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Federaal Kenniscentrum voor de Gezondheidszorg
Centre Fédéral d'Expertise des Soins de Santé
Belgian Health Care Knowledge Centre

CONCEPTUAL FRAMEWORK FOR THE REFORM OF THE BELGIAN HOSPITAL PAYMENT SYSTEM

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HEALTH SERVICES RESEARCH

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ABBREVIATION	DEFINITION
ACOs	Accountable Care Organizations (US)
AEP	Appropriateness Evaluation Protocol
A&E	Accident and Emergency care
ALOS	Average Length of Stay
AMA	American Medical Association
AMI	Acute Myocardial Infarction
ANAP	Agence Nationale d'appui à la performance des établissements de santé et médico-sociaux (France)
APC	Ambulatory Patient Classification (US)
AP-DRG	All Patient Diagnosis Related Group
API	Application Programming Interfaces
APP	Alternative Payment Programs (Canada)
APR-DRG	All Patient Refined Diagnosis Related Group
ARH	Regional Hospital Agencies ('Agences Régionales de l'Hospitalisation') (France)
ARS	Regional Health Agencies ('Agences Régionales de Sante') (France)
ASGB	Algemeen Syndicaat der Geneeskundigen van België
ASIP	Agence des systèmes d'information de santé partagés (France)
ASMR	Amélioration du service médical rendu (France)
ATC	Anatomical Therapeutic Chemical classification
ATU	Authorisation Temporaire d'Utilisation (France)
AWBZ	Algemene Wet Bijzondere Ziektekosten (the Netherlands)
AWR	Approval-With-Research programme (England)
AZV-SHA	Hospital billing data ('Anonieme Ziekenhuisverblijven'/'Séjours Hospitaliers Anonymisés')
BADS	British Association of Day Surgery
BCFI-CBIP	Belgian Centre for Pharmacotherapeutic Information ('Belgisch Centrum voor Farmacotherapeutische Informatie'/' Centre Belge d'Information Pharmacothérapeutique')
BEH	Bail emphytéotique hospitalier (France)

BFM	Budget of Financial Means (‘Budget van de Financiële Middelen’/’Budget des Moyens Financiers’)
B-NMDS	Belgian Nursing Minimum Dataset
BPT	Best Practice Tariff (England)
CABG	Coronary Artery Bypass Graft surgery
CAP	Community Acquired Pneumonia
CCAM	Classification Commune des Actes Medicaux (France)
CCG	Clinical Commissioning Group (England)
CCM	Chronic Care Management
CE	Conformité Européenne
CEA	Clinical Excellence Awards (England)
CED	Coverage with evidence development
CEPS	Comité Economique des Produits de Santé (France)
CF	Uniform national conversion factor (US)
CHP	Community Health Partnerships (England)
CHF	Chronic Heart Failure
CHT	Local hospital communities (‘Communités Hospitalières de Territories’) (France)
CMS	Centers for Medicare & Medicaid Services (US)
CNEDiMTS	Commission nationale d’évaluation des dispositifs médicaux et des technologies de santé (France)
COCOF	Commission communautaire française
COCOM	’Gemeenschappelijke Gemeenschapscommissie’/‘Commission communautaire commune’
CON	Certificates of Need (US)
COPD	Chronic Obstructive Pulmonary Disease
CPT	Current Procedural Terminology (US)
CQUIN	Commissioning for Quality and Innovation (England)
CSS	Code de la Sécurité Sociale (France)
CT	Computed Tomography

CtE	Commissioning through Evaluation
CTG-CRM	Drug Reimbursement Committee (‘Commissie voor Tegemoetkoming Geneesmiddelen’/’Commission de Remboursement des Médicaments’)
CTIIMH-CRIDMI	Committee for the Reimbursement of Invasive Medical Devices and Implants (‘Commissie Tegemoetkoming Implantaten en Invasieve Medische Hulpmiddelen’/’Commission de Remboursements des Implants et des Dispositifs Médicaux Invasifs’)
CVZ	College voor Zorgverzekeringen (the Netherlands)
DBC	Diagnosis Treatment Combination (‘Diagnose Behandel Combinatie’) (the Netherlands)
DBC-O	Diagnosis Treatment Combination-Maintenance (‘Diagnose Behandel Combinatie Onderhoud’) (the Netherlands)
DBFM	Design, Build, Finance and Maintain
DBO	Design, Build and Operate
DDD	Defined Daily Dose
DDRB	Review Body on Doctors' and Dentists' Remuneration (England)
DGEC-SECM	Service for Medical Evaluation and Control (‘Dienst voor Geneeskundige Evaluatie en Controle’/’Service d'Evaluation et de contrôle médicaux’)
DHB	District Health Boards (New Zealand)
DRG	Diagnosis Related Groups
EBM	Evidence Based Medicine
EBMa	Einheitlicher Bewertungs-Maßstab (social health insurance ambulatory fee schedule in Germany)
ED	Emergency Department
eGK	Elektronische Gesundheitskarte (Germany)
EHR	Electronic Health Record
eID	Electronic Identity Card
EMA	European Medicines Agency
EMR	Electronic Medical Record
ESA	European System of Accounts

EU-15	The number of member countries in the European Union prior to the accession of ten candidate countries on 1 May 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom
FAGG-AFMPS	Federal Agency for Medicines and Health Products ('Federaal Agentschap voor Geneesmiddelen en Gezondheidsproducten'/'Agence fédérale des médicaments et des produits de santé')
FBC	Full Business Case (England)
FDA	Food and Drug Administration (US)
FFS	Fee-for-service
FHT	Family Health Teams (Canada)
FM	Facilities Management (England)
FMH	Swiss Medical Association
FOD-SPF	Federal Public Service Health, Food Chain Safety and Environment ('Federale overheidsdienst Volksgezondheid, Veiligheid van de Voedselketen en Leefmilieu'/'Service public fédéral Santé publique, Sécurité de la Chaîne Alimentaire et Environnement')
FT	Foundation trusts (England)
FTE	Full-time equivalent
GAF	Geographic Adjustment Factor (US)
G-BA	Gemeinsamer Bundesausschuss (Germany)
GHM	Groupes homogènes des maladies (the French version of the Diagnostic Related Groups)
GIS	Geographical Information Systems
GMD-DMG	Global Medical File ('Globaal Medisch Dossier'/'Dossier Médical Global')
GOÄ	Gebührenordnung für Ärzte (fee schedule for private patients in Germany)
GP	General Practitioner
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HAS	Haute Autorité de Santé (France)
HIS	Health Interview Survey ('Gezondheidsenquête'/'Enquête de Santé')
HPST	Hôpital, Patients, Santé et Territoire (France)

HRG	Health Resource Groups (the English version of the Diagnostic Related Groups)
HTA	Health Technology Assessment
IBF-FBI	Interdepartmental Budgetary Fund (‘Interdepartementaal Begrotingsfonds’/’Fonds budgétaire interdépartemental’)
ICD	Implantable Cardioverter Defibrillators
ICD-10-BE	International Classification of Diseases, 10th Revision, Belgian modification
ICD-9-CM	International Classification of Diseases, 9th Revision, Clinical Modification
ICD-10-CM	International Classification of Diseases, 10th Revision, Clinical Modification
ICD-10-PCS	International Classification of Diseases, 10th Revision, Procedure Coding System
ICER	Incremental cost-effectiveness ratio
ICT	Information and Communication Technology
ICU	Intensive Care Units
IFRS	International Financial Reporting Standards
INeK	Institute for the Hospital Remuneration System (‘Institut für das Entgeltsystem im Krankenhaus’) Germany)
IPPS	Inpatient prospective payment system (US)
IT	Information Technology
iTAPP	Innovative Technology Adoption Procurement Programme (England)
IV	Intravenous
IVF	In vitro fertilisation
JCI	Joint Commission International
KCE	Belgian Health Care Knowledge Centre (‘Federaal Kenniscentrum voor de Gezondheidszorg’/’Centre Fédéral d’Expertise des Soins de Santé’)
KHRG	Krankenhausfinanzierungsreformgesetz (Germany)
KMEHR	Kind messages for electronic healthcare record
KU Leuven	University of Leuven
LIFT	Local Improvement Finance Trust (England)
LMN-RML	Local multidisciplinary networks (‘Lokale Multidisciplinaire Netwerken’/‘Réseaux Multidisciplinaires Locaux’)

LPPR	Liste des Produits et Prestations Remboursables (France)
LUSS	Ligues des Usagers des Services de Santé (Umbrella organisation for French-speaking patient organisations in Belgium)
MAHA	Model for Automatic Hospital Analyses
MAINH	Mission Nationale d'Appui à l'Investissement Hospitalier (France)
MAS	Medical Advisory Secretariat (Canada)
MERRI	Missions d'enseignements, de recherche, de référence et d'innovation (France)
MFF	Market forces factor (England)
MG-MZG/DM-RHM	Medical data in the hospital discharge dataset ('Medische Gegevens - Minimale Ziekenhuis Gegevens'/'Données Médicales - Résumé Hospitalier Minimum')
MIG	Missions d'intérêt général (France)
MKG-RCM	Minimal Clinical Data ('Minimale Klinische Gegevens'/'Résumé Hospitalier Minimal')
MOC	Multidisciplinary Oncology Consultation ('Multidisciplinair oncologisch consult'/'Consultation oncologique multidisciplinaire')
MoH	Ministry of Health (France)
MOHLTC	Ministry of Health and Long-Term Care (Canada)
MQNK	Medizinisches Qualitätsnetz-Ärzteinitiative Kinzigtal (Physician organisation active in the Kinzigtal valley in Germany)
MRI	Magnetic Resonance Imaging
MRSA	Methicillin-resistant Staphylococcus aureus
MS-DRG	Medicare Severity Diagnosis Related Groups (US)
MUG-SMUR	Mobile emergency care team ('Mobiele Urgentie Groep'/'Service Mobile d'Urgence et de Réanimation')
MZG-RHM	Hospital discharge dataset ('Minimale Ziekenhuis Gegevens'/'Résumé Hospitalier Minimum')
NFU	Netherlands Federation of University Medical Centres ('Nederlandse Federatie van Universitair Medische Centra')
NGAP	Nomenclature Générale des Actes Professionnels (France)
NHI	National Health Insurance

NIAZ	Netherlands Institute for Accreditation in Healthcare
NIHR	National Institute for Health Research (England)
NMDS	Nursing Minimum Dataset
NPCF	Nederlandse Patiënten Consumenten Federatie
NPERCIZ	National percentage on intensive care per APR-DRG
NPM	New Public Management
NRG	Nursing Related Groups
NRZV-CNEH	National Council for Hospital Facilities (‘Nationale Raad voor Ziekenhuisvoorzieningen’/’Conseil National des Etablissements Hospitaliers’)
NTAC	NHS Technology Adoption Centre (England)
NTAP	New Technology Add-on Payments (US)
NUB	Neue Untersucherungs- und Behandlungsmethoden (Germany)
NVZ	Dutch Hospital Federation (‘Nederlandse Vereniging van Ziekenhuizen’)
NZA	Dutch Healthcare Authority (‘Nederlandse Zorgautoriteit’)
OBC	Outline Business Case (England)
OCMW-CPAS	Public municipal welfare centre ('Openbaar Centrum voor Maatschappelijk Welzijn'/’Centre Public d'Action Sociale’)
OECD	The Organisation for Economic Co-operation and Development
OHTAC	Ontario Health Technology Advisory Committee
OIR	Only-In-Research
PAC	Public Accounts Committee
PAL-NAL	Positive/negative number of inpatient days (hospital payment system until 2002) (‘PAL: positief aantal ligdagen, NAL: negatief aantal ligdagen’)
PBC	Prudential Borrowing Code (England)
PCI	Percutaneous Coronary Intervention
PCT	Primary Care Trusts (England)
PET-CT	Positron Emission Tomography-CT
PET-MRI	Positron Emission Tomography in combination with Magnetic Resonance Imaging
PET-scan	Positron Emission Tomography scan
PFI	Private Financing Initiative (England)

PHQID	Premier Hospital Quality Incentive Demonstration (US)
P4P	Pay-for-Performance
P4Q	Pay-for-Quality
PPP	Public-Private Partnership
PRME	Programme de recherché medico-économique (France)
PSTI(C)	Programmes de soutien aux techniques innovantes (en cancérologie) (France)
QALY	Quality-adjusted life-year
RBRVS	Resource-Based Relative Value Scale (US)
R&D	Research and Development
RIZIV-INAMI	National Institute for Health and Disability Insurance (‘Rijksinstituut voor Ziekte- en Invaliditeitsverzekering’/’Institut National d’Assurance Maladie-Invalidité’)
ROM	Risk of Mortality
RUC	RVU Update Committee (US)
RUZB-CHAB	Belgian Board of University Hospitals (‘Raad van Universitaire Ziekenhuizen van België’/’Conférence des Hôpitaux Académiques de Belgique’)
RVU	Relative Value Unit (US)
SEK	Swedish Krona
SFA	Special Finances Act (‘Bijzondere financieringswet’/’Loi spéciale de financement’)
SGEI	Services of general economic interest
SHA	Strategic Health Authorities
SHI	Social Health Insurance
SIRT	Selective Internal Radiation Therapy
SMART	Specific/Measurable/Accurate/Realistic/Time bound
SOC	Strategic Outline Case (England)
SOI	Severity of Illness
SPECT-CT	Single Photon Emission Computed Tomography
SSF	Special Solidarity Fund (‘Bijzonder Solidariteitsfonds’/’Fonds Spécial de Solidarité’)
STA	Single Technology Appraisal (UK)
TARMED	Swiss FFS catalogue (‘Tarif médical’)

TAVI	Transcatheter Aortic Valve Implantation
T2A	Activity-based tariffs (France)
TFEU	Treaty on the Functioning of the European Union
TGR-CTM	Technical Medical Council ('Technisch Geneeskundige Raad'/'Conseil Technique Médical')
VAT	Value Added Tax
VG-MZG/DI-RHM	Nursing data in the hospital discharge dataset ('Verpleegkundige Gegevens - Minimale Ziekenhuis Gegevens'/'Données Infirmières - Résumé Hospitalier Minimum')
VIP	Flemish Quality Indicators project ('Vlaams Indicatoren Project')
VIPA	Vlaams Infrastructuurfonds voor Persoonsgebonden Aangelegenheden
UAntwerpen	University of Antwerp
UCL	Université catholique de Louvain
UK	United Kingdom
ULB	Université libre de Bruxelles
ULg	University of Liège
UMC	University Medical Centre (the Netherlands)
UNAMEC	Belgian organisation of manufacturers/importers/distributors medical technologies
UNCAM	Union nationale des caisses d'assurance maladie (France)
US	United States
VPP	Vlaams Patiënten Platform (Umbrella organisation for Dutch-speaking patient organisations in Belgium)
WBMV	Wet op de bijzondere medische verrichtingen (the Netherlands)
WFZ	Waarborgfonds voor de zorg (the Netherlands)
WHO	World Health Organization
ZN	Zorgverzekeraars Nederland

SCIENTIFIC REPORT

INTRODUCTION AND BACKGROUND

How to use this document?

This Scientific Report is not intended to be read as a stand-alone document, but as a complement to the Synthesis of this study. It gives a detailed account of the methods and results of each of the scientific building blocks underpinning the messages rendered in the Synthesis.

The context, problem description, as well as the discussion of the results and the conclusions are to be found in the Synthesis.

The Synthesis is published as a separate document on our website. It can be accessed from the same referral page as the current document.

Scope and aim of the report

In the beginning of 2013, the Minister of Social Affairs and Public Health announced ‘a roadmap for a prospective hospital payment system, based on pathologies, to be presented to the Council of Ministers at the beginning of October 2013’. As a first step of that roadmap,[1] the Minister asked KCE to make a comparative analysis of the case-based hospital payment systems, including the remuneration of medical specialists, in a selection of countries. The focus of this comparative analysis was on the ‘lessons learned’ from the introduction and reforms of such systems, with special attention to financial incentives to improve quality and to encourage the implementation of integrated care systems. The KCE report with the comparative analysis was published in October 2013.[2]

The current report is the second step of the roadmap. KCE was commissioned by the Minister to **propose a framework for a reform of the payment system of hospital care in Belgium**. However, hospitals do not operate in isolation and are only one element of the wider healthcare system. Moreover, the concept of the hospital has evolved over the years and will continue to evolve. Today’s hospitals face particular challenges, such as escalating healthcare costs, workforce shortages, more complex conditions and care needs of patients, a rise in patients with chronic conditions, public and political expectations and technological developments. Hence, the scope of this report includes the **role of the**

hospital within the broader care landscape, since this role determines to a large extent which system to pay for hospital care is best suited. The focus is, however, on a reform of the payment system of acute hospitals; a payment reform of psychiatric, specialised and geriatric hospitals is out of scope.

Research methods

The orientations for reform are based on a **broad stakeholder consultation, a review of the literature and national or international evidence and experience**. In Part I of the report, the organisation and payment system of Belgian hospitals in the broader context of the healthcare system are described and analysed. Chapter 1 provides an extensive overview of the methods that were used in the different chapters of Part I.

Part II gives an international perspective on four selected topics: the hospital of the future, the remuneration of medical specialists, payments for investments in infrastructure, equipment and ICT and payments for innovation. Research methods are given in each of the chapters separately.

A brief introduction to the goals and incentives of payment systems for hospitals and medical specialists

It is generally accepted that to optimally achieve the multiple, divergent health policy objectives of a hospital system, a mix of payment systems is needed in which the most important risks or drawbacks of each component are to a certain extent countered or alleviated by one or several of the other components.[2] Decisions on who to pay, for what and how much invariably create specific incentives and risks, and this will have an impact on the type and amount of services offered.

Payment systems can be classified along various dimensions. The framework by Ellis and Miller distinguishes five dimensions, with varying incentives according to each of these dimensions: the basis of information used for payments; the scope of payments; the fineness of payments; the level of payments; and whether the payment system rewards performance or not.[3, 4] However, to assess potential behavioural changes due to a new mix of payment systems, it is crucial to understand how the financial risk is shifted from one party to another (e.g. from public authorities to the hospitals).

In the last two decades, Diagnosis Related Groups (DRGs)-based hospital payments have been introduced throughout Europe.[2, 5] While DRGs were first used to provide incentives for acute inpatient care, there is now a wide variation across countries in the degree of extension of DRG-type payment to areas other than acute hospital admissions. Although case-mix adjusted payments using a DRG-type classification are still the norm in Europe and beyond, many countries have entered a new phase of hospital payment reform with more emphasis on whole-system efficiency (rather than hospital efficiency), cost containment, quality and care coordination across settings. Bundled or episode-based payments and global payments are increasingly used to achieve these goals.

Hospital payment systems

Case-based payment is a payment method where hospitals are paid a fixed amount per treated case regardless of the actual costs of the individual hospital. Diagnosis Related Groups are the best-known method to cluster the hospital case-mix into a number of categories.[2]

Bundled payments is a method in which payments to healthcare providers are related to the predetermined expected costs of a grouping, or bundle, of related healthcare services. Within the bundled payment model, a variety of specific payment methods are possible.[6]

Global payments or capitation is a method in which healthcare providers are paid a fixed amount per patient for delivering a range of services.[7]

Many European countries extend the **level of bundling** to 30 or more days after discharge.[2] Some countries also include specialist outpatient care (e.g. the Netherlands), but in general, the bundle or episode of care is restricted to one setting. More recently, bundled payments have been introduced for episodes of care across providers and settings, with the aim of increasing care coordination and integration. However, for patients with chronic or multiple conditions, also longer episodes of care could introduce new dimensions of service fragmentation if they need several bundles of overlapping healthcare packages.[8]

Global payments or capitation go beyond individual episodes of care (e.g. making a separate bundled payment for every hospital stay) by paying a provider or group of providers a single amount to cover all services a patient needs during a period of time (e.g. one year) regardless of the number of episodes of care or which providers deliver services.

The main rationale for reforming hospital payment systems is to change behaviour by creating incentives for e.g. higher quality or lower costs. However, these 'theoretical' incentives have to be confronted with real-world behaviour to evaluate the merits and shortcomings of each payment system.[2] Hospital payment and medical specialist remuneration systems can be categorised according to three parameters:[9]

1. Is the price or budget determined prospectively (before services are provided) or retrospectively (after services are provided)?
2. Is the payment made prospectively or retrospectively?
3. Is the payment related to inputs used (costs) or outputs (services/outcomes) produced?

The combination of the three parameters shapes the likely incentives of the different payment and remuneration methods. An overview of the main methods is given in Table 1.[2]

In Chapter 14 some basic forms of remuneration mechanisms of medical specialists and their expected positive and negative effects with regard to selected objectives are discussed.

Table 1 – Hospital and medical specialist payment systems

Payment system	Price/budget is determined	Payment is made	Payment is related to
Payment per service or procedure Fee-for-service	Prospectively	Retrospectively	Outputs
Cost reimbursement	Retrospectively	Retrospectively	Inputs
Payment per patient-day (per diem)	Prospectively	Retrospectively	Outputs
Payment per patient (capitation)	Prospectively	Prospectively	Outputs
Payment per case, e.g. DRGs	Prospectively	Retrospectively	Outputs
Line-item* budget	Prospectively	Prospectively	Inputs
Global budget	Prospectively	Prospectively	Inputs or outputs
Salary	Prospectively	Retrospectively	Outputs

** Examples of line-items are personnel, drugs, supplies, etc.*

PART I: THE ORGANISATION AND PAYMENT SYSTEM OF BELGIAN HOSPITALS IN THE BROADER CONTEXT OF THE HEALTHCARE SYSTEM

CRITICAL APPRAISAL AND SUGGESTED SOLUTION ELEMENTS BY STAKEHOLDERS AND AVAILABLE EVIDENCE AND EXPERIENCE

1 SCOPE AND METHODS

1.1 Introduction

Part I of the scientific report focuses on the organisation and payment system of Belgian hospitals in the broader context of the healthcare system. In a first chapter we describe the **facts and figures on Belgian hospitals** to place the Belgian hospital capacity and activity in an international perspective and to give contextual data about the Belgian hospital payment system. In the **next eleven chapters** we explore specific topics and for each chapter we include:

- a **factual description** explaining briefly the current Belgian system (based on an analysis of legal documents and text books) and illustrating the current system with facts and figures (in case data were readily available in (inter-)national databases);
- a **critical appraisal** of the strengths and weaknesses of the current system (based on a qualitative study and an analysis of Belgian research reports);
- **solution elements** emerging from the qualitative study as well as from the analysis of previous research about the Belgian healthcare system;
- **key points** resulting from the factual description, critical appraisal and solution elements.

In general, we aimed at collecting information on **the current strengths and problems in the payment system** as well as on **solution elements for a more effective system.** Nevertheless, the scope of the study was extended to embed the analysis of hospital payments in the broader context of the healthcare system. A hospital payment system, after all, is only a means to an end and should be designed to accomplish the overall goals of healthcare policy.

Although the chapters are written as stand-alone documents, cross-referencing to the other chapters completes the content of each separate chapter. Some overlap between chapters could not be avoided.

It is important to note that it was **beyond the scope of this study to simulate the effects of the orientations for reform based on available data.** This was not feasible within the time frame of the study (November 2013-September 2014). However, when a political decision about the direction of the reforms of the hospital payment system is made, simulations and additional study work are urgently required.

1.2 Methods

This study makes use of a mixed method study design to describe the Belgian hospital system (see Figure 1).

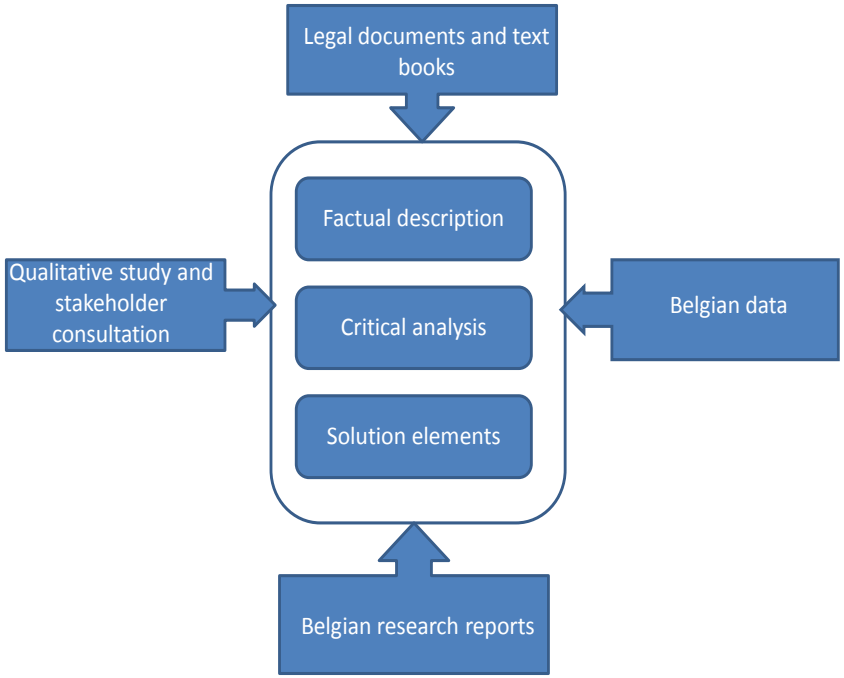
1.2.1 Legal documents and text books

The factual description of the current Belgian system heavily relies on existing text books and reports.[10-12] We searched for legal documents to capture recent changes and updates in the rules and regulations in a targeted way (based on screening of websites of the public authorities and by contacting experts on the matter).

1.2.2 Belgian data

We used international, readily available data sources in order to place the Belgian hospital capacity and activity in an international perspective. The OECD Health Statistics 2014[13] were used as the primary data source. When the data were available, results for the years 2002 and 2012 (or most recent year) were compared. In the figures and tables the data of a selection of ten countries were displayed and the averages of the EU-15 and OECD member states were depicted as benchmarks. The selection of the ten countries is motivated in Part II of the report. The facts and figures about the Belgian hospital (organisation and payment) system are based on readily available data sources from the Federal Public Service (FOD-SPF) of Public Health.

Figure 1 – Mixed method study design to describe the Belgian hospital system



1.2.3 Qualitative study design

1.2.3.1 Introduction

We conducted a qualitative research using a purposive sampling design to recruit people who are likely to provide the most relevant information in function of the research questions.[14] In order to build a balanced purposive sample, a field map was made. Field mapping consists of identifying the key players who have a certain interest in the problem under study and represent all possible perspectives. Since we are interested in covering all variability around the issue of the hospital payment system, we created a field map that consisted of:

- hospital management (chief executive officers; chief medical officers; chief financial officers; chief nursing officers);
- organisations of healthcare professionals (physicians: medical specialists and general practitioners; nurses; hospital pharmacists);
- public authorities (federal and federated authorities);
- representatives from patient organisations;
- sickness funds;
- academics with a track record in hospital payment systems.

Based on desk research and punctual information collected from our existing network we **compiled a long-list** of relevant key informants. These are individuals who have considerable political influence or are experts/professionals who are known to have a very outspoken view on the current hospital payment system and are likely to have an important influence on their peers (opinion leaders). Out of this list, people were invited for either the interviews or the round-table discussions.

The selection of participants for the in-depth interviews and round-table discussions was based on two main criteria. First, it was aimed to restrict the in-depth interviews to 20 participants (10 French-speaking and 10 Dutch-speaking) and the round-table discussions to 8-12 participants per group. A second criterion was to have a mix of profiles in the interviews and round-table discussions. **We further balanced the representation of university and non-university hospitals.**

The round-table discussions were organised for a French-speaking and a Dutch-speaking group separately. The motivation to split up the process in two language-based tracks is both practical and technical. Even with the support of translation services it is hard to implicate different language groups at the same time on a technical topic in a very interactive process. Furthermore, the language differences potentially also signify institutional differences. Integration of Dutch- and French-speaking groups in a shared participatory process potentially confounds these differences.

1.2.3.2 Recruitment and data-collection process

Out of the long-list, people were invited to the in-depth interviews or one of the two round-table discussions. If unavailable they could appoint a substitute. All face-to-face interviews were conducted between 1 December 2013 and 31 January 2014, and all twenty invited stakeholders agreed to participate. The round-table discussions were organised on 18 February 2014 (Dutch language: 9 out of 11 invited stakeholders participated) and 21 February 2014 (French Language: 9 out of 11 invited stakeholders participated).

The in-depth interviews lasted between 2 and 2.5 hours and the location was chosen by the interviewee. All interviews were audio-recorded and transcribed verbatim. Before starting the interviews the objective was explained, confidentiality of the discussion was assured and permission to audio-record the discussion was requested. Interviews were conducted by two members (1 Dutch-speaking; 1 French-speaking) from the consulting firm Möbius (http://www.mobius.eu/en/).

The two round-table discussions, each lasting 3 hours, were carried out in the KCE meeting rooms. Four topics were discussed during each round-table (see Table 3). For each topic the group was split in two with a plenary feedback after the discussion. Each group had a moderator, an observer and a reporter. The moderator led the discussions; the observer helped the moderator to encourage participants to talk; the reporter took notes on the discussion. The reporter was appointed among the participants and was asked to give plenary feedback about the discussions. Before starting the round-table discussions, the objectives, the speech distribution rules and the roles of the moderator, observer and reporter were explained, confidentiality of the discussion was assured and permission to audio-record the plenary feedback on the discussions held in the sub-groups was requested.

The audio-recordings of the in-depth interviews and the plenary feedback sessions of the round-table discussions were transcribed verbatim.

1.2.3.3 Data-collection tools

An interview guide was developed for the in-depth interviews (see Table 2). The research team based the questions on previous experience with the research topic, discussions during informal contacts with stakeholders and content experts as well as information obtained during seminars[a] on the topic. The general themes addressed were the future role of hospitals in the Belgian healthcare landscape, **strengths and problems** of the current hospital budget and remuneration system of medical specialists and **solution elements** for a future, more effective system.

The interview guides were tested during **two test interviews** (with one Dutch-speaking and one1 French-speaking interviewee). The test interviews were observed by one or two members of the research team. Based on the test interviews the interview guides were only slightly adapted. Given the fact that adaptations to the interview guide were only very minor, the data collected during the test interviews were included in the analysis.

For the round-table discussions we developed one or two questions for each of the four topics (see Table 3). These questions were based on a preliminary analysis of the verbatim transcripts of the in-depth interviews and aimed to delineate the playing field of a future reform (acceptability, feasibility).

[a] Belgische Vereniging van Ziekenhuisdirecteurs, 'Naar een prospectief budget van ziekenhuizen?', 19 September 2013; Zorgnet Vlaanderen, 'Together we care', 30 en 31 Mei 2013; ASGB, 'All-in ziekenhuisfinanciering: een controverse?', 21 November 2013.

Table 2 – Interview guide for the in-depth interviews

Topic	Main questions[b]
Future role of hospitals	Papers published by international organisations such as the World Health Organisation (WHO) are clear that some important trends and evolutions will challenge the current way of organising healthcare services in western countries. On one hand there is an ageing population characterised by a growing number of patients with multiple chronic conditions and functional limitations. On the other hand medical innovations are often very expensive while they are sometimes beneficial to only a small number of patients. Furthermore, the increasing scientific and technical knowledge pushes physicians and other healthcare workers towards more sub-specialisation. • What is the impact of these challenges on the organisation of Belgian hospitals? How do you envisage the hospital of the future? o What do you think about 'centralisation' as a response to deal with budgetary pressure and quality demands that are a result of innovative, high-technological but often also very expensive diagnostic and treatment techniques? What is the impact on the number of hospitals? Number of beds? Number of admissions? Are there other approaches (organisational or payment-related) to deal with this? o In the past 10 years a growing number of hospital networks emerged (mostly organised around academic hospitals). How do you think these hospital networks will evolve the next 10 years? o What is the role of the hospital in the care for older persons and chronically ill in their proximity?
Current hospital payment system	Hospitals have revenues from different sources. The two main sources are the 'Budget of Financial Means or BFM' and deductions on physician fees. • The current provisions of the BFM were introduced in July 2002. What are the (dis-)advantages of the current calculation and payment method of the BFM? o The current BFM has prospective and case-based characteristics. What are the (dis-)advantages of such a system (in real life)? o What do you think about the division between a fixed ('provisional twelfths') and variable part? o The distribution of the (closed-end) national hospital budget is based on several criteria. Are these criteria transparent? o Does this result in (un-)intended consequences? o The BFM covers the classic inpatient stays as well as stays in the day-surgery centre. (Non-surgical) day-care admissions are financed via a number of lump sums. What are the (un-)intended consequences of this division? o What are the effects of the BFM? o The current payment method is already (partially) based on pathology information (e.g. fixed part BFM). What is your opinion about this? Are there points for improvement? • What are the (dis-)advantages in the calculation method of physician fees? o Physicians are mainly paid on a fee-for-service basis for activities performed in the hospital (exception: academic hospitals where the majority of physicians are salaried). What is your opinion about the fee-for-service system for physicians? There is an international (i.e. also in Belgium: partial lump sums for laboratory testing and medical imaging) trend to pay medical activities increasingly via lump sums rather than via fee-for-service. In most countries physicians are salaried. What are according to you the (dis-)advantages of lump sum payments compared to a fee-for-service system? And salaried physicians? o What is your opinion about the current fees for 'technical' and 'intellectual' activities?

[b] The 'second level bullets' probing questions are available in Dutch and French upon request.

Topic	Main questions[b]
	o Are the current differences in physician fees between the different disciplines justified? What factors justify differences in fees between medical disciplines? o What is the impact of the financial agreements between hospitals and physicians about the physician's contribution on the relationship between physicians and hospital management? And what is the impact on the relationship between physicians? o What is your opinion about differences in physician fees according to the location where the medical activity is performed (i.e. hospital versus ambulatory care in private practices?) Are there risks involved? o Patient contributions are (potentially) different depending on whether the medical activity is performed by a physician who works at the convention tariff compared to physicians who do not work under the convention tariff. What are the (un-)desired consequences of this division? o What is, according to you, the impact of non-financial incentives for physicians working in a hospital versus physicians working in private practices? • The MAHA-study (Model for Automatic Hospital Analyses) of the Belfius-bank that was published in October 2013 studied the financial situation of Belgian hospitals. According to this study, an increasing number of Belgian hospitals is in deficit. They indicate the structural underpayment via the BFM as one of the main reasons. To what extent does this finding correspond with your assessment of the appropriateness of the size of the BFM? • Deductions on physician fees are used to compensate for the structural underpayment via the BFM. What are the (un-)desired consequences of such a dual payment system? o What is the impact of these arrangements on the relationship between hospital management and physicians? o Which payment method is, according to you, resulting in a well-balanced relationship between hospital management and physicians? • Also supplements are used to compensate for the structural underpayment of the BFM. What are the (un-)desired consequences of the current legislation about supplements? o If the structural underpayment in the BFM is cleared (e.g. in a future reform), for which aspects can supplements still be charged (room, material, physician fee)? • The MAHA-study also illustrated that the profit margin of the hospital pharmacy is used to compensate for the structural underpayment in the BFM. Are there (side-)effects on the functioning of the hospital pharmacy?
Quality[c]	• Quality of care is a high priority on the (political) agenda. Are there in the current hospital payment system (dis-)incentives for quality of care? • Do you think the hospital payment system should include incentives for quality? Or, should the quality improvement policy be based on non-financial incentives? o What are, according to you, the (dis-)advantages of P4P (Pay-for-Performance)? o What are the preconditions for a successful implementation of a P4P-system in the Belgian context?

[c] A sub-set of probing questions was prepared for specific topics on quality and P4P in case the interviewee touched these topics. These probing questions are available upon request in Dutch and French.

Topic	Main questions[b]
	o Implementing a P4P-system requires a well-developed data registration system that allows the monitoring of process and outcome indicators. Do you think that initiatives such as the Flemish Quality Indicator Project will facilitate the implementation of P4P-initiatives?
Integrated care	• International organisations such as the WHO stress the importance of new (integrated/transmural) organisational models to deal with the care needs of patients with multiple chronic conditions. Is the current hospital payment system suitable for such developments? o Is it possible to give examples of integrated care initiatives that have been realised within the current hospital payment system? What went well? For which aspects is there room for improvement? o Belgian experiments with new payment models for integrated care. Examples are the payment of 'care trajectories' (for chronic renal failure and diabetes), payment of palliative networks and art.107 in mental healthcare. Which are the lessons learned from these initiatives that can be used in future reforms?
Medical innovation	• Does the current hospital payment system facilitate medical innovation in a way that the global budget does not increase dramatically? o Can you give examples of medical innovations: ▪ that were realised within the context of the current hospital payment system. What are the (dis-)advantages of the current hospital payment system when implementing these medical innovations? What can be improved? ▪ that were curbed by the current hospital payment system? ▪ that resulted in excessive growth of the global budget?
Payment mechanism for specific purposes	The current hospital payment system provides specific arrangements for specific groups of hospitals or patient groups. • Academic hospitals receive additional means for additional tasks such as research and education (via the B7-part of the BFM). What are the (dis-)advantages of extra payments for academic hospitals for: o specific tasks such as education and research; o specific patient groups (medical outliers). • Some hospitals receive an additional budget for non-medical outliers (the B8-part of the BFM, covering specific costs for patients with a vulnerable socioeconomic profile). What are the (dis-)advantages of this system? o What is your opinion about providing specific payments for these patient groups within the hospital payment system?
Macro-level governance	• What are the strengths and weaknesses of the current macro model that is based on a complex process of negotiations between the various actors (sickness funds, representatives of healthcare professionals, etc.) involved? o How do you experience the effectiveness and the legitimacy of the current decision-making bodies? Do other actors need to be involved? Is this (potentially modernised) model based on negotiation processes between the actors involved the desirable decision-making model for the future? What are the alternatives?
(Un-)intended incentives	• Did the 6th State reform have an impact on the hospital payment system? o Did the 6th State reform create or clear friction points between the federal and the federated authorities? If so, which ones? o What is the impact of transferring the competencies regarding capital costs from the federal towards the federated level?

Topic	Main questions[b]
General concluding questions	• We already discussed several incentives of the current hospital payment system. Are there other incentives that: o should most certainly be maintained; o have unintended consequences that should be reverted.
	• There is a constant pressure on government budgets. Within the global budget of health insurance a considerable part is spent on hospital care. Which are according to you opportunities for rationalisation?
	• During this interview several strengths and weaknesses of the current hospital payment model were discussed. In addition, some solution elements for a future more effective system were expressed. When you could propose a new model of hospital payment, on which basic principles and components should it be based?
	• Are there topics that are not yet addressed that you consider important for this interview?

Table 3 – Main questions of the round-table discussions

Topic	Main questions
Quality of care	• What should be done to ensure that the hospital payment system contributes to quality of patient care?
Dual hospital payment system	• Which mix of payment systems is most appropriate to assure that a balance between quality, efficiency and accessibility of the healthcare system is achieved? • Which changes are needed in the way financial resources are managed and distributed within the hospital and thus in the internal governance model of the hospital?
Physician fees	• Which measures are needed to reduce the large income differences between medical disciplines? • Which measures (hospital payment system? regulation?) are needed to ensure that patients receive care in the most appropriate setting (with a focus on polyclinics in the hospital setting versus private practices)?
Macro-level governance	• Is the macro-level model (possibly updated) that heavily relies on participation of stakeholders the most appropriate model for the future? What are the alternatives?

1.2.3.4 Analysis

The transcripts of the in-depth interviews were coded in QSR NVivo 9.[15] A basic node structure was created by a KCE researcher, by doing the open coding of four transcripts. Interviews from respondents with different profiles were chosen to capture as many ideas as possible in this preliminary node structure. Next, one interview was coded shoulder-to-shoulder by the KCE-researcher and the two researchers from the Möbius team to familiarise the entire team with the node structure. Next, two external researchers (1 French-speaking and 1 Dutch-speaking) continued the open coding of the other transcripts. The node structure was further developed as the coding process evolved. The initial node structure was also discussed with and validated by the other team members.

In a next step the KCE researcher did the axial coding, hence generated overarching themes and relationships between nodes. This structure was discussed and supplemented within the research team. The final step of selective coding, which means linking concepts together, was part of the reflection necessary to write first drafts of the chapters. The transcripts of the round-table discussions were used to fine-tune and complete the chapters. Results emerging from the interviews and round-table discussions were supported by a selection of the original text fragments (in Dutch/French). Not all statements were supported by quotes in the final chapter to increase the readability of the text. They are, however, available upon request.

Disclaimer. The chapters in Part I of the study sometimes only reflect interviewees' perceptions if no reference to research reports or data sources is provided. The reader should be aware that (in absence of a reference) these perceptions are only based on text quotes collected during the interviews and round-table discussions and not on verified facts.

1.2.4 Review of the literature and Belgian reports

In addition to opinions of key informants, we searched the grey literature for relevant Belgian reports. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on:

- a systematic screening of existing KCE reports;
- identification of reports of the Federal Public Service Health, Food Chain Safety and Environment (FOD-SPF), the National Institute for Health and Disability Insurance (RIZIV-INAMI) and the federated authorities by contacting persons with a leading position. We limited our request to reports published since 2008 (or previous years if no fundamental policy changes have taken place);
- a web-search;
- a Medline search for peer-reviewed articles from Belgian key authors;
- ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organisations such as the OECD or the WHO) to retrieve information about or relevant to the Belgian hospital system and to identify interesting international initiatives or best practices.

In the analysis we made a distinction between facts, opinions about the current situation (critical appraisal) and solution elements for a future more effective hospital payment system. Where indicated, Belgian facts and figures are provided. These are based on the Belgian reports (and if possible updated) and on readily available data sources at KCE or provided by the federal authorities (FOD-SPF and RIZIV-INAMI).

1.2.5 Consultation round with academics and stakeholders

Based on the results of Part I (i.e. qualitative study; review of Belgian reports and ad-hoc literature search; fact and figures on Belgium) and Part II (international comparison and/or literature review on four topics: future role of hospitals; physician remuneration systems; medical innovations; investments) the KCE researchers made a first draft of 'orientations for reform'. A participatory process was organised to obtain input from academics in the field of hospital payment as well as from a wide range of stakeholders. The participatory process was organised around three participation events:

- Workshop with academics (6-7 June 2014): a preliminary draft of the synthesis was discussed during a workshop with academics with the aim to discuss and improve the emerging orientations for reform.
- Stakeholder consultation (26 June 2014): the orientations for reform and their rationale were presented (power-point presentation) to a broad range of stakeholders to give an influential number of key stakeholders a better opportunity to voice their opinions (i.e. similar stakeholder groups as those who participated in the interviews and round-table discussions), to include a number of complementary perspectives (particularly from labour unions, private insurers, pharmaceutical sector and banks) and to reflect on and improve the final draft of orientations for reform. More than 50 stakeholders participated in the workshop.
- Consultation with public authorities (30 June 2014): representatives of the public authorities (both federal as well as federated entities) were invited to a round-table discussion. The orientations for reform were presented and the invited participants were asked to voice their opinions, remarks and suggestions.

Both the participants of the stakeholder consultation as well as participants of the consultation with the public authorities had three weeks to discuss the orientations for reform within their own organisations and to submit their comments and remarks to the KCE. These comments were integrated in the scientific report if they added new information compared to the interviews and round-table discussions.

2 FACTS AND FIGURES ON BELGIAN HOSPITALS

2.1 Introduction

This chapter offers a picture of the structure and activity of the Belgian hospital sector on the basis of some key parameters as well as of the main characteristics of the payment system. In a first part of this chapter, the structure (section 2.2), the regulatory framework (section 2.3) and main hospital revenue sources (section 2.4) of Belgian hospitals are described. The aim is to provide a general overview, while in the following chapters some of the revenue sources are more detailed.

We then compare the Belgian hospital system with that in a selection of countries (section 2.5). Comparing hospital systems between countries is not a straightforward exercise. They widely differ from each other and for a good understanding of the hospital system, hospitals should be seen in the broader context of the healthcare system. With the knowledge in mind that numbers never capture the full picture, the description of how the Belgian hospital sector is structured and the comparison with other countries may nevertheless give an indication of where there might be something to learn or change.

For the comparison, ten countries have been selected: Canada, England, France, Germany, Korea, Luxembourg, Sweden, Switzerland, the Netherlands and the US. These countries were also selected for the international comparison of remuneration systems of medical specialists (see Chapter 14). They are a mix of high-income countries in Europe, North America and East Asia with different health systems. In addition, an OECD and EU-15 average (the countries that joined the European Union (EU) before 2004, i.e. Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom) is presented. The main source of data reported in this chapter is the OECD Health Statistics 2014.[16]

2.2 Structure of the Belgian hospital sector

2.2.1 Typology of hospitals

A first dimension to classify hospitals is **hospital ownership**. In 2013, about 44% were public institutions, 56% were private not-for-profit institutions. Public hospitals are mostly owned by public municipal welfare centres (OCMW-CPAS) or intermunicipal organisations, while private hospitals are generally owned by religious charitable organisations or in some cases by sickness funds or universities. There are no private for-profit hospitals. Hospitals can provide services at different hospital sites. To classify hospitals along the ownership dimension we took the ownership status of the main hospital site, as available at the Federal Public Service (FOD-SPF) of Public Health.[17]

A second dimension to classify hospitals is according to **hospital or service type**. Psychiatric hospitals are exclusively designed for psychiatric care. In general, they dispose of one or more of the following departments: A (department of neuropsychiatry for acute observation and treatment), K (department of neuropsychiatry for children), Sp (specialised department for psycho-geriatric care) and T (department of neuropsychiatry for chronic treatment). Except for T-departments, the other departments can also be found in some general hospitals, along with acute care departments: C (surgery), D (internal medicine), E (paediatrics), M (maternity), IC (intensive care), NIC (neonatal intensive care), L (contagious diseases) and H (not otherwise specified (NOS) care).

General hospitals can be further divided into acute, specialised (Sp) and geriatric hospitals (although geriatric hospitals could also be classified under specialised hospitals). Specialised hospitals provide chronic treatment and/or revalidation of patients with e.g. cardiopulmonary diseases, locomotive diseases, neurological disorders, palliative care, NOS chronic diseases and psycho-geriatric care. Geriatric hospitals dispose of G-departments (geriatric). Some acute hospitals also dispose of acute psychiatric (A), specialised (Sp) or geriatric (G) departments.

Table 4 – Number of hospitals by type in 2013

Hospital type	Subtype		Number
General	Acute	University	7
		Non-university	84
		Non-university with university beds	14
	Specialised		14
	Geriatric/geriatric and specialised		8
Psychiatric			65
Total			**192**

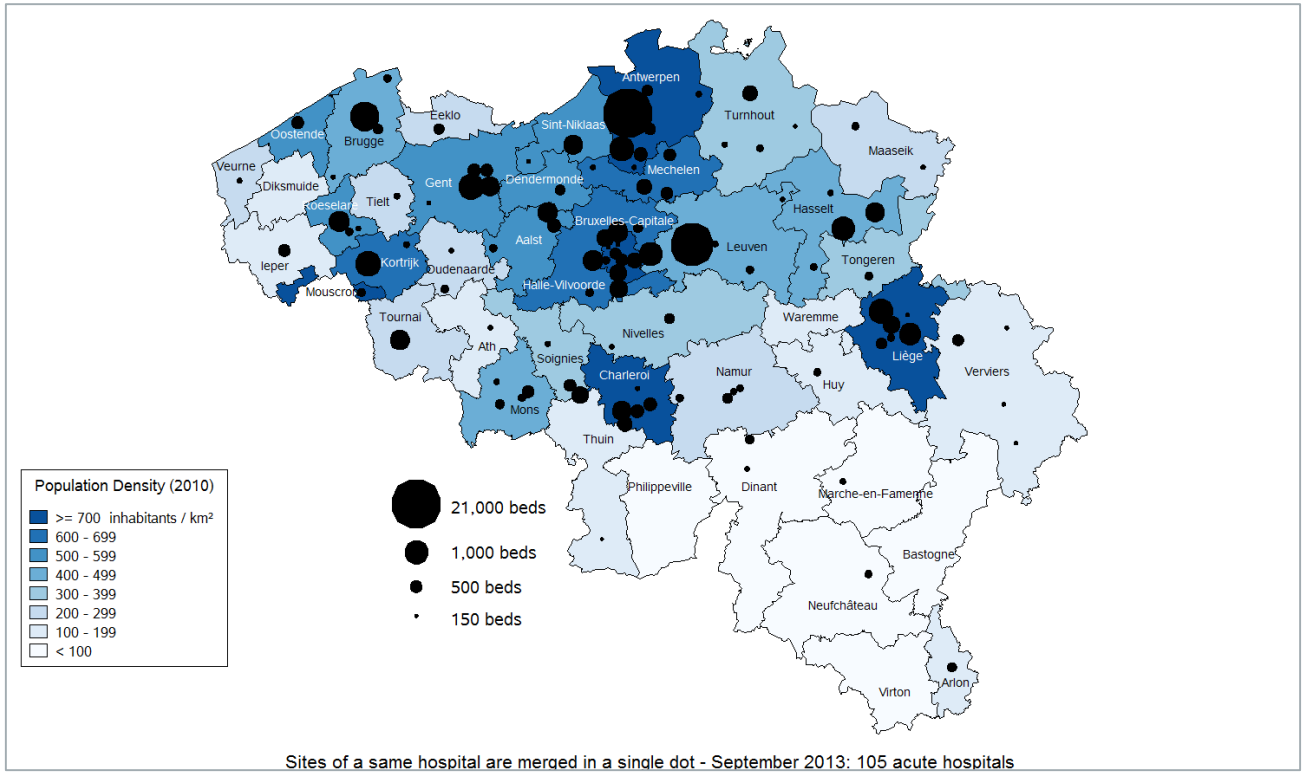
Source: FOD-SPF

Acute hospitals consist of university hospitals, non-university hospitals with university beds, called general hospitals 'with university character' (see Chapter 7) and other non-university hospitals. Belgium has seven university hospitals, one for each medical school that offers the entire medical education.

2.2.2 Geographical distribution of hospitals

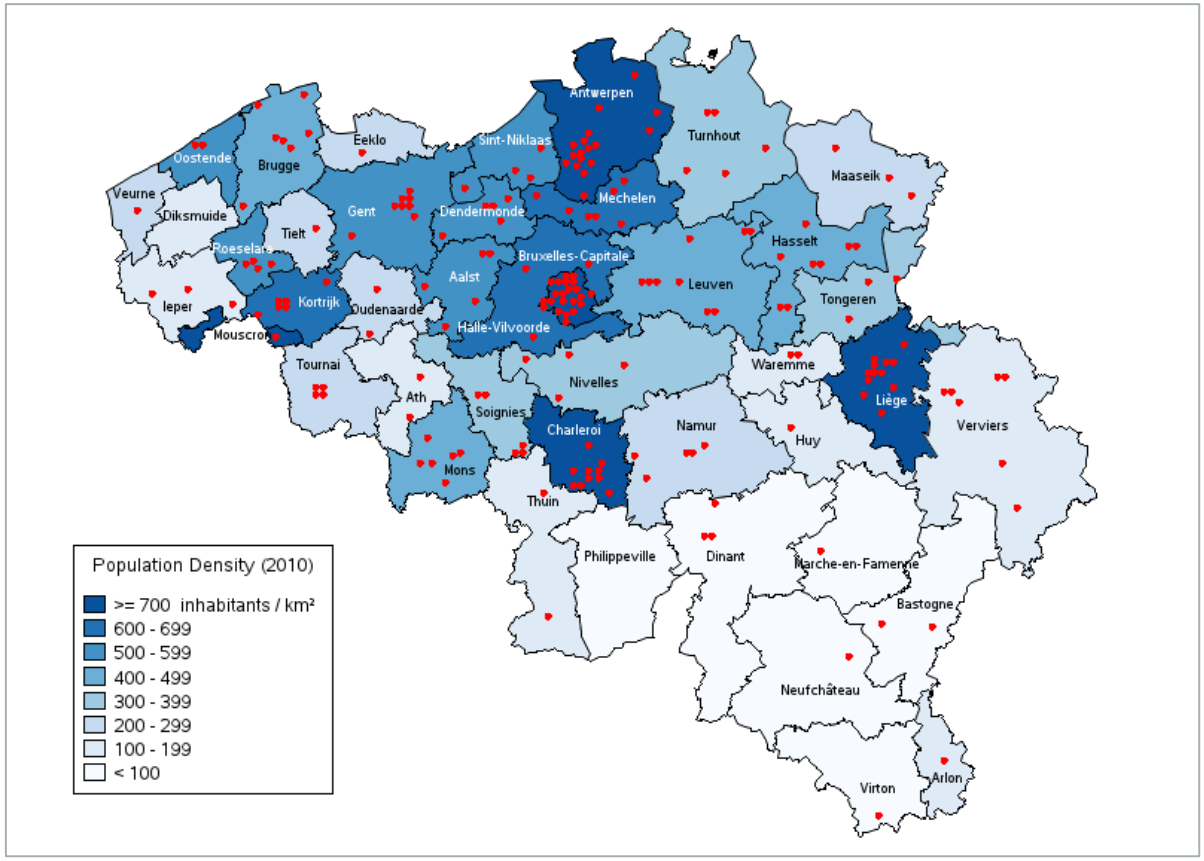
Figure 2 and Figure 3 show the geographical distribution of acute hospitals and hospital sites in Belgium for 2013. In Figure 2 the size of the bubble corresponds with the number of recognised beds in a hospital. Districts (called 'arrondissement') are coloured according to population density. In general, hospitals and hospital beds are concentrated in more densely populated areas. To have a more complete picture of the geographical accessibility of hospital care in Belgium, for example in the southern part of the country, both figures must be taken into account.

Figure 2 – Geographical distribution of acute hospitals in Belgium, 2013



Source: FOD-SPF

Figure 3 – Geographical distribution of acute hospital sites in Belgium, 2013



Source: FOD-SPF

2.3 Regulatory framework for hospitals

This section draws heavily on section 3.3 in KCE report 121[18], but regulation has been updated. Due to the 6th State reform a transfer of powers from the federal government to the federated entities came into effect on 1 July 2014. The transferred responsibilities are described in Chapter 3. In this section, we describe the planning, programming and recognition regulation **valid until 30 June 2014** because this is the regulation that is reflected in the data and the stakeholder comments.

Market entry for hospital services is restricted by government regulation. First, a hospital has to fit into the national planning. Second, it has to fulfil several recognition criteria before it is allowed to operate. Planning and recognition criteria are determined at the federal level but the federated authorities are responsible for granting and controlling the recognition.

2.3.1 Planning and programming

The federal government is responsible for the planning of global hospital capacity, which is then translated into programming standards and criteria. Programming determines the number of hospitals, the number and type of departments and the number of beds. These numbers are based on the size, age structure, and morbidity of the population and on the geographical dispersion, as defined in the Hospital Act of 1963. In 1982 the government decided to introduce a moratorium on the number of hospital beds at the level of the number of recognised beds on 1 July 1982 for general hospitals. The moratorium still applies today, implying that any new bed results in the closure of another hospital bed. At the same time, hospital mergers for general hospitals were encouraged by demanding a minimum of 150 beds spread across at least three departments. Moreover, patient-day quotas were imposed on hospitals at the level of the number of patient-days in 1980, but afterwards the quotas were gradually reduced.

While at first programming criteria mainly targeted the number of hospital beds, during the last decades programming regulation has been extended to heavy medical equipment (e.g. Positron Emission Tomography (PET)-scanners), medical and medico-technical services or care programmes (see section 2.3.3).

2.3.2 Recognition

A hospital not only has to fit into the national planning, it also needs to be recognised before it can operate. The principle of compulsory recognition was also introduced by the Hospital Act of 1963. Recognition standards and criteria entitle hospitals to subsidies and reimbursement by the sickness funds. Recognition follows a strictly regulated procedure and has to be renewed every couple of years. The standards and criteria for recognition are considered as a guarantee for hygiene, safety and quality of care. General recognition standards include:

- organisational standards such as staff requirements and responsibilities, hygiene, ethical requirements;
- architectural criteria concerning the number, size, comfort and hygiene of hospital rooms;
- functional standards such as convenience and accessibility;
- additional standards related to minimum activity.

Specific standards and criteria hold for university hospitals. Additional specific recognition norms and criteria are defined for several groups:

- hospital departments (maternity department, rehabilitation department, etc.);
- divisions and functions (hospital blood bank, hospital pharmacy, palliative care, intensive care, ombudsman, etc.);
- medical and medico-technical services (centre for human genetics, computed tomography (CT) medical imaging, magnetic resonance imaging (MRI), centre for chronic kidney failure treatment, radiotherapy, service for nuclear medicine with PET-scanner, transplantation centre, etc.);
- care programmes (cardiac pathology, children, geriatrics, etc.).[18]

2.3.3 *Heavy medical equipment and care programmes in Belgian hospitals*

Since 1999, the regulation and recognition of medical hospital services and functions have gradually been replaced by that of '**care programmes'**. A care programme is a coherent set of services for well-defined pathologies or patient groups, such as reproductive medicine, cardiac pathology, oncology, children and geriatric patients. For each care programme, legal criteria are set related to the target group, nature and content of care, minimum activity level, necessary infrastructure, required medical and non-medical staff and their required expertise, standards concerning quality and quality monitoring, economic standards and geographical accessibility criteria. A distinction is made between basic programmes (e.g. basic oncology care[d] focusing mainly on diagnosis and less complex treatment) for regular conditions and treatments versus specialised programmes for rarer conditions and/or more advanced treatments (e.g. oncology care programmes that have to offer more advanced diagnostic options as well as various therapeutic possibilities[e]).

According to the Hospital Act, **heavy medical equipment for diagnosis and treatment** are those that are expensive because of the purchase price or because of the expensive operating costs (i.e. requiring highly specialised personnel). The list of heavy medical equipment is defined by a Royal Decree[19] listing these technologies: Computer Tomography (CT); Single Photon Emission Computed Tomography (SPECT)-CT; Positron Emission Tomography (PET)-CT; Magnetic Resonance Imaging (MRI), 'extremity only' included; Positron Emission Tomography in combination with Magnetic Resonance Imaging (PET-MRI); radiotherapy equipment that uses (the emission of) photons, proton beams or carbon ions. Public authorities only provide subsidies for capital investments for equipment that fits in the programming. Moreover, the instalment or exploitation of this heavy medical equipment requires a permission of public authorities even when no reimbursement is claimed or when this happens outside hospital or medical-social premises. We describe below the case of PET- and MRI-scanners.

According to the Royal Decree of 25 April 2014[20] the maximum number of nuclear medicine centres in Belgium allowed to have a **PET-scanner** is limited according to pre-specified criteria: one centre for each university hospital, one centre for each hospital delivering surgical and medical services exclusively in oncology, and 16 centres in addition to these criteria of which 9 are located in Flanders, 6 in Wallonia and 1 in Brussels. The maximum number of PET-scanners is limited to 26. To regulate these PET-scanners, specific norms are used such as specific staffing norms (e.g. presence of a nuclear medicine specialist during opening hours) and a proof of sufficient oncological activity (e.g. reported new tumours via the multidisciplinary oncological consultations (MOC-COM)). In order to reach a sufficient number of oncological activities it is possible for hospitals to form 'hospital associations'.

The total number of **MRI-scanners** is restricted ('programmed') for each region (Flanders: n=65; Wallonia: n=37; Brussels: n=19) but also the number of MRI-scanners per centre is regulated. The MRI-scanners for research purposes for which no subsidy or reimbursement of medical activities are claimed, are not taken into account. In order to operate an MRI-unit, a hospital has to meet certain norms.[21]

2.4 Payments for hospital care

This section does not have the ambition to cover all details of all revenue sources. Instead, some main sources will be described as far as the information is necessary to get a global view of the current system. In the following chapters of Part I, some of the revenue sources are more detailed to understand the stakeholder comments on the current hospital payment system. The interested reader is referred to Crommelynck et al. (2013)[10], Durant (2013)[12] and Sermeus (2006)[22] for a detailed description of the topics discussed in this section.

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[d] In principle, each hospital that does not have a recognition for an oncology care programme, has to offer a care programme for basic oncological care.

[e] The number of care programmes that can be installed at that organisational level is not limited, all programmes that meet the required criteria can be recognised. Nevertheless, the underlying objective is that these specialised programmes are not available in all hospitals.

2.4.1 Hospital revenue sources

Hospitals receive their revenue from various sources. Table 5 gives the share in total revenue of the main revenue sources.

Table 5 – Hospital revenue sources, 2012

Revenue source	Share of total revenue
Hospital budget	38.6%
Physician fees	40.7%
Room supplements	0.6%
Lump sum payments for conventions, day care etc.	4.7%
Ancillary products	0.3%
Pharmaceutical products	15.1%
Fees	40.7%

Source: Kesteloot (2013)[23]

Both the hospital budget, called the 'Budget of Financial Means (BFM)', and fees for consultations and technical procedures make up about 40% of total hospital revenue. Other income sources are payments for pharmaceuticals, rehabilitation conventions, and supplements paid by patients. The results in Table 5 are based on the 19th MAHA study (Model for Automatic Hospital Analyses) of acute hospitals. Data for all acute care hospitals are included.[24]

The percentage of the fees (40.7%) should be interpreted with caution. For hospitalised patients, including day care, a central collection of fees is obliged. The central collection can be organised by the hospital or by the Medical Board. The choice for one of the two systems has implications for the structure of the income statement, the balance sheet and the financial ratios of the hospital. When the central collection is organised by the hospital, the financial accounts reflect all fees for medical, medico-technical and paramedical services. When the collection of fees is organised by the Medical Board, only part of the fees is taken up in the financial accounts.[18] As explained in detail in Chapter 9, physicians cede part of their fees to the hospital to help financing the costs related to their medical activities in the hospital. On a macro level, approximately 42% of physician fees is transferred to the hospital,[25] but large differences exist between hospitals and between medical disciplines. For ambulatory patients there is no central collection of fees.

Income sources not included in Table 5 are subsidies for investments (see section 15.7 in Chapter 15) and other sources such as revenue from the cafeteria, parking, etc. (about 8.8%).[23]

Dual payment system

The payment system depends on the type of services that are provided. Physician fees are paid through compulsory health insurance while hospitals are funded through a separate budget envelope.

Consultations and technical procedures are remunerated through the variable reimbursement system of **fee-for-service** (FFS). Non-medical activities, such as the services of accommodation, accident and emergency services and nursing activities are paid for via a **budgeting** system partially based on pathologies. Physicians cede part of their fees to the hospital to pay for (part of) the costs directly or indirectly linked to the provision of medical activities. These include costs of nursing, paramedical, caring, technical, administrative, maintenance or other supportive staff but also the costs related to the use of rooms, costs of purchasing, renovation and maintenance of equipment and costs of materials not included in the hospital budget. In Chapter 9 of this report a detailed description is given of the remuneration of physicians and of the deductions on the fees.

In addition to the two main revenue sources, pharmaceutical products are partly reimbursed on a product-by-product basis and partly by a lump-sum amount. Day care and conventions, e.g. for rehabilitation care, are paid for by lump sums.

2.4.2 The Budget of Financial Means: components, calculation and payment

Since 1986 a **closed-end budget for hospitals is set at the national level**. Each year the national hospital budget is defined by Royal Decree. Once the national budget is approved, a provisional budget is set for each individual hospital. This budget consists of three major parts (A, B and C), which are set separately and are further divided into subparts, all according to different rules and criteria. Subparts B1 (common operational costs) and B2 (clinical costs) are the two major parts of the hospital budget. Until the last major hospital payment reform in 2002, a per diem rate was calculated on the basis of the individual hospital budget and a quota of patient-days. The number of recognised beds and activity levels were the most important criteria to allocate the national budget to individual hospitals.[18]

Already in 1994, a correction for the budgets for B1 and B2 as part of the per diem rate was introduced on the basis of the length of stay (LOS) per DRG[f] to stimulate a decrease in the length of stay.[18] A national LOS per All Patient (AP)-DRG was applied to the case-mix of each hospital. This PAL-NAL system (positive/negative number of inpatient days), resembled a bonus-malus system and hence did not influence the national hospital budget to a large extent since 95% of the refunds were redistributed to the hospitals with a shorter LOS. Moreover, in this system of pathology-weighted LOS, the per diem rate was still based on the structure of the hospital (e.g. the number of recognised beds) and the system was largely retrospective in nature because the LOS was used as a correction a posteriori.

Since the reform of 1 July 2002, there has been a gradual switch to the notion of **'justified activities'**, with a more prominent role of the pathology-weighted LOS and the Budget of Financial Means (BFM) replacing the former per diem price. The gradual switch took place between 2002 and 2006. Justified activities, the basic concept in the BFM, are based on the national average LOS per pathology group (All Patient Refined (APR)-DRGs), which is then applied to the case-mix of each hospital. Hence, the concept of justified activities is **based on average activity and should not be confused with justified as reflecting evidence-based practice**. Multiplying the national average LOS per pathology group with the case-mix of a hospital, gives the number of justified patient-days for the hospital. Per department or group of departments, the number of justified patient-days is divided by the 'normative occupancy rate' of the department (in general 80%). When the hospital's number of days exceeds its prospectively attributed number of days, the costs for these excess days are only partially reimbursed. More specifically, the number of justified beds above the limit of 112% of recognised beds will only be financed for 50%. This financial sanction is meant to refrain hospitals from unlimitedly expanding their activity. The amounts saved are redistributed to hospitals with less than their prospectively attributed number of days.[18]

2.4.2.1 Components of the hospital budget

In Table 6 the absolute amount as well as the share of each component in the total hospital budget is given (data on 1 January 2014).

Part A covers capital and investment costs, part B operational costs and part C some additional financial costs.

[f] At that time, the All Patient (AP)-DRG classification system was applied.

Table 6 – Components of the hospital budget in absolute amounts and share of the hospital budget, on 1 January 2014

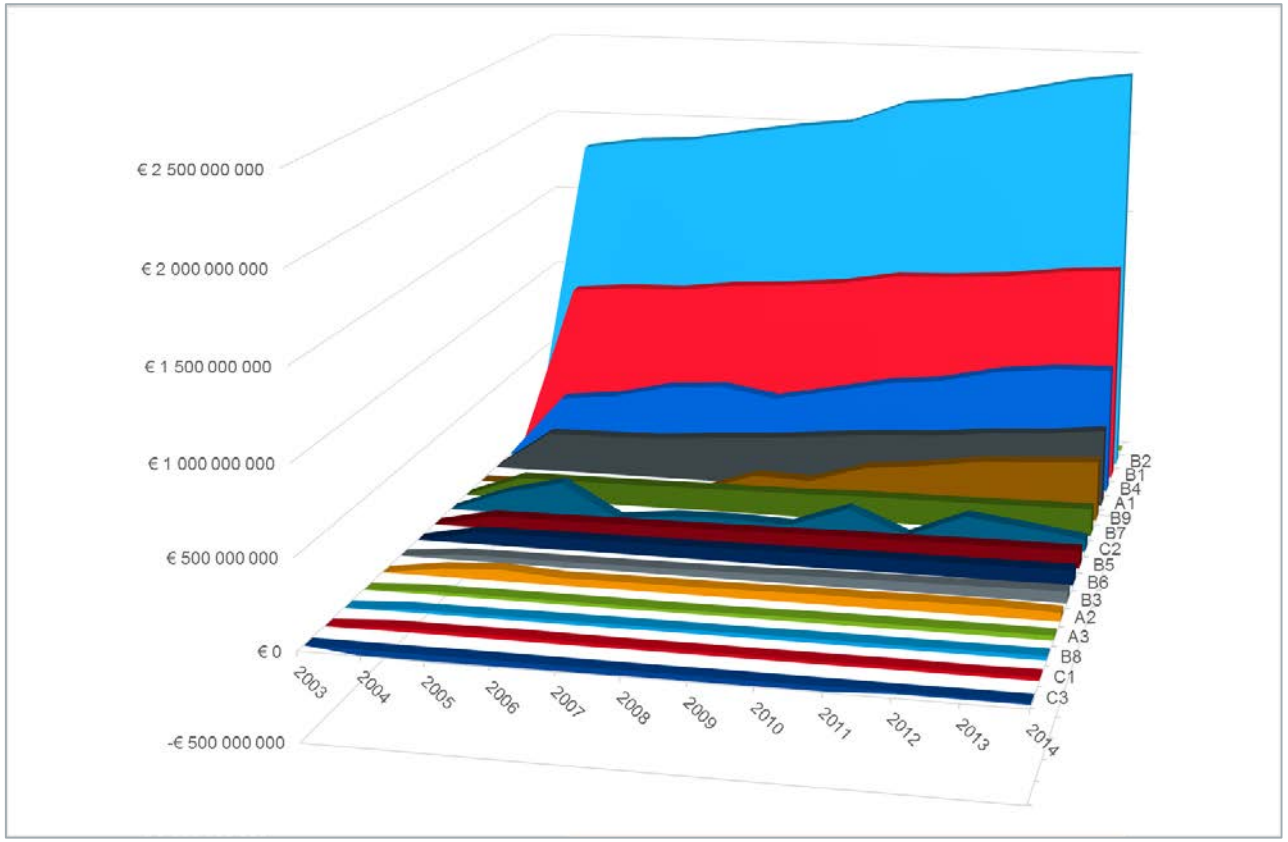
Component	Description	Amount in € 1 January 2014	% of total hospital budget
A1	Depreciations of movable and immovable investments and financial costs of the credit taken	520 987 829.18	8.48
A2	Costs of short-term credit	50 537 470.70	0.82
A3	Investment and depreciations costs of MRI-units, PET-scanners and radiotherapy	26 473 785.88	0.43
B1	Common operational costs (administration, maintenance, laundry, etc.)	1 303 972 600.62	21.21
B2	Clinical costs (nursing and care personnel and medical equipment)	2 448 940 775.11	39.84
B3	Operational costs for medico-technical departments	68 047 802.78	1.11
B4	Costs of pilot projects or of legal obligations (e.g. data registration)	824 804 402.90	13.42
B5	Operational costs of the hospital pharmacy	103 027 051.72	1.68
B6	Costs for carrying out the social agreement for personnel not included in the hospital budget	87 994 916.46	1.43
B7	Costs for specific missions of university hospitals or non-university hospitals with university beds	161 474 497.43	2.63
B8	Specific costs for patients with a weaker socioeconomic profile	24 087 678.48	0.39
B9	Costs for extra-legal benefits determined in the social agreements of 2005 and 2011	389 667 424.13	6.34
C1	Advance costs for new construction or existing hospitals	19 127 381.84	0.31
C2	Readjustment (positive or negative) of budgets for past financial years	130 101 017.95	2.12
C3	Reduction of the budget of financial means to 'compensate for' the room supplements charged in single rooms (negative amount)	-12 163 168.86	-0.20
Total		**6 147 031 466.32**	

Source: FOD-SPF; MRI=Magnetic Resonance Imaging; PET=Positron Emission Tomography

The hospital budget (BFM) increased from € 3969 million in 2003 to € 6147 million in 2014. Figure 4 shows the evolution of the different components over the same period. Figure 5 zooms in on the smallest components of the BFM to give a better view on their evolution.

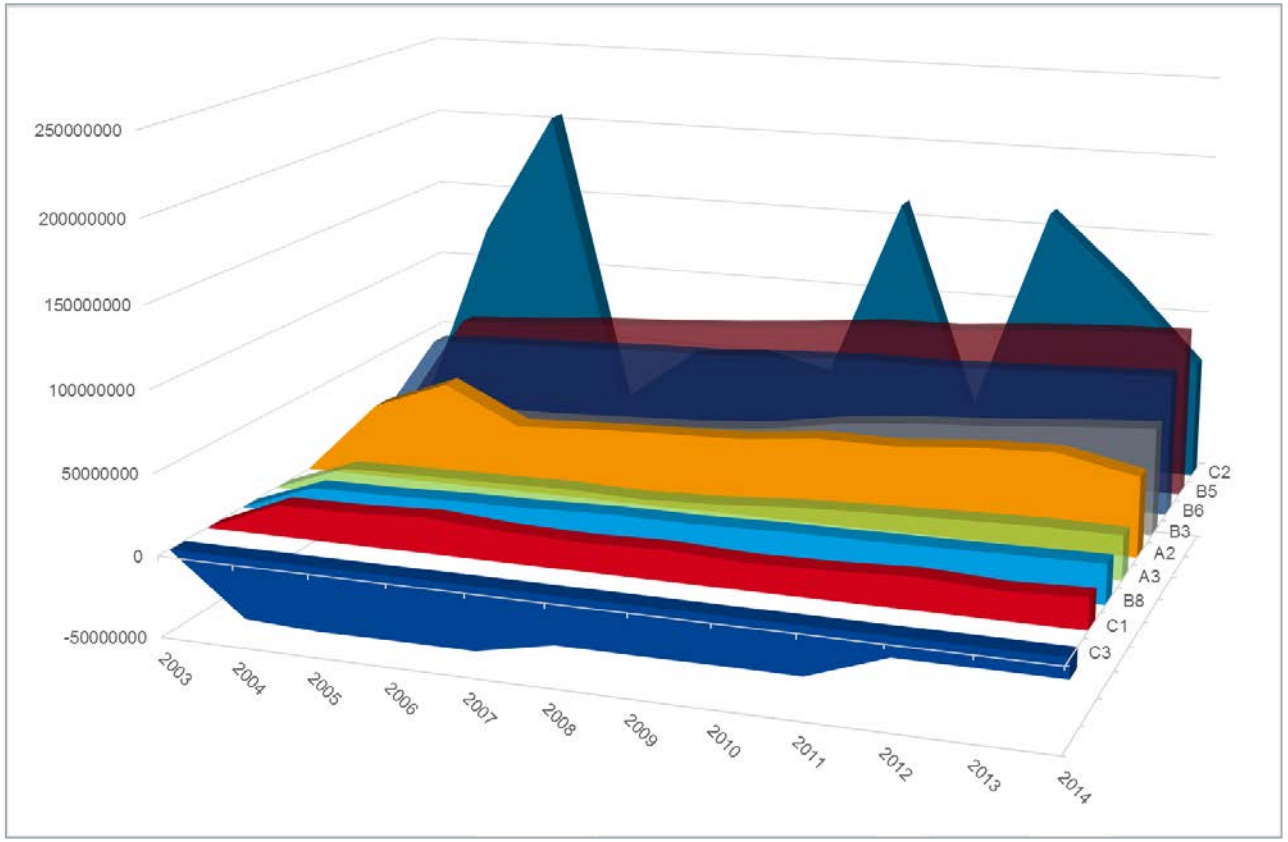
Although the amount of the budget showed an increase between 2003 and 2014 for most components, the relative share of the two largest budget components, i.e. B1 and B2, decreased from 25.4% to 21.2% and from 47.0% to 39.8% respectively. The largest increase was noticed for parts B9 (from 0.6% in 2006 to 6.3% in 2014), A1 (from 5.9% in 2003 to 8.5% in 2014) and B4 (from 9.6% in 2003 to 13.4% in 2014).

Figure 4 – Components of the hospital budget (BFM), evolution 2003-2014



Source: FOD-SPF; BFM=Budget of Financial Means

Figure 5 – Selection of components of the hospital budget (BFM), evolution 2003-2014



Source: FOD-SPF; BFM=Budget of Financial Means

2.4.2.2 Calculation of the individual hospital budget

The distribution of the national hospital budget to the individual hospitals is based on a very multifaceted calculation with a specific calculation method and parameters for each component. Table 7 gives an overview of the components and the respective chapters in which the calculation method is described. Payments for parts A2, C2 and C3 are not detailed in one of the chapters in Part I. Hospitals receive a lump sum payment for part A2 (costs of short-term credit), equal to 21% (in 2014) of the BFM (without A2) plus expenses for pharmaceuticals for hospitalised patients, multiplied by the lowest market interest rate. Payments for C2 (budget readjustment for past years) can be positive or negative and apply to most budget components (e.g. adjustments to interest rate or indexation). For C3 (compensation for room supplements), a fixed amount at the national level is re-claimed in proportion to the room supplements charged in single rooms in 2005 by each individual hospital. The global BFM for all types of hospitals also contains a part C4 (estimated surplus of receipts for specific services, such as palliative care or severe burns, because of a difference in realised and estimated days (negative amount)), but acute hospitals do not receive part C4.

Table 7 – Chapter overview of the calculation method of hospital budget components

Component	Chapter
A1, A3, C1	3 Macro-level healthcare decision-making 15 Paying for hospital investments in infrastructure, equipment and ICT
B1, B2, B5, B6, B8, B9	5 The Budget of Financial Means
B3	8 The uptake, diffusion and reimbursement of medical innovations
B4	12 Payment incentives for quality of patient care
B7	7 The role and payment system of university hospitals

2.4.2.3 Payment of the individual hospital budget

Before the reform of 1 July 2002 hospitals were paid a per diem price for each patient day. Since then, the BFM is divided into a fixed and a variable part. The fixed part is paid by the sickness funds on the basis of monthly advances ('provisional twelfths'). No invoices are submitted for the fixed part of the budget. It includes (theoretically) 80% of the components B1 and B2 and 100% of all other parts. The remaining variable part includes (theoretically) 20% of components B1 and B2 and is paid according to the number of admissions (10% of the budget) and the number of nursing days (10% of the budget) for the general hospitals and only according to the number of days (20% of the budget) for the other hospitals. For the variable part hospitals have to submit an invoice to the sickness fund. For persons not enrolled into one of the sickness funds, or for stays without entitlement to reimbursement from the National Institute for Health and Disability Insurance (RIZIV-INAMI) hospitals have to submit an invoice for parts A, B and C to the paying authorities (e.g. work accident insurance, private insurance).

2.5 An international perspective on the Belgian hospital sector

2.5.1 Hospital bed capacity

A first measure to compare hospitals between countries is the **number of hospital beds**. Although the number of hospital beds is still the most frequently used measure to describe the size and capacity of a hospital, it has several limitations. First, in reality the share of inpatient treatment has decreased due to an increased emphasis on day care and outpatient diagnosis and treatment within hospital walls. Second, there are many different types of hospital beds, reflecting differences in the kind of patients they accommodate.[26] Third, comparing hospital bed numbers between countries further complicates things because the type of facilities included in the comparison also can differ, reflecting how countries organise hospital care.

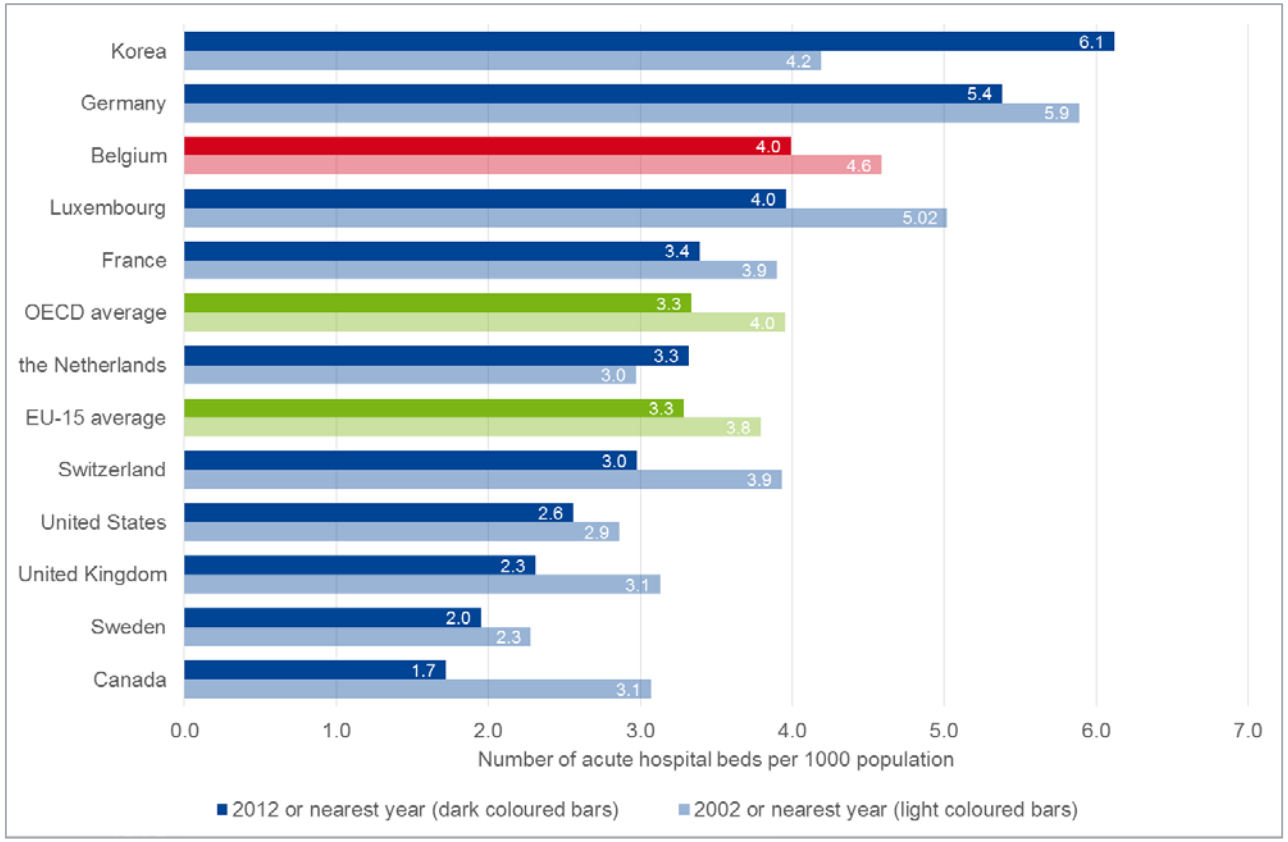
Figure 6 shows the number of acute hospital beds in 2002 and 2012 (or nearest year available) for the selected countries. In 2012, Belgium (with 4.0 acute recognised beds per 1000 population) is **above the EU-15 and OECD average** (both 3.3 beds per 1000 population). In most countries the number of acute hospital beds per 1000 population decreased between 2002 and 2012, except for the Netherlands and Korea. For the Netherlands, beds for same-day care are included in the data while this is not the case for most other countries. Moreover, hospital beds include all beds that are administratively approved rather than only those immediately available for use, resulting in an overestimation.[27] The increase in the number of beds in Korea can be explained by the use of acute care beds for long-term care, the lack of capacity planning for hospital beds and investment incentives in the private for-profit hospital system.[28] For a detailed overview of the selection of beds in the different countries, we refer to the OECD website.[29]

In Figure 7 the share of acute-care beds in total bed availability (including psychiatric care, long-term care and other types of care) is given. On average, more than two-thirds (about 70%) of hospital beds are allocated for acute care across EU-15 and OECD countries. However, the average share hides large differences between countries. For example, for the countries included in Figure 7, the share ranges from 53% in France to 84% in the US. In Belgium, the share of beds allocated for acute care is 63%. Compared with other OECD countries, Belgium has a very high share of psychiatric hospital beds (close to 30%).[27] This is a well-known problem and Belgian healthcare policymakers started to reconvert 'psychiatric hospital beds' into alternative, more community based services via the article 107 contracts (see section 11.1.3 for more details).

Also for the total number of hospital beds in 2012, Belgium (with 6.3 recognised beds per 1000 population) is above the EU-15 and OECD average (4.7 and 4.8 beds per 1000 population respectively).

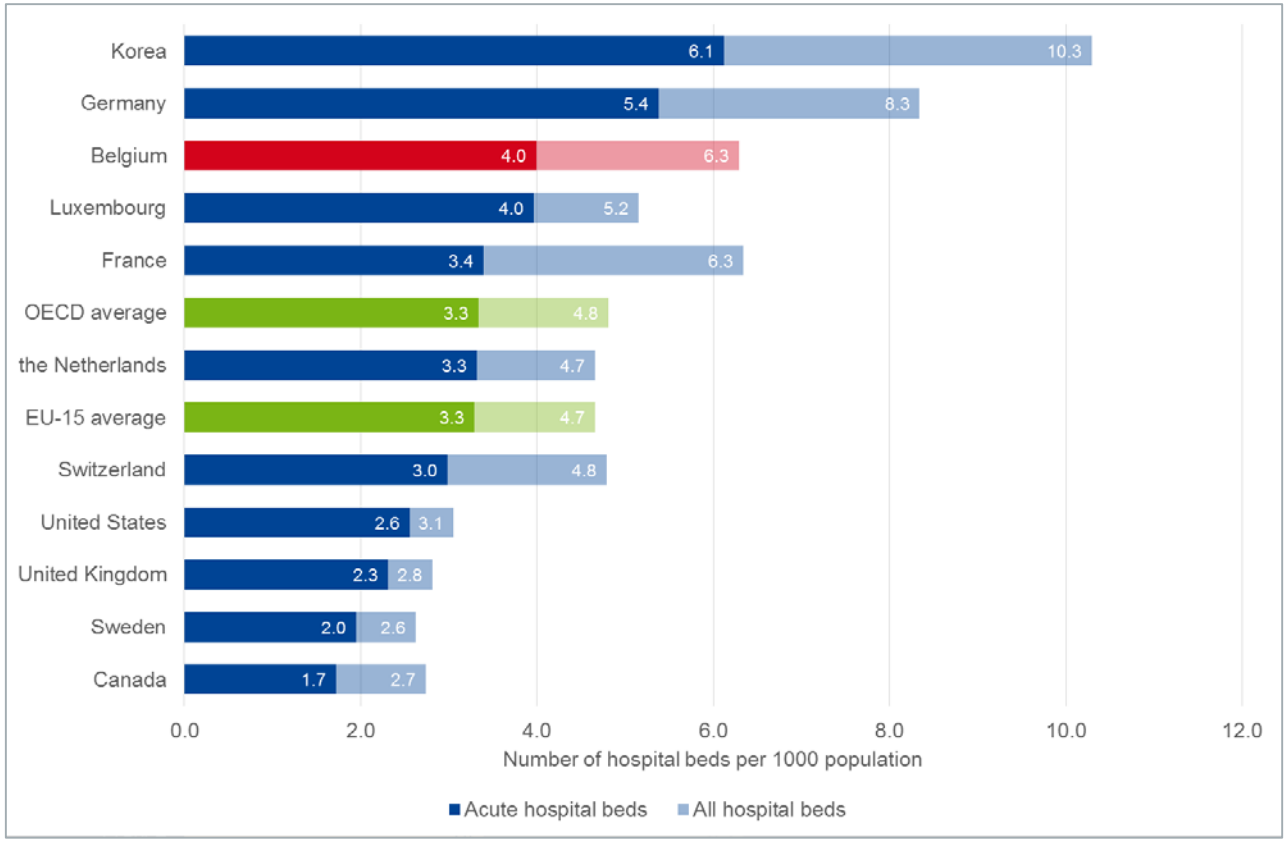
The number of acute-care beds for Belgium in Figure 6 and Figure 7 refers to recognised beds. Figure 8 compares the number of recognised and justified acute-care beds for the period 2002-2013 for Belgium as well as for Flanders, Wallonia and Brussels-Capital Region separately. Justified beds are beds for which hospitals receive money. Except for geriatric beds, there is a surplus of beds which has increased year by year. There are marked differences between the three regions, especially for M (maternity) and E (paediatrics) beds.

Figure 6 – Acute hospital bed numbers per 1000 population in a selection of countries, 2002 and 2012 (or nearest year available)



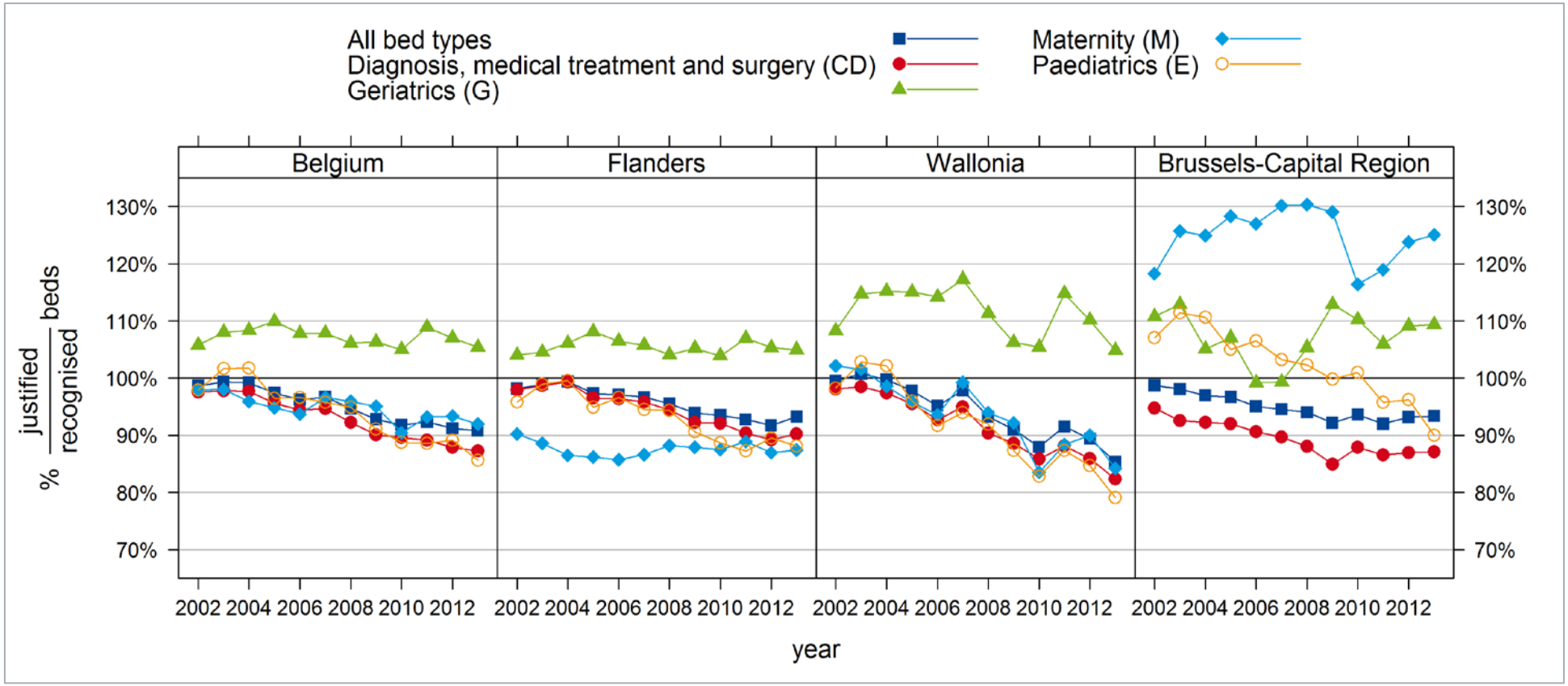
Source: OECD Health Statistics 2014[13]

Figure 7 – Acute and total hospital bed numbers per 1000 population in a selection of countries, 2012 (or nearest year available)



Source: OECD Health Statistics 2014[13]

Figure 8 – Comparison of the number of justified and recognised beds for Belgium and the three regions per bed type, 2002-2013



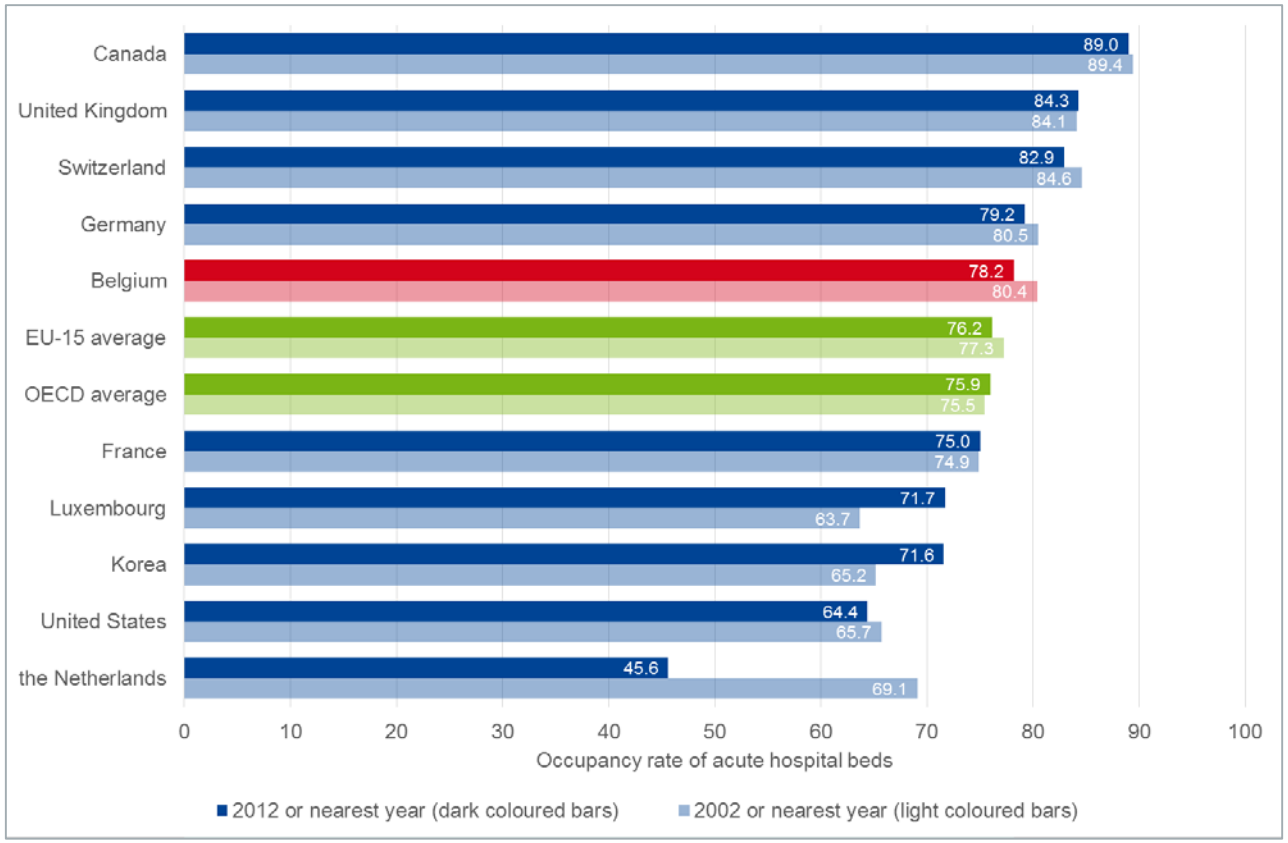
Source: FOD-SPF

2.5.2 Bed occupancy rate

The bed occupancy rate in acute (curative) care is calculated as the number of acute hospital beds effectively occupied (bed-days) divided by the number of available acute hospital beds (multiplied by 365 days and with the ratio multiplied by 100).[29] It mirrors how intensively hospital capacity is used. In some countries, for example in the United Kingdom (UK), Ireland and Australia, a 85% level is considered to be the limit of safe occupancy.[30] Others emphasize that occupancy has to be looked at on a service-by-service basis in individual hospitals. A review of the literature on the influence of bed occupancy rate on patient outcomes is, however, out of scope of this report.

The occupancy rate of acute hospital beds in Belgium (78.2% in 2012) is slightly above the EU-15 and OECD average (76.2% and 75.9% respectively in 2012). In Canada, the UK and Switzerland the rate is above 80% compared with 45.6% in the Netherlands in 2012. The low rate in the Netherlands is an underestimation of real occupancy rates because the number of beds includes all beds that are administratively approved. In general, differences in bed occupancy rate between countries are related to differences in the number of admissions, the average length of stay and the extent to which alternatives to inpatient stays have been developed in a country.[31]

Figure 9 – Occupancy rate of acute hospital beds, 2002 and 2012 (or nearest year available)



Source: OECD Health Statistics 2014[13]

2.5.3 Average length of stay

The reduction in hospital beds has been accompanied in many countries by a reduction in hospital discharges (section 2.5.4) and the average length of stay (ALOS). The ALOS is often used as an indicator of efficiency. A shorter stay will, ceteris paribus, reduce the cost per stay and shift care from inpatient to other, often less expensive settings. On the other hand, shorter stays tend to be more service intensive and more costly per day. Moreover, when the length of stay is too short, it could also cause adverse effects on health outcomes, potentially leading to greater readmission rates.[27]

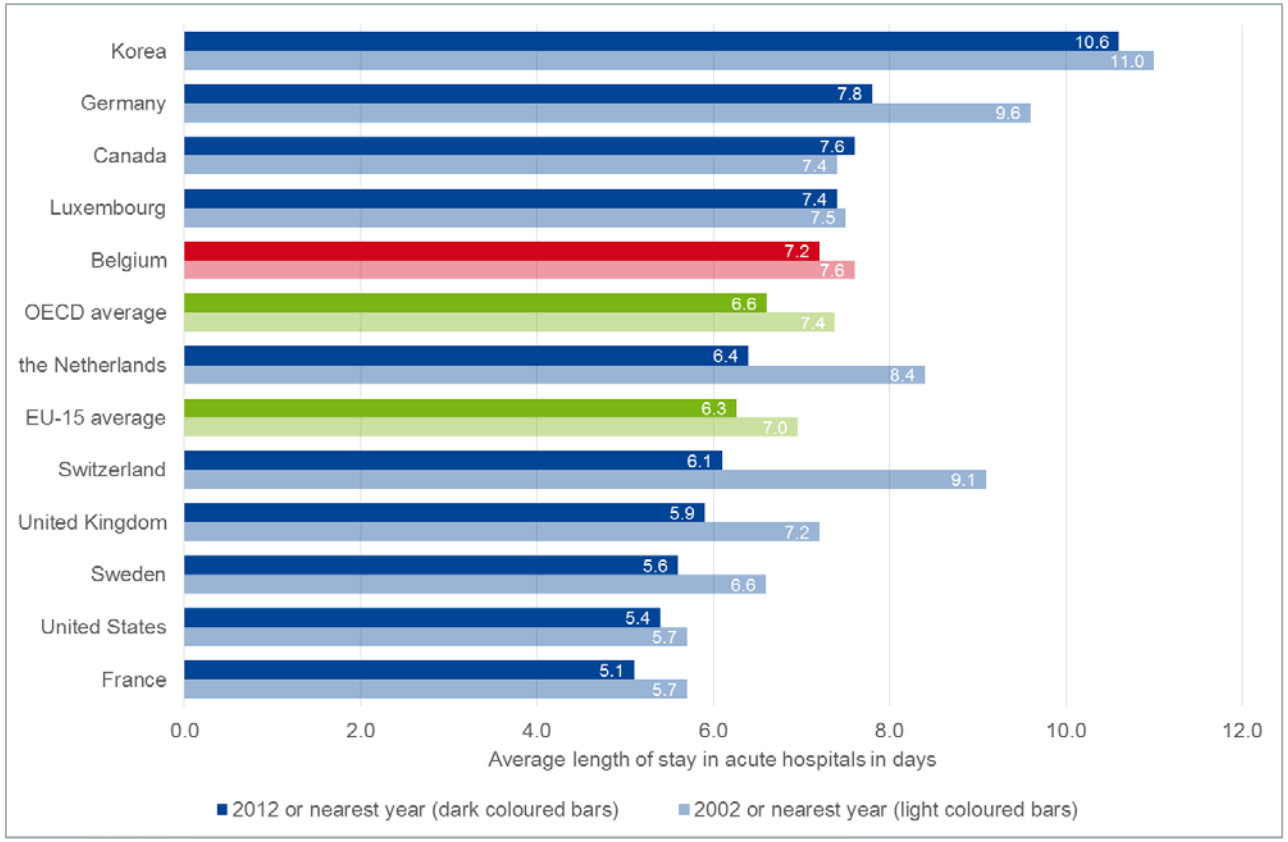
Figure 10 compares the ALOS for all causes in acute care hospitals for the selected countries in 2002 and 2012. It should be kept in mind that in some countries, for example in Korea, acute care beds are also used for long-term care, resulting in a longer ALOS.

In 2012, ALOS for all causes in acute care hospitals across OECD countries was 6.6 days. The EU-15 ALOS was slightly lower (6.3 days). France and the US report the shortest stays (5.1 and 5.4 days respectively in 2012); Korea has the longest stay (10.6 days in 2012). The ALOS in acute care hospitals in Belgium equals 7.2 days. Of the selected countries, only Canada reports a longer ALOS in 2012 than in 2002. ALOS for all causes has fallen quickly between 2002 and 2012 in the UK, Germany, and especially in the Netherlands and Switzerland. In Switzerland, the move from per diem payments to Diagnosis Related Groups (DRGs) based payments has contributed to the reduction in LOS in those cantons that have modified. Also in the Netherlands the introduction of a DRG-based payment system in 2006 is thought to have contributed to the substantial reduction in the ALOS.[32]

The ALOS for all hospitals Belgium (8.1 days) ranks between the EU-15 (7.8 days) and the OECD average (8.5 days). For the Netherlands no data are available in the OECD database for all hospital ALOS.

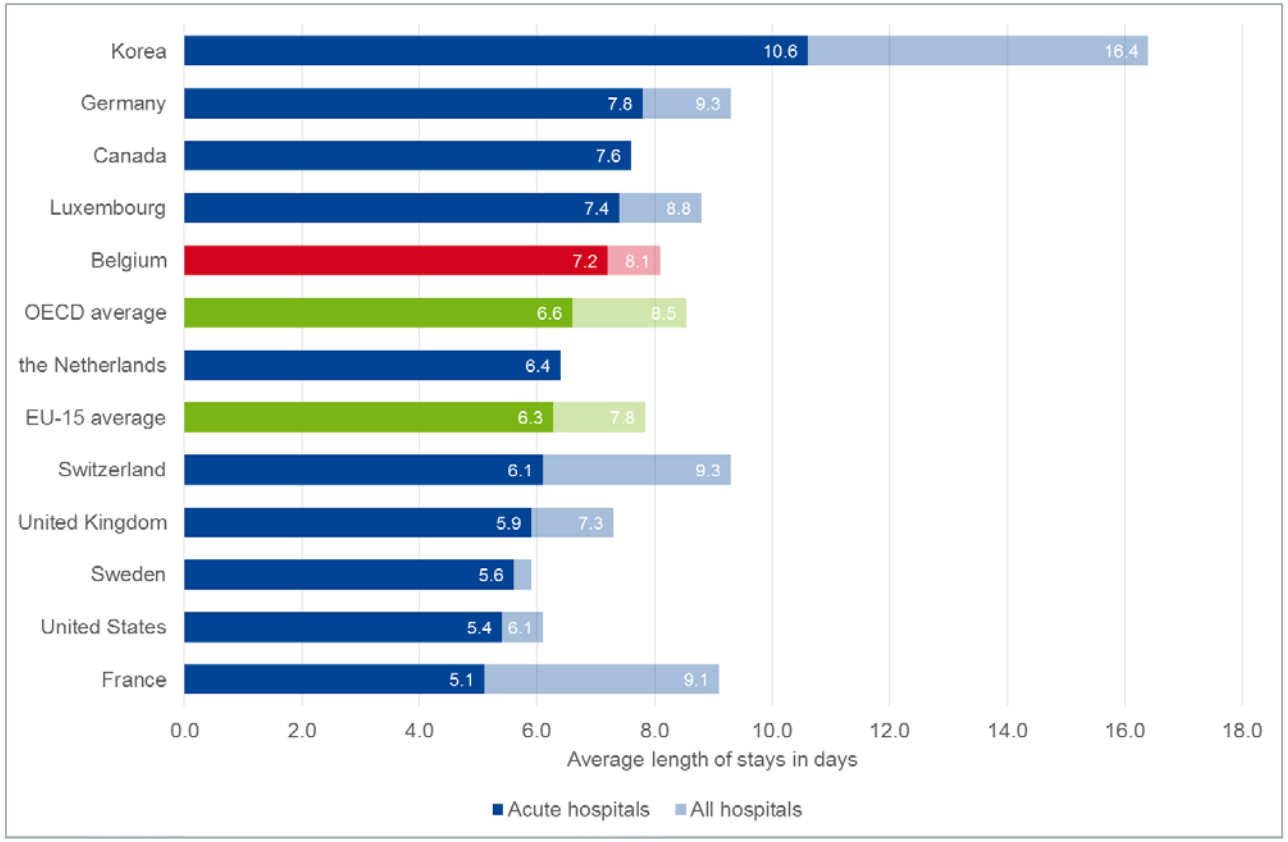
The larger number of acute care and total hospital beds per 1000 population (Figure 6 and Figure 7) and the longer ALOS in Belgium compared to the EU-15 and OECD average, indicate that there might be some room to reduce the number of beds and the ALOS in Belgian hospitals, provided sufficient alternatives in other care settings (post-acute care, day care, outpatient care, home care, etc.) are available.

Figure 10 – Average length of stay for all causes in acute hospitals in a selection of countries, 2002 and 2012 (or nearest year available)



Source: OECD Health Statistics 2014[13]

Figure 11 – Acute and total hospital average length of stay in a selection of countries, 2012 (or nearest year available)



Source: OECD Health Statistics 2014[13]

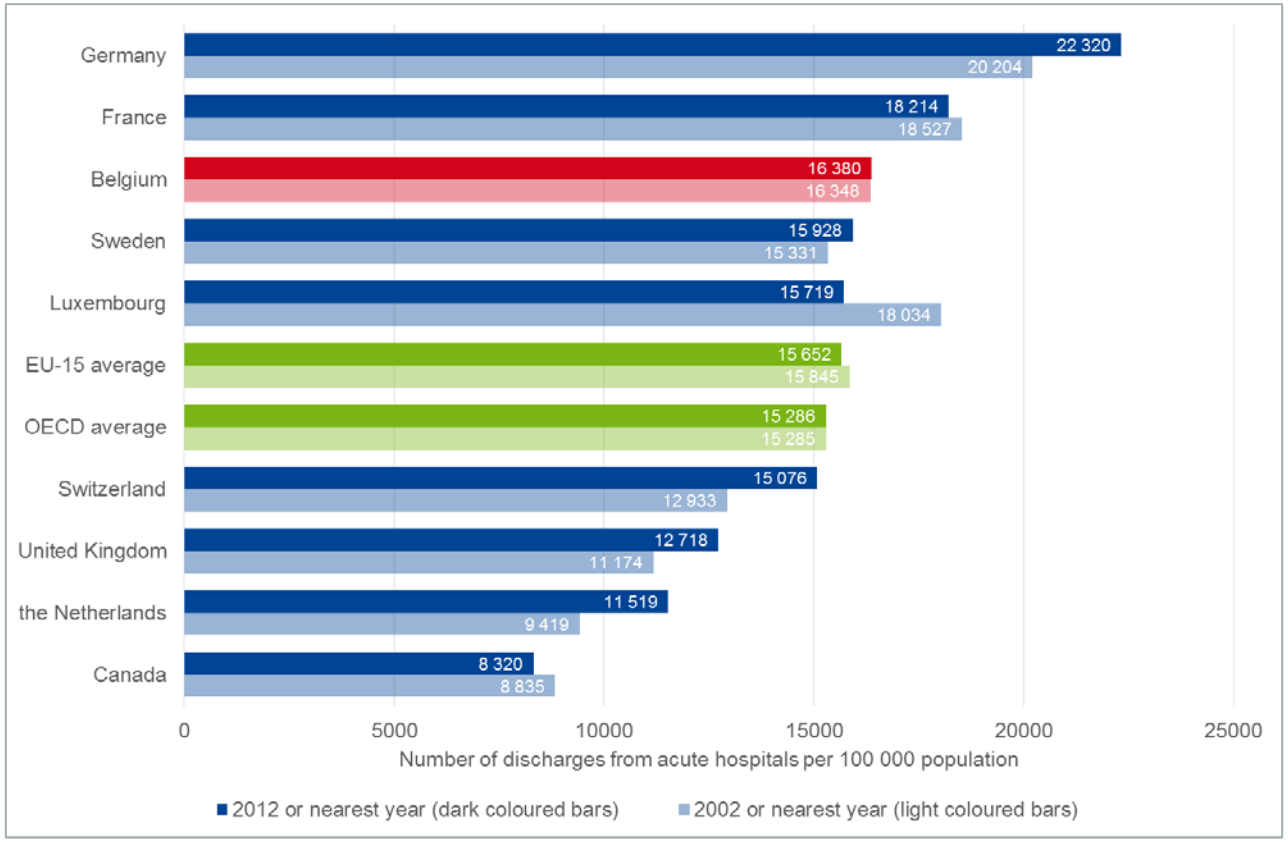
2.5.4 Discharge rates

A hospital discharge is defined as the release of a patient who has stayed at least one night in hospital. Same-day discharges are usually excluded. Hospital discharge rates and the ALOS are important indicators of hospital activities, which depend, among other things, on the ability of the primary care sector to prevent avoidable hospital admissions and the availability of post-acute care settings to provide rehabilitative and long-term care services.[27]

The rate of acute care hospital discharges is quite dissimilar across countries, as well as its evolution over time. In some countries the number of discharges per 100 000 population increased between 2002 and 2012 (in Germany, the UK, the Netherlands and Switzerland), in other countries it decreased (in Luxembourg and Canada) or remained more or less stable (in France, Sweden and Belgium). The **discharge rate in Belgium is above the EU-15 and OECD average rate**. The number of discharges from acute hospitals per 100 000 population ranges from about 8300 in Canada to more than 22 000 in Germany. As was the case for other measures of hospital activity, also a hospital discharge is defined differently in different countries. Data for Belgium (1 788 715 discharges in 2010) are based on the following selection: stays with a minimum of one night, including all deaths, but excluding stays in psychiatric institutions, nursing homes, houses for the elderly, long stays and one-day stays in general hospitals. Stays with a LOS longer than 90 days were excluded.

In general, those countries that have more acute hospitals beds also have higher discharge rates. In the group of countries where discharge rates have decreased over the past decade, there has been a strong rise in the number of day surgeries.[27]

Figure 12 – Discharges from acute hospitals per 100 000 population in a selection of countries, 2002 and 2012 (or nearest year available)



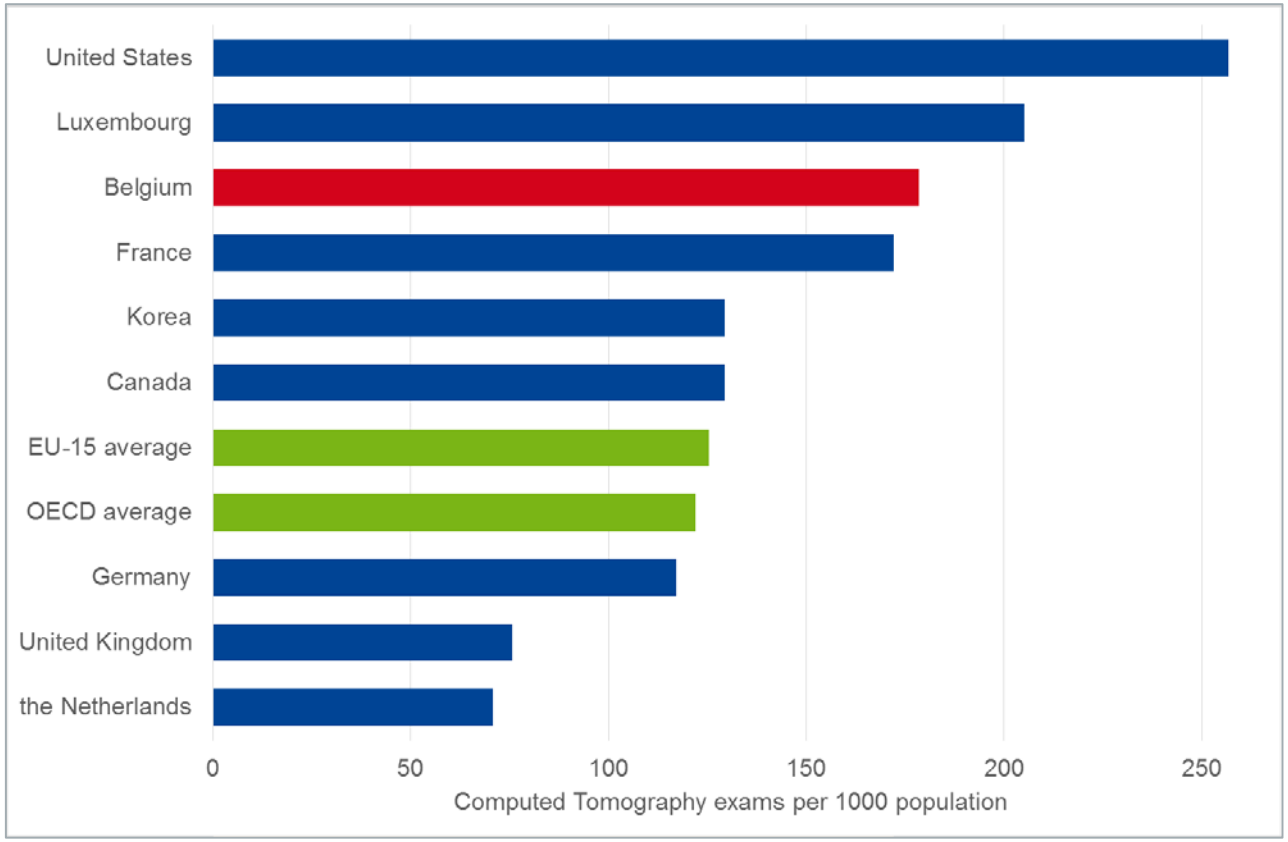
Source: OECD Health Statistics 2014[13]

2.5.5 Medical technologies

This section presents data on the use of two diagnostic technologies: Computed Tomography (CT) exams in Figure 13 and Magnetic Resonance Imaging (MRI) exams in Figure 14 exams. MRI-exams do not expose patients to ionising radiation which is the case with CT-scanning.[27] Figure 13 and Figure 14 show the total number of CT- and MRI-exams in 2012 without a breakdown between hospitals and ambulatory care providers. For most countries, all or the majority of exams are performed in hospital, except for France and the United States. No data are available for Sweden and Switzerland. We refer to OECD (2014)[27] for the comparability of results between countries.

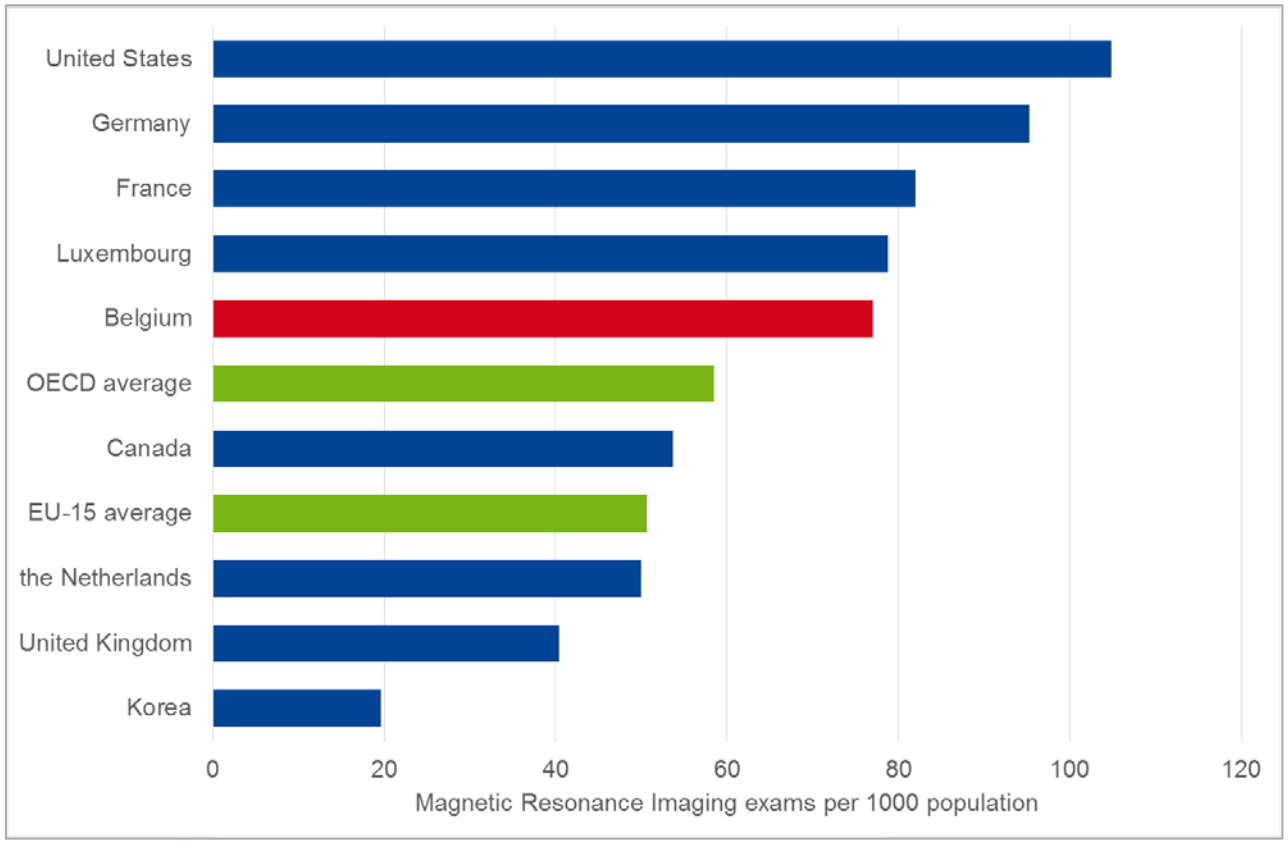
The number of CT- and MRI-exams is highest in the US. The Netherlands and the UK are below the EU-15 and OECD average, while Germany has a low score for CT-exams but is above the average for MRI-exams. Also Belgium ranks high above the EU-15 and OECD average number, especially for CT-exams. In KCE Report 106[33] some explanations are given for the high number of CT-exams compared to MRI-exams. First, Belgium has no programming standards for CT-scanners but only for MRI-units, while in other countries standards often hold for both scanners. Second, CT-scanning is reimbursed on a fee-for-service basis, while for MRI-scans hospitals are (partly) reimbursed by the hospital budget. Third, Belgium has a large number of radiologists.

Figure 13 – Number of Computed Tomography (CT) exams per 1000 population, 2012 (or nearest year available)



Source: OECD Health Statistics 2014[13]

Figure 14 – Number of Magnetic Resonance Imaging (MRI) exams per 1000 population, 2012 (or nearest year available)



Source: OECD Health Statistics 2014[13]

Key points

Belgian hospital capacity and activity:

- **There are 105 acute general hospitals (7 university hospitals; 98 non-university hospitals of which 14 have university beds). In general, hospitals and hospital beds are concentrated in more densely populated areas. Market entry for hospital services is restricted by government regulation since hospitals need to fit into the national planning and have to fulfil several recognition criteria. Since 1982, there is a moratorium on the number of hospital beds, implying that any new bed results in a closure of another hospital bed.**
- **Belgium has a relatively high number of acute-care hospital beds per inhabitant (4/1000 population in 2012). In addition, the average length of stay in acute hospital beds is relatively high (i.e. 7.2 days compared with 6.6 and 6.3 days in the OECD and EU-15 countries, respectively). Although the average length of stay decreased during the course of the last decade, this seems to happen at a lower pace than in other high-income countries. Also the number of discharges from acute hospitals per 100 000 population is slightly higher in Belgium compared to the OECD and EU-15 average. Belgium ranks high above the EU-15 and OECD average number for MRI-scans and especially for CT-exams.**
- **There is a growing gap between the number of recognised and the number of 'justified beds' (i.e. beds for which funding is provided), especially for acute-care beds (internal medicine and surgery) indicating a certain degree of overcapacity of recognised beds. This seems not the case for geriatric (G)-care beds.**
- **The relatively large acute-care hospital capacity and relatively long length of stay, indicate that there might be some room to reduce the number of beds in Belgian hospitals, provided sufficient alternatives in other care settings (post-acute care, day care, outpatient care, home care, etc.) are available. A reduction in hospital capacity (and dispersion of high-technology equipment) might also influence the relatively high number of CT- and MRI-scans.**

Payments for hospital care and the hospital budget:

- **The main income sources for hospitals are physician fees and the hospital budget, the so-called Budget of Financial Means (BFM). Other income sources are payments for pharmaceuticals, rehabilitation conventions, day-care activities and co-payments and supplements paid by patients.**
- **The hospital budget (BFM) includes 15 components (from A1 to C3) each with its own calculation method. This results in a complex calculation process to determine the individual hospital budget.**
- **The national BFM for acute hospitals increased from € 3969 million to € 6147 million between 2003 and 2014. The share of the two largest budget components, i.e. B1 and B2, decreased from 25.4% to 21.2% and from 47.0% to 39.8% respectively. Other parts (mainly B4 and B9) increased, mainly to support ad-hoc policy decisions adding to the complexity and loss of transparency of the hospital budget.**

3 MACRO-LEVEL HEALTHCARE DECISION-MAKING

Macro-level governance in healthcare refers to government decisions that determine the structural, organisational and operational architecture of the entire healthcare system, and of the hospital sector within it. Decisions can be taken at the national level, but authority may also be devolved to regional or even local governments. Moreover, an increasing number of these macro decisions are now being made by European Union level institutions.[34]

In this chapter, we first give a brief overview of the historical merits of the Belgian healthcare system (section 3.1). In section 3.2 we describe the current macro-governance structure for healthcare. Section 3.3 discusses the strengths and weaknesses of the current system as perceived by stakeholders. The evaluation by stakeholders is supplemented with information found in literature. Section 3.4 contains possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature. We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions and study centres of sickness funds) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, interesting international initiatives or best practices were added for illustration.

3.1 Historical merits of the Belgian healthcare system

Strengths of the Belgian healthcare system

The foundations of the current Belgian healthcare system were put in place in 1964 by the Health Insurance Act, introducing the compulsory health insurance system, as well as by the Hospital Act. Stakeholders acknowledge that both legislations contributed largely to the strengths of the Belgian healthcare system:

- The very high health insurance coverage of the population. Less than 1% of the population is not covered by the compulsory health insurance system.[35]
- The high geographical accessibility of healthcare services. In the Euro Health Consumer Index, which is a comparison of European healthcare systems, Belgium occupies the sixth place. The 2013 survey included 35 countries measured by 48 indicators. The main reason for this good result is the extremely high score for accessibility: low waiting times and direct access to specialist care. Together with Switzerland, we outcompete all other countries by far for this criterion.[36]
- The highly productive, motivated and enterprising healthcare workforce. In a recent study (2013) on burn-out and work engagement of nurses and physicians working in Belgian hospitals, 59.1% of nurses (n=4635) and 63.3% of physicians (n=1198) were found to have a high engagement score.[37]

  "En dat er dus toch wel een drive zit in die artsen... Het belangrijkste deel zijn ook zelfstandigen. Daar kan je over discussiëren. Maar dat is nu eenmaal zo. En dat gaan we niet veranderen van vandaag op morgen. Ik denk dat je dan wat gaat meemaken. Dus je zit allemaal een beetje met individuele ondernemers, soms een keer vennootschappen enzo, maar die toch wel een drive hebben om patiënten te zien en te presteren."
- The relatively low price per intervention (i.e. the fee) compared to our neighbouring countries.
- The very high satisfaction of the population with the current healthcare system. According to the Eurobarometer of 2012, the Belgian population was most satisfied among all European citizens about the

healthcare provision in their country.[38] The results from the Health Interview Survey (HIS) 2008 are in line with the Eurobarometer results: more than 90% is satisfied or very satisfied with their contacts with the general practitioner, dentist, specialist and home-care services with hardly any differences in satisfaction level between individuals at different educational levels.[39] However, the KCE report on the performance of the Belgian health system is less positive. Objective indicators of quality and financial accessibility and the large health differences between socioeconomic groups do not confirm the subjective satisfaction.[35]

Patients and providers have freedom of choice

In addition, the system is characterised by a liberal, 'freedom of choice' culture. A first example is the freedom of provider choice for patients. This contributes to the high patient and citizen satisfaction with the healthcare system. Some stakeholders consider freedom of choice as an instrument to achieve high quality of care, also described as 'feet voting', but this is questioned by others. Patients are often not enough informed about the quality of care to make well-informed choices. The freedom of choice is also considered to be a threat for the sustainability of our system since it, for instance, might result in overconsumption.

The freedom of choice also holds for physicians. They are members of a self-employed profession and liberty is deeply rooted within their professional culture. This culture of liberty (partly) explains the resistance of physician unions against the restrictions on patient supplements. According to some stakeholders, the medical profession is no longer a 'liberal profession' since there are many restrictions in the tariffs that they can charge. Physicians also consider 'therapeutic freedom' as an important right and value. Nevertheless, the evidence-based medicine approach changed the notion of therapeutic freedom drastically and is today (for the vast majority of physicians) no longer controversial. Evidence-based practice, after all, means "the integration of clinical expertise, patient values, and the best research evidence into the decision-making process for patient care"[40] and thus does not exclude therapeutic freedom. Interviewees noted that it is also important to leave enough room for innovation.

"Chez nous, la médecine libérale, c'est quelque chose qui est extrêmement ancré. La liberté du médecin, la liberté sur ses honoraires, etc. C'est extrêmement ancré. Donc déjà, quand je vois la difficulté qu'ont les pharmaciens à faire changer les pratiques des médecins au niveau des prescriptions de médicaments, c'est l'enfer. C'est extrêmement difficile. Donc je pense qu'il faut être très prudent dans l'application de la règle."

"We doen heel veel… We laten heel veel vrijheid van onderzoek, van therapie, digitaal patiëntenrecord, verantwoording… Een keer dat we dat hebben kunnen we ook zeggen: ja, eerst een keer uw dossier raadplegen. U hebt dat onderzoek al ondergaan. We moeten dat geen 2de keer doen. … We leven nu in een bijna onmogelijke, onhoudbare situatie."

Despite the wide acceptance of the evidence-based medicine approach, implementation is lagging behind. Important variations in medical practice exist in Belgium.[41] The system of reference amounts for standard interventions, introduced in 2002 to address differences in medical practice between hospitals which could not be explained medically, was an attempt to standardise medical practice (see Chapter 9). Some physicians considered this system as a restriction on their therapeutic freedom, but the Constitutional Court dismissed their appeal.[42]

Time to change

Despite the merits and characteristics of the current system, most interviewees indicate that a change of the current organisation of healthcare supply as well as its payment mechanisms is required to meet the future challenges such as an increasing number of chronically ill, a difficult budgetary context with pressure from technological innovations and a shortage of healthcare workers. The scope of the reform envisaged by stakeholders varies from incremental changes to a fundamental re-thinking of the current system.

3.2 Shared responsibilities between the federal and federated level

The macro-level governance finds its origin in the compulsory health insurance system legislation as well as in the Hospital Act, which both passed in 1963 but came into force on 1 January 1964. The compulsory health insurance system legislation made the National Institute for Health and Disability Insurance (RIZIV-INAMI) responsible for establishing reimbursement rules and determining the tariffs of healthcare services, the so-called 'nomenclature', and pharmaceuticals.[43] It organises, manages and supervises the correct application of compulsory health insurance. The Hospital Act (initially) made the Federal Public Service Health, Food Chain Safety and Environment (FOD-SPF) responsible for the following policy instruments: planning and programming, recognition standards and criteria, payment of hospital services and subsidies for hospital infrastructure.

A detailed overview of the organisational structure of the healthcare system can be found in Chapter 2 of the Health Systems in Transition book for Belgium.[44] In this section we focus on the authorities, departments and agencies with a responsibility in the organisation and/or payment of hospitals. Responsibilities for the hospital sector are shared between the federal level and the federated entities, called regions and communities[g]. The division in responsibilities mirrors the constitutional reforms of the Belgian State that have been implemented since 1970.

3.2.1 Regulatory instruments: planning, programming and recognition

In short, the government disposes of three instruments to regulate the hospital sector. To enter the market, a hospital has to meet two general conditions. First, it has to fit into the national planning determined at the federal level. This national planning is translated into programming standards and criteria which determine the number of hospitals, the number and type of departments and the number of beds. Second, a hospital has to fulfil several recognition standards and criteria before it can operate and claim reimbursement by the compulsory health insurance (see section 2.3.2 in Chapter 2).

A third regulatory instrument of government in the hospital sector is price regulation which determines the payments of hospitals and physicians. This third instrument is the topic of other chapters (e.g. the hospital budget is discussed in Chapter 5 and the remuneration of physicians in Chapter 9).

Due to the 6th State reform a transfer of powers from the federal government to the federated authorities came into effect on 1 July 2014. In section 3.2.2 an overview is given of transferred powers. Until 30 June 2014, the federal government was responsible for the planning of global hospital capacity, for the translation of this planning into programming standards and criteria and for determining the recognition norms. Federated authorities were responsible for granting and controlling compliance with the recognition norms. Since 1 July 2014, the federated authorities have the power to define the recognition norms hospitals, care programmes etc. have to comply with to be recognised. However, these norms have to respect the organic legislation, the federal programming criteria and the federal power to regulate the practice of medicine. If necessary, the federal government has a veto right against norms that have a negative impact on the budget of the federal government or of social security.[45]

3.2.2 Multilevel governance

Two federal ministries

At the federal level, two ministries have responsibilities in healthcare. They are both accountable to the Minister of Social Affairs and Public Health.

The **Federal Public Service Health, Food Chain Safety and Environment (FOD-SPF)** consists of four Directorates-general of which the Directorate-general 'organisation of healthcare facilities' is in charge of the organisation, planning rules, recognition criteria (until 1 July 2014: see 6th State reform), evaluation of the quality of medical and nursing practices in healthcare facilities, registration of data and payments for inpatient healthcare facilities and of the implementation of patient rights.

g In principle, regions are responsible for territorial matters and communities for person-related matters, including health. However, the French community partly exercises its health responsibilities through the Walloon Region. In this chapter we will not make a distinction between regions and communities, but will call them the federated entities.

Within the FOD-SPF a number of consultative bodies have been established. The **National Council for Hospital Facilities (NRZV-CNEH)** gives advice to the minister on matters related to the programming, recognition and payment system of hospitals. The advice is given at the request of the minister or on their own initiative. The NRZV-CNEH has two departments. A first department gives advice on programming and recognition issues. The main responsibilities of this department are: determining the programming and recognition criteria for different types of hospitals; authorising the installation of heavy medical equipment; defining the standards and rules for reducing a surplus of beds.[44] The financing department gives advice on the hospital budget and payments for hospital construction or renovation. The NRZV-CNEH is composed of stakeholders from the hospital sector.

The impact of the 6th State reform on the role and responsibilities of the programming and recognition department of the NRZV-CNEH is unclear at the moment of writing of this report.[46]

The **Federal Public Service Social Security** is responsible for all legislation that contributes to the social security of citizens and for measures to combat fraud in social security and is in charge of granting allowances to disabled persons. Within social security, **the RIZIV-INAMI** is responsible for health insurance and incapacity for work benefits, and more specifically for the reimbursement of healthcare services and products; legislation and regulation; organising negotiations between the different actors involved in compulsory health insurance; monitoring the evolution of healthcare expenses, etc.[47] The RIZIV-INAMI is composed of five departments, of which the healthcare department is responsible for the management of compulsory health insurance. The department is headed by the General Council and the Insurance Committee (see also section 9.1.1 in Chapter 9). In the General Council, representatives of the government and the sickness funds but also of employers, salaried employees and self-employed workers decide on general policy matters concerning health insurance and its budget. Within the healthcare department, various commissions composed of representatives of the sickness funds and providers negotiate on fees. For example, the **National Commission of Sickness Funds and Providers**, the so-called '**Medico-Mut**', negotiates on physician fees. The negotiated fee or 'convention tariff' is settled in agreements (for physicians and dentists) and conventions (for other healthcare providers). The Medico-Mut is composed of an equal number of representatives of sickness funds and provider organisations.

The **Multipartite structure** is the overarching consultative body that was established to build bridges between the decision-making processes at the RIZIV-INAMI and the FOD-SPF. It is composed of representatives of professional organisations (physicians, nurses, hospitals and sickness funds), the government, experts from the RIZIV-INAMI, FOD-SPF, KCE, NRZV-CNEH and the Commission for Budgetary Control of RIZIV-INAMI and Inspection of Finance. It gives advice to the Minister of Social Affairs and Public Health on matters related to the hospital budget and the fee-for-service payment system of physicians, such as Magnetic Resonance Imaging (MRI) and radiotherapy; the reimbursement of pharmaceuticals in hospitals; the evaluation of the hospital admission policy; etc.[47]

The federated authorities

Since the 2nd State reform of 1980, person-related matters have been transferred to the communities (see also footnote g) and healthcare policy has been a responsibility of both the federal state and the communities.[47] Person-related matters in the sphere of healthcare policy are intramural and extramural curative healthcare and policy regarding health education, health promotion and preventive healthcare. However, the federal government has kept the most important powers for intramural and extramural healthcare because the law provides important exceptions for the transfer of competences for these domains. Examples are the regulation of compulsory health insurance; programming and planning of hospitals, nursing homes and heavy medical equipment units; payment rules for the operating costs of hospitals and nursing homes; legislation on the remuneration of physicians; regulation and price control of pharmaceuticals; etc.

Although most of the responsibilities of the communities lie in the domains of health promotion, education and preventive healthcare, most of their budgets are allocated to inpatient and ambulatory healthcare.

Intergovernmental level

Also since the State reform in 1980, interministerial conferences have been organised to facilitate collaboration between the federal government and the federated authorities. The conferences are composed of the ministers, responsible for health policy, of the different government levels. They have no binding decision-making power. Within this forum, declarations (i.e. an agreement on principles that should be further elaborated), protocols (i.e. a political agreement) and partnership agreements (the most far-reaching form of collaboration) have been concluded on a wide range of topics related to public health.[47]

The 6th State reform

On 11 October 2011 a political agreement was signed for a 6th State reform, with a transfer of powers from the federal government to the federated entities and a reform of the Special Finances Act (SFA). The transfer of powers has been put into effect on 1 July 2014; the SFA will come into force on 1 January 2015. The reform gives more spending responsibilities to the federated entities mainly in the areas of family allowances, health and long-term care and labour market policies.[48] The transfer of powers in the health and long-term care sector relates to residential nursing care for the elderly, hospital infrastructure and investment in the organisation of primary care. The Special Act of 6 January 2014 on the 6th State reform (SA 6th State reform) modifies the Special Act on Institutional Reform of 8 August 1980.[49]

The total transfer of powers involves an amount of € 20 billion, of which more than € 5 billion relates to healthcare, long-term care and allowances for disabled elderly.[49] Transferred competences in these domains are listed in Table 8.

Table 8 – Transfer of competences by the 6th State reform

Domain	Competence	Amount in €*
Hospitals	• Definition of recognition norms • Payments for investments in infrastructure and medico-technical services • Isolated geriatric (G) and specialised (Sp) hospitals	/ € 630.2 million € 214.4 million
Care for the elderly	Nursing homes, homes for the elderly, day-care centres and short-stay centres	€ 2.9 billion
Care for the disabled	• Allowances for the support of elderly with disabilities • Mobility aids	€ 581 million € 80.7 million
Prevention	Prevention was already a full competence of the communities, but federal budgets used for initiatives such as vaccination and screening, the national nutrition plan, dental hygiene, and smoking cessation, are now also transferred to the federated entities as well as a fund for addictions.[47]	€ 45.2 million
Long-term care rehabilitation		€ 290.3 million
Mental healthcare	• Mental health dialogue platforms • Initiatives for sheltered accommodation • Psychiatric nursing homes	€ 11.7 million € 62.8 million € 132.3 million
Organisation of primary healthcare	E.g. local multidisciplinary networks, integrated services for home care, palliative networks and multidisciplinary teams in palliative care.	€ 61.1 million

*Source: Hannes (2014)[49]; *The amounts for each (sub-) domain are the amounts as they will be transferred on 1 January 2015. Amounts for hospital infrastructure will be transferred on 1 January 2016.*

The 6th State reform includes a transfer of sub-parts A1 and A3 of the hospital budget (see Chapter 2 and Chapter 5) and hereby makes the federated authorities responsible for payments for investments in infrastructure and in medico-technical services (heavy medical equipment). The transfer of powers covers a distinguishing part (depreciation for maximum 33 years of the investment engagements that have been initiated) and new investments. Already since 1989 part of the responsibility for paying for hospital investments has been transferred to the federated authorities, who are allowed to enact own rules concerning the payments for investments.[18] Federated authorities can subsidise 60% of hospitals' capital investments; the remaining part is covered by federal authorities via the hospital budget (part A1). Priority capital investments can be subsidised by a particular investment percentage of 90% from federal government and 10% from the federated authorities.

Also responsibilities for the isolated geriatric (G) and specialised (Sp) hospitals (the categorical hospitals) have been transferred to the federated authorities. However, when they decide to merge with an acute hospital, they remain under federal laws.

This State reform also strengthens **the need for coordination between the federal state and the federated entities.** For example, the **'Institute of the Future'** announced in the coalition agreement of December 2011 but still to be installed, could play an important interfacing role to foster the collaboration between institutions.

3.3 Critical appraisal: no long-term strategy and governance at the macro level is outdated

3.3.1 Duality RIZIV-INAMI and FOD-SPF based on historical developments but outdated

Stakeholders acknowledge that the **dual structure with two different federal departments (RIZIV-INAMI and FOD-SPF) has its historical grounds but consider it as outdated**. Although there are laudable initiatives to join efforts, the dual system itself results in a fragmentation of efforts and a multiplication of commissions and meetings. Furthermore, it hampers coherent policymaking, a problem that is reinforced by the 6th State reform which has resulted in even more fragmentation of competencies.

> *"On a fait la loi sur les hôpitaux d'un côté et puis la nouvelle loi sur l'INAMI en même temps... Donc je pense que ces organes se sont créés au fur et à mesure sur cette base historique avec des séparations. Donc vraiment un côté non transversal, qui, à mon avis, est dépassé aujourd'hui. … Je pense qu'effectivement ce n'est, quelque part, pas utile d'avoir un CNEH d'un côté, qui va se pencher sur un programme de soins cardiologiques avec le point de vue des hôpitaux, et puis de l'administration, et puis, en même temps, la Médico-Mut, qui va remettre un avis sur l'impact de la nomenclature du programme de soins cardiologiques. Ils vont discuter de la même chose, mais avec des conclusions éventuellement différentes parce que, voilà, on parle entre médecins de mutuelle, et que c'est pas les mêmes qui sont autour de la table et que chacun peut avoir une approche différente. Donc ça, je pense qu'effectivement, avec, en plus, la régionalisation qui diminue certaines compétences de l'État fédéral, je pense qu'on peut sûrement restructurer et l'INAMI et le SPF Santé publique, en termes, notamment, d'organes, indépendamment des services de l'administration..."*

The governance model of both federal institutions involves stakeholders in the decision-making process but their decision power differs. **The RIZIV-INAMI governance model** is mainly based on negotiations between stakeholders who represent their organisations, such as the physician unions and the sickness funds. Many decisions and reforms result from a consultation process of expert groups composed of specialists in the specific clinical disciplines and experts in health insurance. **The decision power of stakeholders consulted by the FOD-SPF is less elaborated**. The stakeholders are invited as experts (not as representatives of organisations) to give advice on matters upon request of the Minister of Public Health. It is the minister who takes the decision based on this advice or otherwise. The Multipartite structure was established to act as an overarching consultative body between the decision-making processes of RIZIV-INAMI and the FOD-SPF. Some stakeholders consider the structure as insufficient to harmonize policymaking, especially for matters that are discussed at the Medico-Mut, such as physician fees. The introduction of a lump sum payment for hospital pharmaceuticals is, however, perceived as a success.

"…de Multipartite structuur voor ziekenhuizen die als voornaamste opdracht kreeg om de relatie of brug te leggen tussen de materies die in Volksgezondheid worden beheerd (programmatie, erkenningsnormen en budget van financiële middelen) enerzijds en de materies beheerd door de ziekteverzekering, met name de honoraria en de medicatie. Ook de collectie van gegevens kwam hierbij aan bod omdat deze voor beide instanties van nut zijn. Dit is ten dele gelukt voornamelijk voor de financiering van geneesmiddelen omdat hier alle partijen werden samen gebracht in één structuur. Voor de honoraria verliep dit moeilijker omwille van het bestaan van een geëigende instantie, de Medico-Mut, die sinds jaar en dag begaan is met de problematiek, vaak tot ongenoegen van de beheerders die vragende partij zijn om hier ook gesprekspartner in te zijn."

3.3.2 Policy of a yearly budget and tariff negotiations but no general healthcare policy

Lack of long-term policy and health targets

The roadmap for a reform of the Belgian hospital payment system of Minister Onkelinx, of which this study is one element, contains clear objectives: sustainability, efficiency, quality of care, accessibility, good governance and management, coherence and readability, and a fair distribution of financial means.[1] Nevertheless, the **Belgian federal government has no tradition of working with 'health targets' that determine the long-term strategy for healthcare policymaking.** At the Flemish level, health targets for preventive healthcare were first defined in 1998. At this moment, the Flemish authorities have formulated health targets on the following 6 topics: nutrition and physical activity; tobacco, alcohol and drugs; breast cancer screening; accident prevention; depression and suicide; infectious diseases and vaccination.[50] In an evaluation of the first ten years of a target-based approach, it was concluded that the use of health targets "can lead to a more transparent policy for prevention, enable better health policy processes and create more synergy among organisations in the field of prevention, health promotion and beyond."[51]

Stakeholders pointed to the fact that Belgian health policymaking is mainly focused on the estimation of a yearly budget and not on a long-term strategic plan. A long-term sustainable plan is lacking. According to stakeholders, the yearly budget revisions hamper investments for which the initial costs are high and the beneficial effects only appear after a couple of years, e.g. computerisation and controlled sharing of patient information (see section 15.7 in Chapter 15). Two recent hospital surveys compared the deployment of eHealth services and the availability and use of eHealth functionalities between 2010 and 2012 on the basis of composite indicators in the 27 EU Member States and Croatia, Iceland and Norway. A detailed overview of the variables included in the composite indicators and the respective weights can be found in Sabes-Figuera (2013).[52] In 2012, Belgian acute hospitals scored above the EU-27+3 average, except for clinical decision support on electronic health records (e.g. clinical guidelines and best practices or drug-drug interactions) and telehealth (e.g. monitoring patients remotely) (see also section 15.1.1).

Interviewees experienced this **lack of a policy based on clear health targets and a long-term strategic plan as important shortcomings and a major threat for the sustainability of our healthcare system.** The future challenges, after all, will require though political choices preferably based on a societal debate. A general long-term strategic plan and clear objectives should set the overall policy framework preceding the traditional negotiation process between stakeholders which is now the starting point of healthcare policy. The centre of gravity of the current Belgian health policymaking process is situated in the Medico-Mut. This commission was initially installed to decide upon the tariffs of healthcare services (the nomenclature). Little by little, and given the absence of alternatives, this commission also became responsible for policy measures for which it was initially not intended or designed such as the implementation of uniform electronic medical records in primary care. Since the nomenclature is the most important instrument of this commission, these policy interventions are also introduced via this channel. Therefore, interviewees point out that in Belgium **there is no general healthcare policy strategy but rather a policy of tariffs**.

"Wat mist het huidig gezondheidsbeleid? Het mist een vertrekpunt van gezondheidsdoelstellingen. Eigenlijk… Wij voeren toch een gezondheidsbeleid? Wij mogen toch geen beleid van tarieven op zich voeren, hé. En eigenlijk zouden we moeten vertrekken van gezondheidsdoelstellingen waarin we zeggen: kijk, met de middelen die ons land daarvoor veil heeft, wat zijn nu de belangrijke prioriteiten in de komende 10 jaar? Dat zou dan waarschijnlijk ook wel zoiets zijn van chronische zorg, maar men moet prioriteiten hebben. Wie moet die

prioriteiten bepalen? Met alle respect, maar niet de mutualiteiten en niet de dokters zelf. De prioriteiten moeten democratisch bepaald worden door het parlement."

The **principle of intensively involving stakeholders in the decision-making process has wide support** and the historical merits of the current model are widely recognised. Despite the many disadvantages (see next point) the model is still considered relatively flexible and rendering stakeholders (at the macro level, not at the micro level) responsible to find agreements.

"Het huidige model heeft… Ik ga eerst het voordeel geven. Het voordeel van het huidige overlegmodel is dat het snel kan… Ten 1ste dat er responsabilisering is van de actoren. Want ze veronderstellen toch dat men onderhandelt met mekaar en dat men tot akkoorden komt. Dat is goed. Dat is een middenveld waar ze hun verantwoordelijkheid in nemen. Voordeel is ook dat men vrij snel op wisselende omstandigheden kan inspelen. Men kan gemakkelijk nieuwe technieken… Ik zeg niet dat het allemaal zo goed loopt, hé. Maar bon, men kan het toch… Tarieven aanpassen. Dus het is een vrij flexibel systeem."

Limitations of the consultative model

Despite the general appreciation for the involvement of stakeholders in the governance model, the interviewees pointed out several disadvantages of the current model:

- **Commissions** such as the Medico-Mut **decide about issues for which they were initially not installed**.
- **Decisions are expert-based rather than evidence-based**. The decision-making process is insufficiently making use of cost data, e.g. to determine tariffs, and clinical effectiveness studies, e.g. to restrict indications for use and to prevent that the reimbursement of new techniques results in overutilisation with the risk of unlimited budget increases.

  "Daar zitten dus van de 2 syndicaten een aantal vertegenwoordigers. Maar dat wil niet zeggen dat van elke discipline er nu een expert zit in die commissie. Dan worden er experten uitgenodigd. Of men vraagt een dossier voor een nieuwe techniek. Experten worden gevraagd. Ja, en dat is dan altijd hetzelfde verhaal. Wat moet die techniek kosten? Dat is verschrikkelijk moeilijk. Daar zitten we zodanig veel uren aan. Dat vergt zo veel investeringen. Dus dat moet minstens zo veel duizend euro kosten per prestatie. Dat kan niet anders. Ja, amai, serieuze… En over hoeveel patiënten gaat dat gaan? Want we moeten een budget kunnen berekenen. Dat zal niet zo veel zijn. Als we de indicaties goed stellen en goed omschrijven, dan gaat dat maximum over 1000 patiënten per jaar. 1 000 euro, dat is zo veel, dat is het budget dat moet begroot worden. Oké, discussie goed, er is toch wel iets voor te zeggen. We keuren dat goed. We voorzien in het volgende akkoord dat die techniek moet geïntroduceerd worden. Binnen het jaar, wat zien we? Dat die 1000 patiënten, dat dat er 5 of 10 000 geworden zijn. Dus dat het budget 5 of 10-voudig is overschreden. Dus die technische commissies worden gewoon dikwijls in de luren gelegd door experten. En als dat nu de professoren zijn en de topexperten in hun gebied… Ja, wie zijn wij dan om dat gaan tegen te spreken natuurlijk. Dus dat is eigenlijk een probleem dat de laatste jaren bijna standaard geworden is."

This lack of use of objective data in the decision-making process can be further illustrated with a recent evaluation of the use of evidence in reimbursement decisions, using 6 case studies (i.e. aortic endovascular replacement; breast cancer screening; oseltamivir; hadron therapy; trastuzumab; Alzheimer medication). The authors evaluated the influence of nine factors on the reimbursement decision (i.e. (1) clinical and health economic evidence; (2) experience, expertise & judgement; (3) financial impact and resources; (4) values, ideology & political beliefs; (5) habit & tradition; (6) lobbyist & pressure groups; (7) pragmatics & contingencies; (8) media attention; (9) adoption by other payers or countries). The study showed that evidence is definitely not the sole criterion on which reimbursement decisions are based. According to the authors this would be inappropriate anyhow, as it would bear the risk of introducing a technocratic approach that is blind to the multiple concerns and trade-offs of current society.[53] Nevertheless, the dominance of opinion leaders, the use of selective information, the influential conflicts of interests and the unnecessary bypassing of standard procedures were evaluated as highly

inappropriate. The stakeholders interviewed in the context of the current study condemned the same practices that were observed in the study by Van Herck et al. (2013).[53]

- The **decision-making process is not transparent**. A motivation for the decisions taken is not made public which has an inherent risk that decisions are not completely free of conflict of interest and of the influence of lobby-groups. This is the case for reimbursement decisions but all the more for recognition decisions. Decisions are often perceived to be made on political motives rather than being based on transparent and objective criteria. For instance, the decision to assign MRI-scans to hospitals is vulnerable to lobby-work (rather than based on objective criteria) which could potentially explain geographical unbalances in the MRI/ Computed Tomography (CT) ratios.[33]

  "C'est un peu l'effet de loterie politique, à savoir que pour obtenir un agrément ou pour obtenir une machine ou un équipement."

- There is **no public accountability for the decisions taken**. General practitioners (GPs) and endocrinologists, for example, have received lump sum payments for diabetic patients included in the care trajectory for diabetes care since 2009. Nevertheless, there are no data about the quality of care for diabetes patients (see section 11.2 in Chapter 11).
- The **ploriferation of commissions and expert groups** results in a multiplication of meetings that could be organised more efficiently.

  "Efficiëntie kan ook sterk verbeteren. … Er zijn al stappen gezet. Daar moeten we eerlijk in zijn. Op het RIZIV heeft men wel stappen gezet de laatste 10 jaar. Maar men vergadert zich vaak te pletter."

- The minister increasingly overrules the negotiation process between sickness funds and healthcare providers or leaves peanuts to negotiate about. The stakeholders perceive that the **advices** of the NRZV-CNEH, which are free of obligations and not binding, **are systematically neglected by the minister** or that the minister consults this commission only because it is compulsory (e.g. in her requests for advice she already stipulates what to expect as an outcome). This causes demotivation among the people involved and lowers the quality of the advices. The fact that the NRZV-CNEH advices are not binding includes a higher risk of subjectivity in the decision-making process. The same is observed for the Medico-Mut and also at the regional level (e.g. the recognition of extra cath labs in Flanders is experienced as unnecessary and based on lobby-work of some).
- Due to majority rules in the current negotiation model, **decisions are taken at the expense of the minority**. Stakeholders give as an example the decision to integrate the Mini lump sum in the hospital budget (see Chapter 6) where the minority (i.e. large hospitals) would have preferred a linear measure to spread the savings amount of € 10 million instead of a fixed amount which was decided by the minority (i.e. small hospitals). A fixed amount redistributes the hospital budget in such a way that mainly small hospitals and/or hospitals with a small number of cancer patients benefit from the new payment system.
- Policy changes are seldom of a major nature since everyone negotiates to defend his acquired rights. Consequently, there is a perception that **the current negotiation model results in a status quo** and only leaves room for incremental changes at best.

  "En dus wat je ziet, als je dat op macroniveau bekijkt: er is niemand die dat geheel op een of andere manier kan overstijgen en daar ook echt een beleid gaat voeren. En dat is de grootste uitdaging, vind ik. Iedereen zit daar in zijn eigen positie met zijn eigen belang. En om nu een keer te zeggen: pak een wit blad en we gaan herbeginnen. Hoe moet dat eruit zien? Dat gebeurt dus niet. Dus dat is terug iedere keer stukjes wegschrappen of stukjes bijvoegen, enzovoort. Maar een fundamentele herziening van die structuren lukt niet."

- The current macro policy starts from different silos that barely connect. There is a subdivision of budgets per discipline and sector. The existing silos and **the silo mentality** are a break of investing in policy domains where the effects are noticeable in the budget of another silo (e.g. investing in prevention could reduce hospital admissions). Therefore, it is required to transcend the silo thinking and make decisions at a higher level.

3.4 Critical appraisal: increased fragmentation of responsibilities due to the 6th State reform

Although some stakeholders say that **the 6th State reform** does not affect the hospital sector much, there is a widespread concern that the reform **has increased the fragmentation of responsibilities**. The transfer of responsibilities is perceived as being based on political bargaining rather than on logical grounds.

> *"Dat wil zeggen dat in de 6de staatshervorming de 7de al zit ingebakken. Wat ik eigenlijk wil duidelijk maken, is dat die financiering die men wil maken in de toekomst niet los zal kunnen worden gezien van de prioriteiten die de gemeenschappen hebben. Wat eigenlijk al waar was toen men in 1963 een ziekenhuiswet maakte om de minister van volksgezondheid bevoegd te maken over het budget en over de normen, ga je eigenlijk nog altijd hebben maar met de complicatie dat die ene minister van volksgezondheid er vandaag 6 of 7 zijn in ons land."*

In the following sections we discuss the different transferred responsibilities that were commented by the stakeholders (note that mental healthcare is not discussed).

3.4.1 Care for the elderly

The responsibility and budget for residential and semi-residential care for the elderly have been fully transferred from the federal level to the federated entities. Stakeholders fear that this transfer can have some unintended effects. If the federated entities fail to provide the required level of services to meet demand and needs, there is a risk that patients are kept longer in the hospital than necessary (with an impact on the federal budget) or that home nurses (impact on federal budget) are deployed in residential elderly care.

3.4.2 Categorical hospitals

The responsibility for the organisation and payment of categorical hospitals is transferred to the federated entities which creates a lot of uncertainty for these hospitals since they fear that the federated entities will transform them into nursing homes (with a less favourable payment). This uncertainty pushes them towards mergers with general acute hospitals to remain under the federal laws.

> *"…zijn nu allemaal aan het ijveren om ervoor te zorgen dat ze federaal blijven. En waarom is dat? Omdat ze zich veel veiliger voelen in een federale financiering dan in een Vlaamse financiering. En waarom? Als dat budget van die categorale ziekenhuizen meekomt naar Vlaanderen, dan kan Vlaanderen daar plots een andere bestemming aan geven, en dat gebruiken voor rusthuizen in plaats van voor categorale SP- of G-ziekenhuizen. Dus het vertrouwen in de staatshervorming is dusdanig groot dat diegene die ze gestemd hebben, ze proberen te omzeilen. Ik vind dat geweldig."*

3.4.3 Recognition standards

The federated entities cannot impose recognition standards unilaterally. In case they affect the federal healthcare budget, the recognition standard can be rejected. As such, it will be very important that proactive consultation between the federal and federated entities takes place.

This deliberation process entails the risk of 'immobilism' and endless discussions between the different entities. It is believed that this will multiply the already numerous negotiation and consultation bodies and will create a duplication of efforts.

> *"Et ce n'est pas tout, il faut encore qu'on concerte tout le monde et que les wallons envoient leur projet de norme aux flamands, aux germanophones, à Bruxelles, à la COCOF, à la COCOM, etc. et on ne sait pas encore trop où, et au fédéral bien entendu… En fin de course, on a un immobilisme total. On ne va plus pouvoir faire évoluer en Belgique la moindre norme hospitalière dans les prochaines années. C'est impossible, le mécanisme fait que c'est impossible. Donc, là, franchement, on se pose beaucoup, beaucoup de questions et on pense que le système va être complètement sclérosé."*

3.4.4 Capital investment budgets: transfer of a relative homogeneous package that creates a lot of uncertainty in the hospital sector

Artificial split of capital and operational budget

Before the 6th State reform, the federal level was responsible for 40% of the capital investments in infrastructure and the federated entities for 60%. The reform shifts the entire budget for capital investments to the federated entities while the operational costs still have to be covered by the federal budget. Although stakeholders perceive the shift of the capital budget to one authority as logical, the separation of capital budgets and operational budgets is considered as artificial and inconsistent since both budgets are intertwined.

Policy vacuum in transition period

The implementation of the 6th State reform causes a policy vacuum which creates a lot of uncertainty in the hospital sector. It is expected that this will result in a standstill during the transition period. Several options for a future investment model are still open. In Flanders, for instance, it can be conceived as a copy of the current federal model, it can introduce public-private partnerships (PPP) or it can be based on drawing rights.[54]

Inadequate transferred budget?

Stakeholders also fear that the transferred budgets are insufficient to cover the current engagements as well as future needs, unless there is a drastic reduction in the hospital capacity.

Some stakeholders are afraid that the budgets of the federated entities (especially in the French-speaking part of Belgium) will be insufficient and moreover, that they will be primarily spent on buildings. Therefore, they consider it important that the fee-for-service payments also cover the medical infrastructure to allow them to invest in medical equipment.

> *"La région wallonne n'a plus un balle. Et on s'en est sortis il y a dix ans avec le crac 1 et le crac 1 a été entièrement bouffé par la rénovation d'hôpitaux publics, pendant ce temps-là on laissait crever le privé. Donc, quand il n'y a plus d'argent, ils ont fait un crac 2. Le crac 2 a été entièrement bouffé et le crac 2 est financé non plus sur des budgets d'investissement, mais sur les budgets ordinaires de la région, les budgets de fonctionnement. Et il n'y a plus un balle non plus. Donc, je peux vous dire que ce qui sera laissé pour financer… Il y aura une dotation fédérale, puisqu'ils vont transférer les moyens, donc ils ne seront pas à cale sèche, mais la clé de population c'est 80%. Donc, ils n'auront pas tout. Le reste devra se débrouiller. Pour moi, si on veut espérer pouvoir faire des investissements hospitaliers avec le A1, le gestionnaire va financer des briques. On peut le voir avec St Joseph à Mons, l'hôpital de Grâce à Gosselies. Il y a des hôpitaux à Tournai, c'est du brol. Pas tous, mais il y a quand même des choses à faire. Mais pour le financement du matériel, ce ne sera pas le gestionnaire qui pourra le faire. Donc, raison de plus qu'on garde du fric chez les docteurs."*

Increased financial accountability of federated entities

The federated entities will have an important key to align the infrastructure to the population needs.

The perceived overcapacity of hospital beds will demand a policy answer at the level of the federated entities. They are responsible for (re)designing the hospital and healthcare infrastructure of the future. Policy decisions taken at the level of the federated entities (e.g. investment decisions that maintain the (over-)capacity of acute hospital beds) will in the end also affect the federal budget (e.g. operational costs of the exploitation of the acute hospital beds). This emphasizes the importance of an intensive and pro-active deliberation process between the federal and federated entities.

Until now, the federated entities were insufficiently (financially) accountable for the recognition of new centres such as radiotherapy or cath labs. The transfer of the budget for capital investments increases the financial accountability of the federated entities. If it is decided to recognise, for instance, a new cath lab it will be the federated entities that are for 100% responsible for the capital investments. This might potentially result in investments that are better aligned with the population needs.

> *"Et donc si la région a le pouvoir sur le bâtiment et même sur l'agrément, pour autant que ça ne touche pas au financement, dans lequel cas il doit se concerter, on va avoir une politique financière qui sera toujours fédérale, l'activité qui sera toujours fédérale, avec des logiques qui seront celles que le fédéral aura décidées en termes de santé, et puis les régions qui auront leur politique éventuelle. Si les deux politiques ne*

sont pas un peu en ligne, on risque, effectivement, de financer les bâtiments pour un hôpital dont on n'a pas besoin au niveau fédéral ou de financer au fédéral ou ne pas financer au fédéral des choses qui seraient très utiles pour les régions dans le cadre hospitalier. Donc, on risque d'avoir des oppositions, des complexités, sauf si, effectivement, l'apaisement que pourrait provoquer la réforme de l'État permettrait de se dire : OK. Puisque chacun a son domaine de compétences, comment est-ce qu'on peut travailler ensemble ?"

It is also noted that Belgium takes an opposite direction compared to Germany (see Chapter 15).[2] Since the regionalisation created problems in the poorer regions, Germany is now transferring the investment budgets back to the federal level.

3.5 Suggested solution elements from stakeholder consultations and literature

3.5.1 Long-term strategic plan with clear objectives

Healthcare policymaking should much more rely on a clear long-term strategic plan with measurable objectives and a detailed medium-term budget. The latter was also recommended by the OECD in its latest economic survey of Belgium. The OECD stated that a detailed medium-term budget is required to enhance the strategic reflection over the desired level of spending. A focus on the medium term would also be useful to reflect the effect of new measures in a transparent way.[48] In addition, it is imperative to transcend the silo thinking and raise decision-making at a higher level, less tributary to the contingent direct interests of the negotiating groups.

Health targets are a policy tool that is widely used throughout Europe. Targets can facilitate the achievement of health policy by expressing a clear statement about the commitment and ambition of a government. They specify the outputs they aspire to achieve in a defined time period which improves the public accountability.[55, 56] The formulation of health targets further enables one to monitor the progress towards these objectives and allows evaluating what is and what is not working.[55, 56] The lack of health targets was also pointed out as a major shortcoming in the interpretation process of the 74 indicators that are monitored in the Belgian Health System Performance Assessment framework.[35]

Based on an evaluation of several case studies and a scoping review of the literature about the growing and sustained interest of governments in health targets and their role in the health system, the European Observatory on Health Systems and Policies made several recommendations about various dimensions of target setting and monitoring that can help to improve health system performance:[55-57]

- Target format. Targets can either be quantitative (e.g. a decrease in inappropriate hospital admissions by x%) or qualitative (e.g. the introduction of reference centres for complex and rare cancer care) and can be expressed in terms of outcomes (e.g. a reduction in mortality) or in terms of processes (e.g. a decrease in the number of CT scans per inhabitant).[57, 58]
- Who should use targets? Targets set by government contribute to political accountability and enable parliamentary (democratic) control, both on the choice of priorities and on policy performance against the targets.[56] However, it is recommended to strive for systematic stakeholders consultation, as reaching consensus with relevant stakeholders (e.g. healthcare providers and organisations, citizens) enhances the local acceptability of the macro-level targets. This is important, since most targets are influenced by local healthcare providers and organisations and will challenge the traditional way of delivering services. This also includes the risk that, in case of an uncritical accommodation of interest groups, the target process becomes meaningfulness (e.g. a proliferation of priorities).[56] To increase the acceptance of targets the Catalonian government, for instance, created health councils at the central and provincial levels to encourage citizen groups to take active part in target setting. In France, stakeholders were given the opportunity to debate existing health problems in national and regional health conferences.[55] In order to be successful, targets need sustained political commitment and a permanent, public body in charge of ongoing monitoring and reporting and timely intervention when needed.[55]

- How should targets be quantified? An ideal target is said to be SMART: specific (to the ultimate health goal to be pursued), measurable (able to be monitored with data that either exist or can be collected), accurate (in order to know whether the target has been hit), realistic (challenging but actually achievable) and time bound (time taken to achieve the target should be specified). Smith et al. (2009; 2010)[55, 56] describe the set of principles as outlined by the Royal Statistical Society as more comprehensive: "indicators should be directly relevant to the primary objective, or be an obviously adequate proxy measure; definitions need to be precise but practicable; survey-based indicators, such as those of user satisfaction, should use a shared methodology and common questions between institutions; indicators and definitions should be consistent over time; indicators and definitions should obviate, rather than create, perverse behaviour; indicators should be straightforward to interpret, avoiding ambiguity about whether the performance being monitored has improved or deteriorated; indicators that are not collected for the whole population should have sufficient coverage to ensure against misleading results; technical properties of the indicator should be adequate; indicators should have the statistical potential to exhibit or identify change within the intended timescale; indicators should be produced with appropriate frequency."

  It is recognised that in practice few target regimes are following these principles entirely, which can explain some of the failures in the past.[55]
- How should cross-ministerial targets be handled? Cross-sectoral targets will require coordination, persuasion and engagement, translated into strong collaborative arrangements. Anyhow, joint targets should always have a lead ministry in charge of the process.[55]

Health targets in New Zealand[59]

After a government change (2009), the incoming Minister of Health announced a revised set of health targets as an indication of key government priorities in health. The revised list reflects a shift in emphasis towards performance indicators focusing on hospitals and specialist care, and away from population health goals including three different types of targets:

1. Compliance measures for District Health Boards or DHBs (improving elective services, reducing cancer waiting times);
2. Ministry of Health-led targets (improve nutrition, increase physical activity and reduce obesity, reduce the harm caused by tobacco, and reduce the percentage of the health budget spent on the Ministry of Health);
3. DHB-led targets that will be achieved by DHBs over time, with Ministry assistance (improving immunisation coverage, improving oral health, reducing ambulatory sensitive (avoidable) admissions, improving diabetes services, improving mental health services).

3.5.2 Harmonizing and simplifying macro-level structures

There is consensus among the interviewed stakeholders that the **plethora of commissions and structures at the macro level should be simplified**, a necessity that is accentuated by the 6th State reform. For some, this only includes a restructuring and rethinking of the composition of the current commissions and their responsibilities (e.g. the Medico-Mut is a commission that is competent for decisions on tariffs, not for decisions about public health issues) or to strengthen the collaboration between them. For others, the proposed measures are more far-reaching and also include an integration of the federal administrations (i.e. RIZIV-INAMI and FOD-SPF). Because the 6th State reform restricted the responsibilities of the federal administrations, such integration might have become easier. Stakeholders also acknowledge that the current administrations have a highly skilled and competent staff. Therefore, when a reform requires new functions, tasks, and roles, stakeholders prefer to integrate these in the existing (federal) institutions rather than to create new institutions (e.g. a large DRG-institute in case the reform includes case-based payments by pathology).

Some stakeholders fear that an integration of the federal administrations with the current governance structure and payment model will ignore the 'public health dimension' since the involved stakeholders influence the negotiations in their own interests. Therefore, they state that the consultative model as it is currently constructed does not allow an integration of RIZIV-INAMI and the FOD-SPF. Such integration should be accompanied by a drastic reform of the entire macro-level governance structure.

> *"Alles in één [financierings]systeem steken zou een zware vergissing zijn. Je moet, naast het financieringssysteem, een volksgezondheidspolitiek kunnen voeren. Geneesmiddelen, voeding, medische beeldvorming, klinische biologie, enz. … Je moet als overheid impact op de middelen kunnen hebben. Moesten die middelen puur het gevolg zijn van een overleg tussen artsen of tussen beheerders en ziekenfondsen, dan gaat de overheid die impulsen die nodig zijn voor de volksgezondheid niet kunnen geven. Beheerders en artsen zullen ervoor zorgen dat ze voldoende middelen binnenrijven. Ik begrijp dit omdat ze instaan voor het financieel evenwicht in het ziekenhuis. Maar de bekommernis van de overheid moet veel verdergaan, met name de volksgezondheid beschermen. Dit moet zijn vertaling vinden in het financieringsbeleid."*

3.5.3 Scientific input by technocrats and real-life expertise by stakeholders

The current macro-level decisions in healthcare are still predominantly based on expert opinions. There is a plea for building up the **evidence-based policymaking** by strengthening the role of scientific evidence in the decision-making process. This can be achieved by making the scientific advice (e.g. by the Belgian Health Care Knowledge Centre (KCE)) compulsory for well-defined issues. It is acknowledged that since the establishment of the KCE in 2004 scientific evidence has gained weight in the Belgian healthcare policy-making process. In KCE Report 214 the impact of 78 reports published in 2009-2011 was assessed.[60] The impact of reports containing recommendations aimed at individual healthcare professionals (mainly practice guidelines) and methodological reports were graded as 'not measured'. The remaining 67 reports have had a direct impact, meaning that at least one of the recommendations had been implemented. About one third of the reports was still under discussion (end 2013). For only one HTA report a decision was taken that went directly against the KCE recommendations. Nevertheless, it is still perceived as too informal and ad hoc and some interviewees, therefore, argue that the status of recommendations of the KCE should be strengthened. At this moment, the public accountability of authorities is limited to an annual presentation to the Parliament of the Minister of Social Affairs and Public Health of a report on the extent to which the KCE recommendations were implemented. Strengthening evidence-based policy does not stand for bypassing the stakeholders. It is stressed that the input of stakeholders and field experts remains crucial. Otherwise, decisions risk to be too academic or theoretical and not adapted to real life.

The stakeholder input should, however, become more transparent (especially the conflict of interest). We refer to KCE Report 147 in which the 'accountability for reasonableness' framework of Daniels and Sabin was applied to drug reimbursement procedures.[61] The framework of Daniels and Sabin describes four conditions for a fair and legitimate priority-setting procedure in healthcare: transparency of the process; relevance of the

reasons used to make a decision; revisability of decisions in light of new evidence and enforcement/regulation of the three previous conditions.

3.5.4 Reform of the composition of stakeholder commissions

There is no consensus about which actors should be involved in the negotiation/consultation process. This is not surprising since most interviewees are stakeholders representing professional groups/organisations that are involved in the current decision-making process (or not) and therefore responded according to their own interests. The discussions focused on the composition of the Medico-Mut, probably because this commission is perceived as the most powerful and influential platform in the decision-making process. The arguments put forward illustrate that the current consultative model has reached its limits and is not adapted to the current societal evolutions and context.

In the following points we describe the arguments, given by stakeholders, to involve a stakeholder group (or not). Contradictions in statements are often based on acquiring (by those that are currently not represented) or defending power (by those that are currently represented):

- **Hospitals (by means of umbrella organisations)** should be involved since many payment decisions by the Medico-Mut affect the budget/income of hospitals. After all, under the current hospital payment model the hospital budget relies for about 40% on deductions of physician fees and the Medico-Mut is exclusively responsible for determining these tariffs. A recent example is the discussion on the restriction of supplements in two-person rooms bargained by sickness funds and physician unions (see Chapter 10). Nevertheless, the outcome of the discussions also affects hospitals and patients. In that respect, it is logical to give these stakeholders a voice in the negotiation process.
- **Patients are the end-clients of healthcare.** In Belgium, there is no widespread tradition to involve patients and citizens in healthcare policy. To adapt the governance model to the 21st century it should be self-evident to give patients and citizens a voice. Although this role is often claimed by the sickness funds, interviewees rather support to strengthen and further professionalise the umbrella patient organisations (i.e. LUSS: Ligues des Usagers des Services de Santé and VPP: Vlaams Patiëntenplatform) and give them a stronger voice in the decision-making process. Recent initiatives, although still modest, already have taken a step in that direction. In May 2012, the Observatory of chronic diseases (Observatoire des maladies chroniques – Observatorium voor chronische ziekten) was set up with, among other things, the task to identify the needs and define the optimal care for the chronically ill. The consultative body of the Observatory includes both sickness funds and patient organisations to represent the voice of patients.[62] Also the federated entities increasingly consult the patient organisations. The VPP, for example, is part of the steering committee of the Flemish Quality Indicator Project[63] (VIP²).
- **The involvement of physician unions in the decision-making is beyond dispute.** Nevertheless, interviewees point out that the current union leaders not only bring medical expertise in the debate but also defend the financial interest of their members. As such, there is a risk that tariffs are set disproportionally high or that reimbursement decisions are not evidence-based or threatening the overall healthcare budget. Therefore, interviewees indicate that there is a need to counterbalance the power of physician unions (and also of the sickness funds) with the other actors involved (i.e. patients and hospitals) and by increasing the use of scientific evidence.

  "Bovendien, in ons overlegmodel zijn het eigenlijk de artsensyndicaten die moeten onderhandelen over die tarieven. En die artsensyndicaten zitten daar heel terecht… Want de artsen zijn de experten en kennen de klinische praktijk. Maar die artsen zitten daar ook niet alleen als medisch expert. Die zitten daar ook als de belangenverdediger van de portemonnee van de artsen."
- **Also the role of sickness funds in the consultative model is acknowledged.** They manifest themselves as patient representatives. Nevertheless, this role is criticised by other stakeholders and is seen as a strategy to protect their power. Some suggest that sickness funds should reorient themselves to their role as healthcare insurer and retract themselves from all other roles (e.g. owner, administrator of healthcare organisations). This will of course also require changes in their legal roles and responsibilities (see also section 4.3.1 in Chapter 4 for potential roles of sickness funds).

- Besides the four main actors described above, some stakeholders also see a role for **academics** to bring in independent scientific advice. This fits in with the demand to increase the use of scientific evidence in the decision-making process.

3.5.5 *Conference of ministers as the place for consistent policymaking*

The 6th State reform with the transfer of additional powers to the federated entities implies that a governance platform such as the **Interministerial Conference on Health** will gain importance if one wants that healthcare policy in Belgium is congruent and consistent. Stakeholders expect that the number of declarations, protocol and partnership agreements will rise in the future.

An example of a policy domain that will require protocol and partnership agreements is chronic care, where responsibilities are divided between federal and federated entities. To introduce new roles and functions in primary care (e.g. nurse practitioners or case managers), for instance, agreements between the different governmental levels are needed. The recognition and payment of healthcare professions are the responsibility of the federal authorities while the education but also the meso-level coordination structures in primary care are the responsibility of the federated authorities. On a recent national conference (www.chroniccare.be), prepared by an inter-administration working group, twenty actions in six priority domains (e.g. multidisciplinary patient record, empowerment and case-management) were presented based on the KCE position paper on chronic care.[64] In order to realise each of the actions situated in the six priority domains protocol and/or partnership agreements will be necessary. Some of the interviewees suggest that this way of policymaking should be further elaborated in the future.

Agreements made in the Interministerial Conference will only have impact if there is also agreement on budgets and payment mechanisms. According to some stakeholders, this will result in endless discussions (and little decisiveness) while others are more optimistic given the successful collaboration at the level of the Interministerial Conference in the past, for example for residential care for the elderly.[65]

Moreover, also **European jurisdiction** requires a transparent payment system. “The EC Treaty prohibits any aid that distorts or threatens to distort competition in the common market (Article 107(1) Treaty on the Functioning of the European Union (TFEU)). Based on this, the State aid rules generally only apply where the recipient of an aid is an ‘undertaking’. As healthcare is (usually) provided for economic consideration, doctors and other healthcare providers (such as public and private hospitals and extramural centres) are engaged in economic activities. The Treaty allows some exceptions where the proposed aid may have a beneficial impact in overall Union terms. State aid measures can sometimes be effective tools for achieving objectives of common interest such as services of general economic interest (SGEI) defined in EU competition law as economic activities that public authorities identify as being of particular importance to citizens and that would not be supplied (or would be supplied under different conditions) if there were no public intervention. Medical interventions can be considered as services of general economic interest.”[45]

The European Commission has the task to control state aid, which comes down to balancing whether the presumed advantages for the common interest outweigh the negative effect of the distortion of competition. The core requirements of transparency and proportionality of the compensation are reflected in several instruments. For instance, according to the **Altmark criteria**, the recipient undertaking must have public service obligations to discharge, the obligations must be clearly defined and the parameters on the basis of which the compensation is calculated must be established in advance in an objective and transparent manner. One of the compatibility conditions is that the compensation must not exceed what is necessary to cover the costs incurred in discharging the public service obligations including a reasonable profit, a calculation of all costs as well as any kind of revenue received is necessary to this end.[45] For more information, we refer to Vinck et al. (2014)[45] and the Roadmap of Minister Onkelinx[1].

> *“Europa wil dat we in het kader van de financiering werken met een soort mandaatsysteem. Dat wil zeggen dat wat men financiert goed moet omschreven zijn. Waarom? Omdat men concurrentievervalsing wil uitsluiten en men duidelijk wil zeggen waarvoor een financiering moet dienen. … Men zal geen financiering kunnen maken als men niet zegt waarvoor deze dient.”*

For some stakeholders, the Interministerial Conference on Health (i.e. for political decisions) and the **Institute of the Future** (i.e. stakeholder consultation) could play an important interfacing role to foster the collaboration between institutions. The Institute of the Future could be conceived as the place where a general vision and strategy on healthcare policy is set out. The same interviewees also propose to create a kind of advisory body allowing stakeholder dialogue that accompanies the activities of this institute. As stipulated in the coalition agreement, the institute should make use of KCE studies to ensure that stakeholders discuss on a scientific basis.[66]

> *"Mijn pronostiek is dat als een gemeenschap normen gaat willen maken, deze dat proactief moet doen. De gemeenschap zal dus proactief aan het federale niveau komen zeggen: wij zouden dat en dat willen normeren en subsidiëren. Ben jij bereid om daar een financiering voor te geven? In feite hebben we dat model vandaag al een stuk gehad in de rustoordproblematiek omdat in de rustoordproblematiek de gemeenschappen vandaag al voor de normen bevoegd zijn. Vanuit de federale overheid was men bevoegd voor de ziekteverzekering. Wel, voor de rustoorden werden protocollen gesloten, waarbij men op federaal niveau zei: kijk, we hebben zo veel voltijdse equivalenten die we kunnen financieren. In die protocollen gaan we afspreken waarvoor die financiering kan dienen. Er kunnen dan verschillende mogelijkheden worden geboden. De gemeenschappen hebben daar een soort trekkingsrecht op. Ik denk dat het ook in de ziekenhuispolitiek zo zal gaan. Men zal concepten uitwerken waarbij men aan de gemeenschap zou kunnen zeggen: ja, we willen eerder daarin investeren dan in dat. Zo bvb zou één gemeenschap kunnen zeggen: we gaan eerder in neurochirurgie investeren, terwijl een andere gemeenschap eerder in hartcentra wil investeren. Maar het risico is natuurlijk heel groot als men het zo gaat doen dat men vrij rap uit mekaar gaat groeien en dat er stilaan aparte budgetten in de ziekenhuisfianciering gaan komen door zo'n akkoorden."*

Key points

Historical merits of the Belgian macro-level governance model:

- **The historical merits of the compulsory health insurance system and the Hospital Act (both introduced in 1964) are widely acknowledged: nearly 100% health insurance coverage; very satisfied citizens which can to a large extent be explained by the high geographical accessibility of services and freedom of choice for both patients and physicians.**
- **Nevertheless, results on objective outcome and financial accessibility indicators as well as analysis of health differences between socioeconomic groups do not share this positive picture.**

The Belgian macro-level governance is under pressure:

- **The two federal departments competent for healthcare (i.e. RIZIV-INAMI and FOD-SPF) heavily rely on a participatory process with stakeholders. Stakeholders negotiate on each and every decision. Integrating more objective data (e.g. cost-accounting data) and scientific evidence (e.g. clinical and cost-effectiveness data in case of reimbursement decisions) in the decision-making process is required to find a better balance between scientific input from technocrats and real-life expertise from stakeholders. In addition, transparency of the decision-making process and rendering decision makers accountable for their decisions could be improved.**
- **More efficiency can be obtained by integrating some of the existing commissions and governance structures. Currently, the plethora of commissions demands many resources and adds to the fragmentation of efforts and policy.**
- **The composition of commissions should be reviewed. Although there is no consensus about who to involve, it is clear that the current consultative model has reached its limits and is no longer adapted to the current societal evolutions and context. In particular the voice of patients and citizens is underrepresented.**

- **Federal policy remains, given the limited repertoire that is available, mainly a policy of tariffs and misses a general healthcare policy strategy. Most decisions are taken with a short-term perspective and within silo-structures. There is a need for Belgium to follow the international trend to spell out long-term healthcare strategy by means of health targets and objectives.**

Impact of the 6th State reform:

- **The 6th State reform transferred powers from the federal level towards the federated entities in healthcare, long-term care and allowances for disabled elderly amounting to more than € 5 billion. The transferred competencies relating to the organisation and funding of hospital care are, however, not entirely homogeneous. Therefore, both a technical and a political common governance platform uniting the federal and federated authorities are required to harmonize policy in healthcare. The Interministerial Conference on Health is the appropriate level for harmonization of political decisions whereas the so-called (and still hypothetical) 'Institute of the Future' could be conceived as the more technical platform where the factual basis for a general vision and strategy is prepared making use of objective study material. It is expected, by some, that this deliberation process will slow down the pace of the necessary reforms.**

4 THE BELGIAN HOSPITAL LANDSCAPE WITHIN THE BROADER HEALTHCARE CONTEXT

Ideally, the payment system for hospitals or other healthcare services is designed to obtain well-defined system goals. In that sense, a payment system is only a means to an end. Moreover, the payment system should constantly evolve to meet the new challenges the healthcare system is facing. In Belgium, as in the rest of Europe, healthcare systems and hospitals will face an ageing population that increasingly will be characterised by multi-morbidity and by a higher share of people that are demented.[64] In addition, the declining ratio of working to non-working population will substantially increase the fiscal pressure on the system and will also create a shortage of healthcare professionals.[67] If we add to this the likely advances in treatment technologies as well as pharmaco-therapeutic innovations, it should be clear that the healthcare system will need to be able to adapt to this rapidly changing environment.

As in most western countries, the Belgian healthcare system has its fundamental focus on treating patients during acute episodes of care, with a central role for hospitals.[64] But hospitals are large physical structures, demanding substantial investments, and, once built, they cannot easily nor quickly adapt to a changing context. Nevertheless, it is clear that this changing environment will impose new roles to the hospitals. In the future, hospitals will continue to provide both highly specialised technology-intensive services as well as more personnel-intensive, but still specialised, services. However, simultaneously hospitals will have to integrate their activities with other parts of the healthcare system, providing what essentially are fragments in the long-term management of patients with one or multiple chronic conditions.

In this chapter we first briefly describe some existing initiatives that have been taken in Belgium to streamline the shape of the hospital landscape (section 4.1). Next, we describe the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (section 4.2) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 4.3). The macro-level governance as well as the facts and figures on the hospital landscape are described elsewhere (Chapters 3 and 2 respectively). We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organizations such as the OECD or the WHO) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, interesting international initiatives or best practices were added for illustration.

4.1 Current Belgian initiatives to streamline the shape of the hospital and healthcare landscape

In this section we describe some initiatives that illustrate how Belgian policymakers aimed to streamline the shape of the hospital (and healthcare) landscape. For a detailed description of the organisation of the Belgian hospital landscape (e.g. type of hospitals; type of hospital services; care programmes ('zorgprogramma'/'programmes de soins'); recognition, planning and programming tools), we refer the interested reader to reference manuals describing this in an elaborate manner (see Crommelynck et al., 2013[10] and Callens, 2008[68]). In this section we only describe the materialisation of the care programmes via the example of breast cancer clinics and the development of care areas.

Care programmes: the example of the breast cancer clinics

Care programmes are gradually replacing the regulation and accreditation of medical hospital services and functions. Moreover, the distinction between basic and specialised care programmes (see 2.3.3) offer (in theory) the possibility to differentiate the supply of services in hospitals that provide basic diagnostic and treatment services for the particular target group of the care programme, while the specialised care programmes provide the more advanced diagnostic and treatment services. However, this not necessarily results in concentration of highly specialised services. First, the number of specialised care programmes that can be installed at that organisational level is not limited. All programmes that meet the required criteria can be recognised. Next, the content of the legal requirements specified in the care programmes is vulnerable for political/stakeholder influence. The National Council for Hospital Facilities (NRZV-CNEH) generally makes for each advice a group of experts (nominated by several stakeholder groups) responsible for the substantive preparations of the advice. Generally, different sources of information (e.g. scientific evidence; consultation of evidence; analysis of administrative databases) are integrated in the advice. The minister receives the final advice when it is approved by the NRZV-CNEH but has no obligation to follow the advice. It is described in detail in Chapter 3 that this macro-level governance model is an insufficient guarantee for evidence-based policy decisions. Many final decisions are the result of bargaining processes and risk to neglect or tone down objective information or scientific evidence (see text box for the example of breast cancer clinics).

Specialised care programme: the breast cancer clinics

To reduce the variability in breast cancer survival among the member states, the European Parliament endorsed in 2003 a resolution on 'Breast Cancer in the European Union' resulting in a set of recommendations made by the European Society for Medical Oncology detailing the criteria that should be fulfilled by breast cancer clinics. Among these, the minimum threshold of at least 150 women with breast cancer treated per centre and at least 50 operations per surgeon generated much discussion in Belgium.[69] This is not surprising, as at that time only 14 hospitals out of 108 fulfilled the European volume threshold, and 17 treated between 100 and 150 women annually. Moreover, 44 hospitals treated less than 50 patients a year (data 2003).[69]

On 26 April 2007 the Belgian criteria for the recognition of breast clinics were published in a Royal Decree[70], specifying also the volume thresholds. A transition period was foreseen so that hospitals could reorganise their services: during the first two years, a minimal threshold of 100 newly diagnosed patients per year was required. After the transition period, the volume threshold was increased up to 150 patients per year (i.e. the EU recommendation), with an exception if there was another recognised breast clinic within a distance of 50 km, in which case the cut-off of 100 still applied. In 2012, the two-year transition period has been expanded to a four-year transition period. In 2013, 50 hospitals were recognised as a 'breast clinic' based on the transition period norms.[69] At the time of the publication of KCE Report 201[69], it was not known what the annual volume of the breast clinics 'in transition' was, and more importantly, it was not known how many breast cancer patients were still being treated outside the recognised centres (which is legal as physicians working in hospitals not recognised as breast clinic are still allowed to treat patients with breast cancer).[69]

Geographical care areas

In Belgium, the **concept of geographical care areas** exists both in Flanders and in Wallonia. Flanders implemented the concept of care areas ('zorgregio's') in 2003.[71, 72] By this decree, Flanders is divided in several care areas. Based on study work[73] societal coherent geographical areas and sub-areas were defined depending on the envisaged policy applications. These areas and sub-areas are built up as hierarchical consistent, non-overlapping areas. One of the sub-levels divides Flanders in 38 care areas with the hospital as the central attraction pole (i.e. 'ziekenhuisregio's').

In 2002, the Walloon government published a similar decree, defining care-zones ('zones de soins') and operational sub-zones ('zones de soins opérationnelles').[74]

Although these care areas were, amongst other, policy measures used to (re-)organise collaboration platforms in primary care[64], until to date and to the best of our knowledge they have not (or hardly) been used in the planning of hospital capacity. We refer to France (see for a detailed description section 4.3.1), where a similar logic has been applied to restructure the whole of healthcare (including hospitals), social and welfare services. France can, as such, serve as an example to further develop the existing Belgian examples.

4.2 Critical appraisal: a dispersed and extensive number of services, dominated by acute-care hospitals

4.2.1 The Belgian hospital sector: relatively high number of acute-care beds and a dispersion of technology and expertise

Belgium has a high number of acute hospital beds per inhabitant

The hospital sector is clearly structured differently across countries.[75] In comparison to other western countries, the average hospital size in Belgium is relatively large. Yet, in many cases these hospitals consist of several distinct physical sites that are merged into larger organisational units. Comparing the number of hospitals and hospital beds between countries is far from straightforward, since the role of hospitals might differ substantially and is strongly related to the context in which they operate (e.g. a smaller hospital capacity in countries with a well-developed primary care).[75] Nevertheless, Belgium seems to have **a relatively high number of acute-care hospital beds per inhabitant** (4 recognised acute-care hospital beds per 1000 population in 2012). A decreasing but still high average length of stay (LOS) and a large number of discharges result in an even higher number of admission days per inhabitant per year (see section 2.5 in Chapter 2).

Since the reform of the hospital budget (Budget of Financial Means, BFM) in 2002, there is a growing gap between the number of recognised and the number of justified beds, especially for acute-care C and D beds (i.e. general surgery and internal medicine), indicating a certain degree of overcapacity of recognised beds. This seems not the case for geriatric care (G) beds.[76] This observation is not surprising since a study by Cannoodt et al. (2005) came to the same conclusion (i.e. overcapacity of acute-care beds, under-capacity of geriatric beds and a need for reconversion towards alternative care services) by calculating the required hospital capacity by means of projections of the use of hospital services taking into account several factors such as the expected trend in LOS-reduction; substitution by day care; population demographics.[77] Several stakeholders conclude from these figures that there is an **overcapacity of acute-care hospital beds** resulting

in too many inappropriate or avoidable admissions (supply-induced demand) and insufficient substitution of hospital activity by outpatient care.

> *"Je pense que comme tout à l'heure j'ai parlé de la capacité dans le vieillissement des lits aigus et suraigus, je pense qu'il y a une surcapacité. Quoique, quand on prend les lits justifiés, heu, ça a quand même fortement diminué ces dix dernières années, mais les lits agréés restent bien là, et donc, là, c'est un problème d'efficience des hôpitaux. Mais globalement on peut dire qu'il faudra s'entendre dans une diminution drastique tant en nombres de sites d'exploitations de l'hôpital aigu …que en taille et en nombre de lits aigus, je pense qu'il peut y avoir une diminution de l'ordre de 20 % et alors il faut réfléchir à une ... et il faudra inciter dans les mécanismes de financement à une rationalisation."*

Some relatively old empirical evidence (study conducted between 2003 and 2005) from the AEP-survey (Appropriateness Evaluation Protocol) confirms that a substantial share of inpatient hospitalisation days in Belgium are indeed inappropriate. The AEP-survey was conducted in 23 hospitals and showed that 24.6% of the 10 921 observed hospitalisation days on adult acute non-intensive care units were inappropriate. The most frequent reasons were 'waiting for examinations (22%)' and 'lack of care structures outside the hospital (31%)'.[78]

The large capacity of acute hospital beds is also pointed out as a factor that increases the competition between hospitals, described by some as a **'rat race' to attract patients** at the expense of neighbouring competitors. Hospitals want to provide the broadest possible number of services with the latest technological innovations, resulting in a wide diffusion of technologies and heavy equipment, even when the effectiveness of this equipment is not supported by robust evidence (e.g. robot-assisted surgery[79]). This ambition to invest in (highly) specialised services is observed in all hospital types, resulting in community hospitals evolving towards secondary care hospitals, and secondary care hospitals actively competing with university hospitals.

Several **efforts** have already been undertaken **to rationalise hospital capacity**. Examples are the hospital payment system which is based on justified instead of recognised beds and hospital mergers, but these efforts have been **perceived as insufficient**. In addition, these measures were driven by 'economies of scale' and not by a thorough capacity planning based on projections of the population needs. The past hospital mergers, for instance, did drastically reduce the number of hospitals. In Flanders the number of acute hospitals decreased from 91 in 2000 to 66 in 2013.[80] However, many of these hospital sites remained operational after the mergers. This high number of hospitals does not necessarily cause problems as they allow to provide care in the proximity of the patients. Nevertheless, the problem is that many of the services, both basic service offer such as paediatric departments or emergency care units as well as more specialised services such as cardiology, are redundant since they are offered by several hospital sites in the same catchment area. Therefore, some stakeholders plead to keep the hospital sites after mergers and reorient their destination. However, a future wave of mergers received little or no support, especially not when this would result in the creation of new large hospital sites. Stakeholders point out that large hospitals have large overhead costs (e.g. human resources department; administration) which largely undo the 'economies of scale' for investments in heavy equipment. In addition, many fear that the creation of more large hospitals with a concentration of a high number of beds on one site would result in (even) more hospitals with the ambition to offer the entire spectrum of highly specialised services and the latest (expensive) high-technology innovations. This would result in a further fragmentation of an already scattered specialised services offer. A better balance between concentration of specialised services and proximity of the basic service offer is clearly required and some departments (e.g. emergency departments) should be reduced drastically according to some of the interviewees.

> *"On a quand même vu, je dirais ces 20-30 dernières années une grande phase de rationalisation, de la gestion en tout cas, puisqu'on a fusionné beaucoup d'hôpitaux et on a gardé des sites de proximité. Donc, le nombre de sites ne me pose pas trop de problème, par contre, ce qui est important, c'est le degré de spécialisation de chacun et de faire des choses qui peuvent correspondre aux standards qualitatifs minimums exigés. Je pense que maintenir des services de proximité qui ne répondent pas à des critères de qualité, ces critères ne sont pas seulement quantitatifs, il y a d'autres aspects qui entrent en ligne de compte … ça c'est un mauvais service qu'on rend à la population. Je pense qu'on va quand même aller vers une plus grande concentration*

de services spécialisés, tout en gardant des services de proximité, pour les petits problèmes médicaux."

Given the limited available empirical evidence, these assumptions about overcapacity will have to be tested by calculating the required capacity of healthcare services based on epidemiological data and other parameters. Moreover, the **lack of operational care strategic plans per geographical area (e.g. level of the provinces)** based on the local needs of the population (e.g. based on epidemiological data) was pointed out by some as one of the reasons of inefficiency within the healthcare system (e.g. overcapacity, unclear tasks of who does what, fragmented service offer, gaps in the service offer, recognition and investments in new services such as the cath labs for which there is no need). The current mechanism of programming and planning that could be used to align the service offer to the population needs is only consolidating historical developments. The programming mechanism is perceived as obsolete and not adapted to the past, current or future needs and abused to defend acquired rights. Stakeholders emphasize that objective calculations should replace the current practice of shaping the hospital and healthcare landscape on the basis of bargaining processes and (political/confessional) favouritism.

"Par rapport à ça, c'est vrai que j'ai une remarque générale sur le modèle belge, c'est que la création d'hôpitaux n'est pas venue d'une programmation déterminée en disant : « Il faut autant d'hôpitaux à tel endroit. » C'est vraiment sur une base historique que les hôpitaux se sont installés là où ils voulaient s'installer, avec les pouvoirs publics ou avec les pouvoirs privés. Donc c'est vrai qu'on se retrouve aujourd'hui avec un mouvement qui a été entamé depuis les années quatre-vingt environ d'un processus de fusion, de fermeture de site, de rationalisation, association, etcetera."

"Ik denk dat het landschap gaat moeten herbekeken worden. ….Ik denk dat we naar een soort masterplan moeten. Een masterplan voor de zorg, eventueel per gemeenschap, per regio of per provincie. … Kijkende naar de toekomst met prognoses van: wat zal deze bevolking epidemiologisch nodig hebben. En wat is dan het beste antwoord daarop? En daar kan enorm bespaard worden. We zijn enorm veel aan het verkwisten in het dubbel doen van dingen. We doen dubbele onderzoeken, doen 3-4 keer meer CT's dan ze in Nederland doen."

"Ik denk dat de kloof te groot wordt tussen wat de ziekenhuiszorg aanbiedt en de noden van de populatie. … Dus wij zijn nu bezig een overaanbod te creëren, bijvoorbeeld inzake interventionele cardiologie. Dus de cath labs. Terwijl daar eigenlijk geen nood aan is. Er zijn geen wachtlijsten. Er zijn voldoende centra, denk ik. En toch creëert het systeem extra cath labs."

Lack of division of tasks between acute hospitals: inefficient and a threat for quality of patient care

The overcapacity and lack of division of tasks between hospitals reinforce the competitive climate. As a result, there is a (too) broad service offer in many Belgian hospitals. Moreover, in (the rare) case legal restrictions exist, these were negotiated such that they favour most hospitals (e.g. cardiac pathology) or they are simply bypassed (Positron Emission Tomography (PET)):

- The volume thresholds for cardiac pathology are lower than recommended based on scientific evidence.[81, 82]
- The programming of PET-scanners had only a limited impact because hospitals bypass the limitation by using the nomenclature code 'double tomography'. In 2007, 18 500 official PET-scans and 20 000 unofficial reimbursements were registered.[83] Some non-recognised PET-scanners seem to be always operational.[84]

"Waar inderdaad louter het gezond boerenverstand zou zeggen: ola, je moet hier toch een beetje structuur inbrengen. … Je kunt daar toch wel wat incentives en structuren inbrengen. Dat is een 1ste politieke vraag: wil men dat doen? Dat gaat financieel natuurlijk belangrijke consequenties hebben. Want de 1ste consequentie gaat zijn dat we in sommige ziekenhuizen bepaalde dingen gewoon knal niet meer zullen financieren. Het lijkt een beetje logisch. En de bevolking denkt daar misschien aan. In de praktijk doen we dat dus niet, hé. We financieren alles gewoon, om het even waar. Op een paar kleine uitzonderingen na die geprogrammeerd zijn, maar dan doet men dat maar in het zwart. En gebruiken ze andere financieringsnummertjes. Dus men vindt altijd wel een creatieve oplossing, want zo zijn wij, Belgen, hé."

It should be noted that also university hospitals fail to make collaboration agreements. All seven university hospitals (geographically not well-balanced) claim, in most cases, the right to supply highly specialised sub-disciplines while epidemiological data illustrate that it is probably more appropriate to concentrate the activities in a limited number of services or even to collaborate on an international level (e.g. hadron therapy[85]).

This situation of *'We pay for everything everywhere'* is, however, no longer tenable. The broad service offer is perceived as inefficient and a major threat to the sustainability of our healthcare system. The dispersion of highly specialised services is, after all, bearing a double efficiency risk: when looked at from a regional or national perspective, one often must conclude to a more or less pronounced phenomenon of overinvestment, which, in turn, almost inevitably results in a certain degree of overutilisation. Moreover, the fragmentation of specialised services may also threaten the quality of patient care. Although volume alone is insufficient to achieve high quality of care, it has been illustrated before[86, 87] that, especially for rare and complex procedures (e.g. surgical procedures upper gastrointestinal cancer[86]), a critical mass of patients is recommended. Nevertheless, in 2011 446 oesophagectomies were performed in 64 hospitals with a median of four operations per year. Also pancreatic resections (729 interventions in 2011) were dispersed over 91 hospitals, again resulting in a median volume of four.[69]

Several stakeholders also pointed out that the current legislation does not always help to revert this dispersion of specialised services. The intertwined nature of the recognition norms were, for instance, named as an important barrier for such reforms. Hospitals will, for example, be reluctant to give up their paediatric ward since this would imply that they can no longer perform simple surgery (e.g. circumcisions) on children. Surgery on children, after all, requires the presence of a paediatrician.

Medical specialists in hospitals: specialised in too narrow sub-disciplines?

The dispersion of specialised services across hospitals is also connected to the unilateral trend towards sub-specialisation within the medical profession. Some stakeholders see this trend as an important obstacle to meet the future care requirements of the population. The increasing number of patients with multiple chronic conditions will require an increasing number of 'generalist physicians' (e.g. internal medicine, geriatricians or psychiatrists). For these disciplines shortages are already reported.[88] As such, specific policy measures such as the recalibration of the nomenclature (see Chapter 9) will be required to make these disciplines more attractive.

> *"Eh bien, oui, probablement. En même temps, on a parfois un manque de généralistes dans les hôpitaux. En médecine interne, il n'y a plus d'internistes généraux et ça pose des problèmes aussi en termes de suivi, en termes de qualité, on passe parfois à côté de choses parce que chacun est vraiment cloisonné dans sa sous-spécialité et ne voit pas le reste et finalement, il faut prendre l'être humain dans sa globalité et dans toute sa problématique, pas seulement le petit problème spécifique. Ca va sans doute se poursuivre, ça devient trop compliqué et trop complexe de tout connaître, mais ça génère un manque d'autre part."*

4.2.2 Paradox between overcapacity of acute hospital beds and gaps in the service offer elsewhere

Primary care services dominated by small group or single-handed GP practices

Despite the broadly acknowledged overcapacity of acute-care inpatient services, **many gaps exist, especially downstream the hospital.** The relatively long LOS in acute hospital beds could be further shortened if alternatives were created to accommodate post-acute services for patients that might not be ready for home care yet, but who do no longer need specialist medical input. It is believed that the need for such alternatives will only increase with the ageing population and the increasing prevalence of chronic conditions.

"Ce qui me paraît très clair, c'est que, pour la question de la prise en charge des patients chroniques, là, le paysage hospitalier en Belgique n'est pas adapté. Ça me paraît assez clair. On a encore fait récemment les constats qu'effectivement, il n'y avait pas suffisamment de structures de prise en charge en aval de l'hôpital pour prendre en charge ces personnes. Donc, on pense aux soins à domicile, mais aussi à certains centres de convalescence ou ce genre de choses. Ce qui, à mon avis, explique des durées de séjours encore relativement importantes. Et, on le voit d'ailleurs dans les statistiques du SPF Santé publique dans ce qu'on appelle les LG, les lits de gériatrie où, là, ben oui, les durées de séjour sont relativement importantes. Et même, visiblement, par rapport à la demande, qu'on manquerait de lits, que le nombre de lits agréés, on va dire par rapport au nombre de lits justifiés, serait insuffisant pour la partie gériatrie."

The **primary care services are relatively ill-prepared for more integrated care developments**. The majority of GPs are still self-employed working in single practices or small group practices (70%).[64, 89] Stakeholders pointed out several bottlenecks in the current GP-practices: GPs are a very heterogeneous group in terms of skills, infrastructure, organisation, collaboration culture (e.g. some fear to lose autonomy and therefore are reluctant to make service agreements with hospitals). A widely-cited problem during the stakeholder interviews is the lack of systematic electronic patient records. While some GPs have implemented electronic patient records, others do not even manage to organise their paper-based medical records. This results in a duplication of efforts but also threatens the continuity of patient care. Some state that there are too few obligations/incentives to work with the 'Global Medical Records' (GMD-DMG) and GMD-DMG plus to make them successful. The GMD-DMG plus, for instance, contains a 'prevention module' for patients 45 years or older. GPs can tick the boxes (e.g. alcohol use, family history of cardiovascular diseases) for which they receive a lump sum per GMD-plus patient. However, there is no requirement to submit data to follow up process or outcome indicators.

"Maar er zijn huisartsen die gewoon geen dossier hebben. Ik hoor dat van de patiënten, die zeggen… Vorig jaar hebben we dat en dat en dat afgesproken. Dat staat in de brief. Is dat niet gebeurd? Nee. Maar je bent toch geweest bij uw huisarts? Want ja, als je niet geweest bent, kan hij het ook niet gedaan hebben. Ja, ik kom er om de 3 maanden. Heeft die dat niet gezegd dat dat en dat moet gebeuren? Ja, maar dokter, die heeft daar zo'n stapel op zijn bureau liggen en elke keer zegt die: ik zal het tegen de volgende keer eens uitzoeken. En de volgende keer is dat terug zo. Ja, dat is geen organisatie natuurlijk. Nu, dat [malfunctioneren dat ik beschrijf] is 1 groep. Er zijn er andere [huisartsenpraktijken] waar het prima bij loopt, hé. Vooral de jongeren, die hebben een mooi uitgewerkt elektronisch dossier. We krijgen daar [als specialist] een pico bello verwijsbrief van. Dat is allemaal tot in de puntjes uitgevoerd wat je hebt voorgesteld. Dat is wat ik bedoel met die heterogeniteit. De patient weet eigenlijk niet bij wie hij terechtkomt. Dus er is eigenlijk veel te weinig responsabilisering."

Home-nursing services are offered by larger 'salaried nurses' organisations as well as by smaller 'self-employed' groups.[89, 90] Consequently, with such a large and diverse number of interlocutors, setting up a dynamic discharge policy with sufficient guarantees of quality and continuity of care is everything but straightforward for a hospital. The pending shortage of GPs[35] in the coming years is not likely to make things easier. Yet, some small-scale examples such as the multidisciplinary primary care practices with task delegation between disciplines[64, 91] or the multidisciplinary palliative home care services[92] could serve as a source of inspiration.

4.2.3 Hospital networks as they are currently conceived do not solve the problem

Hospitals are more and more part of one or more 'hospital networks'. Interviewees are critical about the current networks. They claim that the **motives of hospitals to enter into networks are seldom driven by quality of care**. Hospitals decide to participate in networks because of opportunistic reasons (e.g. it makes it possible to develop a more elaborated IT platform; it helps to maintain their share of patients via referrals; it is required to have residents in training in their hospitals; to bypass minimum thresholds of caseloads that are obliged by law; prestige and 'public relations'). It was indicated by some stakeholders that the creation of hospital networks will not necessarily resolve the 'fragmented nature of the hospital landscape'. Instead of working together within these geographically limited areas, hospitals started to form networks based on the traditional pillars. As a consequence, when there were two hospitals in one city they

(often) joined different networks and did not necessarily slow down the so-called 'rat-race'.

Stakeholders criticised that despite the legal obligations to form networks in some cases (e.g. cardiac pathology[81]) the current hospital payment system does not really encourage hospital networks that use referral and back referral intensively. Hospitals are reluctant to refer and back-refer. There is a strong incentive to keep their patients since they fear to lose money if patients are (back-) referred. Also the concept of geographically limited care regions ('zorgbekken'/'basin de soins') launched under the legislature of Minister Demotte aimed to form networks but failed to rationalise the hospital capacity because of too little financial guarantees for the hospitals (collaboration and service agreements were hampered by the fear to lose money). The hospital sector clearly acknowledges the need for task distribution and even the concentration of specific specialised care. However, rather than imposing a top-down approach they demand that such a model emerges bottom-up building on existing initiatives. Nevertheless, others are (given the past evolutions and failures) sceptical that such a bottom-up approach will work. Therefore, they advocate that the formation of networks comes with stricter legal and financial forms of collaboration, however, without extinguishing the healthy competition and entrepreneurship elements.

> *"Bon, réseau parce qu'on veut avoir sa filière, et maintenir sa filière … Parce que les réseaux je ne sais pas à quoi vous faites référence, mais alors le réseau Santé Louvain, c'est un réseau d'institutions qui relève un peu de l'UCL et dont le principal ciment, si je puis dire, c'est la délivrance des stages. Les maîtres de stage appartiennent aux universités, les hôpitaux sont tous intéressés d'avoir des stagiaires, des assistants, or c'est l'université qui peut l'octroyer, donc ça c'est un réseau qui tient parce qu'il y a un intérêt. On a envie d'être dans le réseau, d'avoir des assistants. Car s'il n'y a pas d'assistants, on n'a pas les médecins, et cætera quoi. Et donc, là, vous avez l'ULB, l'UCL, Liège, chacun a son réseau de maîtres de stage et d'hôpitaux avec qui ils ont des liens de type enseignement, mais, évidemment, aussi c'est de la main-d'œuvre intéressante. Sinon, à part ça, non, à part ça, c'est des partenariats qu'ils font pour des raisons opportunistes d'agréments, ou alors, pour des raisons de, comment dire… consolider la filière."*

Three different legal forms of collaboration between hospitals:[10]

Hospital group ('groepering van ziekenhuizen'/'le groupement d'hôpitaux'). Collaboration between hospitals (maximum distance of 25 km between collaborating hospitals) with agreements about task distribution and complementarity on the level of services, disciplines and equipment. The hospital groups may not result in monodiscipline hospital sites (with the exception of geriatric- and Sp[h]-services). Hospitals of the group should achieve efficient task distribution to obtain complementarity.

Hospital association ('ziekenhuisassociatie'/'l'association d'hôpitaux'). Collaboration between two or more hospitals with the joint exploitation of one or more care programmes/hospital departments/hospital functions/ hospital units/(medico-)technical departments. The association agreement contains a detailed description of the activities that are run by the association and to which catchment area (population) this applies. This form of collaboration is of interest when the activity volume determines quality of care and/or recognition.

Hospital mergers ('fusie van ziekenhuizen'/'la fusion d'hôpitaux'). This includes the merging of two or more hospitals (maximum distance of 35 km between hospitals that merge) under one single administrator with a single 'recognition'. The legislation contains rules about the distribution of different hospital services and functions on the different hospital sites.

h Rehabilitation and long-term hospital services.

4.3 Suggested solution elements from stakeholder consultations and literature

The future hospital landscape will have to find a balance between centralisation of specialised high-tech services, a general offer of basic hospital care in a reduced number of hospital beds as well as a care offer for elderly and chronically ill in the proximity of the patients. In addition, the hospital of the future will be more and more part of (integrated care) networks.

4.3.1 Redesigning the landscape, with a service offer tailored to population needs

Reform goals: quality of care, reduction & conversion of acute hospital capacity and more integrated care

A first goal of a reform should first and foremost be the **improvement of quality of patient care**. The reduction of the dispersion of services for patients with rare and complex conditions aims to improve quality of care for these patients groups. Centralisation of specialised services is not only a means to provide skilled and experienced physicians but it is also required to enable expertise and specialist input from the entire multidisciplinary team.[69]

> *"Il faudra faire plus coercitif, ce n'est pas que la diminution quantitative. Il y a aussi la réorganisation qualitative. Quand on voit qu'il y a 89 hôpitaux qui opèrent du cancer du sein, quand on voit qu'il y a une cinquantaine d'hôpitaux qui opèrent du cancer de l'œsophage, alors que le dernier rapport du KCE a montré que trois ou quatre suffiraient, etc. Tout va dans ce sens-là."*

A second goal is the (gradual) **reduction of the capacity of acute hospital beds** as well as the **reconversion in alternative services**. The reduction of the number of acute hospital capacity (sites, departments and beds) is required to free resources to develop alternative services that have the objective to prevent inappropriate admissions in acute hospital beds or in residential care for the elderly. The ageing of the population and the increasing prevalence of chronic diseases will require this shift in the services offer. Alternatives could be developed to help solving transitional situations (e.g. post-acute services) and could be less expensive than institutionalisation or unnecessary occupation of acute-care hospital beds. The savings from a reduction in the capacity of acute hospital beds should be reinvested in the identified gaps in the services offer. Examples are day-care centres, outreaching care by advanced practice nurses, respite care, social support at home, service flats, kangaroo-homes and other intergenerational solutions (mixed neighbourhoods) and telematics support.[64]

Finally, the redesign of the healthcare landscape should be conducted within the larger context of a regional strategic care organisation plan encompassing all levels and aspects of the cure, care and welfare sector, leading to a much more **integrated care system** where the services are provided to the patient in the least complex environment that is clinically appropriate.[64] The stakeholders advocating a reduction in hospital capacity stressed that linear reductions in the hospital services are not desirable. They indicate that this reform should happen together with **regional and geographical care planning.** The necessity to plan care on the basis of population needs of well-defined geographical areas holds for hospitals as well as for primary care. The primary care provisions after all, are linked to small, circumscribed geographical entities. It has been shown in the KCE position paper on chronic care[64] that an organisation in non-overlapping, hierarchical 'care areas'[i] is key to efficient care integration.

It is stressed by the stakeholders that the objective is not to limit the choice of the patient or the referring physician, nor, as a corollary, to restrain completely any form of initiative and competition among the hospitals, but rather to design a public health framework within which the actors can deploy their services offer.

[i] In the framework of this study, we will use the neutral term 'care area' ('zorgzone'/'zone de soins') for the geographical entities that will need to be defined.

Governance structure

A governance structure with a clear mandate at the level of geographically care areas is required. This governance structure has to play the role of **purchaser of health services** for the population in the care area. This role of purchaser could be given to public authorities, to health insurers or to hospital networks.

In general, stakeholders do not expect hospital networks to take up this role of purchaser in a way that puts quality of care as their top priority (see section 4.2.3). Also in European purchasing models hospital networks do not play a purchasing role.[93]

Providing an overview of existing purchasing models in Europe or beyond is out of scope of this report. We refer the interested reader to two publications of the European Observatory on Health Systems and Policies on purchasing and stewardship in healthcare.[94], [93]

Purchasing can be defined as "the process by which pooled funds are paid to providers in order to deliver a specified or unspecified set of health interventions".[95] The government entrusts some stakeholders (for example health authorities, regional governments, insurers etc.) to purchase healthcare services on its behalf for the population and provides public funds.[34] As the government does not have complete information, for example about the allocation of funds by purchasers, exercising leadership or regulation are important in purchasing.[94]

This stewardship role of steering the purchaser and the purchasing role itself are very diverse across countries. Each health system has evolved over a long period of time and has its own type of government (decentralised or centralised), and clinical and administrative arrangements.[94] Therefore, any application in practice is highly context specific. For example, the Netherlands has placed health insurers in the driving seat for many aspects of healthcare payments and provision. The Dutch health system governance structure has moved towards a system of competing insurers with a purchasing market that allows insurers some degree of negotiation on providers' volumes, prices and quality of services. A risk equalisation scheme was introduced to compensate for demand and supply side differences in health insurers' expenditures. Providers compete for contracts with insurers through attractive care arrangements.[34] Also in the Belgian health system, sickness funds could play the role of purchaser. However, despite almost 20 years of financial responsibility[96], the legislator as well as the sickness funds have hardly taken any initiative in active strategic purchasing.

Foreign examples

Most western countries are redesigning (or planning to redesign) their healthcare system to meet the future challenges (e.g. increasing prevalence of chronic conditions and multimorbidity, technological evolutions). These reforms often aim to find a better balance between the concentration of highly-specialised services and proximity of basic care. In the Netherlands, for instance, the hospital landscape is reshaped via a double movement. On one hand there is a dispersion into community health centres of a substantial part of the care that currently still is provided in a formal intramural setting. On the other hand there is a concentration of the remaining hospital capacity into a smaller number of larger structures, with the aim of gaining on quality and efficiency. Optimal results cannot be attained if one of the two movements fails to reach sufficient momentum.[97]

We describe the example of a reform that has recently been introduced in France more in detail (see text box) since this is the international example that comes closest to what could be envisaged in Belgium. Healthcare services are being reformed on the basis of strategic health plans in a broad medico-social framework based on population needs. This reform is operationalised via strategic planning, based on population needs at the level of 26 (metropolitan) regions.

The methodology can build on previous Belgian study work

Several Belgian initiatives in other domains or developed for very specific purposes or studies can be used as inspiration to develop a robust methodology to calculate the service offer based on a set of parameters including epidemiological data about population needs, geographical accessibility, the degree of medical emergency of the required care (i.e. some services require proximity since the care should be promptly available for services such as stroke units and cath labs while for elective care, from a medical point of view, proximity is less important), etc. Examples on which such methodology can be based are:

- The methodology used within the framework of the financial responsibility of sickness funds: a needs-adjusted payment model (rather than a health-based payment model) since the very elaborate

list of risk adjusters includes both variables that are directly related to health (e.g. diagnosis groups) as well as socioeconomic variables (e.g. unemployment status) and variables related to benefit design and geographical location.[96]

- The use of spatial analysis by means of 'geographical information systems' (GIS) and other related statistical techniques to uncover and map socio-spatial disparities in healthcare accessibility. Two recent examples are a study evaluating the spatial distribution of shortage areas of GPs[98] and the geographical accessibility of emergency care transport with 15 minutes[99].

The Regional Public Health Organisation Programme in France

- Why a reform? Since 1996 with the introduction of the Regional Hospital Agencies (Agences Régionales de l'hospitalisation (ARH)), responsibilities such as the hospital budget allocation and authorisation of services, shifted from the state towards the regions. The ARH, however, co-existed besides a variety of regional bodies with conflicting competencies (e.g. social and long-term care) and were unable to reverse the excessive/expensive use of hospitals as universal care providers.[100]
- Regional Health Agencies (Agences Régionales de Santé (ARS)) were created in 2010 to replace the ARH. Cutting across the traditional boundaries, the ARS are responsible for ensuring that healthcare provision meets the needs of the population in improving articulation between ambulatory and hospital sectors and health and social care sector services, while respecting national health expenditure objectives.[101] It should be noted that several plans co-exist within the regional healthcare plan (Schémas Régionaux d'Organisation des Soins), such as prevention programmes and the regional hospital and outpatient care programme, and that the ARS have no responsibility for purchasing primary care or for managing the budgets for ambulatory care delivery, but only aim to redefine the organisation of ambulatory care in articulation with the general regional health plan.[100]
- Regional health plans based on population needs. Every five years a strategic plan aims to tailor healthcare delivery to local needs (in contrast to the previous national planning norms) by setting out overall strategic goals for healthcare delivery and by defining priorities, objectives and targets, including quantitative targets and the distribution of local healthcare facilities. Population health needs are estimated, based on the analysis of regional healthcare utilisation and mortality/morbidity data, comparisons across regions to identify over/undercapacity and estimates by experts (making use of international available epidemiological data) about future trends in demand and technological change.[101]
- Governance structure and articulation between state and regional levels. The Ministry of Health has a stewardship role, establishing a catalogue of health services that the regions must incorporate in their plans based on a national needs assessment and (sometimes politically driven) priorities. The catalogue lists services in major areas (e.g. general medicine, surgery, palliative care), care of defined population groups (e.g. older people, children and adolescents) and care for selected conditions (e.g. chronic kidney failure and cancer). The ARS are autonomous bodies (with its director appointed by the Ministry of Health) with extensive autonomy regarding the management and capacity planning in the region. The state does not directly communicate national policies to the ARS. These national policies are first approved by a National Council for the Governance of Regional Health Agencies grouping together the representatives of the state and regional levels, which passes then orders on to the ARS.[101]

- Contracting hospitals. The ultimate aim of the reform is that the ARS evolve towards responsible purchasers contracting with individual hospitals rather than passively paying for services.[100] The target contracts (spanning mostly 3-5 years) define for each hospital the responsibilities and volume thresholds of the services to be provided. The contracts also require an evaluation of existing capacity and service volumes at least 14 months before the contract expires. Hospitals can be penalised when they do not fulfil these criteria by a financial penalty (up to 1% of total revenue) or suspension of the authorisation of the services concerned. Hospital federations criticise that contracts limit the flexibility of hospitals to respond to changes in demand (e.g. closure neighbouring hospital).[101]
- Hospital networks. New legal entities called 'local hospital communities' (Communités Hospitalières de Territories (CHT)) were put in place to enable the regrouping of a range of small and large scale hospitals on the basis of the complementarity of their competencies. The underlying idea is to concentrate complex surgical interventions in high-volume hospitals and transfer less complex medical and medico-social care to small local hospitals.[100]

4.3.2 Community hospital services in the proximity of the patients: functional networks

In contrast with the highly specialised services (see reference centres in section 4.3.3), stakeholders suggest that a broad range of services should continue to be offered in the proximity of the patients. This will require **different functions for and typologies of hospitals as well as investments in primary care services**. Various theoretical or business models can inspire hospital management and policymakers to give shape to these reforms. These models try to classify care into several types, according to its characteristics in terms of degree of urgency, standardisation, complexity, number/duration of the episodes, diagnostic/curative/palliative/preventive/… intent, etc. Christensen et al. (2009)[102], for instance, proposed to organise elective standardised care according to a 'value-adding process' model while non-elective complex care requires a 'solution-shop model'. Lillrank et al. (2010)[103] define seven different models. Six models can, in a sense, be seen as a refinement of Christensen's model while the 7th model focuses on 'prevention'. The solution shops of Christensens are divided in 'emergency care' and 'project-based care' (i.e. care that cannot be standardised). The value-adding processes are divided in 'one visit care'; 'elective care'; 'cure-oriented care' and 'chronic care'.

It is clear that not all types of care should be provided by one organisation. In practice, hospitals will have to form **functional networks** in their geographical area to ensure all the care that is required is actually provided, at the right time, in function of the needs of the population, and guided by the overall system goals set out at the highest relevant governance level.

> *"Maar als er ergens winst te boeken is, puur budgettair, want het zal nodig zijn, dan is het op planning: betere organisatie, betere stroomlijning, aflijning van uw doelgroepen en voorspelbare trajecten maken met repetitieve, gestandaardiseerde handelingen, daar waar het aangewezen is voor de controle. … Ik denk dat we naar een soort masterplan moeten. Een masterplan voor de zorg, eventueel per gemeenschap, of weet ik wat. Per regio of per provincie. Ik zie dat men dat in Limburg nu aan het doen is. Ik vind dat een heel goede oefening. Kijkende naar de toekomst met prognoses van: wat zal deze bevolking epidemiologisch nodig hebben. En wat is dan het beste antwoord daarop? En daar kan enorm bespaard worden."*

This **geographical and population-driven rationale** is radically different from the mostly opportunistic, production-driven motives behind the 'hospital networks' that emerged during the last decade. Stakeholders point out that when building 'hospital or transmural networks' the following should be taken into account:

- Proximity is key for emergency departments (ED) and for specific services (e.g. stroke, maternity, cath lab, etc.) However, given the high density of hospital sites in Belgium, not every hospital (let alone each hospital site) should have an ED (and a stroke unit, cath lab, etc.). It is important that the ED capacity is geographically well-balanced and that arrangements are made with GPs about the organisation of 'out-of-office GP practices'.[104] Changes in legislation will be needed to convince hospitals to turn down EDs (currently, having an ED is a prerequisite for running e.g. a neurosurgery unit). Equally important is that hospitals conclude balanced service level agreements about referrals and back-referrals, in order not to penalise hospitals without

an ED. Emergency departments are, after all, still an entrance point of almost half of the patients.[105] Hospitals are therefore reluctant to shut-down their emergency department by fear of being 'downgraded to a nursing home'.

"Natuurlijk moeten wij een dienst spoedgevallen hebben. Maar is het logisch dat die nog een spoedgevallendienst heeft? Dus… Maar dan kom je tot de kern van de zaak. Als je dat allemaal rationeel gaat bekijken, ga je een aantal diensten zeggen van: eigenlijk kan dat niet. Maar het werkt niet rationeel, hé. … Maar dat is een heel moeilijk probleem, omdat dat dan weer met de huisartsenposten te maken heeft, met de huisartsenwachtdiensten. Een heel complex probleem. En als je een spoedgevallendienst zou sluiten… 45% van de aanvoer van patiënten komt via spoedgevallen, hé. Dus als je een spoedgevallendienst sluit, 2 jaar later heb je een oud-peekeshuis, hé, om het zo te zeggen. Neurochirurgie. Je moet, om neurochirurgie te mogen doen, ook een dienst spoedgevallen hebben. Ik heb daarnet gezegd: er zijn veel te veel spoedgevallendiensten. Ah, in Antwerpen, 4 spoedgevallendiensten. Ah, je doet er 1 toe. Die dienst neurochirurgie moet dus ook toe."

- More standardisation of the care processes (through evidence-based guidelines, protocols, care pathways, etc.) is possible, and many of the standardised and elective care processes can be shifted to day-care activities and ambulatory care.[106] This shift towards ambulatory care will also be made possible by technological evolutions (e.g. less invasive surgery) and new models of care (e.g. outreaching care offering specialised services in the home environment of the patient).

  "Er zijn binnen het ziekenhuis een aantal gespecialiseerde verpleegkundigen die in plaats van de patient naar het ziekenhuis te laten komen naar de patiënt thuisgaan. Voor chemotherapie bijvoorbeeld. Dus de patiënt komt telkens naar de dagzaal voor zijn kuur chemotherapie. En dat is dan een miniforfait of een maxiforfait. Ja, maar als de patiënt een centrale katheter heeft, dan kunnen misschien een deel van de chemotherapie-behandelingen bij de patiënt thuis gegeven worden, mits dat de verpleegkundige voor de chemotherapie naar die patiënt gaat. Er zijn patiënten die in het ziekenhuis liggen omdat ze langdurige behandelingen nodig hebben voor doorligwonden. Dat is anderhalf uur per dag dat ze met die patiënt bezig zijn. En voor de rest van de dag niet meer. Je doet die behandeling anderhalf uur per dag. Punt, bij die patiënt. En dus met andere woorden, het concept van outreach, dat je naar de patiënt toegaat met een gespecialiseerd team, dat dan terug naar het ziekenhuis komt, waardoor dat die patiënt 's nachts niets kost, want die ligt dan gewoon thuis in zijn eigen bed, dat vind ik een goed concept. En dat, denk ik, kan helpen om die residentiële zorg af te bouwen en zo veel mogelijk naar ambulante zorg te gaan."

- The growing burden of chronic diseases will demand a fundamental reform of the organisation of healthcare services in Belgium.[64] After all, our current healthcare system is designed to care for patients facing acute disease episodes. This requires punctual and reactive care. Chronic care is quite different. Chronic care needs to be planned and should be pro-actively oriented towards goals that have been defined in collaboration with the patient and caregivers involved. The care plan needs to rely on the best available evidence, taking into account the multimorbidity of the patient. Rather than being disease-oriented, these goals are to be spelled out in terms of quality of life and functioning in a long-term perspective. The KCE position paper on chronic care states that, in order to realise this, a shift needs to be made from hospital-oriented care towards integrated care.[64] This will require a reinforcement of primary care services, a different role for hospital services (at critical moments hospitals should operate in a continuum with the first line of care), the creation of alternative care settings (e.g. intermediate care services to care for patients during the post-acute care phase, respite care etc.) and the support of informal caregivers.

  "Pour tout ce qui est maladie chronique, il est évident, à mon sens, que le développement de la filière de soins avec des structures extra-muros sera bien plus efficace qu'une proximité d'une porte hospitalière, parce qu'une personne âgée qui a besoin d'une prise en charge hospitalière pour un épisode aigu et qui va peut-être devoir passer par une phase d'hospitalisation à domicile où c'est toujours l'hôpital qui a la main mais avec un retour à domicile puis une prise en charge dans une structure de soins à domicile avec un bon relais de médecine générale, cette filière-là doit effectivement continuer à s'organiser et elle sécurisera beaucoup mieux le patient chronique que le simple fait de dire j'ai un

service d'urgence à 2 km de chez moi et si ça ferme, ce service sera à 5 ou 6 km de chez moi. Je pense que ce n'est pas la bonne réponse."

The reinforcement of primary care services will require a shift from the pre-dominantly single-handed GP practices towards multidisciplinary primary care teams. New roles and functions in primary care should be developed to enable the GP to delegate coordination of care for very complex cases and other tasks (such as training of self-management) to other healthcare professionals (e.g. case managers, advanced practice nurses). Stakeholders interviewed in this study stipulate that the final responsibility for care coordination should stay with a physician, preferably a GP (or in some cases a specialist). The development of a uniform electronic patient record is seen as a crucial element in the reform process. Sharing information on the medical history and care plan is, after all, vital to ensure that all partners in the care would take coordinated actions. This development will have to fit hand in gloves with the development of a general IT structure that not only allows the implementation of uniform electronic patient records (accessible for all relevant care providers along the continuum of care) but also the development and implementation of a continuous quality improvement programme for chronic care to render the primary caregivers accountable.

Some of the stakeholders shared this analysis although some were critical about the feasibility of this reform. They stated that the current state of affairs of primary care (see section 4.2.2) does not allow such transformation for a medium long period. Therefore, they advocated to keep the hospital as the centre of the care process (e.g. seen by some as the only way to implement the IT infrastructure that is adapted to the needs of the chronically ill). Others, on the contrary, emphasise that the overcapacity of acute hospital beds should be reduced and that the savings of such an intervention should be re-invested in primary care, home care and intermediate care facilities (e.g. day-care centres, intermediate care facilities). The creation of these alternative facilities will prevent inappropriate hospital admissions and will allow a further reduction of the length of stay in hospitals. Treating patients at the right moment at the right place is expected to result in cost savings. After all, the costs for the hospital facilities of inappropriate admissions and unnecessary long length of stays for non-medical reasons are now included in the BFM. If these admissions can be avoided and the stays shortened by providing cheaper alternatives this would, according to some of the stakeholders, result in an overall cost saving.

"Dus goed, chronische zorg is ook een heel belangrijke zaak…en ik denk dat in de chronische zorg de huisarts de belangrijkste figuur moet worden en zal worden. En die huisarts… …moet nauw betrokken worden in de werking van het ziekenhuis. Nu, elk ziekenhuis heeft dat wel, hoor, een huisartsenoverlegcomité. Dat is niet altijd gemakkelijk. Ook informatica speelt daar een heel belangrijke rol, dat je in elkaars dossiers zou kunnen kijken. Maar ik spreek wel, dan moet het in beide richtingen gaan. Huisartsen kunnen al lang, heel lang, van thuis uit in het dossier van de patiënten in het ziekenhuis kijken. En huisartsen kunnen dus in ons systeem kijken. Maar we kunnen dat niet omgekeerd doen. Dat is heel frustrerend. Ook heel tijdrovend. Want ik heb hier net nog iets geschreven. Ik moet die huisarts van die madam zoeken omdat ik informatie nodig heb. Dus in chronische zorg is de huisarts de sleutelfiguur. Daar moet IT zijn. Men is daar volop mee bezig met het eHealthplatform. Nu, dat gaat allemaal veel langzamer dan dat wij graag zouden hebben."

4.3.3 Concentration of highly-specialised services in reference centres

Drivers for concentration of highly-specialised services

Concentration of highly-specialised services is a widespread policy in many western countries (e.g. the Netherlands[107], UK[108]) with quality of care and economies of scale as the most important arguments. This trend towards concentration of highly-specialised services is grounded on the early work of Luft[109], who showed that in-hospital mortality was lower in hospitals where a selection of surgical procedures was performed more frequently. This resulted in the conclusion that "regardless of the explanation, the data support the value of regionalisation for certain interventions".

Although the literature published after this landmark publication does not allow to settle the debate in an unequivocal way, there is an array of insights and evidence all pointing in the same direction. Especially in the case of rare and complex cancers, there is a compelling pressure, both from the side of patient organisations and from European authorities, to concentrate their management in reference centres, embedded in a 'shared care' network

model.[69] The interviewed stakeholders mentioned the following drivers for concentration of specialised services:

- A vast majority of stakeholders admit that the well-documented extremely low caseloads for many specialised services represent a substantial risk that not all patients would get access to high-quality state-of-the-art care. Whenever it has been studied in Belgium,[87] an association between volume and outcome has been confirmed.[87, 110, 111] Centralisation is not only a means to get skilled and experienced physicians but it is also required to enable expertise and specialist input from the entire multidisciplinary team throughout the whole care continuum.

  "Slokdarmtumor, dat is heel gespecialiseerd. Dat gaat niet alleen over die arts, hé. Dat gaat vooral over de equipe. Want die slokdarmpatiënt met zijn kanker aan de slokdarm, die kan perfect geopereerd zijn, maar die heeft daar heel speciale verpleegkundige hulp voor nodig. Die heeft voedingsdeskundigen nodig. En dat heeft niet elk ziekenhuis. Dat is niet mogelijk. … Ik heb dat in het begin van het verhaal ook gezegd, hé: je gaat moeten hypergespecialiseerde zorg beperken in een aantal ziekenhuizen."

- The increasing sub-specialisation in medicine (e.g. general orthopaedic surgeons are more and more replaced by hand, knee, hip surgeons) also forces hospitals to concentrate highly-specialised services. Sub-specialisation, after all, is only possible when there is a sufficient caseload per physician. Concentration of services into larger units will also result in a more 'interesting' case-mix and in a sharing of out-off-hours duties among more colleagues, both contributing to a better work-life balance, an advantage which is increasingly valued by the younger generations of physicians.

  "De evolutie naar subspecialisatie neigt naar een tendens naar concentratie. … Wat is daar het kenmerk van? Het kenmerk is dat je je richt naar een kleinere patiëntengroep. … En dus is concentratie en complementariteit de logische weg. ... Als er niet voldoende volume is, dan gaat uw groep artsen hoe dan ook nooit groot genoeg zijn om zich te kunnen subspecialiseren. … Bovendien is er vervrouwelijking. 62% van de instromende specialisten die net nu op het werkterrein komen, zijn vrouwen. Vroeger was dat 8%. Wat zie je dus gebeuren? Niet alleen omdat dat vrouwen zijn, maar ook omdat het een nieuwe generatie is. Die zegt: ja, wij willen niet meer met 3 mannen of vrouwen een dienst uitbaten en dan om de 3 weken van wacht zijn. Wij willen met grotere groepen werken. Dus als je zegt: tendens naar superspecialisatie en de tendens of de wens van artsen om comfortabeler privé en werk te combineren, dan zeg je nog eens versterkend dat we naar concentratie gaan. We gaan naar grotere groepen die onder mekaar het werk verdelen en dus nog verder".

- Several stakeholders are confident that in a small, densely populated country as Belgium a reduction in the hospital capacity can be realised without jeopardizing a reasonable degree of geographical accessibility. They argue that people have no difficulties to make weekly journeys of 15-20 km for groceries or leisure activities but at the other hand expect a complete service offer in their local hospital. This situation is no longer sustainable and will require both explanation of the healthcare sector (e.g. quality of care argument) as well as a culture shift of the population.

  "On peut très bien dire que la moitié des économies, on la garde pour faire autre chose. On la réinvestit éventuellement dans le système à domicile, mais je pense qu'on ne fera pas d'économies globales... Simplement, on peut trouver de l'argent à un autre endroit pour le réinvestir dans d'autres innovations, technologies, etcetera. Mais, au passage, on peut sans doute faire quelques économies de système, mais qui doivent être à la marge."

  "On a une tradition en Belgique d'accessibilité proche. Quand on dit qu'il va falloir faire 20 km pour aller à l'hôpital, c'est un peu un cataclysme, une révolution, etc. Donc, voilà, il faut un peut tenir compte de cet aspect culturel-là. Evidemment dans d'autres pays, en Australie, aux Etats-Unis, c'est 200 km qu'on fait, ça ne choque personne. Donc, là, il y a cet aspect-là des choses."

- Stakeholders consider the almost unrestrained investment policy of Belgian hospitals and the coinciding fragmentation of the available resources as unsustainable. To control macro-level expenditure, the choice for concentration of highly-specialised services that require serious investments (marked down on much shorter times than before), based on more objective grounds, is considered as a must.

"Aangezien dat de omslag per patiënt bij kleinere patiëntengroepen, dan is het evident ook dat de kapitaalinvestering dat je moet doen veel hoger is ook. Dus wat is het fenomeen? Veel van die supertechnologieën en superspecialisaties en supermaterialen en superimplantaten… Ja, dat kost allemaal veel geld. Bovendien wordt het afgeschreven op een veel kortere termijn. … Dus als je dat dan omslaat per patiënt… Ja, dat is een grote kost per patiënt. Je kunt niet op elke hoek van de straat alles van die evoluerende technologie en fragmentering aanbieden. Dat is onhoudbaar. … Hoe kunnen we dat verder blijven bolwerken? Dan moet je natuurlijk zien: wat is een optimale spreiding van het aanbod? En moet je vaststellen dat vandaag mensen verwend zijn, dat ze eigenlijk op heel dichte afstand een uitgebreid comfort en aanbod hebben."

Prerequisites and modalities for reference centres

The prerequisites and modalities of getting concentration of specialised care in reference centres have been extensively described in the KCE-report on the organisation of rare and complex cancer care.[69] Obviously, the same general concepts and principles can be applied to many other domains of healthcare. Hereafter, we will only briefly enumerate these principles (complemented with stakeholders input) and we refer the reader to the abovementioned study:

- Reference centres should be carefully planned to ensure a service offer that is geographically well balanced. This planning should be part of a general planning strategy, with operational goals that encompass the entire spectrum of healthcare services (e.g. including primary care, specialised ambulatory services, hospital services, residential facilities). A key planning challenge is to obtain good quality data about the type and frequency of demand the care system is confronted with and to map it with the existing supply of services. In Belgium, this type of information is hardly (available or) used to plan the supply of healthcare services in a concerted way. In Flanders, for instance, hospitals have to submit care strategic plans in case they apply for funding of new hospital infrastructure. Yet, these plans are not bundled with other strategic care plans of the same geographical region and risk to be outdated at the time the building constructions for the new hospital infrastructure are started. This planning process should ideally result in operational goals that help to adjust the supply of services per 'geographical region' based on the local care needs, and transcending the traditional 'silos and pillars'. Moreover, being a reference centre should by no means be the exclusive prerogative of academic hospitals. Reference centres have an official recognition for a specific role, for which each hospital could tender, as long as it can meet all specific requirements for this role.

  "Je pense que, clairement, il y a un besoin d'hôpitaux spécialisés, hyperspécialisés, … sans doute, les hôpitaux académiques ont un rôle particulier à jouer dans ce cadre-là. Mais sans doute pas uniquement les hôpitaux académiques, à cause, principalement, de la répartition des hôpitaux."

- Reference centres should be a part of networks where service level agreements between the physicians and centres involved determine the rules about referral and back-referral and patient follow-up (see the regulations on cardiac care networks[81]). Nevertheless, the formation of networks bears the risk that the 'reference centres criteria' are sidestepped. Therefore, it is required to link the minimum volume thresholds to particular sites. Belgian incidence data and international guidelines should be used as input to determine these volume thresholds with some flexibility and autonomy for hospitals to organise these networks, beit within a strict, clear and objectively determined frame of reference.

  "Nee, maar je kunt daar een verplichting van netwerken bijzetten, hé. Dat je zegt van: kijk, dit is het ziekenhuis waar ze er 100 per jaar doen. Dat is duidelijk. Geen gefoefel, bewezen. We gaan daar nog financieren, maar een van de voorwaarden is dat het centrum toegankelijk is voor de verwijzing van alle ziekenhuizen in de buurt. En dat zij ook een samenwerkingsprotocol rond verwijzing en terugverwijzing hebben afgesloten. Heel eenvoudig. Dat werkt. Laat ze onderling maar discussiëren. Als je dat centraal moet gaan doen… Amai, dat gaat wat geven dan, hé. … Je mag die patiënt nog opereren in Zichem-Zussen-Bolder, hé. Dat is gedaan, hé? Het moet wel in die setting zijn."

- Reference centres will require multidisciplinary teams with recognised clinical and technical expertise. For each type of reference centre staffing requirements as well as the specific infrastructure and equipment will have to be determined.[69]
- Concentrating the delivery of services in few hospitals reduces the scope for competition (likely to affect quality). Therefore, it is important that reference centres do not receive a static and lifelong certification. Reference centres have a duty to monitor and report their performance and outcomes, in order to have their status of centre of excellence periodically confirmed. This requires the set-up of a quality assurance system, including the measurement (and in a next phase public reporting) of a set of evidence-based quality indicators.
- Reference centres should receive appropriate financial support so that they can invest in extra (para-) medical expertise and expensive infrastructure. The system of RIZIV-INAMI conventions ('conventies'/'conventions') is a proven formula that could well meet the need in this specific context. Some stakeholders also plead for a selective reimbursement of certain procedures to specifically qualified and recognised specialists/centres which will also stimulate the systematic referral towards reference centres.[69]

  "Si on considère qu'il y a des hôpitaux hyperspécialisés qui ont des cas lourds et des cas complexes, à sévérité plus lourde et vraiment plus complexe, alors on peut se dire aussi qu'on réserve certains traitements à ces hôpitaux-là. Mais, à ce moment-là, ils sont payés dans ces hôpitaux-là et pas dans les autres."
- The centralisation of services might cause financial problems for certain (probably smaller) hospitals. A sufficient run-in period and transition measures should be provided, allowing hospitals to gradually reorient their activities and get budget safeguards to do so. The principle of article 107 that is used to reconvert psychiatric care beds into community-based care alternatives can serve as an example.

  "L'idée que l'on pourrait arriver à forcer les hôpitaux à concentrer des activités, à se départir de certaines activités, à forcer une forme de spécialisation par la difficulté financière, pour moi, d'abord n'est pas un bon système parce que je pense que ça risque d'aboutir quand même à des situations sociales qui pourraient être extrêmement graves à certains endroits car c'est finalement pousser ceux qui ne pourraient pas tenir un certain nombre d'engagements en termes de concentration d'activités, de niveaux de productivité etc., à des situations de faillite potentielle."
- Since long stakeholders from all echelons suggest to reduce the dispersion of highly-specialised services. But the actual practice often keeps going in the opposite direction (e.g. recognition of additional cath labs; the hadron centre), illustrating that in the current governance model, many stakeholders clearly do not walk their talk when it comes to actually discontinuing to offer certain services. However, concentration of services will not only require a culture shift from healthcare professionals, healthcare organisations and the general public, it will also require a strong political support to revert the historical trend. This political support as well as clear decisions will be needed all the more because stakeholders disagree about how to revert this trend (e.g. contracting reference centres based on transparent and objective criteria covering quality and cost with an active role for the sickness funds; auto-regulation where bad performers are expected to disappear when public reporting of outcomes is applied; imposing reference centres by additional norms).

Finally, it is clear that the unintended consequences (e.g. decreased accessibility; difficulty to attract physicians to work in the non-reference centres; hampering holistic care, especially in the case of multi-morbidity; decreased entrepreneurship) that were voiced by some stakeholders should be clearly monitored by policymakers.

Pilot projects: room to experiment with new models of care delivery

The redesigning of the hospital (and healthcare landscape) will require a lengthy reform. It is suggested to start with pilot projects in which hospital activities (and resources) are shifted to primary care, home care and intermediate care services (e.g. in day-care centres, intermediate care facilities) and the savings are shared by all involved parties. A number of alternative scenarios, also putting other actors than the hospital in the driver's seat, or relying on new, mixed structures should be further explored.

A starting point to explore this route that is seen as feasible on a short term are pilot projects regarding the organisation of post-partum care. Stakeholders assessed that in this domain there is much to gain in efficiency (e.g. in 2011 (or nearest year available), the length of stay for normal delivery in Belgium was 4.1 days while the OECD average was 3 days[27]) without loss of quality. Healthcare professionals involved in perinatal care could therefore be engaged in pilot projects in which models of integrated, multidisciplinary perinatal care are tested.[112] This obviously will also require the testing of new payment mechanisms. Local or regional pilot projects could be launched with the aim to shift part of the current hospital-based care activities towards ambulatory care. This will demand clear agreements about the organisation of childbirth and postnatal care (e.g. what are the selection criteria for short hospital stay, who provides follow-up at home, how will continuity of care be guaranteed? etc.). The budget for normal vaginal deliveries (more specifically the BFM payments for justified M-beds for Diagnostic Related Group (DRG) 560 for normal vaginal delivery, the fees of the gynaecologists, paediatricians, general practitioners, midwives etc.) could be isolated and frozen for a number of years. The partners that embark in the integrated care pilot projects are receiving the budget if a number of goals (related to, for example, the number of patients, outcomes, etc.) are reached. This budget could then be used to reorganise the perinatal care in order to make it more efficient (e.g. shorter hospital stay, more follow-up at home, care hotel service, etc.). The gains made could be redistributed among the participating healthcare providers to address other care needs. Additional agreements could be made with sickness funds orprivate health insurers for enhanced coverage of both in- and outpatient care. If the pilot project succeeds, it could be extended to other medical conditions (e.g. including caesarean sections) and healthcare professionals (e.g. midwives, general practitioners).[112]

Key points

- **Although the required hospital capacity needs to be calculated on the basis of data that capture the population needs, there seems to be an overcapacity of acute-care hospital beds while there is insufficient capacity in other domains such as geriatric hospital beds and primary care (e.g. lack of multidisciplinary well-equipped group practices).**
- **This overcapacity and lack of task distribution between hospitals result in inappropriate hospital stays and overproduction, insufficient substitution of hospital activity by outpatient care and a fierce competition between hospitals to attract patients at the expense of their competitors, further stirring up the dispersion of highly-specialised services.**
- **Hospital management acknowledges the need for collaboration and plead for the development of (informal) networks that emerge bottom-up by building on existing collaboration initiatives. Nevertheless, the current hospital networks are based on production and opportunistic driven motives (e.g. to maintain the patient share via referrals or to have residents in training) and have failed to stimulate collaboration in the past in a way that it resulted in a decreased hospital capacity or a concentration of highly-specialised services.**
- **To redesign the hospital landscape, a governance structure with a clear mandate at the level of geographically clear care areas is required. This structure has to plan the supply of services in the care area such that a balance is found between concentration of specialised high-tech services and a general supply of basic hospital care in a reduced number of hospital beds as well as a supply of care for the elderly and chronically ill in the proximity of patients.**
- **Experiments for well-defined (e.g. standardised care with a sound evidence-base) and promising target groups (large potential impact) should be facilitated. The organisation of perinatal care for normal vaginal delivery has been put forward as a self-evident case for such experiments. After all, the care is very standardised and there is a high potential impact (length of stay in Belgium is high compared to OECD average).**
- **Although this reform requires thorough preparatory work, it can build on the methodology used for the financial responsibility of sickness funds and the previously defined care areas in Flanders and Wallonia (i.e. 'zorgregio's'/'zones de soins').**

5 THE BUDGET OF FINANCIAL MEANS

Hospitals receive their revenue from different sources. The two primary sources of public funding are a global budget, called the 'Budget of Financial Means (BFM)', and physician fees (predominantly via a fee-for-service (FFS) scheme). The BFM covers non-medical activities, such as the services for accommodation, accident and emergency services and nursing activities. Although not covered by the hospital budget, we also discuss payments for pharmaceutical specialties in this chapter because (some) stakeholders propose to include them in the hospital budget when the hospital payment system is reformed. The remuneration of physicians is the topic of Chapter 9. Income sources that are also treated in a separate chapter, although some of them are part of the BFM, are payments for day-care activities (Chapter 6); room, fee and other supplements (Chapter 10); payments for quality of patient care (Chapter 12); payments for the specific missions of university hospitals (Chapter 7). An overview of the different components of the BFM is given in section 2.4 in Chapter 2.

First, we describe the current payment modalities for parts B1, B2, B5, B6, B8 and B9 of the BFM (section 5.1) and the payment system for pharmaceutical specialties (section 5.2). All data are given for acute-care hospitals only. Other parts of the BFM are described in separate chapters. Next, the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (sections 5.3 to 5.7) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 5.8) are discussed. We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organisations such as the OECD or the WHO) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, interesting international initiatives or best practices were added for illustration.

5.1 The hospital budget

The hospital budget, or the Budget of Financial Means, for acute-care hospitals amounted to € 6147 million on 1 January 2014. Broadly speaking, we can say that part A covers investment costs, part B operational costs and part C adjusts for payments for part B.[10]

Every year, the sub-budgets for parts B1, B2, B5, B7, B8 and C3 are set at the national level and allocated to individual hospitals according to specific rules for each sub-budget. For the other parts, the calculation of the individual hospital budget comes first and is based on (historical) actual costs or activity levels. In a second step, the national budget is determined as the sum of the individual hospital budgets.[10]

The closed-end national budget is determined prospectively and allocated to hospitals according to specific rules, mostly without any relation to actual costs. There is, however, no obligation to spend sub-budgets on that part of hospital activity for which they are provided.

A budget year runs from 1 July to 30 June. Hospitals know their budget before a new budget year starts. Only at 1 January the budget can be adapted, e.g. to index changes.

5.1.1 The B1 budget for operational costs

The budget for B1 represents 21.21% of the BFM or € 1304 million on 1 January 2014, and covers the common operational costs (the 'hotel costs' of the patient). The hotel costs are grouped into six cost categories: administration, maintenance, laundry, alimentation, heating and general costs.

A closed-end budget determined at the national level is allocated to individual hospitals on the basis of **a point system in eight steps** (see Table 9). The B1 budget is a lump sum budget with hardly any link to actual costs. Some hospitals are excluded from the lump sum budget and receive an amount per bed. These are hospitals that only provide specialised care to children or for tumours or hospitals with an increase/decrease of 25% in the number of recognised beds between the year for which the data are calculated and the year for which the budget is determined.[113]

Moreover, the individual hospital budget for part B1 also depends on the activity of all other hospitals. For example, in step 3, the budget for

maintenance costs depends on the number of m² per bed. An increase in the number of m² in some hospitals reduces the budget share for all other hospitals. The budget for 2013 has been determined on the basis of data for 2011.[10, 12]

Table 9 – Allocation of the B1 budget to individual hospitals in eight steps

Step	Description
1	Hospitals are classified in one of five groups: four groups according to size (i.e. the number of recognised beds) and university hospitals. University hospitals include hospitals with at least 3/4 university beds (see Chapter 7). The B1 budget for each group is equal to the sum of B1 budgets of all hospitals in that group of the preceding year before step 5. • University hospitals • < 200 beds • 200 ≤ beds ≤ 299 • 300 ≤ beds ≤ 449 • ≥ 450 beds
2	The budget per group is allocated to the six categories of hotel costs according to the share of each category in total hotel costs. For example, administration costs amount to 35% of total hotel costs of university hospitals while the percentage for hospitals with 450 beds or more equals 28%.
3	Per group of hospitals (5) and per hotel cost group (6) the budget is allocated to each individual hospital of that group according to distribution rules that are specific for each hotel cost group, such as m², full-time equivalents (FTEs), number of admissions, number of bed-days etc.
4	All sub-budgets are added up per hospital and augmented with the costs of resident staff. A linear reduction is applied in case the sum of all sub-budgets for all hospitals is larger than the national lump sum for B1.
5	The B1 budget per hospital is adjusted to the concept of justified activities (see section 5.1.6) by multiplying it with the ratio of justified days to realised days in 2010.
6	A linear reduction is applied in case the new sum of all sub-budgets for all hospitals is larger than the national lump sum for B1.
7	The national budget for day-care surgery is added and distributed among hospitals according to their share in total day-care surgery activities and in the B1 budget of the previous step.
8	Extra closed-end budgets are granted for insurance premiums for the professional civil liability of physicians, for energy costs, for the social services department, etc.

Source: Durant (2013)[12]

5.1.2 The B2 budget for clinical costs

The largest share of the BFM goes to part B2 which covers clinical services of nursing staff and medical products, except endoscopic materials and materials for viscerosynthesis. In 2014, the budget for B2 was equal to € 2449 million or 39.84% of total BFM.

General principle

The national closed-end budget for B2 is allocated to individual hospitals by dividing the national hospital budget by the total number of B2-points 'earned' by all hospitals. This gives the monetary value of one B2-point. In 2013, this value was equal to € 24 824.16 and the number of points equalled 86 148.

'Justified activities' and the resulting number of 'justified beds' (see section 5.1.6), the number of operating theatres and the availability or not of an emergency unit determine the number of **basic points** a hospital is entitled to. **Supplementary points** can be attributed depending on activity and care profile. This method was gradually introduced between 2002 and 2006.

Points for nursing staff in different nursing units

Calculation of the basic part

The starting point for the basic part is the number of justified beds and the minimal nursing staff ratios that have been set in the past for various types of nursing units.[18] A selection of nursing staff ratios and points can be found in Table 10. For example, for internal medicine (D) and surgery (C) nursing units, the nursing staff ratio is 12 FTE per 30 recognised beds with an occupancy rate of 80%. This corresponds to 0.4 FTE or 1 point per bed or in other words 1 FTE nursing staff is 'worth' 2.5 points.[12] It should be noted that this monetary BFM-value per FTE does not necessarily correspond to the actual staffing costs since the BFM-value depends on the size of the closed macro-level budget and the number of points to be distributed. In addition, these staffing ratios are an instrument to redistribute the closed-end budget across hospitals and should not be confused with mandated minimum safe staffing ratios as applied in other countries.[114, 115]

Table 10 – Nursing staff ratios integrated in the 'basic part' of the B2 budget

Nursing unit	FTE/ justified bed	Points per justified bed	FTE/point
Surgery and internal medicine (C and D)	0.40	1	0.40
Paediatrics (E)	0.43	1	0.43
Maternity (M)	0.58	1.46	0.40
Maternal Intensive Care (MIC)	1.50	3.75	0.40
Neonatal Intensive Care (NIC)	2.50	6.25	0.40
Geriatrics (incl. allied health professionals) (G)	0.56	1.36	0.37
Intensive care (I)	2.00	5	0.40
Psychiatry acute care (A)	0.53	1.33	0.40
Child psychiatry (K)	0.80	2	0.40

Source: Sermeus (2007)[11]; FTE=full-time equivalent

Calculation of the supplementary part

In addition to basic points, supplementary points can be earned for surgery, internal medicine, paediatrics and intensive care units.

For surgery, internal medicine and paediatrics units, hospitals get supplementary points according to their relative position among all hospitals. First, hospitals are ranked according to their nursing profile (see section 5.1.7) and their profile based on surgical and medical interventions in the respective units. Next, hospitals are divided in deciles (groups of 10% of hospitals) in accordance with their ranking and points are allocated. The number of supplementary points per justified bed that can be allocated varies from 0 points for deciles 1 to 3 up to 0.34 points for the highest decile for surgery and internal medicine or to 0.38 points for paediatrics. Hence, for hospitals in the highest decile the budget for B2 is raised by an amount ranging from 34% to 38%. Additional points are distributed according to the severity of treated patients, defined on the basis of a selected list of invasive medical interventions, the percentage of inpatient days in an intensive care unit standardised per APR-DRG (Nperciz; national percentage on intensive care per APR-DRG) and the nursing care profile in C, D, E and C+D intensive care units.[12] For the budget of 1 July 2013, 9560 additional points were added to the 49 822 basic points.

Points for other personnel categories

Table 11 gives the number of points and the way they are calculated for other personnel categories, paid for by the B2-part of the BFM.

Table 11 – Points for other personnel categories in the B2 budget

Personnel category	Points in the budget of 1 July 2013	Calculation method
Nursing management	1274	The number of points depends on the size of the hospital: ten groups according to the number of recognised beds, ranging from less than 150 beds to more than 1200 beds.
Operating theatres	7641	The operating theatre (including the operating theatre of the day-care surgery centre) is paid for on the basis of a standardized operating time for a set of some 2100 surgical interventions. The standardized operating time reflects the need for nursing resources and not the duration of the intervention itself. The standardized operating time determines the number of theatres and per operating theatre 7.5 points are allocated. Hospitals receive extra payments for a permanent operating theatre.[12, 18] Each hospital has a minimum of 15 points or two operating theatres.
Emergency units	3833	The number of points depends on the number of justified beds and can vary from 3 to 5 points per 100 justified beds depending on whether the hospital has an emergency department 'first level aid' or 'specialised aid'. Supplementary points are allocated according to a decile system based on 'urgent medical interventions'.[18] Since 1 July 2013 payment rules for emergency services have changed and are gradually introduced with complete implementation from 2017 onwards. From that date on, the number of patients that is treated in the emergency department (including ambulatory patients) is weighted according to a limited list of additional criteria and used to calculate payments for emergency department services.
Sterilization	1176	10.22% of the points allocated for medical products (see below) in the operating theatres, emergency units and nursing units.

Source: Durant (2013)[12]

Points for medical products

A budget for medical products for nursing units, the emergency unit and operating theatres is assigned according to the number of points for the nursing staff budget for these three units.[18] A detailed description can be found in Durant (2013).[12]

Final steps to calculate the individual hospital budget for part B2

The number of points for personnel (=basic and supplementary points for nursing staff and for personnel categories in Table 11) is corrected to take account of **average labour costs** of a hospital compared to the national average labour costs. Average labour costs, in a specific hospital as well as at the national level, are 'theoretical' labour costs as determined in collective labour agreements. Since 1 July 2013, theoretical labour costs are no longer based on the private or public statute of the hospital but on the statute of the

personnel. Moreover, also since the same date only personnel paid for by the B2-part of the BFM and extra personnel for university beds are taken into account for the theoretical labour costs, ranking first most qualified personnel and personnel with the most seniority. The theoretical labour cost equalled € 65 794 in 2013.

A second correction is applied to guarantee that for each hospital **basic activities are covered**. Basic activities correspond to the minimum nurse staffing norms for the different nursing units. The payment is limited to guarantee a maximum of 75% qualified nursing staff.

In case the sum of all parts and corrections deviates from the national budget for B2, a further correction is applied to equalize both budgets.

Next, the budget is raised by a certain percentage to compensate for **increases in the pay scale because of seniority**. The percentage varied between 0% and 0.78% in the period 2002-2013; for the years 2011 to 2013 it was equal to 0%. This increase of the budget applies to all B-parts of the BFM, except for B6.

A fixed budget (€ 19.3 million) is allocated to hospitals to compensate for the number of patients older than 75 years of age who are single, called **'social correction'**. 25% of the budget is allocated according to the old criteria of the B8-part (see section 5.1.5) and 75% according to the new criteria introduced in 2008. All hospitals are entitled to both parts.

Finally, hospitals get an extra budget for active wound dressings (since 1 January 2008; previously covered by the National Institute for Health and Disability Insurance (RIZIV-INAMI)) and to compensate their personnel for uncomfortable hours (since 1 July 2009).

5.1.3 The B5 budget for the hospital pharmacy

The B5 budget amounted to about € 103 million or 1.68% of the BFM in 2014 and covers part of the operational costs of the hospital pharmacy. The closed-end budget at national level is allocated to individual hospitals according to:

- the volume of reanimation, interventional radiology and (very) severe surgery (34%);
- other activity types (29%);
- expenses for synthesis material, products for magistral preparations, and standard, suture and sterile products (19%);
- the turnover of pharmaceutical specialties and generics (15%) and
- the number of beds (3%).

A linear reduction is applied in case the sum of all sub-budgets for all hospitals is larger than the national lump sum for B5.

Other income sources of hospitals to cover the operational costs of the hospital pharmacy are profit margins on non-reimbursed pharmaceuticals, on implants and prostheses and on certain categories of reimbursed pharmaceuticals administered to non-hospitalised patients.

For a more complete overview of income sources of the hospital pharmacy, we refer to Durant (2013).[12]

5.1.4 The B6 and B9 budget for social agreements

Both the B6 and the B9 part of the BFM cover labour costs that have been negotiated in social agreements. In 2014, the budget of B6 and B9 together was equal to about € 478 million or 7.77% of total BFM in 2014.

Part B6 was introduced in 1991 to (partly) pay for the social benefits of personnel negotiated in the social agreements of 1991 and 2000 not included in the (then) per diem price but (partly) covered by physician fees.[10]

Part B9 was introduced in 2005 to pay for the benefits negotiated in the social agreements of 2005 (health sector) and 2011 (non-profit sector), such as special premiums to attract nurses and end of career measures. Hospitals receive a lump sum per FTE; the closed-end budget is allocated to hospitals on the basis of the number of FTEs at the moment the benefits are introduced.

5.1.5 The B8 budget for patients with a low socioeconomic status

Social correction index

Since 2002, Belgian hospitals receive extra payments for patients with a low socioeconomic status to compensate for the extra costs they generate. These extra costs result, among others things, from a more extensive use of the social services of the hospital and a longer LOS because of lack of support at home. Part B8 of the hospital budget is a specific budget for these patients. This budget is a closed budget, amounting to € 24.1 million in 2014

or 0.39% of the total BFM, and is distributed among general hospitals[j] according to a formula combining three criteria (article 78 of the Hospital Act[116]):

- the number of inpatient and day-care surgery admissions of patients entitled to the social maximum billing in proportion to the total number of inpatient and day-care surgery admissions affiliated to a sickness fund;
- the number of inpatient and day-care surgery admissions of patients entitled to the income maximum billing and single in proportion to the total number of inpatient and day-care surgery admissions affiliated to a sickness fund;
- the number of persons without domicile whose hospital costs are reimbursed by the Federal Public Planning Service for Social Integration, anti-Poverty Policy, Social Economy to the public centre for social welfare (OCMW-CPAS) in proportion to the total number of inpatient and day-care surgery admissions of patients without domicile.

The system of income maximum billing puts a ceiling on the total amount of co-payments at the level of a household during a calendar year, where the ceiling is a function of the net taxable income of the household. Eligibility for the social maximum billing rests on eligibility for increased reimbursement of healthcare costs, which is granted to vulnerable population groups.

The three proportions are weighted and have a weight of 0.25, 0.66 and 1, respectively. Finally, the weighted proportions are added up to a score. Hospitals are ranked according to their scores, in decreasing order. Only hospitals with a score above the median receive payments from the B8-budget. Sixty percent of the closed budget goes to admissions that meet the first criterion, 25% to the second and 15% to the third criterion.

Hospitals entitled to the B8-part of the hospital budget, have to collect and transmit data on the socioeconomic profile of their patients, participate in information days and submit a yearly report to the FOD-SPF in which it is shown that the budget was devoted to the target group.

Since 2008 only part of the closed budget is distributed among hospitals according to the rules described above: 75% in 2008 and 50% since 2009. The remaining 50% is distributed among all general hospitals[k] according to a large number of parameters, of which the weight was estimated by multivariate regression. Variables included in the regression are the number of admissions for patients 75 years of age and older; for patients entitled to the social maximum billing; for single patients; for patients entitled to a lump sum payment (B or C) for nursing care at home or to a lump sum payment for physiotherapy for severe disorders.

Intercultural mediation and communication

The B8 part of the hospital budget also distributes a closed budget to take account of specific language problems or cultural characteristics of patients. Acute and psychiatric hospitals can voluntarily appeal to an intercultural mediator or a coordinator of intercultural mediation to assist the hospital. To be eligible for the extra budget, the hospital has to admit a sufficient number of foreign patients. The intercultural mediator has to fulfil several criteria, of which having a command of at least one language of one of the target groups is an essential one. Target groups are foreign patients with a low socioeconomic status as well as deaf and hearing-impaired persons (see article 78 of the Royal Decree of 25 April 2002).[113]

5.1.6 Justified length of stay per APR-DRG

Since the reform of 1 July 2002, there has been a gradual switch to the notion of **'justified activities'**, with a more prominent role of the pathology-weighted LOS and the Budget of Financial Means (BFM) replacing the former per diem price. Justified activities per hospital, the basic concept in the BFM, are based on the number and type of admissions during a reference year.[12] A national average LOS per pathology group (All Patient Refined (APR)-DRGs) is calculated, which is then applied to the case-mix of each hospital. The main principle is that the number of justified patient-days for a hospital is calculated by multiplying the national average LOS per pathology group with the case-mix of the hospital. Per department or group

[j] Except specialised (Sp) departments for chronic care, specialised departments for palliative care, isolated geriatric (G) departments and units for heavy burns.

[k] With the same exceptions as in the previous footnote.

of departments, the number of justified patient-days is divided by the 'normative occupancy rate' of the service (in general 80%).[18] Contrary to how DRGs are used in other countries, **no price per APR-DRG is calculated**.

The main principle described in the previous paragraph holds for normal stays. It should be mentioned, however, that also for normal stays age is used as an extra variable, in addition to the DRGs and the severity of illness (SOI), to classify stays. For SOI-levels 1 and 2 a distinction is made between patients younger than 75 years of age, above 75 years of age and a separate group of geriatric patients, called Gfin. For SOI-levels 3 and 4 patients only the separate group of geriatric patients determines the age-specific classification group. No distinction is made between adults and children.[22]

In addition to a normal stay, 9 other categories of stays exist, each with a specific definition of justified length of stay and payment rule. Examples are short- and long-stay outliers, APR-DRGs with less than 30 stays etc. We refer to Sermeus (2006)[22] more a detailed description of these stays.

Some additional adjustments are made to define the final number of justified patient-days allocated to a hospital. For example, when the number of justified beds is above the limit of 112% of recognised beds, these days will only be financed for 50%.

APR-DRGs as patient classification system

Patient classification systems, such as DRG systems, aim to define medically coherent and cost homogeneous groups. Ideally, patients within one group should have homogeneous costs and clinically, cases allocated to one group should be distinguishable from other groups based on principal diagnosis, severity, co-morbidity and/or treatment performed.[18] From a statistical point of view, groups should be as low-variant as possible.

APR-DRGs extend the basic DRG structure by adding two sets of subclasses to each base APR-DRG, i.e. severity of illness (SOI) and risk of mortality (ROM). Patients are allocated to an APR-DRG-SOI group on the basis of principal diagnosis, secondary diagnoses and procedures, age and sex of the patient and, for some APR-DRG (e.g. burns) type of discharge.[18] There are four grades of SOI: 1 = minor; 2 = moderate; 3 = major; 4 = extreme.

The DRG classification system in Belgium is based on the Minimal Clinical Data (MKG-RCM), which are part of the hospital discharge dataset (MZG-RHM) since the registration of 2008. The MKG-RCM also changed name and are called MG-MZG/DM-RHM since their integration in the MZG-RHM. The MZG-RHM are based on the International Classification of Diseases-9th Revision-Clinical Modification (ICD-9-CM), but from 1 January 2015 onwards the ICD-9-CM will be replaced by the ICD-10-BE (Belgian modification). The ICD-10-BE includes the ICD-10-CM as well as the ICD-10-PCS (Procedure Coding system). A more detailed description of the Minimal Clinical Data can be found in KCE reports 121[18] and 208[117] (report 208 only in Dutch and French). Until 2013 APR-DRG version 15.0 was used. Since 2014, APR-DRG version 28.0 is used.

For the budget of 2013, data registered in 2010 were used.

5.1.7 The Nursing Minimum Dataset

Definition of Nursing Minimum Dataset (NMDS)

''Nursing Minimum Dataset: a minimum data set of items of information with uniform definitions and categories concerning the specific dimension of nursing, which meets the information needs of multiple data users in the health care system. The NMDS includes those specific items of information that are used on a regular basis by the majority of nurses across all types of settings in the delivery of care.''[118]

5.1.7.1 The Belgian Nursing Minimum dataset (B-NMDS)

Belgium is one of the few countries that complements its hospital discharge dataset with a nationwide Nursing Minimum Dataset (NMDS). Since 1988, the B-NMDS is compulsory recorded during the months of March, June, September, and December from the first day to the fifteenth day of the month in all Belgian acute hospitals. The Federal Public Service of Public Health (FOD-SPF) samples five days at random during each registration period, for which information must be sent to the national database. The collection of the NMDS originally consisted of a registration of 23 nursing interventions (e.g. frequency of monitoring of vital signs/24h; number of intravenous lines; care related to hygiene-mobility-elimination-feeding) and nurse staffing variables (i.e. qualifications of nurses caring for the patient). In 2007, this

original version of the B-NMDS was replaced by a revised version of the B-NMDS.[119] The most important changes were the expansion of the number of nursing interventions from 23 to 78 items and of the sampling period of the FOD-SPF from 20 days per year to 60 days per year. In addition, the B-NMDS (called VG-MZG/DI-RHM) was integrated in the MZG-RHM.[120]

Validity, reliability and lack of transparency

Both the original[119, 121] as well as the revised B-NMDS[120, 122, 123] were extensively tested on reliability (i.e. inter-rater reliability) and validity (i.e. content-validity, criterion-related validity, construct validity) when both instruments were developed and they met the international accepted psychometric properties. The quality of the data is audited by the FOD-SPF on a regular basis in two ways. First, a software program checks the data for missing, illogical, and outlying values. Second, during regular hospital visits, a random selection of patient records is reviewed to ensure that data were coded correctly.[124] However, results of these audits are not disclosed to the public domain. The B-NMDS data are, besides their use in the hospital payment system, used for various clinical and management applications (e.g. structuring of nursing notes based on the lay-out of the B-NMDS; day-to-day staffing allocations; budget allocations within hospitals) contributing to the validity of the registered data.[122]

5.1.7.2 The use of nursing data in the hospital payment system

International **DRG-systems link nursing costs to DRGs using three different approaches**. A first approach links the cost of nursing care directly to the number of inpatient days. In this method LOS is used as the main cost driver for allocating nursing costs and the variability in nursing care and costs (which is shown to be varying substantially between and within the similar nursing units[125]) is not taken into account.[126] In a second approach the 'average nursing time per DRG' is calculated by means of nursing workload systems. This results in DRG-specific nursing cost weights showing that some DRGs are more nursing intensive than others (e.g. a DRG with a relative weight of 4.0 is four times more nursing resource intensive than a DRG with a relative weight of 1.0). The averaging method, however, does not take the variability of nursing intensity within DRGs into account. Including additional nursing care data, combined with DRG use, can improve the overall explanation of variance in LOS, use of intensive care, hospital charges, hospital death and discharge to nursing home drastically.[127, 128] Also Belgian studies illustrated that DRGs only explain a small portion of the variability in nursing care.[119, 129] A third approach is the use of a variable nursing cost weight per DRG. In this method, DRGs are linked to patient-level nursing data to obtain the hospital-specific nursing cost-weights per DRG. [126]

Some countries, such as Belgium and Luxembourg, **correct for nursing care independent from the DRG system**. In Belgium, a part (approximately 6% of the B2-budget) of the BFM is redistributed across hospitals based on 'supplementary points'. Amongst other factors, the NMDS is used to allocate additional budgets to (some) hospitals. The NMDS is used to classify inpatient days into 28 zones. Each zone is weighted based on actual staffing level (nursing hours per patient day and qualification level). The additional budget allocation is based on the number of inpatient days per zone and their weight. Hospitals are ranked according to these weights in deciles (groups of 10% hospitals). The hospitals that are in the lowest ranked group (decile 1) do not get any variable budget. The hospitals ranked in the highest ranked group (decile 10) get most additional budget (see 5.1.2). As a consequence, an individual hospital is not reimbursed on the basis of its actual performance but as a function of its relative position compared to other hospitals. Moreover, small differences between hospitals can result in large differences in reimbursement and large existing differences between hospitals within the same decile are not taken into account.[11] It should be noted that not all nursing units are considered in the system (e.g. geriatric nursing units are not included). The system is limited to paediatric, general surgery and internal medicine nursing units. The supplementary points for intensive care are based on a similar but slightly more complex calculation method (for details see Sermeus et al. 2007[11] and Durant 2013[12]).

A consequence of the revision of the B-NMDS in 2007 is that until 2013, the calculation of the supplementary points was based on NMDS-data from the year 2006. However, from 2014 onwards a new calculation method, the so-called '**Nursing Related Groups or NRGs'** will be used. NRGs are care episodes that are homogeneous for nursing care. Based on the 78 nursing items of the revised B-NMDS, the type of nursing unit, age and surgery (yes/no), 21 NRGs are calculated for care episodes that last 24 hours (i.e. an entire inpatient day; examples are surgical care, complicated wound care

or palliative care) while 10 additional NRGs are calculated for shorter care episodes (based on 78 items, type of nursing unit and time in hospital stay relative to surgery/delivery; examples are preoperative care, recovery care or postoperative care).[130] Each NRG is weighted based on required staffing levels.[131] All scores (i.e. NRG-weights for each care episode) are added and the share of each hospital in the whole of care profiles (type and volume) is calculated. Additional B2-points are awarded based on the share of patient days with a higher weight than the median national weight per patient day. As such, the system of deciles is abolished. For 2014, a transition measure is provided: additional budgets for internal medicine, paediatrics and general surgery nursing units will be based for 30% on NRGs and for 70% on the original NMDS calculation method. The original calculation method of deciles is kept for intensive care. The impact of this new methodology on the budget of the individual hospitals is uncertain. Nevertheless, to avoid too large differences with the previous system, the difference between the original NMDS-system and the NRG-system is limited to +/- 0.04 points per justified bed.[132]

For the BFM of 2014, MZG-RHM data for 2011 are used.

5.2 Payments for pharmaceutical specialties

A mixed system of a lump sum and reimbursement per product

In the last decades, several efforts have been made to control escalating expenditures for pharmaceuticals.[18] For example, patients pay a **co-payment of € 0.62 per day** which is charged irrespective of actual utilisation. In 1997, a first step towards **prospective pharmaceutical budgeting** for hospitalised patients was made for the prophylactic use of antibiotics in surgical interventions. A pathology-related lump sum reimbursement system was introduced with lump sums based on clinical guidelines. Antibiotics used during the perioperative period (i.e. from the day before until the day after the surgical procedure) were reimbursed for 75% with a lump sum. The remaining 25% were reimbursed per product to keep track of actual utilisation. This system was applied until 1 July 2006. At that moment, a prospective budget for pharmaceutical specialties administered to patients hospitalised in an acute hospital was introduced. The prospective budget can be extended to day care in acute hospitals and to hospitalised patients in psychiatric, geriatric and specialised hospitals.[133] Most pharmaceuticals are integrated in this budget for approximately 75% of their value. The remaining 25% of the reimbursement basis is still reimbursed per product. To avoid administrative complexities, the system of lump sums for the prophylactic use of antibiotics for surgical interventions was suppressed and antibiotics (not only in prevention) were included in this prospective budget.

Pharmaceutical specialties not integrated in the lump sum are **reimbursed per product**. These include active compounds that are very relevant to medical practice, taking into account therapeutic and social needs and the innovative character or that have a high cost which can strongly slow down the administration to a hospitalised patient if they would be included in the prospective budget. Other products excluded by law from the prospective budget are orphan drugs, cytostatics, immunoglobulins and albumins, retroviral drugs, radioisotopes, etc.[44] The list of excluded pharmaceuticals is updated monthly. In 2012, 337 Anatomical Therapeutic Chemical (ATC)-codes representing about 25% of total reimbursements for pharmaceutical specialties were on that list.[12]

Pharmaceuticals dispensed by the hospital pharmacy for non-hospitalised patients are not included in the prospective budget. Patients pay a co-insurance rate per reimbursed drug varying from 0% to 80% subject to a ceiling limit.

Lump sum per stay based on APR-DRGs

Hospitals receive a lump sum amount per stay, which is based on the hospital's case-mix and the national average reimbursement per APR-DRG and severity of illness. APR-DRGs 950 to 956 (residual APR-DRGs) are excluded. National average reimbursements are calculated annually on the basis of the linked hospital discharge dataset (MZG-RHM), and the hospital billing data (AZV-SHA) for all hospital stays reimbursed by compulsory health insurance of the last available year (generally three years earlier). Outliers (defined by Q3 + 2*(Q3 – Q1), with Q=quartile)) are also suppressed. When taking account of the excluded pharmaceutical specialties (25%), outliers (9%), excluded APR-DRGs (2%) and 25% reimbursement per product, the lump sum per stay represents 48% of total reimbursements for pharmaceutical specialties. On 1 July 2012 the lump sum amount per hospital varied from € 58.36 to € 158.59.[12]

In 2006, the national budget was equal to € 256 million. The budget for 1 July 2012 until 30 June 2013 was 9.2% lower than in the preceding year and in the next period the budget was reduced again by 6.8%. In 2013, the budget amounted to € 167 million, which means a reduction of more than 50% since 2006.

An evaluation performed in 2011 showed that most hospitals on average benefited from this system and that less than 10% lost from the system.[134] In the assessment the revenue with the prospective budget was compared with the revenue they would have received in the old system of reimbursement per product. This positive result was explained by the effort made by hospitals in terms of reorganisation of pharmacies, the involvement of stakeholders, more frequent consultation, development of the clinical pharmacy, etc. In terms of pharmaceutical expenditure, a reduction was already observed the year before the implementation of the system (showing that hospitals anticipated the measure) and then slightly increased (see Table 12). In terms of volume, the consumption of pharmaceuticals included in the budget slightly decreased and then slightly increased. It should also be noted that the consumption of cheaper pharmaceuticals increased while the consumption of expensive pharmaceuticals decreased.

Table 12 – Evolution of expenditures and volume of pharmaceutical specialties in hospitals before and after the introduction of a lump sum per stay

	Year -2	Year -1	Year 1	Year 2
Pharmaceutical expenditures	€ 476 103 726	€ 457 639 727	€ 468 533 991	€ 471 617 794
Volume in DDD (all pharmaceuticals)	130 633 463	128 979 385	124 676 324	129 175 403
Volume in DDD (pharmaceuticals in the budget)	16 888 560	18 427 804	17 636 552	18 548 319
Volume in DDD (excluded pharmaceuticals)	113 744 903	110 551 581	107 039 773	110 627 083
Volume in DDD (cheaper pharmaceuticals)	11 152 259	16 950 402	20 258 068	23 876 526
Number of admissions (evolution)	1 617 527	1 607 941 (-0.6%)	1 621 867 (+0.9%)	1 650 458 (+1.8%)

Source: Multipartite (2011)[134]; DDD=defined daily dose

5.3 Critical appraisal: the closed-end macro budget is insufficient to cover costs and stimulates production

5.3.1 A 'rat race' between hospitals to get their piece of a closed-end budget

Untransparent allocation criteria of the closed-end macro budget

The national BFM is a closed-end budget. This has the advantage that **expenses can be controlled at the macro level**. Since the medico-technical possibilities will always be larger than what is budgetary feasible, working with a closed budget demands though (political) choices and there will always be some sort of competition between healthcare providers to get their piece of the pie. Therefore, it is important that the **criteria to distribute the national budget among hospitals** are objective, transparent and fair. Stakeholders complain that the criteria have become so **complex and untransparent**, that healthcare providers perceive the distribution as unfair, e.g. favouring some hospitals on the basis of political or confessional motives rather than on objective criteria. As a result, there are frictions and discussions between hospitals about the payment rules.

A second problem that is mentioned by stakeholders is related to the **variability in costs** between patients/pathology groups, which is considered much **larger than the variability in payments** by the BFM, which are based on the length of stay. They also state that a payment system that reflects differences in costs would result in an even more skewed distribution of the closed-end budget, giving more money to hospitals with a severe case-mix. Since the variability in care and costs is much higher in large and university hospitals, stakeholders fear that small-sized hospitals would receive less money than today. Simulations show that the introduction of a more comprehensive pathology-based prospective hospital payment system would indeed result in large budget shifts at the level of the hospital or stay.[18]

A drive for production

Although a closed-end budget is from a macro perspective an understandable strategy to control healthcare costs, the current rules to allocate the BFM encourage hospitals to **increase the number of admissions** to get a larger share of the national budget. This drive for production entails a risk of inappropriate hospital admissions and premature discharges. It also results in a very competitive environment. Although Belgian hospitals are all not-for-profit, every hospital tries to increase its market share at the expense of other hospitals. Stakeholders state that there is a rock-hard battle between hospitals to attract the best physicians and the newest and most innovative equipment in order to increase their market share. This hinders collaboration and task distribution agreements. In fact, hospitals avoid to refer (or back-refer) patients while this is sometimes clinically or socially, in case of back-referrals, more appropriate. This is a major barrier for successful hospital networks and for providing care at the appropriate place and by the team that is best-skilled to perform the care, e.g. reference centres in case of highly-specialised care. The current hospital networks are, according to stakeholders, not installed on opportunistic motives but hospitals only participate in those networks when they can increase their market share or can attract the best physicians, e.g. via training places.

> *"Il y a un gâteau à distribuer... Ce gâteau dépend fondamentalement du nombre d'admissions et, bien sûr, de la lourdeur des admissions. Et, donc, si un hôpital augmente ses admissions de cinq pour cent et les autres ne bougent pas, les autres reculent dans l'enveloppe, c'est un jeu à somme nulle. Donc, il faut croître au même rythme que les autres pour ne pas reculer. Donc, il faut croître parce que, forcément, il y en a toujours un qui croît. Et donc, c'est un jeu qui pousse à la croissance tout le temps, tout le temps, tout le temps. Et tous les tableaux de bord – je pourrais vous en montrer, je ne sais pas si j'en ai sous la main – sont tous là avec des petites flèches et il faut que toutes les flèches aillent vers le haut, tout le temps. Et, dès qu'une flèche est stable ou baisse, on dit : « Mais qu'est-ce qu'il se passe là dans le service ? Comment ça se fait ? Pourquoi est-ce que ça baisse ? L'activité. » Il faut que l'activité monte tout le temps parce qu'ils savent que ça va être la clef pour, demain, avoir un BMF stable, c'est-à-dire il croît au même rythme que les autres ou mieux que les autres, c'est-à-dire il croît un peu plus. Donc, ce système est inflationniste. Il a, en lui, le moteur qui pousse à la croissance des activités, mais dans un budget qui ne croît pas au même rythme."*

Stakeholders mention the new payment rules for emergency departments as an illustration of inappropriate use. Until July 2013, emergency departments were mainly paid according to the number of justified hospital days. This was highly criticised since there is not necessarily a direct link between justified hospital days and emergency department activities. Since July 2013[l] all patients treated in emergency departments, including ambulatory patients, are taken into account to calculate payments for emergency department services. This reform opens the door for inappropriate use of the emergency department because with a closed-end budget, hospitals are stimulated to increase their activities in emergency departments. As such, there is no real incentive for hospitals to lunge out patients to primary care. Stakeholders report that some hospitals deliberately admit patients via emergency departments for elective diagnostic procedures, e.g. CT-scans outside office hours, while in fact these can be done as ambulatory activities in polyclinics.

On the other hand, stakeholders also acknowledge that the current payment system contributes to the **high accessibility** of our healthcare system. There is no maximum threshold on the number of admissions and there are no waiting lists, despite the closed-end budget.

Uncertainty about individual hospital budget

Another characteristic of a closed-end budget that is criticised by some stakeholders is that the **distribution of the national hospital budget** not only **depends** upon the own activity of the hospital but also **upon the activity** (i.e. reduction in LOS) **of all other hospitals**. This creates a lot of **uncertainty** in the sector. The outcome of the calculation of the individual hospital budget is unpredictable and the communication is seen as 'a bolt from the blue'. Hospitals do not have the opportunity to adjust their policy. Therefore, some stakeholders plead to extend the period on which the budget is calculated and to monitor hospitals and give intermediate feedback.

[l] There is a gradual introduction of the new rules with complete implementation from 2017 onwards.

5.3.2 Structural underpayment of non-medical activities

Interviewees report that through the years, the hospital budget has become insufficient to cover all rules and standards that are imposed by the authorities, such as minimal staffing ratios, recognition standards, pensions for the public sector personnel or collective labour agreements. This results in the often quoted critique on the so-called 'structural underpayment' of the hospital budget.

The monetary value of a B2-point

Stakeholders criticise the **lack of flexibility** to adjust nursing staff ratios to patient acuity. Minimum nursing staff ratios are related to the number of recognised beds and not to justified beds. Of course, when reducing the already low staffing ratios,[135] the safety of the patient should remain guaranteed.

The classic example given to illustrate this problem is the **underpayment of nursing staff via the B2-part of the BFM** which is the starting point for the basic part of the calculation of B2. Dividing the national hospital budget by the total number of B2-points 'earned' by all hospitals gives the monetary value of one B2-point. In 2013, this value was equal to € 24 824.16. Given that 1 full-time equivalent (FTE) nursing staff represents 2.5 B2-points, each hospital received € 62 060.4 per FTE nursing staff in 2013 while the 'theoretical' average labour cost used by the FOD-SPF to calculate the BFM, and based on collective labour agreements, equalled € 65 794.[12] Hence, payments for nursing staff in the B2-part of the hospital budget are on average about 6% lower than their cost. The financing department of the National Council for Hospital Facilities (NRZV-CNEH) estimated that an extra budget of € 53.2 million was needed in 2013 to equate the amount a hospital receives for a FTE nursing staff (and hence the monetary value of a B2-point) with the theoretical average labour cost.[136]

Another reason for the structural underpayment mentioned by stakeholders is the insufficient compensation for special recruitment programmes (e.g. social Maribel and the Interdepartmental Budgetary Fund (IBF-FBI) statute). The total amount of structural underpayment has been calculated for the years 2002 and 2007, with an amount of € 364 million and € 670.5 million

respectively.[137, 138] The 19th MAHA study (Model for Automatic Hospital Analyses) revealed that the structural underpayment of nursing costs by means of the BFM added up to -4.3% in 2012 (against -3.1% in 2011). This means that for every € 100 turnover an average hospital makes a loss of € 4.3.[24]

> *"Chaque fois que l'on engage une infirmière, il manque 10 % pour la payer."*
>
> *"Wat vooral een aandachtspunt is, is de waarde van het punt. Dus budgetfinanciële middelen gebaseerd op verantwoorde activiteit lijkt mij correct. Alleen, die onderfinanciering sleuren we mee gelijk een molensteen rond onze nek. En dus een op verantwoorde activiteit gebaseerde financiering die correct is zou een stap vooruit zijn. We becijferen op dit moment dat de globale onderfinanciering 320 miljoen is, denk ik, hé, euro? Omwille van IBF-statuten en dergelijke waar dat het gesubsidieerd gedeelte maar ongeveer twee derde is van de reële loonlast. Dus hetgeen dat je als ziekenhuis krijgt als loonkost voor uw personeel klopt niet met de reële loonlast. … En dat verklaart die onderfinanciering. En dat, denk ik, moet gecorrigeerd worden. Want het creëert oneindige spanningen naar afdrachten van honoraria."*

Many stakeholders refer to these figures to emphasize the discordance between the imposed minimal staffing norms and the provided budget for these staffing ratios. Others, however, **put these figures into perspective** and argue that the underpayment is not so dramatic because there is still a lot to gain by process optimization (e.g. resulting in shorter LOS and less waste of resources). Another argument they give is that older employees are replaced by younger employees who are cheaper, although the seniority of the older employees is taken into account for the budget calculation. This measure is, however, not fully effective because of the time lag in the data which is requiring pre-financing of the hospital during several years.

> *"Maintenant, le sous-financement au niveau du BMF, comme je vous l'ai dit tout à l'heure, moi, j'y crois qu'à moitié. A partir du moment où on peut faire le constat qu'il y a quatre mille lits agréés qui ne sont pas justifiés. … On peut se demander dans quelle mesure ce sous-financement ne disparaîtrait pas si on fermait des lits ou si on arrivait à effectivement mieux gérer les durées de séjour dans certains hôpitaux."*

Hospital strategies to counterbalance the structural underpayment of the hospital budget

Stakeholders see **five main strategies** used by hospitals to deal with the structural underpayment of the hospital budget.

- A first strategy used by the hospital management is to negotiate **increased deductions on physician fees** (see Chapter 9).
  - The deductions on physician fees cover costs directly or indirectly linked to providing medical services (e.g. use of rooms, purchasing and maintenance of equipment, staff). Some stakeholders are therefore of the opinion that deductions should not in the first place be interpreted as compensations for the underpayment of the hospital budget. The deductions are used to pay the hospital for using its infrastructure. They criticise physicians who lump everything together and claim that on average about 42%[25] of their income (which is, roughly calculated, about € 2 to 2.5 billion) is used to compensate for the underpayment of the hospital budget while the real **underpayment** is, in fact, a **relatively low amount that can and should be remediated**.
  - The practice that deductions on physician fees are used to compensate for the structural underpayment not only causes tensions between hospital management and physicians but also between physicians and nurses. After all, part of the physician income is used to pay for the salary of nurses, which is considered the main contributing factor of the underpayment. This **situation does not stimulate multidisciplinary teamwork.** Some stakeholders claimed that eliminating the structural underpayment would not result in lower deductions.

- **A second strategy is to increase fee supplements**. When the hospital management negotiates with physicians on larger deductions, physicians often drive a bargain on fee supplements to keep their income up to the same level. This causes large variations in supplements within and between hospitals, a situation that is far from transparent for patients and a possible threat for the financial accessibility of the healthcare system. Recent legislation reduced the freedom of physicians to charge fee supplements and increased transparency for patients (see Chapter 10).
- A third strategy is to use the **profit margins on the hospital pharmacy**. Hospitals manage to negotiate price reductions with pharmaceutical companies that do not affect the reimbursement level of pharmaceuticals. As such, the better they negotiate the more profit they make. This profit can be reinjected in the hospital budget to compensate for loss-making areas. Many interviewees find this a legitimate practice, as long as the profit margins are reinvested in healthcare-related activities. A recent KCE Report on biosimilars revealed that "hospital pharmacies in Belgium obtain on average 10 to 20% discount on the pharmaceutical products, including volume discounts".[139] Others advocate abandoning this practice of discounts. They propose to reduce payments for the hospital pharmacy and to use the money made available to augment the hospital budget at the macro level. Another option suggested by stakeholders is to integrate the hospital pharmacy budget in a prospective pathology-based payment system to increase the fairness and transparency of the payment system. The MAHA study reported a decrease of the positive margin (per € 100 of turnover) of the hospital pharmacy from 9.4% between 2009 and 2010 to 7.9% between 2011 and 2012.[24]
- Although the structural underpayment is described as a problem that affects all Belgian hospitals, some manage to make profit while others have a deficit. **Process optimization** can be considered as a fourth possible strategy to respond to the underpayment.
- A large part of the hospital budget is spent on salaries. Therefore, if budgetary pressure continues, **staff cuts** are seen as a possible (but last resort) solution. This will not only have serious macro-economic implications since hospitals are important employers, it is also a threat for patient safety and quality of care.[135]

> *"Dat we met structurele werkloosheid gaan te maken hebben. Ik weet van collega's dat er dus wervingsstoppen zijn in heel wat ziekenhuizen. We gaan dus werkloosheid krijgen en tegelijkertijd gaan we mensen tekort hebben. Want de ziekenhuizen worden natuurlijk verplicht om maatregelen te treffen om ten minste break even te zijn. Als je nu kijkt naar de recentste cijfers die beschikbaar zijn, en dat zal voor 2013 nog slechter zijn… In 2012 reed 1 op 3 ziekenhuizen in het rood. Van 2013 verwacht ik dat dat bijna de helft zal zijn. Die ziekenhuizen trachten nu op hun kosten te besparen. En dat is personeel."*

5.4 Critical appraisal: incentives for efficiency are too strong, or not strong enough?

Stakeholders confirm that the switch to justified activities by the reform of 2002 has created a **strong incentive for efficiency**. **Paying for activities** (i.e. justified beds calculated on the basis of justified activities) **rather than paying for structures** (i.e. recognised beds) has increased efficiency by a cutback of the overcapacity of hospital beds and a decrease in the average length of stay (ALOS) (see section 2.5 in Chapter 2). A hospital payment system based on activities rather than on structures is appreciated by the interviewed stakeholders. The payment system for operation theatres is given as an example. The largest part of the operating theatres payment system is now based on activities, with the number of operating theatres per hospital being determined by standardised operating time for about 2100 surgical procedures reflecting the duration of the intervention and the need for nursing resources. In addition, a selection of hospitals (mostly university hospitals) receive extra payments for a permanent operating theatre.[12]

> *"On finance l'hôpital pour ce qu'il fait et pas pour ce qu'il est. On ne finance pas une structure, on finance une activité. Un exemple très frappant, le bloc opératoire. La règle aujourd'hui c'est qu'on a droit à trois infirmières par salle d'opération, mais combien de salles d'opération ? Il y a vingt ans ou je ne sais plus quand on a changé les règles, c'est peut-être 13 ans, je ne sais plus. On disait vous avez droit à trois infirmières par salle d'opération. Combien de salles ? Une salle d'opération par 25 lits de chirurgie. On ne disait pas il faut que ces lits soient occupés ou pas et on ne faisait pas la distinction entre des appendicites et des pontages coronariens. Vingt-cinq lits donnent droit à une salle et une salle donne droit à 3 infirmières. On avait des salles occupées à 30 % qui recevaient 3 infirmières. Un autre hôpital, parce*

que notamment les caractères physique et architectural faisaient qu'on ne pouvait pas avoir plus de salles d'opération, ils travaillaient 12, 15, 20 heures dans la salle d'opération et cela ne changeait rien. ... Ça c'est financer une structure. Aujourd'hui c'est en fonction de l'activité et c'est quelque chose qu'il faut veiller à conserver."

The drop in ALOS can partly be explained by medical and technological evolutions increasing the potential for day-care surgery. Nevertheless, the interviewed stakeholders attribute a large part of the decrease to the incentives embedded in the hospital payment system. They have **divergent opinions on the possibilities and desirability of a further reduction of the ALOS**:

- In 2012, the ALOS for all causes in acute care hospitals across OECD countries was 6.6 days; the EU-15 ALOS was slightly lower (6.3 days). ALOS in Belgium was 7.2 days in 2010, the most recent year available in the OECD database (see section 2.5 in Chapter 2). Many interviewees indicate that, with the current supply of services, the **limits to further reduce the length of stay without jeopardizing the quality of patient care are within reach**. The current payment system, which is based on the ALOS of hospital stays, has a permanent incentive to shorten the LOS. In this 'regression to the mean', hospitals want to keep ahead of their competitors and stakeholders fear this will put the quality of care under pressure. Some state that 'this rat race cannot continue infinitely'.
- A shorter LOS causes an increased intensity of care for the days for which patients are kept in the hospital.[16] Consequently, as nursing staff ratios did not change accordingly, the **workload for nurses** increases with a reduced LOS as nurses care for higher acuity patients who require intensive nursing care.[8] Stakeholders warn that with a further reduction in the LOS measures should be taken to guarantee quality of care and patient safety. A recent European study with data from 300 hospitals from 9 countries showed that Belgian hospitals have a comparatively high mean patient-to-nurse ratio (10.8 patients per nurse per 24h, versus 8.3 on average over all countries).[135] Moreover, evidence illustrates that the variability in nurse-to-patient ratios is associated with variability in hospital mortality rates.[135]
- However, they also indicate that **there is still some room to further shorten the LOS** under the condition that investments are made to **strengthen primary care** and to **provide alternative care settings**, e.g. intermediate facilities for post-acute care. At the same time, stakeholders warn that these interventions are not necessarily cheaper, e.g. hospitalisation at home is also costly and will incur other costs (e.g. transportation). Also a **further substitution of inpatient by day-care activities** (see Chapter 6) will continue to contribute to a shortening of the LOS.
- Some stakeholders state that the current payment system entails a **risk on premature discharges and organised readmissions.** Others argue that this risk is rather limited because physicians will try to keep patients in the hospital as long as this is clinical required and, moreover, they have no financial incentive to shorten the LOS of their patients. Another counter-argument given by stakeholders is that the hospital management will try to balance sufficient revenue from deductions on physician fees against an efficient LOS. Finally, additional measures are possible to reduce the number of inappropriate readmissions. For example, a task force at the National Institute for Health and Disability Insurance (RIZIV-INAMI), installed to increase efficiency in the Belgian healthcare system, introduced a reduced payment for readmissions from 1 January 2014 onwards (see section 12.1.2 in Chapter 12).
- For other stakeholders, the incentives for efficiency are **not far-reaching enough** because the different payment sources ensure that hospitals still receive a substantial budget (in the B1-part) for realised but not justified patient days, e.g. for restaurant costs.

  "On module un peu avec l'activité justifiée. Si on voulait être tout à fait strict, on devrait dire : « Puisque vous avez droit à autant de journées justifiées, et bien on vous donne autant de jours d'activité justifiée, même pour manger. » Ce qui veut dire que l'hôpital fait une perte s'il fait plus de journées. Aujourd'hui, s'il fait beaucoup de journées, niveau nourriture, il ne perd rien. Donc c'est un peu contradictoire. En même temps, par rapport au coût du restaurant et de la nourriture, c'est normal de se dire : « Ben, on va essayer de payer les coûts. » Mais c'est quelque chose qui est contradictoire par rapport à l'activité justifiée complète."

Incentives for more efficiency should not solely focus on decreasing the LOS. After all, the number of hospital days is the product of the number of admissions and the LOS. Stakeholders state that, despite increased efficiency, there are still too many **inappropriate admissions.** Some relatively old empirical evidence (study conducted between 2003 and 2005) from the AEP-survey (Appropriateness Evaluation Protocol) confirms that a substantial share of inpatient hospitalisation days in Belgium is indeed inappropriate (see section 4.2.1). The discharge rate in Belgium is slightly above the EU-15 and OECD average rate (see section 2.2 in Chapter 2). Stakeholders attribute the higher number of admissions to the overcapacity of acute recognised hospital beds (4 per 1000 population in Belgium versus 3.3 per 1000 population as EU-15 and OECD average; see section 2.2 in Chapter 2) and the deficiency of primary care and alternative facilities.

5.5 Critical appraisal: complex and untransparent calculation of the individual hospital budget

A melting pot of income sources

Hospitals receive their revenue from a large number of income sources: the BFM, deductions on physician fees, lump sum payments for pharmaceuticals, clinical biology and medical imaging etc. Moreover, the distribution of the national hospital budget to the individual hospitals is based on a multifaceted calculation with a specific calculation method and determining parameters for each budget component. Although each rule and all exceptions on each rule have on itself a rationale, over the course of years the entire system and calculation method have developed into a tangled ball. This makes the **system untransparant and complex to calculate**.

There is no general framework for the deductions on physician fees that regulates the size and destination (e.g. a restricted list of issues for which deductions on physician fees can be made) of these deductions. Instead, they depend on negotiations between physicians and hospital management which results in a lot of variation within and between hospitals.

No link between the payment and its destination

Originally the calculation of the BFM was relatively straightforward. It allowed hospital managers to make a link between the received budget and its destination. Over the years, however, several rules were added resulting in a complex mosaic of sometimes conflicting rules and calculation methods. As a result, the received budget is perceived as utterly complex and untransparent. The budget for nursing staff, for instance, was originally almost exclusively paid via the B2-part. Nowadays it is very difficult for hospital managers to trace the part of the budget that is meant for nursing staff. It is still mainly paid via the B2-part, but also, for instance, via B4 (e.g. additional staff originating from negotiations with social partners in the nineties) and B9 (e.g. compensation for shorter working hours). The current system is perceived as a 'black box' with an insufficient link between the budget and its destination. Therefore, it is recommended that, in case of a reform, the black box is opened and the payment system becomes more transparent. This does not necessarily imply that all calculation methods should be simple. A future system can still make use of complex calculations in the back-office. However, these calculations should be made transparent and should be reproducible.

The **lack of transparency, the highly complex calculation methods and the uncertainty about the individual hospital budget** (because of the dependency on the LOS of other hospitals in a closed-end budget system) make it difficult to pursue a consistent and congruent policy both at the macro level and at the meso and micro level. Even for experts in the hospital payment system the outcome of the calculations is unexpected and impossible to unravel.

> *"Quand on voit le nombre d'indicateurs et le nombre d'opérations… Je prends... Rien que le B1, si je me souviens bien, il y a 15, 16 ou 17 opérations avant d'arriver depuis le budget de départ jusqu'au budget de chaque hôpital, divisé par l'âge du capitaine…"*

> *"Enfin des choses qui sont assez peu faciles à manier et surtout difficiles à suivre. Il y a tellement d'indicateurs. Parfois les indicateurs sont contradictoires entre les sous-parties, effectivement il faut un énorme tableau de bord et encore des pondérations qui permettraient de comprendre le système."*

Not evidence based

The calculation method of justified patient-days is not evidence-based. Instead, they are based on the ALOS with the incentive to increase efficiency. It results in a rat race between hospitals to keep ahead of each other and eventually results into a 'regression to the mean'. An alternative is to design evidence-based clinical pathways and calculate the length of stay for those pathways. The Best Practice Tariffs in England (see section 12.3.1 in Chapter 12) could be used as an example. This seems only feasible in case of standardised care processes. However, since the BFM is calculated in a closed-end budget, fixing the number of days for a selection of standardised pathologies (e.g. normal vaginal delivery) will not result in cost savings if these pathologies are not removed from the calculation of 'justified activities' that aim to distribute the BFM across hospitals.

The ingrained incentive to shorten the LOS in the current payment system also explains the opposition of physicians against a DRG-based payment system. Therefore, suggestions are made to change the calculation method from an ALOS to an evidence-based LOS, e.g. a fixed LOS based on an evidence-based clinical pathway, or to more pragmatic alternatives such as an average LOS +/- 5%. The latter system will not penalize hospitals with for instance 1% or 2% above the ALOS but it will only penalize the manifest abuses for which this system is actually designed.

> *"Donc une moyenne peut être une moyenne avec une marge de sécurité qui existait à l'origine du système et qu'on a supprimée pour des raisons purement budgétaires, le principe de la moyenne c'est la régression à la moyenne, c'est-à-dire qu'à partir du moment où vous considérez que c'est trois jours la bonne durée pour un accouchement sans complications, vous avez obtenu cette moyenne précisément parce que certains hôpitaux sont au-dessus et certains en-dessous, sinon ce ne serait pas la moyenne. A partir du moment où on dit que c'est l'objectif, tous ceux qui seront au-dessus diminuent leur durée de séjour pour essayer de renter dans l'objectif de la moyenne. Ce faisant, ils diminuent la moyenne et font en sorte que d'autres hôpitaux se retrouvent au-dessus de la moyenne d'hier. Si on disait « c'est la moyenne plus 5% », on peut imaginer que le système devienne stable parce qu'on peut imaginer que tout le monde se trouve en-dessous de la moyenne plus 5%, et ça je pense que c'est l'objectif qu'il faut atteindre. Le principe de la moyenne ça doit être d'éviter les abus manifestes, et donc pour éviter les abus manifestes, il ne faut pas aller flinguer celui qui est à 1% au-dessus de la moyenne mais celui qui est à 25% au-dessus de la moyenne, et donc je crois qu'on devrait réintroduire cette logique-là dans le calcul de la moyenne mais je ne crois pas à une forme d'objectivation plus précise des durées de séjour, sinon on tombe dans le travail administratif pléthorique dont je parlais tout à l'heure."*

5.5.1 The budget for B2

The budget for B2 makes up the largest part of the hospital budget (39.84% on 1 January 2014). The budget for B2 consists of a basic part, which is based on the number of justified beds, and a supplementary part, which is determined by activity and care profile.

Calculation of the basic part

To calculate the basis part of the budget for B2, one starts from the minimal nursing staff standards and translates the standards to points. For example, for a paediatric service the nursing staff standard of 13 FTEs per 30 justified beds yields one point. The number of justified beds depends on the case-mix of the hospital. Stakeholders mention that this payment system does not sufficiently take the variability in actual costs/resources per pathology into account. Given that a higher severity of illness (SOI) is associated with a higher variability in costs, hospitals with a higher case-mix are penalized.

> *"En dus ja, als je dat allemaal uitzet, al die DRG's met die variabiliteit in middelen, dat eigenlijk de variabiliteit in middeleninzet een pak groter is dan de variabiliteit in financiering die nu in het BFM bestaat. Dus eigenlijk zeg je: als je dat volgt, zou je het BFM nog moeten schever verdelen, hé. Dus eigenlijk relatief nog meer geven aan de ziekenhuizen met de zwaarste pathologie en minder aan de ziekenhuizen met de lichtste pathologie. Terwijl in de politieke initiatieven die bezig zijn we de omgekeerde beweging zien."*

Calculation of the supplementary part

The pathology information captured by the APR-DRGs does not necessarily explain variability in nursing workload.[129] The system corrects for nursing workload, via a supplementary part of the B2-budget, but the way it is calculated is heavily criticised. According to stakeholders (mainly) from smaller hospitals, **the method of deciles is considered as unfair**, disproportionally favouring the large and university hospitals. The basic idea is that hospitals with a higher nursing intensity receive a higher budget to allow higher nursing staff ratios. The decile-system, however, only results in supplementary points from decile six onwards. Moreover, the curve is exponential resulting in disproportional (and thus higher than the difference in workload) high additional budgets for the higher deciles. Other stakeholders, mainly from large and university hospitals, contest that the system of deciles is unfair and consider the additional budgets based on the NMDS-calculation method in line with the higher intensity of nursing care in their hospitals. They state that smaller hospitals with a low nursing intensity claim additional budget 'just because they also register NMDS data'.

> *"Hoe hoger uw zorgzwaarte, hoe meer punten dat je hebt. En hoe meer punten, hoe meer middelen. En hoe komt dat dat die curve zo is? Omdat die curve ook politiek bepaald is door de universitaire ziekenhuizen. Want de kennis van dat systeem is ontwikkeld in universitaire ziekenhuizen en die hebben natuurlijk ook gevonden van zichzelf dat ze heel zware zorg hebben. En als je mij vraagt: overdreven. Er is een verschil, maar dat verschil is niet zo…"*

> *"Wat op dat vlak eigenlijk scheef gegroeid is, is dat een instrument dat initieel bedoeld was om de verpleging te ondersteunen, dat men daar niet onterecht van gezegd heeft van: we kunnen dat ook gebruiken in de financiering. Maar dat men het nu eigenlijk aan het omdraaien is: wij registreren MVG, dus op basis van onze MVG-registratie moeten we bijkrijgen in de financiering. Want dat is het argument van de kleine ziekenhuizen, hé, van: wij doen al die MVG-registraties en we krijgen er niks voor. … Ja, en dus men draait het om en zegt: daar moeten ook supplementaire punten komen."*

Stakeholders complain that the **NMDS are not valid, insufficiently audited and too old.** The lack of transparency (audits are not disclosed to the public domain), the low frequency of the quality audits as well as the fact that the B-NMDS is an isolated Belgian project without an international frame of reference contribute to the distrust of several stakeholders regarding the validity and reliability of the B-NMDS. The B-NMDS are considered as audited less and in a less standardised way compared to the medical data (MKG-RCM) making them prone to data-gaming and fraud. Some stakeholders even conclude that the lack of association in the supplementary points between the medical data and nursing data can only be explained by data manipulation. Yet, this argument is not taking into account the evidence for high heterogeneity in nursing intensity per DRG in Belgium[119, 129] as well as abroad[128].

This distrust comes on top of a **registration burden** which is considered to be high and "keeps nurses away from their patient care activities".

> *"Gelijk MVG die zijn onvoldoende gevalideerd, onvoldoende gecontroleerd. … Zonder een goede controle, heb je stropers en boswachters. … En ik denk dat de controle van de medische gegevens vrij goed is. Maar de controle van de verpleegkundige gegevens … trekt op niks. Dus diegenen die foefelen, komen er te gemakkelijk mee weg, ten koste van anderen. En dat is nooit goed."*

A specific point of criticism was given on the calculation method of payments for intensive care units (ICU). One of the criteria to determine the number of ICU beds a hospital gets funded is a selected list of invasive medical interventions that were performed in C (surgical), D (diagnosis and medical treatment) and E (paediatrics) beds. The impact of this criterion lessened over time because the number of nomenclature codes for these interventions has been cut from 16 to 8 codes and its relative contribution has been gradually reduced from 100% in 1994 to 20% since 2002.[22] Some stakeholders claim that this system results in an inappropriate use of the ICU, for example, for patients who are admitted for hip surgery or an appendectomy. They also claim that some hospitals have 90% of their patients in an ICU.

Final steps to calculate the individual hospital budget for part B2

In the basic part, every hospital is entitled to the same nursing and caring staff per bed, and gets the same payment per point (€ 24 824.16 in 2013). However, hospitals are free to hire younger or older personnel or personnel that is very qualified or not. Therefore, a correction is introduced to take account of **average labour costs** of a hospital compared to the national average labour costs. In 2013, the rules to correct for the average labour costs have changed. The personnel that is taken into account is now ranked with the most qualified personnel and personnel with the most seniority coming first. Due to this rule, average labour costs at the national level are higher than before, because labour costs of cheaper and/or younger personnel are not always taken into account, which is disadvantageous to hospitals that strictly followed staffing norms. Moreover, stakeholders find the rules complicated and untransparent.

5.5.2 The budget for B8

Extra budget for non-medical outliers

Stakeholders also state that APR-DRGs alone do not sufficiently account for differences in resource needs. It has been shown that the socioeconomic status of patients also has an influence on the LOS.[140] These patients are so-called non-medical or social outliers. It is questioned by stakeholders whether the costs of the prolonged hospital stays for social reasons such as the lack of informal caregivers, should be borne by the healthcare budget. Nevertheless, it is recognised that socially deprived patients demand extra resources both for the administration as for social support services. Therefore, the principle to include some kind of correction mechanism in the hospital payment system is considered as fair. However, hospitals who are entitled to B8-payments complain that they are not sufficiently paid to take care of their large proportion of socially deprived patients while others complain receiving nothing, while they also have patients with a low socioeconomic profile.

Additional costs of social services and cultural and linguistic support

A large subgroup of socially deprived patients has a different ethnic origin. This demands extra resources which are partially covered by the current payment system by means of the (limited) financial support for linguistic and cultural support. In addition, it is pointed out that the pre- and post-hospital care trajectory for these vulnerable groups is often non-existent. As a result, hospitals often take up the care that should better be provided by primary care.

> *"La problématique sociale, c'est à la fois que les patients sont plus lourds à prendre en charge, comme à [hôpital XX], ils ont 25 langues différentes ou 50 langues, je ne sais pas, avec ces gens-là, c'est difficile à prendre en charge. C'est la lourdeur de prise en charge, en terme de durée de séjour, en terme d'actes, parce qu'il n'y a rien qui a été fait en ambulatoire."*

The number of unpaid hospital bills is increasing

The number of unpaid hospital bills increases and physicians and hospitals are not compensated for this loss of money. This problem of unpaid hospital bills mainly hits the intensive care, emergency, psychiatry and paediatrics departments. It is questioned whether physicians and hospitals should continue to cover these losses or if a system should be set up that is more based on solidarity. In addition to unpaid bills, physicians earn less money in a hospital with many socially deprived patients because of the stricter regulation on fees supplements (see Chapter 10).

Criteria are not transparent

The criteria on which this system is based have **low face-validity** among the interviewed stakeholders. In addition, stakeholders complain that the process that resulted in the **selection of the current criteria was not transparent**. This feeds the suspicion that the definition of criteria was not entirely free of conflict of interest. To be eligible for a compensation, hospitals have to cross a certain threshold of patients with a lower socioeconomic profile. This is disadvantageous for large hospitals because they can have many patients with a lower socioeconomic profile but in the end fail to meet this threshold since the vast majority of the patients still have a higher socioeconomic profile. As such, large hospitals do not easily reach this threshold, unless they are located in urban areas populated with a large share of people with a low socioeconomic status.

> *"Nu, op zich, het klinkt goed als theorie, maar in de uitwerking is dat wel compleet misgelopen, want men heeft onderzoeken gedaan… De statistische relevantie van die criteria blijken niet te kloppen. … Je kunt even goed zeggen: neem alle patiënten met blauwe ogen en beschouw die als sociaal en het zal ook ongeveer zoiets zijn. … Dat was niet in overstemming met de kansarmoedeatlas. … We vermoeden ook dat het politiek gemanipuleerd is."*

5.6 Critical appraisal: the APR-DRG system needs refinement, cost data, control and money

APR-DRGs as grouper

During the last decades, lump sum payments, partly based on pathologies, have been introduced in the hospital payment system. Examples are the lump sums for clinical biology and medical imaging (see Chapter 9), the lump sum for a subset of pharmaceutical specialties and (mainly) the B2-part of the hospital budget. In comparison to other countries, the **current system is largely fragmented and partial**.[18]

The **APR-DRG system,** with its subclasses based on severity of illness (SOI), is in general **regarded as an objective and transparent system**. Despite its shortcomings, stakeholders consider it as internationally one of the best systems available.

Others are less positive about the APR-DRG system and say that it **insufficiently reflects clinical and cost differences**. A same level of severity of illness for a particular APR-DRG can reflect very different nursing and medical needs. The SOI takes into account "the main diagnosis, age, the existence of certain non-operative procedures and the consequences of secondary diagnoses that are not connected with the main diagnosis and which are not mutually linked with other secondary diagnoses. Allocation to a SOI-subclass is based on clinical judgment and resource consumption".[18] Stakeholders complain that the 3M-grouper (3M is the owner of the grouper) is very unclear about the allocation of patients to SOI subclasses.

> *"Il y a des gens hors normes. Une façon de dire, c'est : ils sont restés trop longtemps, donc voilà… On n'a pas d'indicateur de pathologie précis pour le dire. Le problème fondamental de ce truc, depuis l'origine, c'était pour comparer les hôpitaux et pas pour payer. … Tous ces diagnostics secondaires servent à une seule chose : à donner un niveau de sévérité, mais quand ça sort de la boîte 3M, vous ne savez pas ce qui a motivé la sévérité. Vous pouvez avoir un gars qui est diabétique insulino-dépendant ou diabétique qui mange une petite pilule tous les jours, ce n'est pas le même coût. Vous ne savez plus ça de l'autre côté, ça disparaît. Et donc vous avez un patient de sévérité 2 qui peut être un gars qui a fait une embolie pulmonaire ou une bronchopneumonie et qui est sous anticoagulants, qui est insiluno-récurrent, mais on peut avoir un autre de catégorie 2 qui n'a rien de tout ça et qui a autre chose. Et ses consommations de médicaments, et ses besoins de passage d'infirmières parce que le diabétique insuliné c'est quatre fois par jour qu'on vient lui piquer le bout du doigt, ils ne savent pas tous les faire, etc. et donc ayant perdu les diagnostics secondaires, vous perdez beaucoup d'éléments de justification de coût…. Ça c'est le pêché du système de DRG. C'est qu'on a le DRG principal qu'on garde, c'est une maladie du poumon qui a été opérée. Tout ce qui est à côté, c'est un niveau de sévérité 1, 2, 3, 4, qui est attribué par un programme d'algorithmes en fonction de la connaissance de ce qui étaient des sévérités plus ou moins importantes corrélées à des pathologies secondaires, sur les populations américaines de 1975. Alors c'est des grosses moyennes, des milliers de cas, ça noie un peu les différences. L'ennui, c'est que quand vous voulez payer avec ça, les trois malades par an qui ont la conjonction d'un cancer du poumon, etc., vous pouvez perdre votre culotte. La moyenne ne correspond pas. Et ça le système d'outliers aujourd'hui ne tient pas compte de ça."*

In general, and irrespective of the patient classification system, stakeholders defend to have **separate payments for emergency services, the specific missions of university hospitals, patients with a low socioeconomic status and also stays with SOI 4**. In KCE Report 121 the performance of the APR-DRG grouper for grouping stays in Belgian hospitals was examined in terms of the homogeneity of resource use within groups.[18]

> *"Il faut exclure du système les tarifs forfaitaires par DRG une série d'activités. Il est clair pour moi que les urgences cela doit être un financement séparé. Les missions académiques j'en ai parlé. Les patients sociaux. Les DRG très hétérogènes parce qu'à la limite toute la sévérité 4 devrait peut-être y échapper. Je ne sais pas hein, je parle des grands principes. Il y a quand même des DRG très hétérogènes. Il y a un groupe de travail d'enregistrement à la multipartite qui a fait une série de propositions de rendre les DRG plus homogènes en les coupants en deux, en trois, que sais-je. C'est rare que quelque chose ait été pris en considération. Oui une fois à ma connaissance on a coupé en deux un DRG. Mais si je prends les prothèses de hanches, la reprise d'une prothèse ou la première prothèse, ce n'est pas la même chose en termes de temps. Pour l'hôpital, pour le chirurgien, une reprise de prothèse est plus compliquée et c'est quand même plus d'énergie. Il y a des exemples tellement nombreux. Donc les DRG hétérogènes. Ou*

bien on fait des DRG homogènes ou bien on les exclut du tarif forfaitaire."

Gaming and lack of audit and control

The main point of criticism brought against the APR-DRG classification is not the system as such but rather how it is implemented in the Belgian hospital payment system. Stakeholders consider the **lack of control on the registration of pathologies** as the main weakness of the classification system.

According to stakeholders, there are indications for upcoding and verifying the validity of what is coded is as hard for medical data as for nursing data. Stakeholders claim that the number of secondary diagnoses per hospital admission are much higher in Belgium than in other countries. It should, however, be mentioned that in some countries the number of secondary diagnoses that can be coded is restricted while this is not the case in Belgium.[141] Although coding of the data is audited, stakeholders complain that audits are not frequent enough, are done too long after the data is submitted and for too few cases, and with too much variability among auditors. The auditing and monitoring of the mass of data requires competent, specifically trained staff. The lack of expertise at the public authorities to work with these data is, according to stakeholders, one of the reasons why they are not used to their full extent. Moreover, when fraud is observed, sanctions are rare. Some hospitals hire firms specialised in DRG coding optimization strategies to maximize income.

"Ben, le BMF, c'est-à-dire 2002, vous parlez des lits justifiés par pathologie et les DRG. Très clairement, la force c'est que ça permet d'avoir une certaine équité entre les distributions des enveloppes budgétaires concernant les frais hospitaliers. Donc une équité entre les hôpitaux. Mais jusqu'à une certaine limite puisque le système est relativement effectivement optimisable au niveau des règles de codification et donc là on peut mieux faire."

Although all stakeholders agree that medical outlier payments should supplement payments per DRG, they also report **misuse of the system of outliers**. For patients with a prolonged LOS, there is a real risk that the stay is unnecessarily prolonged to be classified as an outlier and receive a full reimbursement of costs rather than a penalization. Stakeholders suggest to impose a maximum number of outliers per hospital to counterbalance this practice. However, other forms of risk sharing exist. One suggestion is to replace the current system in which an outlier is determined on the basis of the number of days above an average, with outliers determined as the x% patients with an excessive long or short LOS. Optimization practices will become much more difficult with such payment system.

On the other hand, the system of short-stay outliers does not at all support initiatives that aim to further reduce the LOS of hospital stays by investments elsewhere. It is, for instance, possible to further reduce the LOS by providing post-acute services by means of outreaching care. However, if the reduction in the LOS results in stays being classified as short-stay outliers, only the actual number of hospital days is reimbursed instead of the national ALOS and the gains cannot be reinvested in the alternative care, for example outreaching teams.

"Et donc on peut avoir un effet totalement opposé à celui qu'on souhaite c'est qu'un patient qui est hospitalisé 20 jours avec une bonne mécanique d'ingénierie interne, si vous le laissez encore 1 semaine dans le lit vous êtes sûr que vous serez outlier et là vous aurez la totalité du séjour qui est financée. On commence à voir ça dans certains hôpitaux. C'est tout à fait contraire à l'objectif souhaité, on va augmenter les durées de séjour au lieu de les diminuer."

Registration burden is not sufficiently rewarded

The current registration requirements are considered high and stakeholders also point to the different authorities demanding different registrations as reinforcing the registration burden. They fear that implementing a prospective APR-DRG-based payment system based on actual costs will further increase this registration burden substantially.

"APR-DRG, dat is nu de dada. Maar dat is ook zeer ingewikkeld, hé. En als je naar zo'n systeem gaat, dan kom je weer hetzelfde probleem tegen. Om dat correct te kunnen berekenen, moet je ongelofelijk veel registreren. Er moet nu ook al zeer veel geregistreerd worden. En omdat we België zijn, moet dat dan nog een keer voor de federale overheid en dan nog eens voor de Vlaamse overheid. Ik zwijg dan nog van mijn Brusselse collega's, want daar is het helemaal waanzin aan wie ze allemaal informatie moeten geven. Maar een ziekenhuis moet vandaag ook al heel veel informatie geven, dikwijls dezelfde, aan verschillende instanties. Dus dat is voor het huidige systeem."

The hospital budget (via part B4) covers the costs for data coding. Nevertheless, stakeholders indicate that this budget is largely insufficient to cover the actual costs incurred by the coding obligations, for example the hospital discharge dataset (MZG-RHM) or Nursing Minimum Dataset (B-NMDS).

> *"Allez je ne sais pas, un exemple, on nous impose les enregistrements médicaux, et paramédicaux, les RCM et le RIM et bien très franchement ce que l'on reçoit c'est la moitié de ce que l'on dépense. C'est impossible de faire mieux. J'ai souvent comparé notre productivité RCM par rapport à d'autres hôpitaux, on ne sait pas faire mieux que ce que l'on fait aujourd'hui, c'est 12 000 RCM par encodeur et par an. On n'est payé que de la moitié. Débrouillez-vous pour le reste. Donc beaucoup d'impositions où on n'est pas payé."*

In other countries one or more independent agencies responsible for the management and monitoring of the DRG system have been established.[2] For example, the German institute INeK (Institute for the Hospital Remuneration System) is financed through an additional charge of € 0.13 per DRG case. Other institutes receive a subsidy from the Ministry of Health, e.g. the Dutch institute DBC-O (Diagnose Behandel Combinatie-Onderhoud or DBC-Maintenance), responsible for the development and maintenance of the DBC system, received a subsidy of € 13.6 million euro in 2012. In some countries cost-collecting hospitals receive money for their efforts. In Germany, hospitals that voluntarily participate in the cost-data collection receive a lump sum and a variable amount according to the number of cases and the quality of data. Both payments are financed through an additional charge of € 0.97 per DRG case.

Time lag between data registration and payments

There is a serious time lag between data registration and use for the hospital payment. Yet, there is improvement, especially for the medical data, and according to some stakeholders, thanks to the efforts of the FOD-SPF.

APR-DRG tariffs: based on costs or reimbursements?

In KCE Report 121[18] data and methodological issues related to the 'mechanics' of case-based funding were explored: how patients are classified, how costs are calculated, how tariffs per DRG are set and how other specific hospital activities are funded. These issues were assessed by using routinely collected data in national registrations and cost data from a selection of hospitals. The first approach was called the 'price model', the second approach the 'cost model'. By 'price' was meant the amount paid by the third-party payer for care provided in hospital (by fees, tariffs or charges). By 'cost' was meant expenses made by hospitals.

Ideally, APR-DRG tariffs reflect actual costs because prices or reimbursement rates also reflect the historical bargaining power of providers or political negotiation. However, no compulsory nationwide registration of patient-level cost data are available. Therefore, the cost accounting model in KCE Report 121 was based on cost data voluntarily provided by nine hospitals.

Most stakeholders agree with the recommendations in KCE Report 121 and with international practice that a **prospective pathology-based payment system demands cost data.** The available tariffs per medical intervention are perceived as an insufficient proxy for costs. Only when the imbalances in physician fees are reduced (see Chapter 9), some stakeholders could agree with an APR-DRG payment system based on prices. In Belgium, cost data are available from punctual activity-based costing initiatives on a voluntary basis. Stakeholders propose to expand the data collection to a sufficiently large and representative sample of hospitals because hospitals differ in many respects, such as the remuneration method of physicians and the organisation of care processes. At the same time, stakeholders warn for ever-increasing registration efforts, also from clinicians who are now already burdened by registration systems.

APR-DRGs are a 3M proprietary grouper which can be a limiting factor in the roll out of an APR-DRG payment system based on Belgian cost data.

> *"On devrait par contre pouvoir se détacher de certaines firmes commerciales et ramener beaucoup plus certains éléments au niveau du pouvoir public. Des sociétés comme 3M etc. ont pris beaucoup trop de pouvoir sur le terrain de ces enregistrements."*

5.7 Critical appraisal: efficiency gains of the lump sum for pharmaceutical specialties are not reinvested in the system

The lump sum payment system for pharmaceutical specialties, introduced in 2006, is in general regarded as a fair system to distribute resources between hospitals. Stakeholders are also positive about the separate list of drugs that can be considered as outliers and for that reason not suitable to be included in the lump sum. The main purpose of the separate list is to avoid underutilisation of expensive drugs that are required in the care of specific patient groups. However, the list is updated every month and stakeholders warn for the **serious budget implications for an individual hospital when drugs from the list are integrated into the lump sum** in case they have a patient population for whom these drugs are frequently prescribed (e.g. haemophilia patients), especially because the amount of the lump sum is not adapted accordingly. The **fragmented way of defining lump sums** in the Belgian hospital payment system adds to the financial risks hospitals are exposed to.

> *"Et puis un coup il n'est pas dedans et puis un coup il est dedans, regarder dans les rétromicines, les rétroprotéines et les EPEO, des médicaments chers qui étaient hors forfait du médicament et puis qui maintenant sont in sans avoir changé l'enveloppe et donc ils crient au scandale parce que ceux qui ont des patients lourds et des patients rénaux et bien ils perdent € 400 000 dans l'aventure qu'ils n'avaient pas vraiment prévus dans leur budget et ils n'ont pas un forfait qui augmente en proportion. Et donc tous les saucissonnages ont eu un effet délétère, c'est que tous les forfaits sont devenus très impopulaires."*

Stakeholders acknowledge that the **prescription of drugs has become much more efficient and rational** since the introduction of the lump sum payment system. A good example is the prescription of antibiotics. Despite numerous information campaigns by the FOD-SPF, Belgium remained amongst the worst performers in Europe.[142] The prescription of antibiotics reached more appropriate levels with the introduction in 1997 of a lump sum payment system for the prophylactic use of antibiotics in surgical interventions for hospitalised patients.[143] From then on medical pharmaceutical committees had a tool to discuss with physicians about the appropriateness of their prescription behaviour. In addition, it also stimulated hospital managers to negotiate with pharmaceutical companies to obtain price reductions and to reinvest these profit margins into the healthcare system.

While expenses for antibiotics in surgical interventions increased from € 29.5 million in 1991 to € 39.6 million in 1996, they decreased to € 31.8 million in 1997 and to € 34 million in 1998 and 1999 without any loss in quality of care.[142] Some stakeholders refer to these data to refute the argument that lump sum payments are detrimental to care quality. Other stakeholders raise **concerns about the quality of patient care** because they fear that drugs will be substituted by cheaper alternatives that, although not less effective, cause more discomfort for the patients (e.g. administration type or frequency; side effects such as nausea and vomiting).

Although stakeholders are in general rather positive about the measure that was taken in 2006, some of them are **not in favour of an extended prospective hospital payment system based on APR-DRGs because they fear that public authorities will again break their promise to reinvest efficiency gains in the hospital sector**. According to stakeholders, public authorities had promised to reinvest the efficiency gains of the lump sum payments in the hospital pharmacy, for example to modernize the pharmacy or to employ clinical hospital pharmacists, and keep the macro budget at the same level. Instead, the authorities assessed that profit margins of hospitals were too high after the introduction of the lump sums and decided to reduce the overall macro budget for pharmaceutical specialties. This caused a breach of confidence between the authorities and the healthcare professionals.

Other stakeholders prefer **an integration of the lump sum for pharmaceutical specialties in a more extended pathology-based payment system** because the current fragmented way of defining lump sums increases the financial risks of hospitals. However, they also emphasize the precondition that the structural underpayment of the hospital budget should be solved first, so that hospitals are no longer obliged to make profits with the hospital pharmacy to compensate for losses in other departments.

"Men heeft altijd gezegd dat het niet de bedoeling was van te besparen door de forfaitarisering. Gezworen. Ik kan het u tonen, ik zou moeten zoeken, in de verslagen van 2005-2006. …Hoeveel is eraf? Eén derde minder. En dan zegt men: heb je al bewijzen dat patiënten doodgegaan zijn? Doodgegaan misschien niet, nee. Maar er is wel veel discomfort ontstaan, hé. … Om te vermijden dat een zwangerschap vroegtijdig stopt, hé. Dus vroegtijdige geboortes te vermijden. Men heeft daar heel goede medicijnen voor. Dan moet die patiënt dan maar 4-5-6 weken gehospitaliseerd worden, ook gebaksterd, om die weer remmers te kunnen geven. Je hebt daar dus nieuwe, zeer dure… Men heeft dat in het budget van financiële middelen gestopt. In het budget apotheek, hé. In het BFM inderdaad. Ja, die apotheker zegt: dat kost mij hier ongelofelijk veel geld, hé. Dat kost mij hier ongelofelijk veel geld, hé. Maar, zegt hem, ik kan toch niet die oude rommel blijven gebruiken? Waar die vrouwen dan ook begonnen bij te braken, zich misselijk voelden, terwijl er veel betere producten zijn. Ja, hij heeft dan toch maar die dure gegeven, hé, omdat dat een correcte mens is. Maar zijn winstmarge. … Dan werd hij op de vingers getikt door de financieel directeur. Want op een jaar of 3-4 tijd, zijn overschot van [x] euro is geslonken, dat zijn nu wel reële cijfers, naar [x] hé. En die [x], daar werden vroeger mensen mee betaald. Je hebt de clinical pharmacist, hé. De klinische apotheker. Die op de zaal ook gaat, de artsen een beetje moet bijstaan bij het correct gebruiken van medicijnen. … Er was ook gezworen dat het geld, als men dan toch een besparing zou realiseren… Ik spreek over debatten van 2005, hé. Als er dan toch een besparing zou kunnen uit voortvloeien uit die forfaitarisering van het geneesmiddelenpakket, dan zou dat geïnvesteerd worden om clinical pharmacists aan te werven. We zijn nu 8 jaar jaren: nul. Nul. Geloof nooit politici. [lacht]"

5.8 Suggested solution elements from stakeholder consultations and literature

5.8.1 Resolve the structural underpayment by savings elsewhere

In general, stakeholders agree that undertaking action to **resolve the structural underpayment in the BFM is urgent**. It creates perverse effects such as overproduction and larger fee supplements, and it is an important source of tension between physicians and hospital management. To tackle the underpayment in a budget-neutral way, shifts between sub-budgets or **savings elsewhere** are needed. Stakeholders see several opportunities: measures that decrease medical overutilisation, the concentration of heavy equipment in a selection of hospitals or reducing the overcapacity of hospital beds.

In any new payment system there should be an assessment of whether the payment system is **sufficiently covering the nurse staffing ratios**. This is not only an important factor for the well-being and retention of nursing staff, it is also a prerequisite to deliver safe patient care.[135, 144] Despite this evidence, it is considered a real risk (given their relatively low bargaining power) that savings in nurse staffing budgets are made in times of budget restrictions.

5.8.2 Link the budget with its destination

There should be a closer link between the budget and its destination. A transitional measure could be the development, e.g. by FOD-SPF, of a feedback tool where the elements of the hospital budget are earmarked, e.g. nurse staffing or infrastructure, and not anymore by sub-parts that are used for the calculation of the budget. This would facilitate discussions between managers of different hospital departments about the allocation of resources among the different departments and services.

> *"Il faut surtout que le système qu'on va mettre en place pour financer les hôpitaux soit compréhensible, vérifiable, transparent, accessible. Parce que les boîtes secrètes 3M, les simulations que personne ne peut voir,… et un système il est bon au moment où on peut le simuler pour voir s'il est bon et s'il n'est pas bon, on le change, mais les simulations itératives où on change un paramètre, et puis l'autre, et puis l'autre, jusqu'au moment où ça produit un résultat qui plaît à certains mais pas à d'autres, c'est vraiment pervers."*

5.8.3 Provide room in the budget for general and human resources policy

Stakeholders consider it important that hospitals have some room in their budgets to take **general (health) policy measures** such as quality improvement initiatives or savings for investments in buildings.

In light of the changing demographics and expectations from the medical workforce regarding the work-life balance, for example because of feminization of the job, it will be important that hospitals can pursue **a human resources policy** that is adapted to these changing needs. This can include the provision of nurseries on hospital sites, but also improved maternity leave arrangements and better career opportunities for physicians with similar arrangements as for other healthcare professionals. Under the current payment system with the vast majority of physicians being self-employed and paid on a fee-for-service system, there is little solidarity between physicians in case of sickness or maternity leave, especially when they work in small partnerships (see Chapter 9). Furthermore, career switches are not self-evident. If a medical specialty with a specific interest in 'quality management', for instance, wants to invest time in quality improvement initiatives this is at the cost of its own revenue. Such reorientations of physician careers should be made possible in the future.

> *"En ten tweede, en dat is meer vanuit HR dan geredeneerd, vanuit human resources: zorg dat de financiering een ondersteuning is van een loopbaanbeleid. En daar zijn wij totaal niet gewoon om mee te werken. Heb je ooit al een keer in de Medico-Mut over een loopbaan van een arts horen spreken? Neen. Uw nomenclatuurnummer van uw 1ste patiënt aan uw 30 jaar, als je afgestudeerde specialist bent, is dezelfde nomenclatuurnummer als die van uw 65 jaar. Het is precies alsof dat heel uw leven hetzelfde gebleven is, terwijl dat je enorm geëvolueerd bent, dat de geneeskunde geëvolueerd is, dat de manier van werken geëvolueerd is, dat je eigenlijk ook als mens geëvolueerd bent, dat je meer ervaring hebt, dat je misschien andere dingen liever doet. En daar wordt allemaal geen rekening mee gehouden."*

5.8.4 Payments for socioeconomically deprived patients should go beyond the individual hospital level

Transform the calculation method: individual patient-level corrections rather than hospital-level corrections

The system currently corrects at the hospital level. Some hospitals receive additional budget if a threshold of patients with a lower socioeconomic profile is met, while others not meeting this threshold, receive nothing. This is perceived as unfair. Stakeholders propose to integrate socioeconomic variables at the patient level in the calculation of justified hospital beds. As such, each hospital budget will be adjusted for the proportion of socioeconomically deprived patients it treats. Efforts in the past were unsuccessful because data about socioeconomic status were not precise enough and the models used were incomplete. Better data and criteria about the social situation of patients should be used to better reflect the actual need of social support. It should be investigated which data are available, for example, within the social services department of the hospital, and could be integrated in the hospital discharge dataset (MZG-RHM).

It is suggested to put this back on the political agenda. Stakeholders recommend to conduct a large study that aims to solve both problems. The outcome of such a study should be a correction method that is independent of the typical population of the hospital. If a hospital that is characterised by a wealthy patient population has to provide care to patients from lower socioeconomic groups, it should receive the same compensation for these patients as a hospital with a large proportion of patients with a low socioeconomic status. The correction method should be easily implementable by the responsible authority.

A multifactorial approach is needed

Stakeholders also acknowledge that a specific payment system for this group of patients will not solve the problem on itself. They consider it important to treat these patients in the most appropriate care setting. This will also require investments outside hospitals such as nursing homes, intermediate care facilities that are easily accessible or multidisciplinary primary care teams. It will also demand investments outside the healthcare sector, such as in housing and education. Therefore, the correction for hospitals working in socially deprived areas, currently integrated in the B8 part of the BFM, would more logically be integrated as one of the variables

in the multivariate formula modelling supply on the basis of population needs (see Chapter 4).

> *"Donc, de nouveau, il y a pas une réponse unique, c'est pas un financement spécifique qui va résoudre le problème socio-économique des patients. C'est à la fois la qualité de la prise en charge des besoins spécifiques de ces patients, des structures pour accueillir ces patients quand c'est plus nécessaire de les accueillir à l'hôpital, et si ces patients peuvent sortir aussi vite que les autres parce qu'en termes de soins ils ont pas besoin de plus... dans certains cas, c'est vrai, ils ont besoin de soins de plus parce que leur état est plus graves ou ils arrivent plus tard, aussi à l'hôpital."*

5.8.5 Shift to more prospective and pathology-based payments

Among stakeholders, there is much **support to shift to a more pathology-based and prospective payment system**. It is believed that this will increase efficiency and transparency. In addition, stakeholders indicate that hospital administrators will be able to better manage the hospital activities since their budgets will be more predictable when the tariff per pathology is determined a priori.

Of course, the introduction of **a fixed price per APR-DRG within a closed-end macro budget**, will not solve the current 'rat race' of hospitals to maximise their share of the national budget. To guarantee that hospitals have a more predictable budget than is today the case, some flexibility will have to be built into the payment system. Within the logic of the care area network (see Chapter 4), the macro budget should be sufficient to cover justified bed-days which are determined on the basis of population needs of the care area. Hospitals can be incited not to provide bed-days on top of that volume by reducing the tariff per APR-DRG. A comparable system is in place in Austria.[145] In other countries price/volume control mechanisms have been introduced to ensure that the overall hospital targeted budget is not exceeded. For example in France or England, if the overall hospital activity increases in year n, the national tariffs will be reduced in year n+1.[2]

From international experience we can learn that the concrete choices for the **design features of the DRG payment system** can make the difference as to whether the goals are reached or not. Three interrelated concepts need to be defined and elaborated: currency or catalogue, product and price/tariff.

5.8.5.1 The 'catalogue' – classification system and grouper

To get a common vocabulary to describe the hospital case-mix, most countries use a classification system that originates from the US DRG system.[2] The current APR-DRG system with four SOI-categories is considered a good system on which a more inclusive prospective pathology-based system can be developed.

In previous work we investigated in how far APR-DRGs classify patients in economically, statistically as well as clinically meaningful groups when applied to Belgian data.[18] A trade-off between granularity, within-group homogeneity and manageability of the system has to be found, taking into account the specific country context and system goals. APR-DRGs showing large variability could be split with a new tariff for each subgroup. The selected number of groups represents a trade-off between incentives for risk selection and efficiency.

In addition, nursing workload or socioeconomic status may also be taken into consideration to account more accurately for differences in resource use.

5.8.5.2 What is included in the product?

No all-inclusive payment system

Although there is much support for a more pathology-based and prospective payment system, **there is absolutely no support for an all-inclusive payment system.** Stakeholders acknowledge that most western countries have a hospital payment system with a larger share of the budget that is prospective and pathology-based compared to Belgium. Parts that are currently covered by different BFM-components or outside the BFM such as day care, could be grouped and integrated into a prospective pathology-based payment system. However, stakeholders indicate that none of these countries have an all-inclusive system that covers everything. Examples are the extra payments for university hospitals or payments for the emergency departments. We refer to KCE Report 121[18] and 207[2] and to the Euro-DRG report[5] (in 2011 the European Observatory on Health Systems and Policies launched an extensive report on hospital payment, providing comparative information from 12 European countries that have introduced a DRG-type hospital payment system) for recent overviews of the scope of DRG payments.

Payment systems are always a mix of different mechanisms.[2] An all-inclusive prospective pathology-based payment system is therefore not considered as appropriate for the Belgian context either. Moreover, stakeholders point out that the carefully developed historical balances should not be disturbed too drastically with the introduction of a new or updated hospital payment system. This concern applies to the remuneration of physicians in particular. According to stakeholders, an all-inclusive pathology-based payment system would possibly result in even more discussions on money than currently is the case. Physicians, after all, will first have to discuss with hospital managers about their share of the pathology-based budget and then discuss between themselves about how the physician share will be distributed between disciplines. It could also decrease the motivation of physicians to work hard (see Chapter 14).

Stakeholders put forward **different possible scenarios to keep the remuneration of physicians separate from the pathology-based payment system** (see also Chapter 9). Some prefer to keep the current fee-for-service system, but only to pay for the intellectual and physical labour of the physician and not anymore for direct and/or indirect costs related to providing medical services. This would imply that the deductions on physician fees are shifted to the hospital budget. Others prefer to pay physicians with a lump sum separate from the hospital budget, which would allow that the physician income is easily identifiable. Nevertheless, there are different opinions about what should be included in the lump sum. For some, this lump sum should also cover the operating costs of the medical activities that are currently included in the FFS. For others, it only concerns intellectual acts with all deductions shifted to the hospital budget.

Include parts of the current hospital budget if activity-related and under control of the hospital

Street et al. (2007)[146] provide three grounds for separate payments:

- Payments for services provided to patients for whom no satisfactory classification system is available or other (case-mix) classification systems are needed (e.g. mental health and rehabilitation);
- Payments for non-patient related activities (e.g. teaching and research);
- Payments for costs incurred by hospitals because of their location (e.g. rural) or because of constraints on the organisational structure. These costs are considered to be out of control of hospitals. For example in England, payments are made to account for differential prices hospitals have to pay for staff, land and buildings through the Market Forces Factor.

Applying Street et al. (2007),[146] the following **parts of the current BFM qualify for being included in the payment per DRG**: B1, B2, B3, B4, B5, B6 and B9 insofar costs are related to the hospital activity and hospitals can control these costs. Drugs that are currently covered by the prospective budget, introduced in 2006, would also be included in the payment per DRG. To safeguard homogeneity of resource use within each APR-DRG, payments for distortive price components such as high-cost drugs or devices should not be included.[18] Separate payments for outliers are also needed for the same reason. Stakeholders are in favour of having part of the payment on a FFS-basis to keep track of what is happening within the system. This is not only important for epidemiological reasons but it also allows identifying outliers.

Although rehabilitation and mental healthcare were out of scope of the current report due to time constraints, there is no reason why the design and principles of the payment system for these patient groups should be fundamentally different. Moreover, international examples (e.g. the DBCs in the Netherlands) exist illustrating it is possible to integrate these patient groups in a payment system that employs a same logic for these patient groups as for acute-care stays.

Include inpatient and day-care admissions in acute care but exclude complex, high-cost patients

Stakeholders indicate that **a prospective pathology-based hospital payment system is easier to implement for standardised non-complex pathologies and treatments.** Some stakeholders suggest starting with very straightforward standardised surgical treatments (i.e. the procedures selected for the reference amounts, see Chapter 9) and progressively expanding with other standardised procedures and medical treatments (e.g. normal vaginal delivery, hip replacement). Since a prospective pathology-based payment system requires cost data that are currently unavailable, alternatives to start with were suggested:

- For some standardised procedures it is relatively easy to change the calculation method of justified activities from a system that is based on the national ALOS to a fixed number of days per procedure. Fixing the number of days per procedure can, for example, be based on evidence-based clinical pathways. However, since the current BFM is a closed-end budget, fixing the number of days for a selection of standardised pathologies will not result in cost savings if these pathologies are not removed from the calculation of justified activities that aim to distribute the BFM across hospitals (see section 5.5). This system could be implemented progressively with, when data become available, another calculation method, i.e. cost-based and prospective. On the other hand of the spectrum of standardised LOS are the palliative care patients. If a LOS-based calculation method is kept, for these patient group a payment on the basis of the actual LOS should be made possible. If a palliative care patient dies after 60 days, 60 days should be taken into account. If the patient dies after 20 days, only 20 days should be taken into account.
- In the same line of thought, one could also start with a prospective pathology-based system for procedures and treatments for which there is agreement that they can be performed in day care. It is suggested to calculate hospital independent tariffs for these procedures on the basis of a day-care stay and apply this tariff for inpatient and day care.

It was repeatedly stressed that a prospective pathology-based payment system is less evident for highly complex cases that are characterised by a lot of clinical heterogeneity and variation in costs. Therefore, some stakeholders are of the opinion that a **pathology-based payment system is less appropriate for these complex pathologies** and that FFS should remain possible for this type of care. Other alternatives are suggested such as a payment system at the level of the 'care programmes' (see Chapter 4). This budget per care programme could be based on several criteria such as APR-DRGs but also on the provision of out of office services, highly complex and variable care linked at minimal volume thresholds and the reporting of process and outcome indicators, the permanent availability of staff for specific services such as burn care centres, intensive care units or emergency departments.

It is also suggested to expand the pathology-based part of the hospital payment system by including more settings. Some suggest to also including the polyclinics and other ambulatory hospital activities in the pathology-based payment system. This is a drastic expansion since the activities on polyclinics represent an important share of the hospital activities and budget.

Another suggestion is to include the pre- and aftercare activities in the pathology-based payment also covering the costs incurred in primary care, rehabilitation settings etc. This should be made possible for evidence-based 'transmural' clinical pathways (see also section 11.3.1).

> *"Enfin, voilà, je prends comme exemple ce genre de découpage. Et donc, ayons un financement à la pathologie forfaitaire qui couvre tout le trajet. Bon. On pourrait imaginer, si je prends l'itinéraire clinique, qui est fort développé déjà en Flandre. Ils en en ont déjà développé quarante-cinq, je crois, ou cinquante. Et dire : « voilà, l'itinéraire clinique pour telle pathologie, ça commence par un acte et ça se termine après et donc si c'est bien cette pathologie-là, on englobe tout là-dedans. » Ça, c'est possible quand c'est bien délimité. L'itinéraire clinique, c'est, je commence quinze jours avant un premier examen ou une semaine avant, c'était un autre examen, puis l'admission, on fait ça, deux jours après, ben ça… Après cinq jours, il sort et puis, le sixième jour, on l'appelle parce qu'il est à surveiller et cætera. Donc, mais ce n'est pas malade chronique, c'est des parties aiguës."*

5.8.5.3 APR-DRG tariffs based on cost data

Collection of cost data is needed but will take time

According to stakeholders, there is currently a discrepancy between the monetary values assigned to the different parts of the hospital budget, e.g. the monetary value of the B2-point is based on staffing costs and LOS, and the actual costs. A more inclusive pathology-based payment system will require a better **system to collect cost data to ensure that the monetary value of the APR-DRG better reflects the incurred costs**. This will require activity-based costing instead of prices per intervention. It will not be easy since the cost data measurement between hospitals will differ because, for instance, the organisation of care processes (e.g. cost calculation in one labo can differ from that in another because of different organisation methods) is different or because there are different payment systems and statutes for physicians (e.g. self-employed, salaried, pooling of FFS per discipline or across disciplines). It will, thus, require **a sufficiently large and representative sample of hospitals** and it will take at least two years to execute such a study.[147]

5.8.6 *Prerequisites for a more prospective pathology-based payment system*

A new payment method for physicians entails a new hospital government model

Integrating part of the current physician fees into the pathology-based payment system will change the relationship between physicians and hospital management. Physicians will lose the power that is currently exercised during the negotiation about deductions. As noted above, these negotiations risk to get bogged down in endlessly arguing about money issues and divert the attention from the core business, i.e. patient care. Removing or decreasing deductions from physician fees by integrating these amounts in the hospital budget will therefore reduce the power of physicians but also entails a risk of loss of organisational commitment and of less clinical input in management decisions, e.g. purchase of medical equipment and other investments. Therefore, it is required to set up **new governance models that ensure the involvement of physicians (and other stakeholders) in the decision-making process.** One suggested option is to work with investment funds where hospital management and physicians collaborate and jointly decide about investments (see also Chapter 9).

Monitoring of practice variations

There is a risk that the number of inappropriate admissions will increase under a system of payments per APR-DRG. Since this is difficult and labour intensive to audit, it will be important to monitor practice variations followed by targeted audits in hospitals that jump out compared with benchmarks. We refer to the AEP-survey (Appropriateness Evaluation Protocol) as described in section 4.2.1 for some empirical evidence on inappropriate admissions in Belgian hospitals.

Key points

Hospital budget (BFM): complex and untransparent mix of rules

- **Although originally there was a clear link between the (sub-) budget and its destination, over the years, several rules and exceptions were added. Although all these additions had a rationale on itself, the system as a whole became a complex and untransparent mosaic of sometimes conflicting rules and calculation methods.**

Structural underpayment

- **Through the years, the hospital budget became insufficient to cover all rules and standards (e.g. collective labour agreements, recognition standards) that are imposed by the authorities. This results in the so-called 'structural underpayment' of the hospital budget. We identified five main strategies used by hospitals to deal with this structural underpayment:**
  - **increased deductions on physician fees, causing strained relations between the hospital management and the medical staff;**
  - **fee supplements, with large variations within and between hospitals such that transparency of patient bills and financial accessibility are threatened;**
  - **profit margins that result from negotiated price reductions with pharmaceutical companies;**
  - **optimisation of care processes;**
  - **staff cuts which are seen as a possible (but last resort) solution.**
- **Undertaking action to resolve the structural underpayment in the BFM is urgently needed. These reforms could be financed via efficiency gains elsewhere (e.g. reduced acute-care hospital capacity or decreasing the number of inappropriate hospital admissions).**

DRG-based payment: Belgium is an international outlier

- During the last decades, lump sum payments, partly based on pathologies, have been introduced in the hospital payment system (e.g. clinical biology and medical imaging, pharmaceutical specialties, the B2-part of the hospital budget). However, most other western countries introduced prospective pathology-based hospital payment systems with more homogeneous and cost-based tariffs in comparison to Belgium.
- A large part (of the B2-component) of the hospital budget is redistributed across hospitals based on a calculation of justified activities and beds. The national average length of stay (LOS) per APR-DRG is, as such, used as the gold standard.
  - This system created a strong incentive for efficiency by a cutback of (part of) the overcapacity of hospital beds and a decrease in the average LOS.
  - In addition, the decreased LOS coincided with an increased intensity of care per day (i.e. concentration of activities during a shorter period). As nursing staff ratios did not change accordingly, the workload for nurses increased. This is problematic since Belgian staffing ratios are already low and it has been shown that staffing ratios are associated with patient safety.
  - The distribution of the national hospital budget not only depends upon the own activity of the hospital but also upon the activity (i.e. reduction in LOS) of all other hospitals. Hospitals want to stay ahead of their competitors resulting in inappropriate admissions (reinforced by the large capacity of acute-care hospital beds) and a 'regression to the mean'. The latter puts the quality of care under pressure (e.g. premature hospital discharges).
  - Different additional rules (e.g. supplementary budgets based on nursing intensity and socioeconomic profile of patients) are considered as unfair and based on untransparent criteria, disproportionally favouring specific groups of hospitals.
- Stakeholders, therefore, plead to shift the calculation method from average LOS towards a LOS based on evidence-based clinical pathways or to follow the international practice of a prospective pathology-based payment system based on cost data.
  - It is believed that a priori determined tariffs per APR-DRG will increase efficiency and transparency and will allow hospital administrators to better manage the hospital activities since their budgets will be more predictable.
  - To control macro-level expenditures a closed-end budget will still be needed, but hospitals should be allowed some flexibility to ensure that they have a more predictable budget than is the case today.
  - There is, however, absolutely no support for an all-inclusive payment system especially when this would imply the entire integration of medical specialist fees.
- From international experience and stakeholders comments some important design features of the DRG payment system can be listed:
  - The current APR-DRG system is considered a good starting point for the development of a prospective pathology-based system. However, it will require data simulations to ensure that groups are homogeneous in terms of costs and clinical significance. This exercise will be less evident for highly complex cases characterised by a lot of clinical heterogeneity and variation in costs. Therefore, some plead to start with a (broad) selection of standardised pathologies.
  - Only parts that are activity-related and under control of the hospital should be included while payments should be excluded as far as they concern patients for whom other (case-mix) classification systems are needed (e.g. mental health and rehabilitation) or non-patient related activities (e.g. teaching and research). Applying these principles, would result in a prospective pathology-based payment including the prospective budget for pharmaceutical specialties and the B1, B2, B3, B4, B5, B6 and B9 BFM components insofar costs are related to the hospital activity and hospitals can control these costs.

- **The current exceptions (e.g. nursing intensity, socioeconomic profiles) should be transformed in individual patient-level corrections as part of the prospective pathology-based tariff calculation rather than hospital-level corrections.**

The lump sum payment system for pharmaceutical specialties

- **The prescription of drugs has become much more efficient and rational since the introduction of the (DRG-based) lump sum payment system. Stakeholders are also positive about the separate list of drugs that can be considered as outliers and for that reason not suitable to be included in the lump sum. However, they would like to see that efficiency gains of the lump sum system are reinvested in hospitals.**

Registration systems: cost data are the missing link

- **The lack of control on the registration of pathologies and nursing data are described as an important weakness, resulting in data gaming. The auditing and monitoring of the registration systems should be done more frequently and in a targeted way and in case of fraud, sanctions should be applied. Another important shortcoming is the serious time lag between data registration and use for the hospital payment.**
- **In Belgium, cost data are only available from punctual activity-based costing initiatives on a voluntary basis. Stakeholders propose to expand data collection to a sufficiently large and representative sample of hospitals. In other countries, one or more independent agencies are responsible for the management and monitoring of such a DRG system.**

6 PAYMENTS FOR DAY-CARE ACTIVITIES

The decision to treat a patient in an ambulatory or hospital setting is influenced by many factors such as the state of medical science and technology and the legal framework but also financial incentives.[106] In this chapter we describe the evolution of day-care activities and of payments for these activities (section 6.1), the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (section 6.2) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 6.3). We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organisations such as the OECD or the WHO) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, interesting international initiatives or best practices were added for illustration.

6.1 Hospital day-care activities in Belgium

6.1.1 Definition of day care

There is no internationally accepted terminology to make a distinction between inpatient care, day care and ambulatory care. According to the OECD System of Health Accounts services of curative day care comprise “medical and paramedical services delivered to day-care patients during an episode of curative care such as ambulatory surgery, dialysis, and oncological care. It includes ambulatory surgery day care, which is all elective invasive therapies provided, under general or local anaesthesia, to day-care patients whose post-surveillance and convalescence stay requires no overnight stay as an in-patient”.[148]

In Belgium, day care is defined as “care in an institution with established procedures for selection of patients, safety, quality control, continuity, reporting and cooperation with various medical-technical services”.[149] The

criteria a day-care stay has to meet can be derived from the conditions for reimbursement:[106]

- "the provided care does not give rise to a hospital overnight stay;
- the provided care does not take place in a consultation ward (for ambulatory patients) of the institution;
- the provided care is not immediately followed by a scheduled admission in the same institution;
- and "(...) a procedure (...) is established for monitoring the patient after his discharge."

The distinction between surgical and non-surgical day care is based on a different use of the hospital infrastructure, such as the operating room.

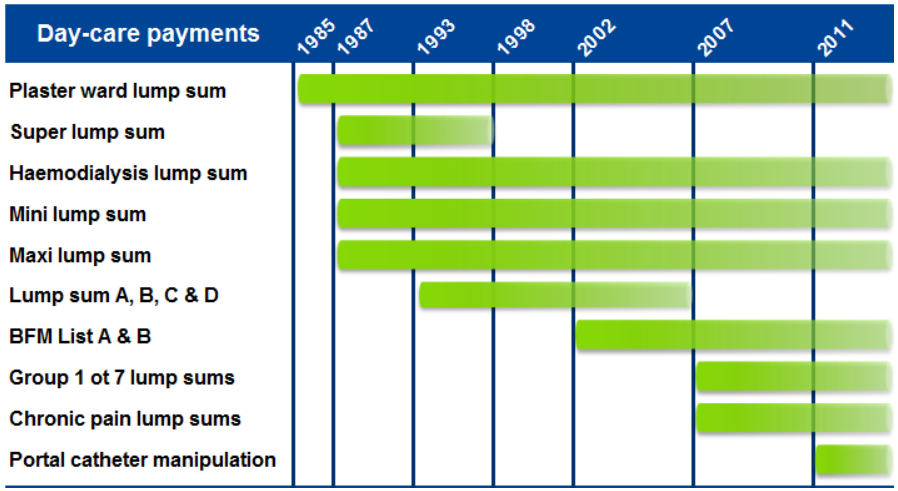
6.1.2 Payment systems for day care

This section draws on section 3.3 of KCE Report 192, in which an extensive description of the evolution of different types of day care can be found.[106] Payments for day care depend on the type of day-care setting. Figure 15 gives a summary timeline of the major reforms in day-care payments. The overview is limited to payments by federal public authorities. Payments by private insurers or patients' out-of-pocket payments are considered out of scope in this chapter.

Day-care activities can be grouped into day-care stays (comparable to an inpatient stay but without an overnight stay) and more ambulatory activities. We include both groups in the overview since hospitals also receive lump sum payments for the more ambulatory activities that make use of the hospital infrastructure.[m]

Day-care stays are paid (in 2014) by the hospital budget (called the budget of financial means (BFM)) (see Chapter 5), Maxi lump sums and groups 1 to 7 lump sums; more ambulatory activities are paid by a plaster ward lump sum, groups 1 to 3 lump sums for chronic pain, haemodialysis lump sum and a lump sum for portal catheter manipulation. In the next paragraphs the different lump sums are briefly described.

Figure 15 – Overview of major reforms in payments for day care



Source: Update of Figure 4 in Van de Sande et al. (2013)[106]

1985: first lump sum for plaster ward

The first step in paying for hospital services to day-care patients by means of a lump sum payment was taken on 1 April 1985[n]. At that time, a lump sum, identical for all hospitals, was introduced to compensate hospitals for costs incurred by the use of plaster ward facilities and their assigned personnel. It is at this moment still valid under the following conditions: for treatment of fracture or dislocation; or other orthopaedic treatment; or for plaster mouldings.[106]

[m] As in the remainder of the report, rehabilitation care is out of scope of this chapter.

[n] Before that date, payments for the plaster ward were part of the per diem price.

1987: Mini, Maxi, Super and haemodialysis lump sums

On 1 January 1987 four lump sums were introduced resulting from the national agreement between the representatives of the hospitals and the sickness funds. The Mini lump sum, Maxi lump sum[o] and Super lump sum are hospital specific as they are determined by the B2-part of the per diem price, which covers clinical costs (mainly for nursing and care staff and for medical products). The price of the Mini lump sum equals half of the per diem price for B2, the price of the Maxi lump sum is equal to and the Super lump sum is twice the B2 part of the per diem price. Each lump sum is linked to a restricted number of nomenclature codes, the so-called 'nominative list'. When the hospital provides services from one of the nominative lists, it is entitled to the corresponding lump sum. Due to the hospital-specific character of the lump sums, large inter-hospital price variations exist for equivalent services.

The fourth lump sum introduced in 1987 is the lump sum for hospital haemodialysis,[150, 151] which is also hospital dependent. Before 1996 there was a linear relationship between a hospital's per diem price and the lump sum for chronic haemodialysis. Hospitals received 75% of their per diem price per dialysis session, with a minimum of € 111.55. In addition, they received an extra 15% if 25% or more of the dialysis patients were treated with dialysis modalities outside the hospital. Hence, also the lump sum bonus for treating patients with alternative modalities was hospital dependent. Since 1996, the relationship between the lump sum for hospital haemodialysis and the per diem price has been gradually reduced.[152] In 2014, payments for hospital haemodialysis consist of a baseline lump sum, a percentage of the hospital per diem price[p] and a lump sum bonus for treating dialysis patients outside the hospital, where the bonus payment depends on the percentage of patients receiving alternative dialysis treatments (incremental lump sum). In addition, minimum and maximum amounts for total payments are defined.[q]

1993: lump sums A to D

In 1993 four new lump sums were introduced to encourage day-care activities. These lump sums, called A, B, C and D, were hospital independent and were again linked to nominative lists of services, that were adapted over the years[r]. In April 1998 the Super lump sum was abolished and was (largely) replaced by the A-lump sum.

2002 reform: day-care surgery centre[106, 18, 10]

Since the reform of 1 July 2002, payments for day-care surgery are included in the Budget of Financial Means (BFM). The general costs are included in part B1 of the BFM and costs specific to the day-surgery centre and its activity in the operating room are included in part B2.

Payments for activities in a day-care surgery centre concern two types of stays. A first type concerns interventions for which day-care surgery is considered to be justified. These interventions are recorded on List A. The initial selection of the nomenclature codes on List A was based on the previously fixed list of interventions that gave entitlement (before the reform of 1 July 2002) to a Maxi lump sum or to lump sums A, B, C and D. In addition, the procedures have to meet two additional criteria: involving an invasive surgical intervention and the number of the interventions performed in day care or in a policlinic are at least 60% of all interventions performed in ambulatory care.[153]

For interventions on List B (inappropriate inpatient stays), hospitals receive exactly the same amount independent of the care setting being inpatient or day care. For codes on List B the same criteria hold as for List A (former Maxi lump sum or lump sums A to D and involving an invasive surgical intervention), except that the substitution level of the inpatient stays by day-care stays has to be at least 10% during a certain reference period.[154] A stay is defined as an inappropriate inpatient stay if it meets all of the following criteria at the same time:[18]

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[o] The conditions for charging a Mini or Maxi lump sum are explained in the 2007 reform.

[p] Since 1 July 2002, the calculation of the Budget of Financial Means (BFM) is no longer based on per diem prices. The per diem prices used for the calculations of the lump sums are therefore based on the per diem prices as of 30 June 2002.[152]

[q] See Table 14 for the exact amounts in 2014.

[r] Since lump sums A to D were replaced by 7 groups of lump sums in the 2007 reform, we only describe the price setting of the 7 groups.

- it involves one of 32 selected APR-DRGs;
- it concerns an inpatient stay;
- it concerns a scheduled admission;
- the length of stay is at maximum three days;
- the stay has a severity of illness class of 1 (minor);
- the patient did not die during the stay;
- the stay has a mortality risk index of 1 (low);
- the patient is under 75 years of age.

The total number of justified stays in a day-care surgery centre is the sum of stays in the day-care surgery centre (List A) and the inappropriate inpatient stays (List B). For each justified stay the hospital is allotted a justified length of stay of 0.81 days.

The reform of 2002 also changed to hospital budget allocation mechanism. Since then, the BFM is divided into a fixed and a variable part. The fixed part is paid by the sickness funds to the hospitals on the basis of monthly advances ('provisional twelfths') and includes (theoretically) 80% of the subparts B1 and B2 and 100% of all other parts. The remaining variable part includes (theoretically) 20% of the subparts B1 and B2. For general hospitals, the variable part is paid according to the number of admissions (10% of the budget) and the number of nursing days (10% of the budget). This mechanism holds for inpatient stays and stays in a day-care surgery centre.

2007 reform

The new national agreement between hospitals and sickness funds effective on 1 July 2007 changed the application rules of the Mini and Maxi lump sum, introduced 7 new groups of lump sums, partially replacing the lump sums A to D, and 3 lump sums for chronic pain.

The lump sums for the 7 groups and for chronic pain have a fixed price per lump sum and are linked to nominative lists of services.

Price scaling for the fixed lump sums of the 7 groups was based on a pilot study in 95 hospitals conducted in 2005 by the National Institute for Health and Disability Insurance (RIZIV-INAMI) to calculate the real cost of the interventions on the nominative lists. The following items were taken into account:[106, 10, 155]

- "General costs and costs of administration;
- costs for bedding and laundry;
- costs for cleaning and heating;
- nursing activity (time) for preparation of patient, ward and intervention as well as for after-care;
- type of anaesthesia;
- costs of intervention ward, recovery room and patient room;
- food and beverages."

The Mini and Maxi lump sum are both hospital specific but have a minimum price of € 25.[149] Hospitals can charge a Mini lump sum in case of an emergency bed occupation or intravenous infusion. The Maxi lump sum can be charged in case of medical and nursing surveillance for any intervention needing a general anaesthesia supervised by an anaesthetist or for the administration of specific chemotherapeutic agents. The nominative lists were removed for both lump sums by the 2007 reform.

For an intervention performed under general anaesthesia, which is also on the nominative list of one of the 7 groups, hospitals have the choice between charging the Maxi lump sum (hospital-dependent price) and the fixed price of the groups 1 to 7 lump sum.[106, 149]

2011: lump sum for portal catheter

Since 1 February 2011 hospitals receive a fixed price for portal catheter manipulation (i.e. flushing in combination with medical imaging requiring contrast fluid or radioisotope and/or blood sampling). The lump sum was introduced to avoid that hospitals would charge a Mini lump sum for this intervention.[10, 106]

2014 reform of Mini lump sums

On 1 January 2014 the Mini lump sums were abolished. It was decided to include the interventions allowing hospitals to charge a Mini lump sum (emergency bed occupation or intravenous infusion) in the B2-part of the BFM from 1 July 2014 onwards.[156] The measure was taken to break the link between the lump sum amount and the historical hospital-dependent per diem price and also to reduce practice variations.[157]

As a transitional measure, hospitals received in the period 1/1/2014 – 30/06/2014 a fixed amount for each intervention previously giving right to

charge a Mini lump sum. The fixed amount was calculated as the average amount of the Mini lump sum in 2013. Since the Mini lump sums were hospital specific and equalled half of the B2-part of the per diem price, the new fixed amount is lower than the Mini lump sum for some hospitals and higher for others. Additional measures were taken to avoid that hospitals would charge supplementary payments to patients or to the health insurance. It has been decided to prolong the measure until 1 July 2015. However, the amount has been reduced to 80% of the advance that was given for the first half of 2014. The remaining 20% has been transferred to the budget for emergency services, because about 28% of the Mini lump sums were used in the emergency department.

The total budget of the Mini lump sums in 2013 (€ 63 million) transferred to the BFM was reduced by € 10 million, as an austerity measure. The National Council for Hospital Facilities (NRZV-CNEH) is in charge of working out a proposal for the distribution of the reduced budget (€ 53 million) among hospitals.

Payments for day-care activities come from a mix of sources:[106]

- Budget of Financial Means (BFM) for day-care surgery and activities in former Mini lump sums.
- Hospital–independent lump sums: plaster ward lump sum, group 1 to 7 lump sums for non-surgical day care, group 1 to 3 lump sums for chronic pain treatments and the lump sum for portal catheter manipulation. All have a fixed price.
- Hospital–dependent lump sums: Maxi lump sum, priced according to previously allocated B2 part of the hospital's BFM, and haemodialysis lump sum.

Lump sum amounts

Table 13 gives the amounts in 2014 for the hospital-independent lump sums and Table 14 for the haemodialysis lump sums. Strict rules apply for cumulative charging of different lump sum amounts.[158]

The tariffs for the haemodialysis lump sums are the same as those mentioned in the Royal Decree of 23 June 2003[159] multiplied by an adaptation factor to reflect current prices. The minimum amount of the lump sum is equal to € 126.51 and the maximum amount equals € 292.84 (in 2014).

Table 13 – Lump sum amounts for day-care activities in 2014

Lump sum	Amount in 2014
Plaster ward	€ 29.95
Group 1	€ 165.02
Group 2	€ 201.57
Group 3	€ 291.14
Group 4	€ 207.45
Group 5	€ 215.70
Group 6	€ 256.97
Group 7	€ 212.17
Group 1 chronic pain	€ 231.02
Group 2 chronic pain	€ 128.49
Group 3 chronic pain	€ 100.18
Portal catheter manipulation	€ 28.38

Source: RIZIV-INAMI[160, 161]

Table 14 – Lump sum amounts for chronic haemodialysis in 2014

Percentage of patients receiving alternative dialysis treatments	Incremental lump sum	Baseline lump sum
5-10%	€ 33.31	€ 44.65 + 20% of per diem* until 30 March 2014 18.63% of per diem between 1 April 2014 and 30 June 2014 19.32% of per diem from 1 July 2014
10-25%	€ 81.63	
25-35%	€ 106.52	
>35%	€ 112.38	

Source: Oral communication D. Wouters (RIZIV-INAMI) and RIZIV-INAMI[162]
** Per diem on 30 June 2002*

Additional payments for day-care activities

Under certain conditions, specified in the circular letter 2007/10 add to the hospitals,[163] they are also allowed to claim consultation, coordination, permanence and surveillance fees as well as lump sum fees for clinical biology. For example, in addition to the lump sum payment per haemodialysis treatment, hospitals also charge a medical fee per session for the nephrologist.

6.1.3 Volume and expenditures

Between 2004 and 2010 total payments for day-care and inpatient hospital stays increased yearly by 4.1% on average from € 4.13 billion to € 5.25 billion.[s] For day care only the yearly increase equalled 4.5%, from € 307 million to € 398 million; for inpatient care only the yearly increase equalled 4.1%. Hence, the increase for day care was not compensated by a decrease in inpatient payments. The increase is in the first place the result of a price effect: the national weighted per diem prices rose by 34.3% from € 288.94 euro to € 388.14.[t] In terms of volume, a decrease in the number of inpatient days was observed, which was entirely due to a reduction in the average length of stay from 7.8 days in 2003 to 7.2 days in 2011.[u]

Figure 16 shows the evolution of payments for day-care activities by type for the period 1995-2012. Contrary to the results described in the previous paragraph, the payments for surgical day-care in Figure 16 only refer to the lump sums per admission and per day and not to the fixed part of the hospital budget (see section 6.1.2).

Figure 17 gives the number of day-care activities per type between 1995 and 2012. The number of day-care stays[v] increased by 3.7% per year (50 000 to 60 000 stays per year) from about 900 000 stays in 2002 to 1.5 million stays in 2012.[165]

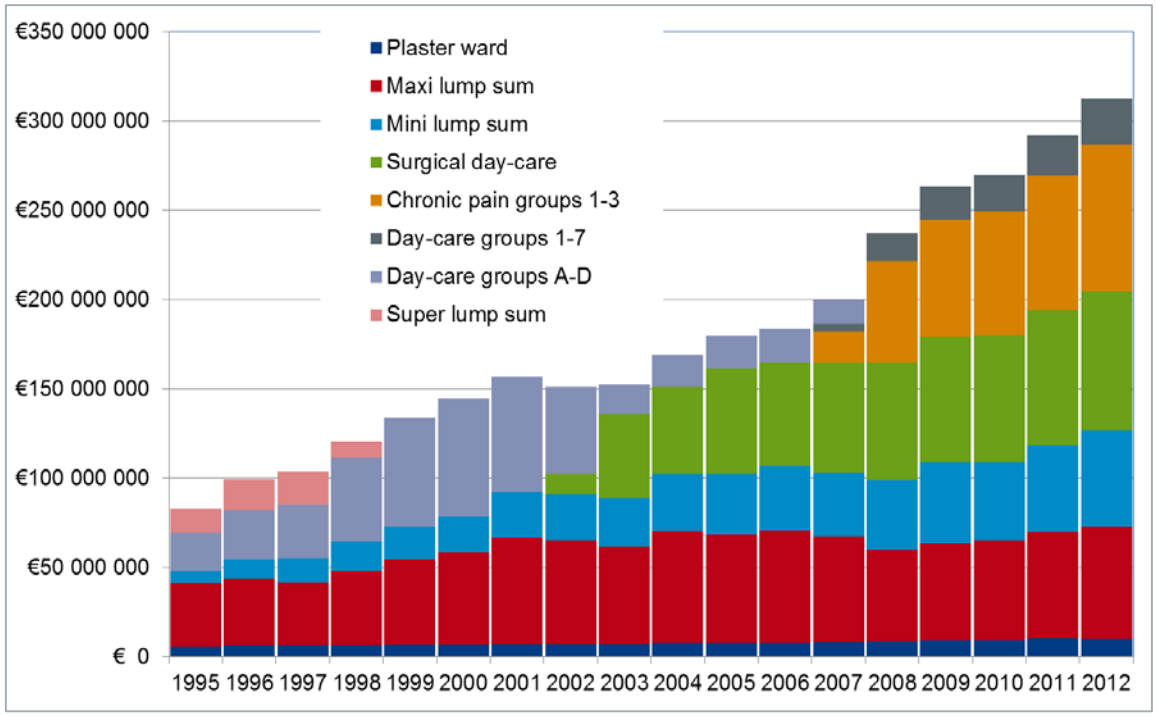
[s] We refer to KCE Report 192 for a detailed analysis of the evolution of stays and payments.[106]

[t] We refer to section 5.7.3.5 in KCE Report 183 for the calculation method of the weighted per diem prices.[164]

[u] The figures in this paragraph are based on data files available at KCE.

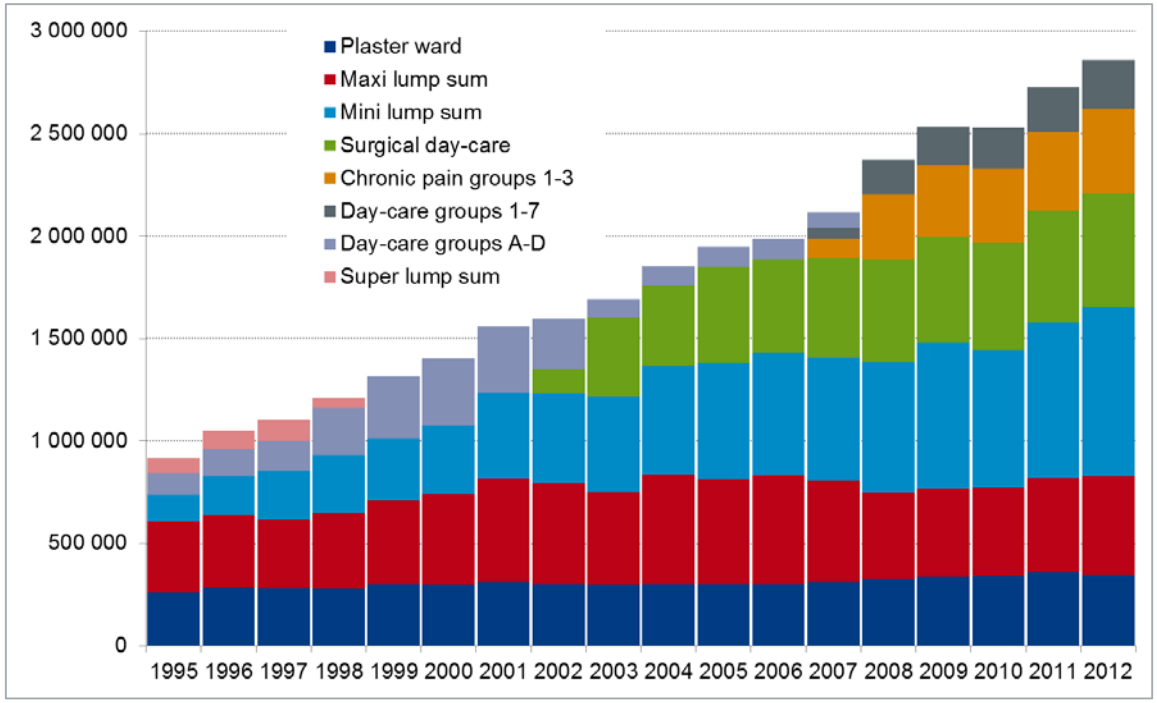
[v] Excluding more ambulatory activities paid by a plaster ward lump sum, groups 1 to 3 lump sums for chronic pain, haemodialysis lump sum and a lump sum for portal catheter manipulation.

Figure 16 – Evolution of lump sum payments for day-care activities by type, 1995-2012



Source: Update of Figure 11 in Van de Sande et al. (2013)[106]

Figure 17 – Evolution of the number of day-care activities by type, 1995-2012



Source: Update of Figure 12 in Van de Sande et al. (2013)[106]

6.2 Critical appraisal: a fragmented payment system for day-care activities

6.2.1 *The BFM includes day-care surgery but no other day-care activities: a difference without rationale*

Stakeholders are of the opinion that the **payment system for day-care activities is implemented in a fragmented manner**. New rules have been implemented without (sufficiently) reviewing or aligning them with the existing rules. As a result, the payment system has reached a level of complexity such that it is not clear, for the healthcare provider or even the payer, what incentive is actually given (e.g. incentive in favour of or against day care). There is a need to reform the payment system for all activities performed within the hospital and make them consistent. However, stakeholders also point out that a reform would probably have a large impact on certain hospitals and think that to avoid too large a shock, it was preferred to find a balance by introducing small changes to the system resulting in the current hybrid system.

> *"Dans certains cas où on a tout intérêt à augmenter la sévérité, d'une façon ou d'une autre, pour garder les gens en hôpital classique, dans d'autres, on joue sur des forfaits dont la base, de nouveau, c'est soit des miniforfaits avec une base historique d'avant 2002, donc… On garde comme ça des éléments mélangés sans doute, en partie, parce que quand on fait les calculs d'un nouveau système, on se rend compte, évidemment, des impacts de changement que ça peut avoir sur certains hôpitaux et donc, on essaye de retrouver un équilibre… voilà... pour un peu amortir les chocs des changements et alors on a un système fort hybride."*

KCE Report 192 came to a comparable conclusion. The current payment system for day-care activities **lacks transparency and coherence**. Its complex structure is mainly the result of successive political choices and stakeholder agreements to give financial incentives for hospitals to support day-care activity.[106] The payment system of day-care activities is characterised by a double dichotomy which can lead to confusion when applying the rules:

- The BFM for day-care surgery and activities in former Mini lump sums versus non-surgical lump sum payments. The BFM is a closed-end budget determined ex ante. The non-surgical lump sums are paid per service or package of services and can been seen as a kind of fee-for-service payments (see section 6.2.3).
- Hospital-dependent versus hospital-independent lump sums.

Some stakeholders emphasize that **the inclusion of day-care surgery in the BFM while other day-care activities are paid via different lump sums outside the BFM has historical grounds, but is not logical**.

The lump sum payment principle is regarded as an acceptable payment method for day-care activities, but for some stakeholders on the condition that it is integrated in the general hospital payment system (i.e. BFM). After all, day-care activities (both surgical and non-surgical) are relatively homogeneous and standardised which makes them suitable for case-based payment. Others prefer a separate payment system for specific or medico-technical procedures such as the operating room, intensive care unit, emergency department or dialysis. This separate system could be within or outside the BFM.

Nevertheless, according to stakeholders, making lump sums (i.e. Maxi and Mini lump sums) **hospital dependent** by pricing them according to the previously allocated B2 part of the hospital's BFM is **a major flaw in the system**. The variable amounts of lump sums between hospitals for the same treatment are perceived as unfair.

> *"En dat je voor hetzelfde product dezelfde prijs krijgt, dat is in se een goede zaak. Zou krijgen, want in de praktijk is het zo niet. Denk aan de dagkliniek miniforfait en maxiforfait, dat varieert per ziekenhuis van het enkele tot het dubbele. Dat is dus eigenlijk schandalig. Men probeert al 10 jaar om dat recht te zetten. Maar in alle commissies zetten ze dus de have's en de have's not naast mekaar. Diegenen die nu het dubbele forfait hebben, die zeggen natuurlijk: alles moet blijven gelijk het is. En diegene die het laagste forfait hebben, zeggen: we willen dat het wijzigt. En er komt dus nooit een consensus uit. We hebben onlangs de berekeningen eens gemaakt. Het maxiforfait in [ziekenhuis x] is het dubbele, denk ik, van dat van ons. Ik denk dat wij ongeveer op de middenmoot zitten. Dus dat is eigenlijk echt een nadeel van de huidige berekening, dat het eigenlijk ziekenhuisafhankelijk is. … Dat is absoluut*

onfair, hé, dat je voor dezelfde behandeling dubbele inkomsten krijgt. Dat is een schandaal eigenlijk."

However, interviewees complain that due to the recent decision to abolish the Mini lump sums and change the payment from a hospital-dependent to a hospital-independent price, some hospitals will lose a lot of money. The change in payment system should have been accompanied by transitional measures other than paying the national average amount of the Mini lump sums to all hospitals because this disadvantages hospitals that were previously above the average.

The difficult and lengthy negotiations between stakeholders to introduce standardised tariffs for day-care activities result in pessimistic views about the feasibility of future more case-based oriented payment systems for both inpatient stays as well as one-day activities. It should be noted that part of the stand-still can be allocated to the current negotiation and decision-making model (see Chapter 3).

"En daarom ben ik ook zo sceptisch. Als men dat nog niet geregeld krijgt, hoe gaat men dan voor die duizenden APR-DRG's een eerlijk systeem, een eerlijke vergoeding… Dat is dus a priori onmogelijk geworden, hé. Dus men moet de mensen niet wijsmaken dat men dat gaat kunnen doen. Dat zal niet gebeuren."

The lack of a clear delineation between day-care stays and ambulatory activities is also considered as an obstacle to the introduction of standardised tariffs. For example, some technical acts such as chemotherapy or a colonoscopy are performed in day care within the walls of a hospital, while other acts such as an echography are performed in an ambulatory setting.

"C'est qu'il y a une imprécision sur ce que représente l'hôpital de jour médical. Pour l'hôpital de jour chirurgical, c'était simple: dès qu'il y a passage au bloc opératoire, on est dans un hôpital de jour chirurgical. Dans le médical, entre des chimiothérapies ambulatoires, des actes techniques que l'on peut faire dans le cadre d'une consultation et une véritable hospitalisation de jour il y a un espèce de flou qui rend l'inclusion dans une logique de financement à la journée d'hospitalisation plus difficile, donc il faudrait définir clairement à partir de quand on est dans le cadre d'un hôpital de jour médical et on peut définir qu'un certain nombre de prestations techniques telles que chimiothérapies, coloscopies ou autres actes de ce type déterminent qu'on est bien dans un hôpital de jour médical par rapport à une consultation dans laquelle on fait un certain nombre d'actes d'échographie ou autre mais qui resterait consultation. Si cette distinction est clairement faite, à ce moment-là, il n'y a pas beaucoup de problèmes pour faire basculer l'hôpital de jour médical dans le BMF."

6.2.2 Dialysis: a 'jackpot' for hospitals?

In KCE Report 124 on the organisation and financing of chronic dialysis in Belgium[152] it was analysed whether the financial incentives created by the payment system for the different treatment modalities of dialysis (haemodialysis in a hospital setting, haemodialysis in a satellite unit, peritoneal dialysis and home haemodialysis) are appropriate to ensure an efficient allocation of dialysis resources.

One of the conclusions was that **the current payment system** does not reflect the real costs to the hospital and the patient and **is not neutral when balancing costs and revenues**. For hospitals it is more profitable to move patients from haemodialysis in a hospital setting to a satellite unit because this is a less costly alternative than peritoneal dialysis for the hospital. This is, however, a more costly alternative for the RIZIV-INAMI. Although the incentive mechanism (see the incremental lump sums in Table 14) has had a clear effect on the use of satellite haemodialysis, its effect on peritoneal dialysis has been small. In theory, a possible solution would be to refine the current incentive mechanism for alternative dialysis modalities with a distinction between peritoneal dialysis and satellite haemodialysis. In practice, this would require setting a threshold for the proportion of peritoneal dialysis in all alternative dialysis modalities. Since there is no scientific basis for such a threshold, as the choice of dialysis modality is not only based on patients' profiles but also on patients' preferences, refining the system with lump sum bonuses will probably be difficult.

A second conclusion concerns **the costs covered by the lump sum payment in the different treatment modalities**.[152] For haemodialysis in a hospital setting the hospital can charge a lump sum and a medical fee, covering the intellectual act of the nephrologist as well as the consumables. This contrasts with the payment system for the other treatment modalities, where lump sums are supposed to cover all costs. Whereas the incremental lump sum system has created a financial incentive for hospitals to develop satellite haemodialysis rather than peritoneal dialysis, for nephrologists the fee-for-service payment system for haemodialysis in a hospital setting may remain the most attractive option.

Stakeholders also underline that the current payment system for dialysis is very profitable but that these 'profits' are used to pay other services such as diabetology, neurology and especially paediatric neurology (see Chapter 9). Others are of the opinion that the profitable payment system for haemodialysis is a disincentive for quality since hospitals are financially penalized if they put a patient on a transplant waiting list.

> *"Alors ce qui m'agace au plus haut point, c'est que les mutuelles disent : vous gagnez beaucoup trop d'argent en dialyse. Moi je veux bien, mais il faut revaloriser les autres services. Sinon je ne vois pas comment je peux payer la diabétologie, la neurologie, la neurologie pédiatrique. Ça c'est le pompon. On perd un million d'euros par an sur la neurologie pédiatrique et on a une équipe sensationnelle."*

> *"La dialyse c'est le jackpot. Un patient dialysé c'est trois séances par semaine pendant 52 semaines. 150 séances de dialyse. Quand vous perdez un patient vous perdez 150 séances de dialyse à ces tarifs-là, plus les honoraires du médecin. Si vous mettez un patient sur une liste de greffe, je trouve que, c'est prouvé que la greffe est moins chère pour la société, c'est quand même mieux pour le malade, la survie n'est pas moins bonne, que du contraire, que la dialyse, que du contraire. On devrait avoir un incitant en qualité. Mais c'est refusé par les hôpitaux qui ne font pas de greffes."*

6.2.3 *Evolution of day-care activities: a mixed picture of shifts and growth*

The lump sums (outside the BFM) are in fact a kind of fee-for-service, albeit on a higher aggregation level. For example, groups 1 to 7 lump sums or groups 1 to 3 lump sums for chronic pain treatments have a fixed price and require a specific health service or package of services to be performed.[106] They are kept outside the BFM and do not affect the number of 'justified activities'. According to stakeholders, they contribute to the overproduction problem because physicians, but also the hospital management, are incited to produce as much as possible.

The system of Mini lump sums entails the risk that not the most appropriate care is provided or that the introduction of innovative drugs is hampered. For example, the fact that a Mini lump sum can be charged in case of the administration of intravenous (IV) medication could encourage the use of IV chemotherapy at the expense of innovative per os or subcutaneous administration of chemotherapy that can be as effective but with less discomfort for patients.

> *"Artsen krijgen het verwijt dat ze overconsumptie hebben. Ziekenhuizen zeggen: wij hebben dat niet. Zij hebben dat ook. Want alles wat je in dagactiviteit doet, dat kan mini-, maxi- of andere forfaits genereren, daar heb je ook een puur activiteitengebaseerde financiering. Waar dat het luik 'verantwoord zijn' niet meer ter sprake komt, wel integendeel. Om nu simpelweg het voorbeeld te nemen van het miniforfait. Dus het miniforfait kan je aanrekenen als er iemand een infuus krijgt en een medicament in dat infuus. Dat remt de switch naar innovatieve geneesmiddelen. Er zijn bijvoorbeeld op dit moment heel wat nieuwe antikankermiddelen, chemotherapeutica, die je per os kunt geven. Maar als je dat per os geeft, word je financieel gepenaliseerd."*

In KCE Report 192[106] the impact of the regulation and payment rules on the different care settings was analysed for a selection of 16 (groups of) interventions. In general, it was found that **the increase in day-care payments was not compensated by a decrease in inpatients payments.** Different patterns of day-care activity were observed:[w]

[w] See Table 2 in the Synthesis of KCE Report 192.[106]

- A shift from inpatient to day care. Some of these shifts are the result of regulation, e.g. for arthroscopic meniscectomy, tonsillectomy and removal of deep osteosynthesis material. In other cases, a new technology was the main driver of the shift, e.g. for mesh grafts for inguinal hernia repair and new, less aggressive techniques for varicose vein eradication.
- A shift from ambulatory to day care, e.g. for medium–grade varicose vein surgery.
- A widening of indications, e.g. for eye lens surgery or carpal tunnel surgery.
- Overall practice growth with an increase in both inpatient and day-care activities, e.g. subcutaneous portal system implant for administration of medication.

Although it is difficult to isolate the impact of the payment system from other policies such as regulation, introduced in the same period, some shifts can be attributed to changes in the payment system. For example, the 2002 reform induced shifts from inpatient to day care for interventions such as ultrasound-guided or laparoscopic follicle aspiration, inguinal hernia repair and subcutaneous portal system. The effect of the 2007 reform, introducing lump sums for groups 1 to 7, is visible in the global analyses as well as in the case studies for the 16 (groups of) interventions, e.g. for lower gastrointestinal fibre optic endoscopy, extracorporeal shock wave lithotripsy and therapeutic epidural infiltration. Depending on the case study, shifts from ambulatory or inpatient care to day care were noticed.

6.2.4 Regulation in choice of care setting

Lists not sufficiently evidence-based

Although medical technology is rapidly evolving, the initial selection of interventions on List A for day-care surgery has hardly been adapted since 2002, except with the reform in 2007.[106] The meanwhile **obsolete selection of the interventions on List A has a restraining effect on day-care surgery activities**. The choice of care setting is hardly supported by scientific evidence. For example, while in some countries the percentage of laparoscopic cholecystectomies performed in day-care exceeds 50%, it is 3 to 4% in Belgium.[106, 166] Cholecystectomy is not included in List A and hence there is no (positive) financial incentive to perform this intervention in day care. Of course, any international comparison should also include the level of availability of post-hospital services.

Likewise, also the interventions on List B have hardly been updated since 2002. Even the selection of APR-DRGs is in 2014 still the same as in 2002.[106] Comparable to List A, also **List B provided no (negative) financial incentive to switch to day care**.

One size fits all

Stakeholders support the fact that lists of procedures are drawn for which it is considered to be safe to perform them into day surgery. However, some criticize the binding character (i.e. financial penalization if performed as an inpatient stay) of the B-list interventions and argue that the ‘one size fits all’ approach does not take account of patient pathology.

> *“En soi, c’est logique de dire par sécurité on définit des interventions qu’on peut faire de jour. Là, ça va un peu plus loin, puisqu’il y en a que vous devez faire de jour. Et là, il y a quand même des… parce qu’on n’a pas vraiment pris en compte les pathologies des gens, c’est la même chose, mais c’est inéluctable dans un système comme celui-là. C’est one size, fits all, donc c’est la même taille pour tout le monde. C’est un costume confection, vous le mettez, si ça fait des faux plis,…”*

6.3 Suggested solution elements from stakeholder consultations and literature

Choice of care setting based on scientific evidence

As a first step towards a reform of the payment system for day-care activities, a **global plan for all hospital activities** should be developed. This overall plan should contain clear goals and strategies to support and facilitate the expansion of day-care activities.[106] The plan should also contain a clear framework defining for each type of care the most appropriate care setting: inpatient, day care or ambulatory care. The choice of care setting should be based on scientific evidence. For interventions and procedures where day care is feasible and advisable, a target (%) for day care should be provided, based on scientific evidence, international trends and hospital benchmarking.

International initiatives could serve as an example. By way of illustration, we briefly describe initiatives taken in France and England.

Directory of Procedures of the British Association of Day Surgery (BADS)

The British Association of Day Surgery developed a Directory of Procedures, at this moment for over 200 procedures over 12 specialties.[167, 168] Clinical leaders in the field of day and short-stay surgery were consulted to review the procedures and consider what percentage of activity could be achieved in a procedure room, as a day case, as 23 hour stay or with a less than 72 hour stay. The results were reviewed by the BADS Council. These procedure-specific targets serve as a focus for clinicians and managers in the planning and provision of short-stay elective surgery.[169]

Joint action programme for day surgery in France

A joint action programme between the National Authority for Health (‘Haute Autorité de santé’, HAS) and the National agency for healthcare organisations’ performance (‘Agence Nationale d’appui à la performance des établissements de santé et médico-sociaux’, ANAP) was established to increase the proportion of surgical activities carried out on a day-surgery basis.[170] The core missions of both institutions in the partnership complement each other. The main task of HAS is to produce analyses and in-depth summaries of the literature to present the evidence, to produce professional guidelines, indicators and certification standards. The main task of ANAP is to analyse on-site processes, support healthcare organisations, and to produce tools and guidelines.[171]

The joint action programme consists of six areas defined over a multi-year plan (2012-2015):

1. *Overview of the current state of medical, regulatory and economic knowledge on day surgery*.[171] The report, jointly published by HAS and ANAP in April 2012, provides a knowledge base on the following topics: definitions of day surgery; regulation of operation; review of day-surgery growth; description of the day-surgery framework; best clinical practices and organisation; planning and designing of a day-surgery unit; assessment of risks and benefits; economic benefit; current incentives in France.
2. *Eligibility criteria for day-surgery patients*. Patient selection is based on medical and psychosocial criteria which enables a distinction to be made between the need for care and the need for accommodation (the so-called hotel services).[172]
3. *Operational models and tools*. The organisational dimension is examined using the following approaches:[170]
    a. Analytical: an organisational risk assessment from a sample of five healthcare facilities and benchmarking in 15 pioneering day-surgery facilities;
    b. Support: operational support for 20 healthcare facilities willing to increase their day-surgery rates and targeted support for some Regional Health Agencies (‘Agences Régionales de Sante’, ARS) with low day-surgery rates;
    c. Deliverables: provide end products (tools, guides, recommendations, etc.) to produce generic models of organisational plans, clinical pathways and appropriate ‘check lists’.

4. *Economic assessment tools to identify the conditions for a financial break-even for day surgery using an income/production costs approach*. HAS and ANAP have adopted three complementary approaches for this axis:
   a. ANAP has developed a software tool on the basis of data available from hospital analytical accounting to study the conditions for the break-even point when a hospital substitutes day surgery for surgery with conventional hospitalisation. A first prototype software tool was produced in April 2012 from an initial sample of five healthcare facilities. In a next step, the tool was tested for reliability on a larger sample of 20 healthcare facilities.[173] Finally, the tool is deployed to the ARS and volunteer facilities.
   b. HAS will carry out a micro-costing study to assess the actual cost of day surgery from observations of the patient's clinical pathway in a few day-surgery units for a few predetermined procedures. This study will make it possible to calculate the cost per stay and variations in cost depending on production volumes. It will further allow to compare the cost per stay to the funding received primarily through activity-based tariffs (T2A). The method will lead to the production of a second software tool for volunteer facilities wishing to carry out their own micro-costing study.[170]
   c. HAS has conducted a study of the international published literature on tariff models in other countries to propose recommendations for changes in tariffs in France.[170]
5. *Clinical pathways and monitoring and assessment indicators*. A limited number of indicators will be developed for each target client (i.e. physicians, hospital management) based on the work already carried out by HAS and indicators already developed by ANAP.
6. *Certification/accreditation standards*. Current certification standards will be updated in the next four to five years to support all upstream activities.

Pending a comprehensive reform of the hospital payment system for day-care activities, following short-term adaptations could increase the transparency and coherence of the current system.

- Scientific findings and standards of safety and quality of care should underpin adaptations of the nomenclature, Lists A and B and/or application rules to new procedures or techniques, or new indications of existing procedures or techniques. Adaptations should be implemented more rapidly.[106]

Integrated payments across care settings

A second element concerns the payment system.

First, **all** hospital interventions and procedures in **day care should be paid from a single source** fitting within a closed-end hospital budget.[106]

Second, following the international trend in hospital payment systems, a **more comprehensive pathology-based payment system for inpatient and day care** should be envisaged (see Chapter 5).[106] Payments should better reflect the real costs of treatments to the hospital and the patient and should not be justified on the basis of compensation for other, underpaid hospital services.[152, x] For relatively homogeneous pathologies, a single tariff for inpatient and day care could be applied, but the advantages and disadvantages of different systems should be weighed against each other to incentivize providers in line with societal objectives.[106] Prior to pathology-based payments, the cost and clinical homogeneity of the pathology groups must be analysed.[106] The hospital/physicians could, under such a scenario, decide about the location of care. The payer could decide, for instance, to base the cost weights[y] on day-care calculations for standardized pathologies and surgical interventions for which day care is the most appropriate setting.

> *"… dat het veel logischer zou zijn dat de ziekenhuisfinanciering een geheel zou zijn, waarin niet alleen het beddenhuis zit, niet alleen de chirurgische daghospitalisatie, maar ook de internistische daghospitalisatie, en voor mijn part ook de polikliniek. Waarbij dan het ziekenhuis uitmaakt in hoeverre een patient best ambulant behandeld*

x This recommendation was made for dialysis treatments[152] but also holds as a general principle.

y A cost weight is a measure of the average cost of a DRG, compared with the average cost of all DRGs.

wordt, in een dagziekenhuis of in klassieke hospitalisatie. Dat het zijn plan trekt. Maar het is 1 budget voor het geheel. Dat lijkt mij logischer. Ik zie geen reden waarom dat er een cesuur moet zijn tussen chirurgisch dagziekenhuis, beddenhuis, en dan daghospitalisatie en polikliniek."

For example, in England until 2009-2010 a single tariff for inpatient and day care was applied for most Health Resource Groups (HRGs – the English version of the Diagnostic Related Groups) to promote the move to day care where appropriate. The tariff was set at the average of day-care and inpatient elective costs, weighted according to the proportion of activity in each setting. It has been shown that the day-case rate increased with the introduction of the single tariff. As of 2010/2011, additional incentives were created for day care with the introduction of day case Best Practice Tariffs (BPTs).[2] For a selection of procedures (by the BADS), the BPT for each procedure consists of two prices, one applied to day-case admissions and one to inpatient elective admissions. By setting the price for day cases higher than the one for inpatient admissions, day-care procedures are overpaid and inpatient procedures are underpaid. According to the National Health Service (NHS) hospitals will be overall adequately paid as long as they perform broadly in line with the target day-case rates. For most selected procedures, the day-case rate improved from 1 to 10 percentage point.

Likewise, in France the same tariff applies for an increasing number (from 18 in 2011 to 39 in 2012) of Groupes homogènes des malades (GHM – the French version of the Diagnostic Related Groups).[170, z] Others have a difference in tariff of maximum 25% (for non-identical populations and a low mean length of stay); for still other GHMs there is a difference in tariff of over 25%. Moreover, since 2009 some surgical interventions must have a prior approval of the French health insurance to be performed in an inpatient setting.[2]

According to some stakeholders, reforms of payment models for day-care activities should most likely be integrated in a general hospital payment reform and will probably also require some changes in the macro-level governance model.

[z] In the HAS report of June 2013 a description is given of the theoretical and practical consequences of the main tariffs currently used for day surgery and areas for improvement for the French tariff calculation are identified.

Key points

- **There is a clear split in the payment system between surgical (i.e. BFM) and non-surgical day-care activities (hospital-dependent and hospital-independent lump sums). Keeping non-surgical day-care activities outside the BFM has historical grounds but is not logical and not in line with international evolutions (e.g. France, UK, the Netherlands).**
- **Day-care activities are relatively homogeneous and standardised activities which make them suitable for case-based payment. The hospital-dependent character of some lump sum payments is therefore perceived as unfair by several stakeholders.**
- **The current payment rules for day-care activities are complex and lack transparancy and as a consequence fail to give clear incentives to healthcare providers (e.g. incentive in favour or against day care). This could (partly) explain the observation that despite the yearly growth in volume and expenditure of day-care activities, there is no clear trend of substitution of inpatient care activities.**
- **There is a need to define and regularly review the choice of care setting based on scientific evidence. Clear targets (% to be provided in day care) should be formulated for those interventions for which day care is feasible and advisable. These targets should be based on scientific evidence, international trends and hospital benchmarking (e.g. the French multi-year joint action programme could serve as an example).**
- **In addition, all day-care activities should be integrated in the hospital budget as pathology-based payments that are based on objective cost data. For homogeneous pathologies, a single tariff (day-care as well as inpatient care) could be provided to incite a shift from inpatient towards day-care activities.**

7 THE ROLE AND PAYMENT SYSTEM OF UNIVERSITY HOSPITALS

As in most other countries, university or academic hospitals in Belgium have a tripartite mission of research, patient care and education and training. Moreover, university hospitals also have a 'last resort' function for patients with complex healthcare issues.

Given the specific missions of university hospitals, a separate chapter is devoted to the role and payment system of these hospitals. Section 7.1 gives a brief overview of the legislative framework, the specific missions and funding as well as some facts and figures on university hospitals in Belgium. In section 7.2 the missions and payment system of university hospitals in a selection of countries is provided. Section 7.3 discusses the strengths and weaknesses of the current Belgian system as perceived by stakeholders. The evaluation by stakeholders is supplemented with information found in literature. Section 7.4 contains possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature. We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organisations such as the OECD or the WHO) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, two recent comparative studies on the role and payment system of university hospitals in a selection of countries were consulted to put Belgian university hospitals in an international perspective.

7.1 University hospitals in Belgium

7.1.1 Definition and role of university hospitals

Seven general hospitals have the status of academic or university hospital, one for each medical school that offers the entire medical curriculum as stipulated by article 4 of the Hospital Act.[116] Five university hospitals are private, not-for-profit hospitals; two hospitals have a public status.

General recognition standards

To be recognised as a university hospital, a number of criteria must be fulfilled.[174, 175] These criteria relate to the exploitation of the hospital (there has to be a link with a medical school), staff, convention tariffs, patient care, teaching and research.

- University hospitals are obliged to engage at least 70% of **medical specialists** (full-time equivalents, FTE) as salaried workers while in non-university hospitals specialists have a self-employed status.[aa] Second, 70% of medical specialists must perform clinical activities exclusively in or by order of the university hospital. Third, 70% of medical specialists must work full-time for the university hospital. All medical specialists in a university hospital have to subscribe the convention between physicians and sickness funds which determines the rules of charging supplements.[bb]
- Medical specialists can only be appointed after advice of the faculty of medicine. At least 70% of medical and medico-technical (e.g. laboratory) head of departments must have an academic appointment.
- University hospitals offer basic specialist care as well as **top reference care**.
- They participate in the **clinical education programme** of the associated university as well as in the **postgraduate training** of medical specialists and general practitioners.
- University hospitals must participate in **clinical research** and the **development and evaluation of medical technologies**.
- Finally, they have to assist in **policy-oriented** activities and scientific programmes.

Recognition standards for specific departments

In addition to the general recognition standards which apply to the entire university hospital, specific standards apply to surgical, internal medicine and paediatric services and the maternity. The Royal Decree of 15 December 1978[176] specifies the architectural, functional and organisational criteria that these services have to satisfy. For example, for university hospitals minimum staffing norms are defined (0.6 FTE per occupied bed or 18 FTE per 30 beds) for surgery (C) and internal medicine (D) beds while for non-university hospitals no such staffing norms exist.[177]

These recognition norms should not be confused with financing norms (see section 7.1.2, first point of component A).

Programming standards

Programming standards were first defined in the Royal Decree of 24 December 1980,[178] and are in proportion to the number of inhabitants. The maximum number of university beds was equal to 7405. The same Royal Decree defines the distribution of beds across the seven universities with a university hospital (see Table 15). Figure 18 shows the geographical spread of university hospitals in Belgium, as well as population density. The size of each bubble coincides with the number of recognised beds.

The Royal Decree of 1980 also defines the minimum number of the 7405 university beds that should be allocated to acute hospitals with university character in provinces without a medical school. The ULB had to allocate 200 beds to hospitals in Hainaut; UGent a minimum of 90 beds and a maximum of 120 beds in West-Flanders; KU Leuven a minimum of 60 beds and a maximum of 80 beds in West-Flanders and a minimum of 150 and a maximum of 200 beds in Limburg. The UCL concentrated its university beds on two campuses with only university beds: in Saint-Luc in Brussels and Mont Godinne in the province of Namur.[179]

aa We refer to Chapter 9 for a description of the remuneration system of medical specialists in Belgium.

bb These are described in Chapter 10.

Since 1980, the maximum number of university beds as well as the allocation of beds to non-university hospitals in provinces without a medical school has been changed. Table 15 shows the current situation of university beds in university and non-university hospitals.

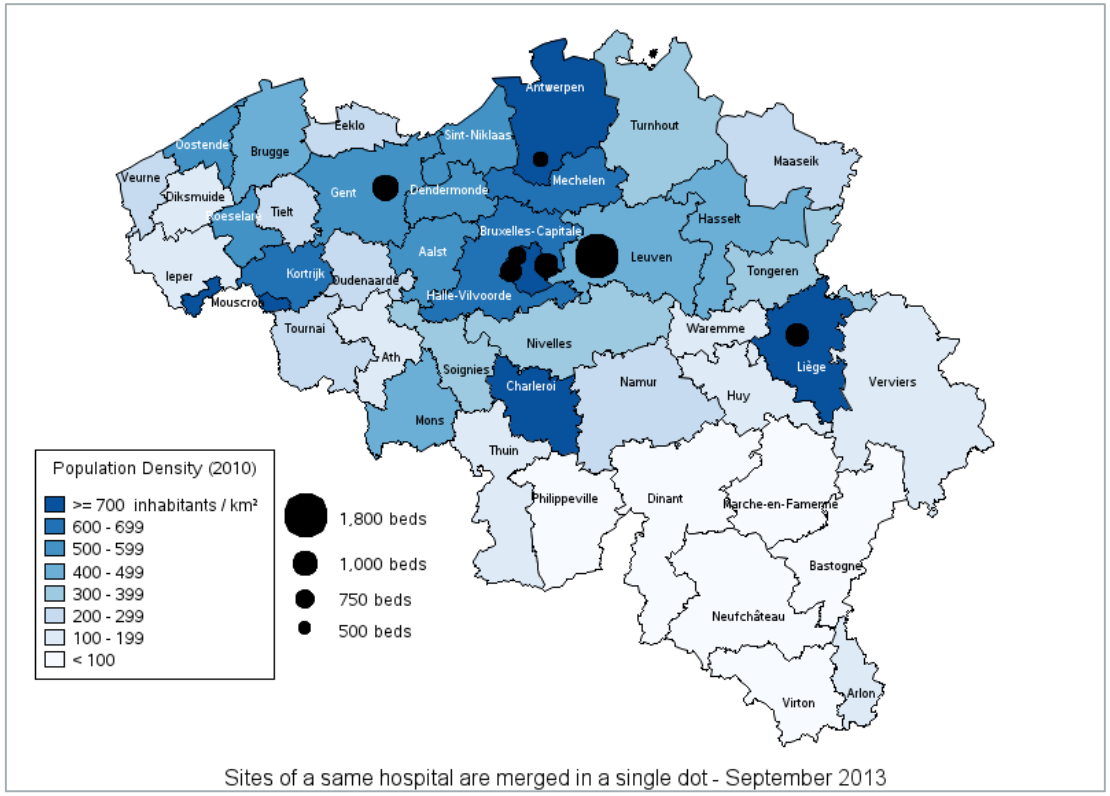
Table 15 – Number of beds per university

University	Hospital	Maximum number of university beds (1980)	Maximum number of university beds (2014)	Number of university beds per hospital
Ghent University (UGent)	**Universitair Ziekenhuis Gent**	1165	1162	1062
	Ziekenhuis Sint-Jan, Brugge			100
University of Antwerp (UAntwerpen)	**Universitair Ziekenhuis Antwerpen**	881	881	524
	Fusieziekenhuis Middelheim, Antwerpen			104
	Algemeen Ziekenhuis Stuivenberg, Antwerpen			88
	Alg Ziekenhuis Sint-Augustinus - Sint-Camillus, Antwerpen			70
	Sint-Vincentiusziekenhuis, Antwerpen			95
Vrije Universiteit Brussel (VUB)	**Academisch Ziekenhuis**	616	616	586
	CHU Brugmann			30
University of Leuven (KU Leuven)	**Universitaire Ziekenhuizen van de KU Leuven**	1428	1403	1218
	Virga Jesse Ziekenhuis, Hasselt			50
	Ziekenhuis Oost-Limburg, Genk			75
	Algemeen Ziekenhuis Sint-Jan, Brugge			60
University of Liège (ULg)	**Centre Hospitalier Universitaire de Liège**	935	935	717
	Centre Hospitalier Régional de la Citadelle, Liège			192
	Centre Hospitalier Bois de l'Abbaye et de Hesbaye, Seraing			16
	Centre Hospitalier Régional de Huy, Huy			10

University	Hospital	Maximum number of university beds (1980)	Maximum number of university beds (2014)	Number of university beds per hospital
Université Libre de Bruxelles (ULB)	**Cliniques universitaires de Bruxelles Hôpital Erasme**	1190	1190	750*
	Hôpital civil de Charleroi			45
	Hôpital André Vésale, Montigny-le-Tilleul			55
	Centre Hospitalier Universitaire de Tivoli, La Louvière			50
	Hôpital Ambroise Paré, Mons			20
	Institut médico-chirurgical, Tournai			15
	Hôpital de la Madeleine, Ath			15
	Hôpital Saint-Pierre, Bruxelles			110
	Hôpital Brugmann, Bruxelles			50
	Institut Jules Bordet, Bruxelles			80
Université catholique de Louvain (UCL)	**Cliniques universitaires Saint-Luc**	1190	1190	979
	CHU Dinant Godinne			211
Total		**7405**	**7377**	

*Source: Royal Decree of 24 December 1980[178]; *In 2014, there has been a conversion of university beds to rehabilitation beds.*

Figure 18 – Geographical spread of university hospitals and beds in Belgium



Source: FOD-SPF

7.1.2 Separate payments for research, education and training but not for patient care

The Hospital Act of 1963 already included an identification of the specific missions of a university hospital. The act stated that a university hospital is a general hospital but with additional specific missions, mainly with respect to education and research & development, but also with respect to patient care.[179]

Research, education and training

University hospitals receive extra payments in the hospital budget, called the Budget of Financial Means (BFM), namely by part B7, for their specific role in research, education and training. Part B7 is a closed budget and consists of part B7A for university hospitals and part B7B for general hospitals with university character (see article 77 in the Hospital Act[116]).

B7A

Before the last major reform of the hospital payment system in 2002, university hospitals received extra payments for their specific roles in education, research and development of new technologies in parts A3 and B3 (investments for medical equipment, e.g. Magnetic Resonance Imaging (MRI)), B2 (extra staffing standards, extra operating time, permanent operating theatre) and B4 (development of new technologies, residents in training). Since July 2002 **university hospitals receive a separate closed budget for their specific missions**, that consists of a transfer of the amounts in parts A3 and B3, B2 and B4 and an amount to compensate for reduced budgets for laboratory testing, medical imaging, dialysis and surgical day care.

More specifically, part B7A consists of components A+B+C+D+E:

- Component A
  - In the system before 2002 the basic points in part B2 (see Chapter 5) for C (surgery) and D (internal medicine) beds were higher for university hospitals because of extra nurse staffing standards. Since 2002, no distinction in basic points is made between university and non-university hospitals. The difference in budget between both calculation methods was transferred to B7A for the university hospitals and to B4 for the general hospitals with university beds.
  - An amount to compensate for reduced budgets for laboratory testing, medical imaging and dialysis because of new payment rules. In practice, this compensation has only been applied for laboratory testing.
  - The reduction of the budget as mentioned in article 42 §8 of the Ministerial Decree of 2 August 1986 (value of 30 June 2002).
- Component B
  - The budget for the development, evaluation and implementation of new medical technologies was transferred from B4 to B7.[cc]
- Component C

  A national budget is allocated to the university hospitals in proportion to the number of residents in training and supervisors in each hospital.[dd]
- Component D
  - An amount to (partially) compensate for the extra cost of social security contributions for the salaried physicians in university hospitals. More specifically, the budget is allocated according to the formula T x N, with T = social security contributions as a percentage of gross wages and N = the number of salaried physicians (FTE in the last year for which social security contributions were paid); residents in training are not included in the calculation.
- Component E
  - The extra receipts for one MRI per university hospital were transferred from A3 and B3 to B7A.

The sum of the budgets for components A, B and C is allocated to individual hospitals as follows:

[cc] We refer to Durant (2013)[12] for a detailed overview of the conditions that have to be met to receive this budget.

[dd] See previous footnote.

- 15% according to the number of supervisors and the number of residents in training. Each hospital has to inform the Federal Public Service of Health (FOD-SPF) about both numbers;
- 60% according to the share of each university hospital in the B2-part of the hospital budget (at 1 July 2003);
- 25% for hospitals who fulfill the requirements of scientific publications. University hospitals have to produce at least 4 publications in at least 10 different medical disciplines each as well as a minimum of 3 publications per 10 beds in a period of three years preceding the year on which the budget is applicable. Each university hospital has to inform the FOD-SPF about the research strategy and has to provide an overview of research projects.

B7B

Part B7B of the hospital budget applies to non-university hospitals that receive payments for the development, evaluation and implementation of new medical technologies and/or the training of residents. In practice, only general hospitals with university character fulfil these criteria. Part B7B is calculated and distributed among hospitals in the same way as part B7A, except for components A, 2nd point (reduced budgets for laboratory testing, medical imaging and dialysis) and D which are not included in part B7B.

Patient care

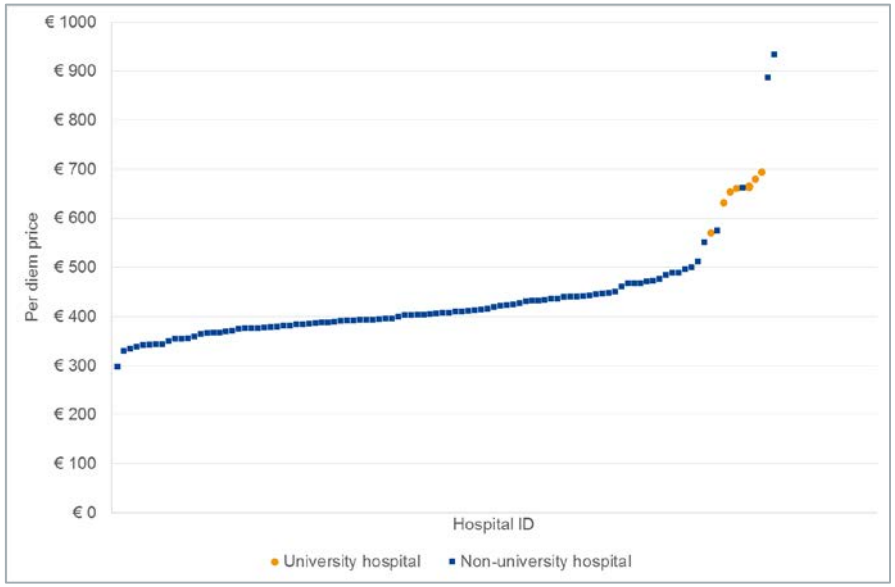
Since the 2002 reform, the rules to pay for patient care are the same for university and non-university hospitals. Hence, every hospital, whether university hospital or not, is entitled to the same B2-part of the per diem price[ee] for the same patient and service profile. The higher per diem B2-price for the university hospitals compared to (most of) the non-university hospitals follows on the type of patients they treat or services they offer. On average, university hospitals treat more patients with more severe pathology and have a more extensive and broader supply of often expensive services such as intensive care beds, neonatal intensive care services, maternal intensive care, haematology, a radiotherapy department, a Positron Emission Tomography (PET)-camera, national cancer plan projects, fertility clinics, expensive infrastructure (and thus A1-funding).

Figure 19 shows the per diem price for university and non-university hospitals on 1 July 2014. With the exception of a limited number of non-university hospitals, university hospitals receive a substantially higher per diem price. Also among general hospitals, the total per diem price may differ, even if hospitals have a fairly comparable case mix. For instance, some hospitals may have an older care population and thus higher funding for the end-of-career employment measures in B9.

In Table 16 some activity indicators are given. Inpatients stays in the seven university hospitals represent about 15% of all stays in acute hospitals; for day-care surgery stays the share is about 9%.

[ee] Since the reform of 2002, the BFM has replaced the per diem price as the 'unit' of hospital payments. However, a per diem price or 100% price is still calculated.

Figure 19 – Per diem price for university and non-university hospitals in Belgium in 2014



Source: FOD-SPF

Table 16 – Activity of the seven university hospitals, 2010-2012

Activity	2010	2011	2012
Turnover (million euros)	2905	3319	3137
Inpatient stays	258 215	257 092	262 138
Day-care stays*	155 455	172 516	175 262
Day-care surgery stays	48 161	50 452	51 050
Number of consultations (in thousands)	3452	3579	3655
Number of days (in thousands)	1915	1908	1901
Justified[ff] beds	6838	7009	6918

*Source: RUZB-CHAB,[180] ; *Day-care surgery not included*

[ff] We refer to Chapter 2 for a description of 'justified' beds. Justified beds can be defined as beds for which payments are received in the hospital budget.

7.2 University hospitals in a selection of countries

Conducting an analysis of the specific missions of university hospitals and the associated specific funding in other countries was not possible within the time constraints of this study. Therefore, to put the role and funding of Belgian university hospitals in an international perspective, we mainly relied on a recent comparative study on this topic. The Belgian Board of University Hospitals (RUZB-CHAB) commissioned Antares Consulting to conduct a study on the organisation and payment system of the specific missions (education and training, tertiary care and research) of university hospitals in a selection of countries.[181] Germany, Canada, Denmark, Spain, France, the Netherlands, Sweden and Switzerland were included, but for Sweden and Switzerland most information was gathered for one or two regions (the canton of Vaud in Switzerland and Stockholm and Scania in Sweden). As the organisation and payment of university hospitals is decentralised in Canada and Spain, the study is limited to Québec in Canada and Catalonia in Spain. The information was gathered from 24 stakeholder interviews and desk research.

Additional information was retrieved from another comparative study, which was commissioned by the German Association of University Hospitals (Fischer, 2013).[182] Fischer (2013) covers one country included in the Antares study (the Netherlands) and some new countries (United Kingdom, Austria and the United States (US) of America), and is based on desk research.

7.2.1 Definition and number of university hospitals

In most countries university hospitals have a clearly defined legal status. However, the exact definition varies greatly across countries. In Denmark, England, and the US, university hospitals are less clearly defined but they can be identified by means of their collaboration with a university or by their activities in research, medical education or tertiary care provision, and they usually carry the word ‘university’ in their name. In Catalonia the concept of a university hospital does not exist, but different hospitals participate in one or more of the three above-mentioned missions of university hospitals.

The definition of what a university hospital is, is particularly important in those countries, where certain funding sources are exclusively reserved for university hospitals. In countries where funding is related more to the fulfilled functions, e.g. training of residents (which may also take place in non-university hospitals), the definition is less important.

Table 17 shows the number of university hospitals in the eleven countries included in the two studies as well as the number of inhabitants per university hospital. Belgium is also included in the table for comparison. In Catalonia the number of university hospitals depends on the definition of a university hospital that is used. The number of inhabitants per university hospital varies from 0.8 to 2.8. With the exception of England (where the definition of university hospitals is less clear), countries/regions with a ratio comparable to that of Belgium (1.6 million inhabitants per university hospital) have a lower number of inhabitants than Belgium. Unfortunately, the study gives no details on the number of beds in the university hospitals (except for Germany) which would have allowed to compare the number of inhabitants per bed. In Belgium, this number equals 1613 inhabitants per bed while in Germany this number amounts to 2071 (82 million inhabitants and 39 600 beds[181]) and in the Netherlands to 2211 (16.9 million inhabitants and 7645 beds[183]).

Table 17 – Number of university hospitals in a selection of countries

Country/Region	Number of university hospitals	Number of inhabitants (million)[gg]	Inhabitants per university hospital (million)	Surface area (km²)
Austria	3	8.4	2.8	83 879
Belgium	**7**	**11.1**	**1.6**	**30 528**
England	33	51.8	1.6	130 395
Germany	33	82.0	2.5	357 021
Québec	5	8.0	1.6	1 667 441
Denmark	4	5.6	1.4	43 100
Catalonia	5-9	7.6	1.5-0.8	32 114
France	30	65.0	2.2	549 190
The Netherlands	8	17.1	2.1	41 526
Sweden	7	9.5	1.4	450 000
Switzerland	5	7.8	1.6	41 290
US	100 (under DRGs)	317.2	3.2	9 629 091

Source: Antares Consulting (2014)[181] and Fischer (2013)[182]

7.2.2 Specific missions

The studies conducted by Antares Consulting and Fischer contain a lot of detailed information, also summarized in tables, on the specific roles and funding of university hospitals in the selected countries. Of course, the aim of this section is not to reproduce the detailed description of the specific situation in each country. Instead, we describe the main characteristics of the specific role (this section) and funding (section 7.2.3) of university hospitals across countries.

R&D

In most countries university hospitals are the principal actors, certainly in clinical research. They have set up research centres for pre-clinical and clinical studies, although non-university hospitals may participate in clinical trials. However, in France, public authorities encourage research in non-university hospitals, for example by the MERRI (Missions d'enseignements, de recherche, de référence et d'innovation) which is a lump sum envelope distributed amongst a pool of hospitals with research, teaching, reference and innovation missions. In Denmark, non-university hospitals participate in more than 50% of research activities. We refer to Chapter 16 for a more

gg The number of inhabitants as in the Antares study (for the countries included in that study).

detailed description of research activities of hospitals in Germany, France, the Netherlands and Sweden.

Education and training

Education of medical students is only in the Netherlands the exclusive role of university hospitals. In the other countries also non-university teaching hospitals play a (sometimes major) role in the formation of students, usually in cooperation with a university. However, university hospitals have in general more students or provide a broader choice of programmes.

The training of residents is provided by university and non-university hospitals in all reviewed countries, but the proportion of accredited resident training hospitals as a percentage of all hospitals varies considerably. Consequently, depending on the country, the share of residents trained in university hospitals varies from 30% to 60% (according to the Antares study).

Both for education of medical students and training of residents there is a tendency to increase the number of hospitals that provide education or training.

Tertiary care

Countries largely differ in the role of university hospitals in providing tertiary care. In some countries providing tertiary care is the (quasi) exclusive role of university hospitals (e.g. in France or the Netherlands), but sometimes only for specific disciplines. In other countries, tertiary care is offered by 'highly specialised' hospitals, which generally include university hospitals but also other non-university hospitals. For example, in Sweden and Denmark, large regional hospitals can be highly specialised.

7.2.3 Specific funding

All countries provide certain specific funding sources to compensate university hospitals for their higher costs. This is done in spite of the fact that the reasons for higher case-mix adjusted costs of university hospitals are poorly understood.[182] There are three possible reasons: (1) costs are higher because DRGs are unable to adequately reflect case-mix complexity in university hospitals; (2) costs are higher because of justified structural differences of university hospitals, and because of the additional functions that they fulfil; (3) costs are higher because of inefficiencies in the provision of care.

In theory, it would be possible to specifically identify those costs of university hospitals that are related to research, teaching and education, as well as to the capital costs and other structural requirements of ensuring availability of highly specialised services. However, in practice, this is much more difficult, as teaching and research activities are often closely related to patient care, and structural costs can be difficult to disentangle from service provision costs. Consequently, the appropriate level of reimbursement for university functions, i.e. sufficient reimbursement to cover justified costs, is usually unknown.

In most countries, specific funding instruments exist for all three characteristic functions of university hospitals, i.e. for R&D, teaching and education, as well as for the provision of or for ensuring availability of certain highly specialised (tertiary care) services. However, the same funding instruments may be available also for non-university hospitals. Finally, university hospitals are mostly public entities, and deficits may be compensated by the owners (districts, regions, or national governments).

R&D

Although different modalities for funding R&D activities exist in the selected countries, in all countries funding consists of a structural part and funding on a project by project basis.

Structural funding accounts for about 30 to 50% of total R&D funding (except for Québec (6%); for France no data were available). It can be granted as a global budget (fixed amount) but it is **increasingly based on specific indicators** relating to scientific productivity, performance, etc.

For example:

- In Germany variable structural funding depends on the number of projects that are ongoing or planned;
- Determining factors in Québec are the size of the hospital and performance indicators;
- In France the adjustable part of the MERRI funding is distributed among all eligible hospitals based on four indicators relating to scientific publications and clinical trials (see also section 16.3.1 in Chapter 16);

- In Sweden allocation criteria differ between counties, but examples are the number of published articles, the number of PhDs awarded or the amount of external funding the hospital could attract.

A second trend, in addition to an increased reliance on variable structural funding, is the **development of infrastructure for research**.

In some countries university hospitals are granted one global budget for R&D and education, e.g. in Austria.

Grants from public and private sources are a second funding source for R&D activities in university hospitals, which has become more important in recent years in several countries, such as France and Germany.

Education and training

In most countries, university hospitals receive separate payments for the education of medical students and training of residents. Two major payment schemes exist: a global budget based on historical criteria or funding and a payment per student or resident. There is, however, one exception: in Germany, university hospitals (and all other hospitals employing residents) do not receive separate payments for the training of residents. Instead, residents receive a salary from the hospital for the work that they perform.

A payment per student or resident can be a lump sum payment (e.g. in Catalonia for students and residents, in France and Sweden for students). For residents the payment can depend on the year of training, reflecting their productivity. In some countries the payment per student or resident is the only income source for education and training, e.g. in Catalonia and France from 2016 onwards). In Germany, hospitals receive one global payment for education and training and structural funding of research.

In general, the number of hospitals providing education and training is increasing.

Tertiary care

In all of the countries, except Catalonia, a clear definition of 'tertiary care' is lacking. Therefore, payment mechanisms are generally not targeted at tertiary care but at 'specialised care'; and countries differ in what they consider to be 'specialised care': (1) care provided by specialised departments, (2) care for special (high-cost) patients, or (3) special (i.e. high-cost) services. Countries (and sometimes regions within countries) have different payment mechanisms that compensate hospitals for the (presumably justified) higher costs of specialised care. In some countries, payments exist for specialised departments or hospitals (e.g. university hospitals). For example, in England, Diagnostic Related Groups (DRG)-payments are increased by a certain percentage for DRGs provided by specialised care units (so called specialised service top up, e.g. for paediatric or orthopaedic specialty care). In Austria, DRG-based payments are systematically adjusted upwards (by increasing the base rate) for university hospitals in two (of three) regions, i.e. for two (of three) university hospitals in the country. In other countries, payment is based on special (high-cost) patients, which can be included in the general DRG tariffs. For example, in Germany, DRGs exist for transplant surgery and burns therapy. In the United States, hospitals are systematically reimbursed for 80% of the excess costs of certain high-cost outliers (those exceeding the DRG tariff by more than US$ 22 000). In addition, almost all countries provide certain separate fee-for-service payments for complex ('specialised') services, although sometimes these are limited by a global budget.

Furthermore, the availability of public funding for capital investments often plays an important role in paying for the infrastructure necessary to provide highly complex tertiary care services. For example, in Germany and Austria, investment costs are usually made available by the regions (Länder).

Share of funding for specific missions

Comparing the share of funding for specific missions in total hospital funding between countries is not an easy task. A detailed overview of payments for each specific role of university hospitals is given in the study of Antares Consulting.[181] The authors warn that the percentages are not fully comparable between countries, for example because of missing data. The share of funding for the specific missions of university hospitals (without project by project funding for research) ranged from 6% in Québec and Denmark to 34% in the Netherlands. In **Belgium**, the budget for the specific missions of university hospitals (the B7A-part of the hospital budget) amounted to **4.3% of total turnover in 2012**. However, the figures should be interpreted with caution because they are not completely comparable. For Belgium, only the B7A-part of the hospital budget was taken into account, while for example research is also funded by other sources.

7.3 Critical appraisal of the role and payment system of university hospitals

7.3.1 *Geographical distribution, capacity and role of university hospitals*

Some stakeholders point out that there is an **overcapacity** of university hospitals/beds and that the geographical distribution of hospital sites is not well balanced (see also Figure 18). In addition, they indicate that **university hospitals fail to make agreements about who does what.** According to them, not every complex treatment or sub-specialisation should be offered by all seven university hospitals but a distribution of tasks is required. Stakeholders from university hospitals question the alleged overcapacity and refer to the international comparison which was carried out by Antares Consulting (see section 7.2). According to that study, the average population per university hospital equals 1.6 million in Belgium, which is in line with most other included countries.

With regard to the **role of university hospitals**, stakeholder comments can be summarized as follows. Stakeholders from non-university hospitals claim to perform the same type of activities as university hospitals, for specialised patient care as well as for education, training or R&D. Therefore, they believe they should be entitled to the same extra payments for these roles as university hospitals. This critique of the non-university hospitals is also voiced by the general hospitals with university character. Therefore, although the general hospitals with a (limited) number of university beds have signed an affiliation contract, they are considered as true competitors for university hospitals.[179] Stakeholders from university hospitals, however, refute these assertions and are of the opinion that their role is different in all three missions. They claim to treat the more complex and most severe patients, to have more residents in training and that R&D is more linked to fundamental research and clinical development.

- Non-university hospitals criticise that university hospitals claim highly specialised sub-disciplines as their exclusive rights while the **expertise is sometimes present in other large centres**. In addition, they point out that university hospitals are not the only hospitals that play a role in education, training or clinical research. Therefore, they take the view that the establishment of, for example, reference centres should not be restricted to university hospitals especially since their geographical distribution is not well balanced. This viewpoint is in line with the recommendation in KCE Report 219 on the organisation of care for the treatment of adults with rare or complex cancers, to set up shared care networks around reference centres which should not necessarily be situated in a university hospital.[69]
- Stakeholders from university hospitals agree that applied clinical research is not the exclusive role of university hospitals, but they defend the position that this research should remain concentrated in university hospitals because of their long experience and know-how and to assure that research budgets remain concentrated rather than be dispersed, which would yield too small budgets per centre to do solid research. In addition to sponsored research, university hospitals also conduct non-sponsored research. Also for translational research university hospitals emphasize their privileged position due to the close relation with the university.

It is also emphasized that university hospitals should **continue to offer basic specialist care**. After all, in order to be a teaching hospital it is important to train physicians not only in rare and complex treatments and pathologies but first and foremost in basic care. Stakeholders consider this as the international accepted model of a university hospital. In addition, under the current payment system, many of the more complex interventions are, according to stakeholders, loss-making. University hospitals claim that the standard care is needed to compensate for the loss-making tertiary care.

> *"Alors on dit toujours que les universitaires ne devraient faire que de l'universitaire. … mais alors il faut que le pontage coronaire soit payé x fois plus. Aujourd'hui on se paie par des activités alimentaires que sont l'appendicite ou les varices."*

7.3.2 *A separate budget for the specific missions of university hospitals*

Stakeholders consider it logical that a separate budget is provided for specific tasks regarding education, research, development of new technologies and evaluation of medical activities. However, at this moment only university hospitals are eligible for this separate budget, except for non-university hospitals entitled to part B7B of the hospital budget.

Payments for patient care are harmonized between university and non-university hospitals

Since the reform of 2002, a similar case-mix in university and non-university hospitals yields a similar B2-funding. Therefore, some stakeholders emphasize that the higher per diem price of university hospitals should not be seen as a result of a payment system that favours university hospitals. Other stakeholders contest this alleged equal treatment of both types of hospitals and refer to the historical overpayment of university hospitals that was transferred to the B7A.

> *"Je pense qu'avec la réforme du BMF on a déjà fait un bon pas en avant. C'est-à-dire qu'on a essayé de séparer le financement de l'enseignement et des soins en partant du principe qu'un patient ne devait pas pour des soins coûter plus cher dans un hôpital universitaire que dans un autre. Je pense que ça a été une grande révolution de faire ça et on l'a fait et c'est un bon point de départ."*

Many of the specialised care programs, such as cardiac surgery or cancer care, are also available in large non-university hospitals, but often at a smaller scale, to attract patients and physicians. University hospitals, however, claim that the care provided in these programs is different because they treat the more complex, complicated and severe patients. Moreover, university hospitals provide a last resort function for patients who cannot be treated elsewhere. Finally, university hospitals also engage more extensively in providing second opinions. All these functions entail, according to university hospitals, a much higher cost than in non-university hospitals which is and should be reflected in the per diem price.

A separate budget for education, training and R&D should not be the exclusive right of university hospitals

University hospitals have a specific role in providing **formal education** of medical students, candidate medical specialists and candidate GPs which includes teaching, structured coaching, evaluation, and delivery of diplomas, certificates and professional titles. As to the **supervision of residents in training**, university and non-university hospitals are involved.

The rationale for the extra payment for training and education is that this demands extra time, e.g. longer surgery time. However, some interviewees comment that the opposite is true. Residents in training are used as labour forces and allow the supervisors to perform more surgery (e.g. the resident in training is asked to close the patient) and to work less on out-of-office hours. Moreover, if it would be true that training and education is time-consuming, then also non-university hospitals should be compensated for these inefficiencies in production. University hospitals emphasize the much more extended role of a supervisor in a university hospital compared to non-university hospitals, because this role is linked to scientific research activities such as Evidence-based medicine (EBM) guideline development or case discussions. In non-university hospitals resident training mainly consists of hands-on training, while in university hospitals the training also consists of a scientific and theoretical part. University hospitals also point out the larger number of residents in training in university hospitals which generates extra costs.[179]

Some stakeholders propose to extend the target group of training services to other healthcare professions.

Also **R&D** is no longer the exclusive right of university hospitals. Therefore, non-university hospitals consider this separate budget for university hospitals as unfair and demand more transparency in how these budgets are used. Conversely, university hospitals claim that R&D activities of both types of hospitals cannot be compared. Although some non-university hospitals are engaged in clinical trials, this happens at a much smaller scale and with less links to fundamental research and to clinical development than in university hospitals.[179]

7.3.3 Extra payments to compensate for staffing standards and employment status of physicians

The nursing and caring staff ratios are considerably higher in university hospitals compared to non-university hospitals. This is partly funded by the B7 that compensates university hospitals for the historically higher funded staffing ratios norms imposed by the legislation (e.g. internal medicine: 18 nurses per 30 beds compared to 12 nurses per 30 beds in non-university hospitals).

Stakeholders from non-university hospitals state that this is also caused by the disproportionally high compensation that is given via the supplementary part of the B2-budget that is distributed via the system of deciles (see Chapter 5). The latter compensation is also applicable for non-university

hospitals but given the higher case-mix in university hospitals, it is perceived as unfair that such a large part of the budget is allocated to a limited number of hospitals in the highest deciles. They point out that this results in different nursing staff ratios between university and non-university hospitals that do not reflect a real difference in medical and nursing activities. It should be mentioned that not only university hospitals but also non-university hospitals with complex patients are in the highest deciles and hence are entitled to the extra payments. Moreover, university hospitals refute this argument and emphasize that the difference in payments is not at all sufficient to cover the higher costs of patients with the higher severity of illness (SOI) scores. Therefore, in the current hospital payment system, also taking payments for medical specialists into account, 'low-variability' care cross-subsidizes 'high-variability' care.

In addition, medical specialists in university hospitals are salaried although the income for the hospital comes from the same fee-for-service system as applied to medical specialists outside the university hospitals. Since university hospitals have to pay more social security contributions than is the case for non-university hospitals with self-employed physicians, a certain compensation for university hospitals is considered as justified.

7.3.4 Lack of transparency

University hospitals do not have to substantiate in detail for what purposes the B7-budget is used. Stakeholders from university hospitals recognise that the justification for the B7-budget that aims to stimulate research and medical innovation is limited but question if this process can be guided in a top-down way, as innovations often emerge bottom-up.

This lack of transparency fuels the resistance against the separate budget for training and R&D for university hospitals only. Some non-university hospitals claim part of the B7-budget for R&D to pay for their research activities, especially in case the B7 is transformed into a budget to support the evaluation of medical innovations via pilot projects. Nevertheless, other stakeholders find this not realistic. The Belgian budget for research is already scattered: seven university hospitals for such a small country is considered as too much already.

> *"En dat [B7A] budget is apart en dat moet alleen onder hen verdeeld worden. Wat doet dat? Dat is zogezegd een budget voor opleiding… Wat is de realiteit die eronder zit? Ja, de opleiding wordt ook verstrekt in perifere ziekenhuizen. Dus mij is al niet duidelijk hoe dat dat daar gaat met die centen. Gaat dat dan naar die perifere ziekenhuizen? Ik denk dat niet. … En de research… Ja, er wordt ook veel research in de perifere ziekenhuizen gedaan. Waarschijnlijk veel meer die niveau 3 onderzoeken, die meer marktgericht en implementatiegericht zijn en waar de firma's meer voor betalen. En waarschijnlijk is het ook wel zo dat universitaire centra dan de duurste onderzoeken doen. Als er een nieuw medicament is dat voor de eerste keer uitgeprobeerd wordt op een patiëntenpopulatie. Ja, dat is natuurlijk risicovol en ook heel duur. En dus dat dient daarvoor. Dus conceptueel is daar niets tegen in te brengen. Maar ik vind wel dat er een keer transparantie mag zijn over wat het wel is en wat het niet is. Want daar wordt toch wel heel zedig over gezwegen."*

7.3.5 Size of the B7-budget

Some stakeholders see the B7-budget as a regularization of the **historical overpayment** of university hospitals (i.e. before the reform in 2002). Although the largest part of the B7A-budget is aimed to pay for the higher staffing ratios and the social security contributions for salaried physicians, the B7A budget creates the perception that the university hospitals are favoured compared to non-university hospitals.

Others, mainly stakeholders from university hospitals, term the B7-budget as **insufficient**. According to them, the research funds outside the healthcare budget provided by the Belgian authorities are low compared to other countries. This concern is shared by most interviewees. Also the research budget that is provided via the B7A system, to 'buy' time for research, is low according to stakeholders from university hospitals. They criticize the policy of reduced investments in research because the impact will only be clear over time. A same remark is made for the budgets for education and training and for providing top clinical care. Therefore, as was mentioned before for the research budget, university hospitals consider it not expedient to further subdivide the already scarce resources for education, training and top clinical care.

Some stakeholders state that if the payment for the research and education activities of the university hospitals is insufficient, then these hospitals are forced to increase their medical activity to generate additional income.

Stakeholders warn that this can potentially result in overproduction. Moreover, if there is a dominant drive for production this can influence the mind-set of the physicians in training for the rest of their career.

In a study that was conducted in 2003 on the costs of research and education in Belgian university hospitals,[184] it was found that physicians in university hospitals spent about 28% of their time on research and education-related activities while the B7-part constituted about 4.4% of the hospital budget.

7.3.6 Should research and education be paid by the healthcare budget?

The main argument to provide a separate payment for university hospitals is their specific mission regarding R&D and education. Therefore it is suggested by some stakeholders to exclude these budgets from the hospital payment system. It is argued that these budgets should be provided by the authorities responsible for education and research and not by the healthcare budget because social security contributions on income are not intended to finance research.

Others refute this argument motivated by the fact that clinical research and on the spot training are inherently intertwined with patient care and thus justify a specific budget via the hospital payment system, contrary to fundamental research which is, indeed, not funded by means of healthcare budgets. They indicate that this is common practice in other countries.[181] Additional budgets for teaching and research can be provided via the respective departments. Some also express the fear that if research and education are no longer paid for via the healthcare budget, there is a risk that research activities in university hospitals will receive less funding than today given the financial situation of the federated entities (responsible for education and innovation), especially in the French-speaking part of Belgium.

> *"Dat een ziekenhuis voor wetenschappelijk onderzoek bijkomend gefinancierd wordt: ja. De vraag is: moet dat beperkt worden tot universitaire ziekenhuizen? Of kan een ziekenhuis dat excelleert in het een of het ander daar ook aanspraak op maken? En twee, dat is dan de hoofdzaak, moet dat budget komen uit Sociale Zaken? Of moet dat budget dan komen van Wetenschapsbeleid? Moeten sociale lasten op arbeid dienen om wetenschappelijk onderzoek te steunen? En dat vind ik van niet. Dus dat er een B7 bestaat, daar heb ik geen enkel probleem mee, maar ik vind niet dat dat uit de sociale zekerheidsmiddelen moet komen."*

7.3.7 Salaried physicians: do university hospitals have a competitive disadvantage?

There is a 'war for talent' and stakeholders point out that the university hospitals are having a competitive disadvantage (see Chapter 9). Although physicians working in university hospitals are attracted by non-financial incentives such as innovative patient care or prestige, university hospitals are nevertheless forced to give their physicians an additional income via practices which they do not necessarily approve themselves, such as allowing more private consultations or patient supplements. As a consequence, the income of physicians working in university hospitals can no longer be considered as a fixed income sensu stricto. In fact, the salaries can be seen as a 'basic income' that is topped up with other income sources. Furthermore, according to some stakeholders, for the worst-paid disciplines (e.g. paediatrics) the basic income of physicians in university hospitals is higher than the income of self-employed physicians in non-university hospitals. They also state that the differentiation between disciplines is less pronounced in university hospitals compared to non-university hospitals.

> *"Rekening houdend ook met het feit dat men beseft dat er communicerende vaten moeten zijn om andere disciplines levend te houden, heeft men zich hier akkoord verklaard dat veel van de verschillen enorm afgevlakt zijn, hé. Dus de verschillen zijn uiteraard een stuk minder erg dan in de private sector. Maar er is wel een differentiatie. Bij mijn weten is dit in alle universitaire ziekenhuizen het geval. Men heeft een gesalarieerd systeem, maar er is een modulatie naar boven toe. Er is een minimum waar men nooit onder gaat. En de modulatie naar boven toe is gebonden aan wat ik zou zeggen markteconomische standaarden."*

7.4 Suggested solution elements from stakeholder consultations and literature

In this section we focus on solution elements for the specific role and specific funding of university hospitals and less on the role and funding of hospitals, as compared to other healthcare or social care providers, in general. Stakeholders agree to allocate a specific budget to hospitals for education and training and for R&D activities, but they propose to allocate the budget differently.

Division of tasks in networks

University hospitals should make arrangements about who develops a specific sub-specialisation or care programme to prevent a fragmentation of efforts and waste of resources. This could result in **networks of tertiary care and also for education and R&D** comparable networks could be set up (see Chapter 4). In addition, for the very rare and expensive treatments **international collaboration** should be developed. For example, in 2007, KCE recommended not to build a hadron therapy centre in Belgium but to send patients to centres abroad.[85] In a recent feasibility study, however, it has been recommended to build one hadron centre in Belgium at the campus of a large general hospital, preferably a university hospital because of the underlying research programme.[185] Two consortiums have expressed their intent to build a proton centre, one in Leuven and one in Charleroi.

> *"Dat er ook netwerken gemaakt worden voor opleiding, research en tertiaire en quartaire geneeskunde. Het beste en bekende voorbeeld in België is hadrontherapie. Het Kenniscentrum heeft daar een rapport over gemaakt. En je moet geen grote economist zijn, denk ik, om te weten, dat dat absoluut ten eerste niet nodig is dat we dat in ons land ontwikkelen. We zitten in Europa. Er zijn perfecte alternatieven die rationeel zijn. En als er dan toch 1 zou moeten zijn in België, dan moet er ook toch maar 1 zijn."*

Increasing transparency about specific funding

The transparency about the extra budgets for university hospitals should be improved. This requires the **measurement of the extra time and resources** that are needed to perform the specific tasks that belong to the mission of university hospitals. Stakeholders plead for a payment system that is based on parameters that objectively measure the activities, performance and output for the education and R&D missions of university hospitals instead of on historical or input criteria.[179] Possible parameters for education and training are the number and type of residents or the number and kind of training programmes. Examples for R&D are scientific publications in international peer-reviewed journals, the impact factor or citation index of the journals, the number and type of clinical trials, patents etc.

Stakeholders from university hospitals suggest to keep payments for patient care separate from payments for education and R&D because cross-subsidization lacks transparency about which budgets are intended for which mission and puts university hospitals in a weak position in times of budgetary constraint.

Independent evaluation of education and training

For education, some stakeholders suggest to make the budget dependent upon an independent evaluation of the training.

Monitoring of hospital research activities

In the context of **promising innovative technologies** where the pre-market evidence is insufficient to decide upon reimbursement it could be considered to set up well-designed research projects to evaluate the desirability of reimbursement of medical innovations. Examples abroad exist such as the Medical Research Councils in the UK. The Research Councils support research through three principal mechanisms: by providing project or programme funding to higher education institutions; by funding research in their own research facilities; by providing access to large facilities for UK researchers (http://www.rcuk.ac.uk/).

This would result in a more targeted spending of the research budget than is currently the case. The academic statute would not be a sufficient condition to receive the budget to conduct the research but (university) hospitals should meet the criteria of the research protocol. Nowadays,

university hospitals only submit a list of their peer-reviewed publications to the authorities to justify the extra budget for research that they receive via the B7. The minimal threshold of publications was set relatively low so that all university hospitals achieve this requirement. This could be guided and monitored more strictly, based on the number and quality of publications or by targeting the areas where innovation is really required. It is, however, questioned whether it is the role of the authorities to decide upon research priorities.

Extra payments for university hospitals to compensate for higher social security contributions

For home nursing there is a difference in the payment per activity according to the employment status of the nurse. The payment per activity is higher for salaried home nurses to compensate for the higher social security contributions. Some interviewees propose to introduce a similar – or other – system for salaried and self-employed physicians to compensate the university hospitals adequately for the social security contributions of their salaried physicians.

Key points

- **Seven general hospitals have the status of university hospital, one for each medical school that offers the entire medical curriculum. To be recognised as a university hospital, a number of criteria related to the exploitation of the hospital, staff, convention tariffs, patient care, teaching and research must be fulfilled.**
- **University hospitals receive a separate closed budget for their specific role in research, education and training.**
- **Since the 2002 hospital payment reform, the rules to pay for patient care are the same for university and non-university hospitals. Hence, every hospital, whether university hospital or not, is entitled to the same per diem price for the same patient and service profile. The higher per diem price for the university hospitals compared to (most of) the non-university hospitals follows on the type of patients they treat or services they offer.**
- **A distribution of tasks about tertiary care delivery is required. Not every complex treatment or sub-specialisation should be offered by all seven university hospitals. In addition, reference centres for rare and complex care will have to ensure a high-quality service offer (i.e. minimum thresholds for volume and expertise) that is both geographically well-balanced and appropriately dimensioned for the population to be served. This also means that recognition as a reference centre should by no means be the exclusive prerogative of university hospitals.**
- **University hospitals have a specific role in providing formal education of medical students, candidate medical specialists and candidate GPs which includes teaching, structured coaching, evaluation, and delivery of diplomas, certificates and professional titles, for which they should receive specific funding. As to the supervision of residents in training, university hospitals should be treated in the same way as other hospitals accepting candidate specialists.**
- **University hospitals play a central role in fundamental (funding via grants from private and public sources), translational (various funding sources) and clinical research (funding by industry as in other hospitals). For research or supporting initiatives with a clear community-oriented goal (e.g. in the field of prevention, screening, technology assessment, health services research, etc.) funding could come from the health insurance budget on the condition that the funding is allocated on a project by project basis, through public tendering.**

8 THE UPTAKE, DIFFUSION AND REIMBURSEMENT OF MEDICAL INNOVATIONS

In the cross-country analysis on mechanisms to encourage or monitor the uptake and diffusion of innovations, these mechanisms were categorised into four groups based on whether the mechanism 1) relates to the use of the innovation only or also encourages doing research and 2) provides financial payments or not (see Figure 34 in Chapter 16).

In this chapter, the general procedure to receive reimbursement and the reimbursement mechanism linked to research (i.e. coverage with evidence development) are described for both drugs (part 8.1) and devices (part 8.2). In both parts, possibilities to use drugs and devices before reimbursement are also discussed. Other innovations (e.g. new techniques for breast reconstruction requiring new nomenclature codes (see Chapter 9)) are not discussed. Next, the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (section 8.3) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 8.4) are discussed. We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions or study centres of sickness funds) were performed to retrieve information about or relevant to the Belgian hospital system.

8.1 Reimbursement of drugs

What follows is an overview of the different steps taken before a drug is reimbursed. In addition to a brief summary of registration[hh] and pricing, the reimbursement[ii] procedure is described. This description is mainly based on information published on the website of the National Institute for Health and Disability Insurance (RIZIV-INAMI) (http://riziv.fgov.be/drug/) and the Royal Decree (RD) of 21 December 2001 'concerning procedures, terms, and conditions for reimbursement by compulsory health insurance of the costs of pharmaceutical specialties', including recent changes published in the RD of 3 June 2014 that came into force on 1 July 2014.

8.1.1 Registration

The Minister of Public Health is the competent authority for the marketing of drugs, i.e. the so-called 'registration'. The company responsible for the marketing of a medicinal product must submit an application to the European Medicines Agency (EMA, www.ema.europa.eu). National registration is also available for registration in a single Member State. To register a product, the company must demonstrate that the product meets a number of requirements in terms of quality, safety and efficacy. The registration is based on a risk-benefit analysis of the individual product and not on the basis of studies in which the comparison is made with alternative interventions. According to the European guidelines, the registration process may take no longer than 210 days.

The Federal Agency for Medicines and Health Products (FAGG-AFMPS, www.fagg-afmps.be) has a database of authorized medicinal products for human use. This includes all the medicines which have been authorized at national level and by the EMA and which therefore may be marketed in Belgium. The website of the Belgian Centre for Pharmacotherapeutic Information (BCFI-CBIP, www.bcfi.be) also gives an overview of the drugs for human use that are available on the Belgian market.

hh http://riziv.fgov.be/drug/nl/drugs/general-information/general/index.htm

ii http://www.riziv.fgov.be/drug/nl/drugs/general-information/refunding/

8.1.2 Pricing procedure

The competent authority for determining the maximum price for pharmaceutical products is the Minister of Economic Affairs. The Minister decides after receiving advice of the Pricing Committee for Pharmaceutical Products (for reimbursable drugs) or the advice of the Price Regulation Commission (for non-reimbursable drugs).

8.1.3 Reimbursement

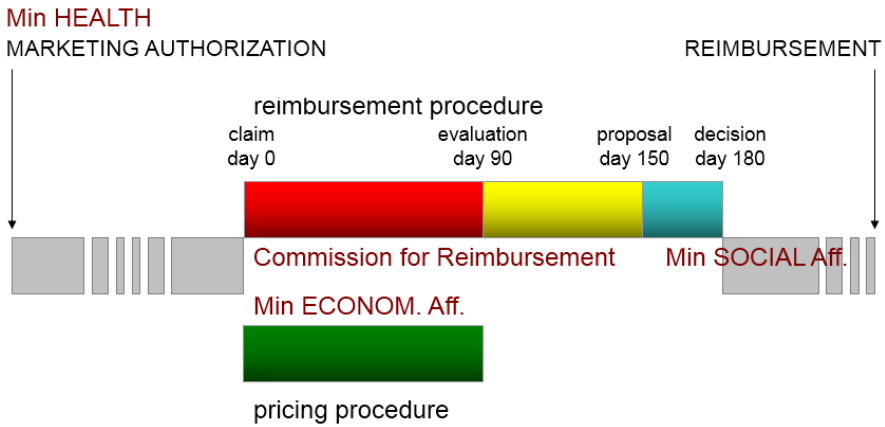
The compulsory health insurance will only (partially) cover pharmaceuticals that are included on a positive list. This list may be amended after request of the applicant (i.e. the company), the Minister or the Drug Reimbursement Committee (CTG-CRM, 'Commissie voor Tegemoetkoming Geneesmiddelen'/'Commission de Remboursement des Médicaments') of the RIZIV-INAMI. After receiving market authorization, the applicant can submit an application to the CTG-CRM. This committee is composed of:

- twenty-two members with a voting right: experts from Belgian universities (7), sickness funds (8), pharmacists (3), and physicians (4);
- eigth members without a voting right: Pharma.be (2), representatives from four Ministries (social affairs, public health, economic affairs and budget), Febelgen (1) and one representative from the RIZIV-INAMI Service for Medical Evaluation and Control (DGEC-SECM, 'Dienst voor Geneeskundige Evaluatie en Controle'/'Service d'évaluation et de contrôle médicaux').

8.1.3.1 Procedure and terms for reimbursement requests of pharmaceuticals

We focus on the procedure for pharmaceuticals in Class 1, i.e. **pharmaceuticals with an added therapeutic value in comparison with existing alternatives**. Class 2 includes drugs with similar or analogous therapeutic value and Class 3 is for generics and copies. The following figure provides a schematic overview of the procedure. For drugs in Class 1 a price premium can be negotiated.

Figure 20 – Time-related procedure for inclusion on the list of pharmaceuticals



Source: RIZIV-INAMI powerpoint presentation by R. De Ridder (October 2009)

1. Admissibility of reimbursement request file (day 8)

The drug reimbursement request file for inclusion of the specialty on the list is sent to the secretariat of the CTG-CRM. At the same time, a price demand is sent to the Federal Public Service (FOD-SPF) Economy. For a reimbursement request where the applicant categorizes the specialty as a Class 1 drug, for instance the following information must be provided:

- the prices of the product in the other member states of the European Union;
- reimbursement proposal;
- justification of this proposal, together with the published and unpublished clinical, epidemiological and health economic studies and scientific justifications.

The assessment of the admissibility occurs by the secretariat within eight days. If inadmissible, then the 180-day period is suspended for a maximum of 90 days and the applicant receives time to submit the missing elements. The file is closed if these missing elements are not submitted in time. This avoids that incomplete reports remain pending.

2. Evaluation of the request and proposal of the CTG-CRM (day 60/90/150)

For the evaluation of a Class 1 drug, the following five criteria are taken into account (Art. 4 of RD 21 December 2001):

- therapeutic value (looking at efficacy, safety, effectiveness, applicability, and convenience of use);
- price of the specialty and proposed reimbursement level;
- position of the drug in medical practice (therapeutic and societal needs);
- budgetary impact for the health insurance;
- cost-effectiveness (cost health insurance versus therapeutic value).

The final decision on whether the specialty is a Class 1 drug is taken by the Minister, based on a proposal from the CTG-CRM. The Minister also decides in case the CTG-CRM did not formulate a proposal. If the Minister does not decide, the proposal of the applicant is adopted.

Assessment report: day 60

The CTG-CRM board decides on the appointment of a (group of) internal and external expert(s) who are responsible for evaluating the justification of the drug reimbursement proposal. The evaluation report written by these experts, in dialogue with the CTG-CRM, is provided to the secretariat of the CTG-CRM within 60 days. The applicant has 20 days to make remarks/objections or request additional time to make comments.

Assessment report: day 90

Within 90 days, the company has to inform the CTG-CRM of the maximum price. Within this period, the final assessment report is written. This 'day-90' assessment report is also made public.

Motivated proposal: day 150

The CTG-CRM makes a motivated proposal within a period of 150 days. This proposal is:

- either a motivated proposal that includes a position on the added value class (i.e. Class 1, 2 or 3), the reimbursement modalities, the reimbursement basis, the reimbursement category (i.e. A, B, C, Cs, Cx, Fa or Fb), the reimbursement group (e.g. chapter I, II or IV), and the time frame and elements required for the individual reimbursement revision;
- or a motivated proposal to start a procedure according to article 81bis that includes both a position on the added value class and the reimbursement modalities as well as a description of the uncertainties and the questions which the CTG-CRM would like to see answered by the end of the agreement;
- if the CTG-CRM is unable to formulate a motivated proposal, they may, by two-thirds majority vote, decide to forward the request directly to the Minister.

The motivated proposal is either provisional or final:

- Motivated provisional proposal:
  CTG-CRM's motivated proposal is provisional if their proposal differs from the reimbursement proposal of the applicant.
- Motivated final proposal:
  If remarks or objections have been made or there was a hearing with the applicant, the CTG-CRM examines these comments or objections and makes a motivated final proposal. The motivated provisional proposal also becomes final if the applicant has communicated its agreement with this proposal. CTG-CRM's motivated proposal is immediately final if their proposal does not deviate from the reimbursement proposal of the applicant.

Possibilities to suspend the procedure

There are several possible suspensions of the described periods for various reasons: the applicant requests to be heard, the applicant has made objections or comments on the assessment report (day 60) within 20 days, or reacts on the motivated provisional proposal (day 120) within 10 days, or the price of the specialty is missing or not communicated to the secretariat of the CTG-CRM after 90 days. The duration of these suspensions is limited.

3. Motivated decision of the Minister (day 180)

The Minister of Social Affairs receives from the secretariat CTG-CRM's motivated final proposal within 150 days and has to take a motivated decision within 180 days (excl. suspensions) of the initial drug reimbursement request. This motivated decision includes the added value class, reimbursement modalities, the reimbursement basis, the reimbursement category, the reimbursement group, and the time frame and elements required for the individual reimbursement revision. The Minister's

decision may differ from CTG-CRM's final proposal on the basis of social and/or budgetary elements, within the limits of the five criteria set out in Article 4 (see above). The Minister can also take a motivated decision and notify this within 180 days if there is no proposal from the CTG-CRM. If the Minister has not taken a decision, then the applicant's most recent proposal is accepted.

4. Coming into force of the adjustment

The reimbursement by the compulsory health insurance starts the first or second month after the decision is taken to include a product on the list, depending on whether this decision is taken in the first or second half of the month.

8.1.3.2 Reimbursement contract (Art.81-85 of RD 21 December 2001)

1. By the applicant

The applicant may express his wish to the Minister to negotiate a contract with RIZIV-INAMI if the CTG-CRM has not been able to formulate a final proposal within 150 days. In this case, the final assessment report approved by the CTG-CRM (day 90), will provide the basis for discussions in the working group. Such a contract can for example be negotiated in the following cases:

- specialties for which registration listed in Class 1 is requested;
- orphan drugs for which registration on the list is requested;
- reimbursement request for specialties, whether or not registered on the list, in a new indication for which there exists a therapeutic or societal need.

The applicant addresses his request to negotiate a contract within seven days after being informed by the CTG-CRM's secretariat that there is no motivated proposal. This request includes elements that justify the appropriateness of negotiating such a contract and a request to suspend the 180-day procedure. This suspension may take no longer than 120 days.

The Minister has seven days to judge the admissibility of this request. If the Minister does not take a decision the request is automatically admissible. The 180-day period is then suspended until the day a contract is agreed on or that the Minister notifies the applicant it is not possible to make such an agreement.

2. By the CTG-CRM or the applicant

The applicant or the CTG-CRM may suggest the Minister to negotiate a contract with RIZIV-INAMI if the CTG-CRM judges the reimbursement proposal to be excessive in relation to the above-mentioned criteria (Art.4 of RD 21 December 2001) or if the CTG-CRM is of the opinion that including the specialty on the list is accompanied by budgetary uncertainties. In this case, the applicant also has to include a proposal for budgetary compensation mechanism in his request.

RIZIV-INAMI organises a meeting of a working group to set up a contract. This group is composed of a representative of the Minister of Social Affairs, the Minister of Budget, and the Minister of Economics; three representatives of the sickness funds; two representatives of the applicant; a representative of the professional association of the pharmaceutical industry; and the chairman or one of the two vice-presidents and/or an academic member of the CTG-CRM.

The decision to conclude a contract depends on the agreement of both the Minister of Social Affairs, the Minister of Budget after advice from the Inspector of Finance, and the applicant. The other members of the working group only have an advisory vote. If no agreement can be closed between the applicant and RIZIV-INAMI, the contract is concluded between the applicant and the Administrator General of RIZIV-INAMI. Finally, the Minister takes a motivated decision on the amendment of the list of reimbursable drugs.

The contract includes amongst other things the following elements: the price and reimbursement basis; possible modalities for compensation of the budgetary risks; if appropriate, the terms related to the scientific reporting and evaluation that should be done by the applicant during the period of the contract; the consequences of non-compliance with the contract; the reimbursement modalities; the modalities on entering into force of the contract, the revision and possible extension of the contract.

The registration is valid for a minimum period of one year and a maximum of three years and may be renewed periodically up to a maximum of three years. At the earliest six months before the expiration of the contract, RIZIV-INAMI and the working group that prepared the contract evaluate the gathered information and explore the opportunity to extend or terminate the contract or propose the applicant to submit a new application for inclusion on the list. Also in this case, the decision to extend the contract depends on the agreement of both the Minister of Social Affairs, the Minister of Budget after advice from the Inspector of Finance, and the applicant. The other members of the working group only have an advisory vote.

8.1.4 Use of drugs before/without reimbursement

Registered pharmaceuticals that are not reimbursed can be prescribed and usually costs are borne by the patient. Also off-label prescribing/use is perfectly legal based on the principle of therapeutic freedom. A drawback is the absence of reimbursement by the compulsory health insurance for off-label indications. For both the use of registered and off-label drugs, the following protection mechanisms exist:

Special Solidarity Fund (SSF)[jj]

"The Special Solidarity Fund (SSF) was established by law as part of the RIZIV-INAMI and is operational since 1990. The Fund complements the compulsory health insurance coverage and serves as a social care net covering high-cost rare diseases excluded from the compulsory insurance system.

- Individual demand

One can make an appeal to the SSF if all other possible sources of reimbursement have been exhausted. Additionally, several criteria have to be met in order to be eligible for reimbursement. Reimbursement can be granted for certain costs related to rare diseases, rare indications or the application of innovative techniques, which are not (yet) covered by the compulsory health insurance system in Belgium or any other channel (private insurance or reimbursement abroad). The target population of the SSF are seriously ill patients for whom an expensive but not (yet) reimbursed treatment is essential. Chronically ill children (children below 19 years suffering from cancer, renal insufficiency or any other life threatening disease, requiring a continuous or repetitive treatment of at least 6 months) are a specific target group of the SSF. In this case, the SSF can reimburse additional costs as soon as € 650 out-of-pocket payments have been paid on a yearly basis." For more details we refer to KCE Report 133[186] on this topic.

- Demand for a specific group of patients: Unmet Medical Need Programme

In the future (1 December 2014), patients may have faster access to drugs intended for diseases for which no effective treatment exists through a cohort decision.[187] A demand for reimbursement of the particular drug can be introduced for a patient group by the Minister of Public Health, the Minister of Social Affairs or a pharmaceutical firm. The drugs envisaged by a cohort decision with inclusion criteria meet an unmet medical need and fulfil each of the following conditions: a) the drug is administered to treat a serious or life-threatening disease; b) there is no therapeutic alternative that is acceptable from a scientific point of view and that is included in the compulsory health insurance; c) the drug is part of a programme for compassionate use or medical need; d) the drug provides an unmet medical need which is included in the list of unmet medical needs.[188, 189]

As soon as the College of Medical Directors has taken a cohort decision, individual decisions can be taken about reimbursing the costs of the drugs. This individual decision determines whether the patient meets the inclusion criteria of the cohort. The cohort decision is limited in time and based on available economic and medical data.

- Programmes of compassionate use

Unauthorised drugs under development, that *do not yet have obtained a Marketing Authorisation* in Belgium, can be made available to patients outside the setting of a clinical trial while the pharmaceutical company bears the costs. These are the so-called programmes of compassionate use: "Making available, for compassionate reasons, of a medicinal product that can qualify for the centralised procedure to a group of patients with a chronically or seriously debilitating disease or whose

[jj] http://vlaamspatientenplatform.be/themas/medicatie-1

disease is considered to be life-threatening, and who cannot be treated satisfactorily by an authorised medicinal product. The medicinal product concerned must either be the subject of an application for a Marketing Authorisation in accordance with Article 6 of the European Regulation laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Medicines Agency or must be undergoing clinical trials."[186]

- Medical Need Programmes
  Other drugs already *have a Marketing Authorisation* in Belgium *for a given indication*, but not (yet) for the indication for which it is used. These drugs can also be made available to patients while the pharmaceutical company bears the costs under the so-called Medical Need Programmes: "making available a medicinal product to a group of patients with a chronically or seriously debilitating disease or whose disease is considered to be life-threatening, and who cannot be treated satisfactorily by an authorised medicinal product. The medicinal product concerned must have a Marketing Authorisation but
  - o either the given indication has not been authorised yet, or
  - o although authorised, the medicinal product is not yet available on the market in this indication."[186]

8.2 Reimbursement of implants and invasive medical devices

Before implants and invasive medical devices are eligible for reimbursement (8.2.3), they need to receive a Conformité Européene (CE) label (8.2.1) and be notified (8.2.2).

What follows is an overview of the RD of 25 June 2014 that reforms the reimbursement system of implants and invasive medical devices. This Royal Decree was published in the Official Journal on 1 July 2014 entered into force on 1 July 2014. As for drugs, it contains a general procedure to receive reimbursement (sections 8.2.3.1 and 8.2.3.2) and a reimbursement mechanism linked to research (i.e. coverage with evidence development, sections 8.2.3.3 and 8.2.3.4).

8.2.1 CE label

For devices, there is a pre-market evaluation by a Notified Body, which is performed only once for the complete European market. In Europe, this clinical evaluation is defined as the assessment and analysis of clinical data pertaining to a medical device to verify the clinical safety and performance of the device when used as intended by the manufacturer. This evaluation does not require pre-market data that demonstrate clinical efficacy or effectiveness.[190] Once a device or implant has received its CE mark, it can be sold and used in Europe.

8.2.2 Notification procedure

To be eligible for reimbursement, CE-labelled implants and invasive medical devices for long-term use have to be notified.[kk] The companies that market implants on the Belgian market notify themselves their products in a national database. A notification number is assigned by RIZIV-INAMI to every notified device. This notification does not make an evaluation of the quality of the products that are already available on the market, but offers the compulsory health insurance the possibility to have an overview of all implants and devices that are on the market.

kk http://www.riziv.fgov.be/care/nl/other/implants/information-topic/notification/index.htm

Some products do not need to be notified:[ll] for example, 'a custom-made device' and 'a device intended for clinical investigation'. The latter involves implants in clinical trials prior to CE-marking.

8.2.3 Reimbursement

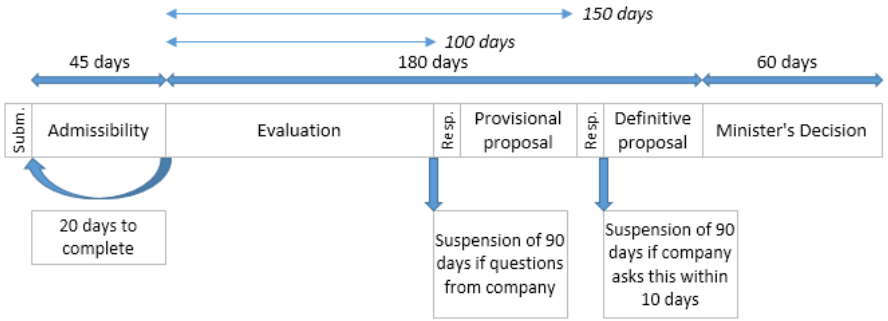
The compulsory health insurance will only (partially) cover implants or invasive medical devices that are included on the list or the nominative list. This list may be amended after request of the applicant, the Minister or the Committee for the Reimbursement of Invasive Medical Devices and Implants (CTIIMH-CRIDMI, 'Commissie Tegemoetkoming Implantaten en Invasieve Medische Hulpmiddelen'/'Commission de Remboursements des Implants et des Dispositifs Médicaux Invasifs'). After receiving a CE-label, the applicant can submit an application to the CTIIMH-CRIDMI. This committee is composed of:

- members with a voting right: experts from Belgian universities, sickness funds, pharmacists, and physicians;
- members without a voting right: hospital administrators, manufacturers/importers/distributors (UNAMEC), representatives from three Ministries (social affairs, public health, and budget), and representatives from the RIZIV-INAMI Service for Medical Evaluation and Control (DGEC-SECM).

8.2.3.1 Procedure and terms for reimbursement request of implants or invasive medical devices: the list

The described procedure is applicable for both a request to list, amend or remove an implant or invasive medical device for long-term use[mm] from the list. The following figure shows a schematic overview of the procedure.

Figure 21 – Time-related procedure for inclusion on the list of implants or invasive medical devices



Source: Based on RIZIV-INAMI powerpoint presentation.
Resp.: response; Subm.: submission.

1. Admissibility of reimbursement request file: 45 days

An application for reimbursement is sent to the secretariat of the CTIIMH-CRIDMI. This includes amongst other things (the) notification number(s), CE certificate, a scientific justification for the reimbursement request, epidemiological data, clinical and health economic studies, as well as price information. The price information should also mention the price in other member states of the EU. The application can be submitted when a price request has been submitted to the FOD-SPF of Economy.

The assessment of the admissibility is done by the secretariat within 45 days. If inadmissible, then the applicant has 20 days to submit the missing elements. If this is done, another 45-day period starts to judge the admissibility. The file is closed if these missing elements are not submitted in time. If the secretariat did not take a decision in due time, the 180-day period starts to run.

[ll] http://www.riziv.fgov.be/care/nl/other/implants/information-topic/notification/notifications_no.htm

[mm] For devices for non-long term use, the procedure is similar without being time-restricted.

2. Evaluation of the request and proposal of the CTIIMH-CRIDMI: 180 days

For the evaluation of a Class 1 device, i.e. a device with a demonstrated added value over existing therapeutic alternatives, the following five criteria are taken into account (Art.16 of RD of 25 June 2014):

- therapeutic value of the device;
- price of the device and proposed reimbursement level;
- position of the device in medical practice (therapeutic and societal needs);
- budgetary impact for the health insurance;
- cost-effectiveness (cost health insurance versus therapeutic value).

Assessment report: day 100

A detailed and motivated assessment report, prepared by (internal/external) expert(s) will be delivered within 100 days to the secretariat. This report can mention elements for which additional information and clarification from the applicant is required to be able to complete the evaluation. If no additional information and clarification is required, the applicant has ten days time to make any comments or objections. The procedure is similar for (the evaluation of) a 'restricted clinical application' (see section 8.2.3.3). In this case, the assessment report also explicitly mentions the scientific motives that justify a temporary reimbursement in the context of a restricted clinical application.

Motivated proposal: day 150/180

Within 180 days: In case CTIIMH-CRIDMI's motivated proposal does not deviate from the application, then this is a motivated final proposal.

Within 150 days: In case CTIIMH-CRIDMI's motivated proposal deviates from the application, a motivated provisional proposal is prepared. This becomes a motivated final proposal if the applicant makes no comments or objections.

Again, the procedure is the same in case of a restricted clinical application.

Possibilities to suspend the procedure

There are several possible suspensions of the described periods for various reasons: the price of the device is not communicated at day 90, additional information is requested from the applicant in the assessment report (day 100), or the applicant requires extra time to make comments or objections on the motivated provisional proposal (day 150). The duration of these suspensions is limited to 90 days and the file is closed if the requested information is not provided in time. In case of (an evaluation of) a restricted clinical application, the CTIIMH-CRIDMI can also suspend the 150-day period with 90 days to prepare a motivated proposal or to adapt this proposal after comments or objections were received from the applicant.

1. Motivated decision of the Minister: 60 days

The Minister takes a motivated decision within 60 days, whether or not there is a motivated proposal of the CTIIMH-CRIDMI, after approval of the Minister of Budget. The Minister can deviate from CTIIMH-CRIDMI's motivated final proposal, based on social and/or budgetary arguments, within the limits of the criteria mentioned in Article 16 (see the five criteria listed above). In the case of an application for delisting, the Minister can also refuse for reasons of public health or social protection.

If the Minister does not take a motivated decision within these 60 days:

- The decision is considered to be in accordance with CTIIMH-CRIDMI's motivated final proposal.
- If there was no such motivated final proposal, then the request for listing is accepted OR if the CTIIMH-CRIDMI suggested a temporary reimbursement within 100 days in the context of a restricted clinical application, then the request to list is closed.
- In the context of an evaluation of a restricted clinical application, the temporary reimbursement is discontinued in the absence of a motivated final proposal by the CTIIMH-CRIDMI within 180 days and if the Minister also does not take any decision within 60 days.
- There is a separate rule if the CTIIMH-CRIDMI proposes within 100 days a temporary reimbursement in a restricted clinical application. Before the Minister takes a decision, the applicant may express his wish to conclude a contract with RIZIV-INAMI to the Minister.

2. Coming into force of the adjustment

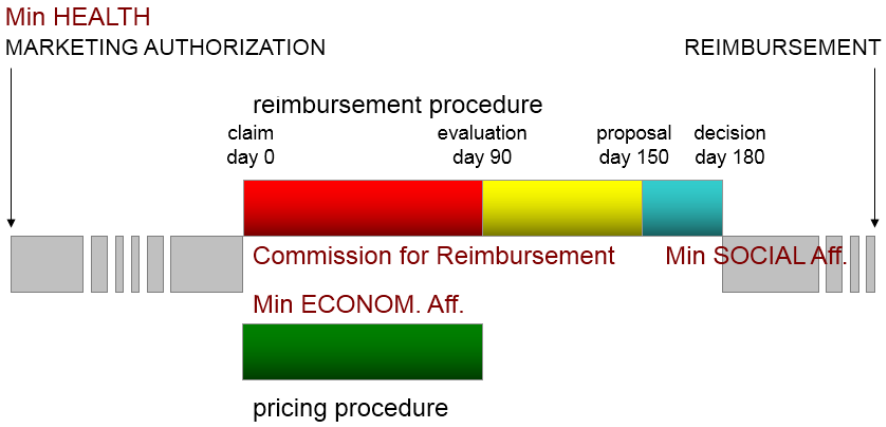
The moment that the decision comes into force is specified in a Ministerial Decree. In case of listing a new service, the adjustment will come into force the first day of the month following the publication on the website of RIZIV-INAMI. This publication should take no longer than 30 days after the decision was taken. In this case, the Ministerial Decree is then published later.

8.2.3.2 Procedure and terms for reimbursement request of implants or invasive medical devices: the nominative list

There are also products approved for reimbursement for specific services (reimbursement categories A, C and E of the list (see further)). These so-called nominative lists of implants and invasive medical devices are coupled with a service from the list.

The described procedure applies for both an application for listing, modification, and deletion by the applicant. The following figure shows the similarities and differences with the procedure for an application to adjust the list.

Figure 22 – Time-related procedure for inclusion on the list versus the nominative list of implants or invasive medical devices



Source: Based on RIZIV-INAMI powerpoint presentation

1. Admissibility of reimbursement request file: 30 days

In this procedure, CTIIMH-CRIDMI's secretariat has 30 days to evaluate the admissibility. If inadmissible, then the applicant receives 20 days to submit the missing elements. If this is done, another 30-day period starts to judge the admissibility. The file is closed if these missing elements are not submitted in time. If the secretariat did not take a decision in due time, the 75-day period starts to run.

2. Evaluation of the request and proposal of the CTIIMH-CRIDMI: 75 days

In this procedure the five evaluation criteria do not apply and there is no assessment report. There is only a proposal and motivation for this proposal.

Motivated proposal

Within 75 days: In case CTIIMH-CRIDMI's motivated proposal does not deviate from the application, then this is a motivated final proposal.

Within 45 days: In case CTIIMH-CRIDMI's motivated proposal deviates from the application, a motivated provisional proposal is prepared. This becomes a motivated final proposal if the applicant makes no comments or objections.

Possibilities to suspend the procedure

The procedure may be suspended for the following reasons: the price of the device is not communicated at day 30, the applicant makes within 10 days remarks and/or objections on the motivated provisional proposal (day 45) or requires extra time to make comments or objections on this proposal. Also in this case, the duration of the suspension is limited and the file is closed if the requested information is not provided in time.

3. Decision Insurance Committee: 45 dagen

The Insurance Committee takes a motivated decision within 45 days, whether or not there is a motivated proposal of the CTIIMH-CRIDMI.

If the Insurance Committee does not take a motivated decision within these 45 days:

- the decision is considered to be in accordance with CTIIMH-CRIDMI's motivated final proposal;
- if there was no such motivated final proposal, then the request for listing is accepted.

4. Coming into force of the adjustment

The adjustment comes into force the first day of the month following the publication of the decision on the website of RIZIV-INAMI.

8.2.3.3 (Evaluation of a) restricted clinical application

The reimbursement decision can also be linked to specific research conditions. The CTIIMH-CRIDMI may propose to reimburse a medical device that is part of a technological innovation in the context of a *restricted clinical application*. This applies if the CTIIMH-CRIDMI considers that the request is done for an innovative technology for which there is uncertainty whether the technique offers an added value compared to existing alternatives. In this case, within 100 days (of the 180-day period), the CTIIMH-CRIDMI can propose a temporary reimbursement in the context of a restricted clinical application. The assessment report (day 100) mentions the scientific arguments to justify this. The procedure is similar as described above in part 8.2.3.1.

The *evaluation of a restricted clinical application* starts upon receipt of the analysis as required in the decision to approve a temporary reimbursement in the context of a restricted clinical application (day 0). The CTIIMH-CRIDMI evaluates the temporary reimbursement within a period of 180 days. Again, the procedure is similar as described above in part 8.2.3.1. This evaluation may result in a motivated proposal to the Minister relating to:

- the discontinuation of the temporary reimbursement, or
- the prolongation of the temporary reimbursement with or without modification of the service and/or the reimbursement conditions, or
- the inclusion of the service on the list.

The temporary reimbursement continues until the Minister has taken a decision.

8.2.3.4 The possibility to close a contract (cat. H)

The applicant may express his wish to the Minister to negotiate a contract with RIZIV-INAMI if the CTIIMH-CRIDMI has not been able to formulate a final proposal for a temporary reimbursement in the context of a restricted clinical application.[nn]

The applicant addresses his request to negotiate a contract to the Minister within seven days after being informed by the CTIIMH-CRIDMI secretariat that there is no motivated final proposal within the 180-day period. This request includes elements showing that by agreeing such a contract would provide an answer to the questions and remarks mentioned in the assessment report and that have resulted in the proposal for a restricted clinical application. The request also asks for a suspension of the 60-day period in which the Minister should take a decision. This suspension may take no longer than 150 days.

The Minister has seven days to judge the admissibility of this request. If the Minister does not take a decision the request is automatically admissible. The 60-day period is then suspended until the day a contract is agreed on or that the Minister notifies the applicant it is not possible to make such an agreement.

Similar to the procedure for drugs, RIZIV-INAMI organises a meeting of a working group to set up a contract. This group is composed of a representative of the Minister of Social Affairs, and the Minister of Budget; three representatives of the sickness funds; two representatives of the applicant; a representative of the professional association of the device industry; and a member of the CTIIMH-CRIDMI.

The decision to conclude a contract depends on the agreement of both the Minister of Social Affairs, the Minister of Budget after advice from the Inspector of Finance, and the applicant.

Similarly as for drugs, the contract should include amongst other things the following elements: the price and reimbursement basis; the reimbursement modalities, possible modalities for compensation of the budgetary risks; the terms related to the scientific reporting and evaluation that should be done

[nn] The possibility to close a contract does not exist for devices for non-long term use.

by the applicant during the period of the contract; the consequences of non-compliance with the contract; the modalities on entering into force of the contract, the revision and possible extension of the contract.

The registration of these devices is valid for a minimum period of one year and a maximum of three years and may be renewed periodically up to a maximum of five years. At the earliest six months and no later than three months before the expiration of the contract, RIZIV-INAMI and the working group that prepared the contract evaluate the gathered information and explores the opportunity to extend with or without changes, or terminate the contract or proposes the applicant to submit a new application for inclusion on the list.

The decision to extend the contract, with or without changes, depends on the agreement of both the Minister of Social Affairs, the Minister of Budget after advice from the Inspector of Finance, and the applicant. The other members of the working group only have an advisory vote.

8.2.4 Use of implants and invasive medical devices before reimbursement

Payers increasingly look for evidence of efficacy to support coverage decisions. HTA agencies perform evaluations of clinical safety, effectiveness and cost-effectiveness of new interventions. Evidence of efficacy/effectiveness is increasingly requested by the payers to support coverage decisions.[191] This is increasing the demand for clinical trials on devices and goes far beyond what is needed to obtain a CE label.[190] Nevertheless, these CE-labelled devices can be used before they are reimbursed.

8.2.4.1 Reimbursement by the compulsory health insurance from the moment of inclusion on the (nominative) list

Compulsory health insurance will only reimburse the costs of the implants or invasive medical devices included in the (nominative) list, provided there is compliance with the reimbursement modalities. This is only due from the moment the decision to list the device comes into force. For notified non-reimbursed products, patients may be charged a large supplement.

8.2.4.2 Costs of implants borne by the hospital budget

Article 102, 4 of the Hospital Act stipulates that the cost of implants is borne by the hospial budget (Budget of Financial Means (BFM)) in specific cases, such as:

- implants that are subject to the obligation of notification and that have not fulfilled this obligation;
- implants and invasive medical devices with a retail price (incl. VAT) higher than the ceiling price or the reimbursement basis plus the safety margin;
- no costs for the device can be charged to the patient in case of a lump sum payment from the compulsory health insurance;
- implants that received a negative decision of the Minister or the Insurance Committee after a negative decision of the CTIIMH-CRIDMI. A negative decision refers to an implant of inferior quality or with harmful side effects.

8.2.4.3 Costs of notified devices borne by the patient in the period before the reimbursement decision

The costs of notified devices that are not on the list for one of the following reasons are borne by the patient:

- no request for reimbursement is submitted;
- a request for reimbursement is submitted, but the decision of reimbursement by the compulsory health insurance is not in force;
- a request for reimbursement is submitted, but the CTIIMH-CRIDMI decides to wait for further evidence or there is no budget.

8.3 Critical appraisal: "Medical innovation duels cost containment": are we making the right choices?

8.3.1 Societal preferences: need for a more structured consultation process

Medical innovation[oo] is seen as an important element of a qualitative healthcare system but is also an important cost-driver which risks, if not properly managed, to derail the national healthcare budget. New cancer drugs, for instance, are a frequently cited example of medical innovations that are putting large pressure on the healthcare budget. These drugs are often very expensive, with relatively high sums of money per quality-adjusted life-year (QALY) gained. The adoption of such medical innovations will increasingly elicit societal debate about what is an acceptable cost per QALY.

In KCE Report 100[193] the use of threshold values for cost-effectiveness in healthcare was studied. An incremental cost-effectiveness ratio (ICER) can be used in two ways in reimbursement decision making.[193] First, by defining an ICER threshold value as the maximum societal willingness to pay for a unit of health effect. This option requires a flexible macro-level budget as well as the measurement of the maximum willingness to pay for a generic QALY. A second and most widely applied option is to determine the acceptability of an ICER on a case-by-case basis. As such, the societal willingness to pay for a unit of health effect is evaluated for each intervention separately and thus this requires in-between comparisons of ICERs.[193]

Today, in Belgium, an interactive deliberation-driven model of decision making incorporates several stakeholders in different committees such as the Drug Reimbursement Committee (CTG-CRM) and the Committee for the Reimbursement of Invasive Medical Devices and Implants (CTIIMH-CRIDMI) (see Chapter 3 on macro-level governance). This model, where interests of patients and citizens are supposed to be defended by the involved stakeholders, risks to result in healthcare policy decisions that insufficiently take into account the public values.[194] A previous KCE-study (KCE Report 195[194]) evaluated the acceptability of public and patient involvement in Belgium by means of a Delphi-panel among a wide range of stakeholders of which two out of three respondents are part of the current decision-making organs with regard to reimbursement. The KCE report revealed that there was a general consensus about the importance of citizen and patient participation and a high level of openness to change.[194] Yet, there seemed to be "no openness to a complete overhaul or major revision of the present system". Therefore, the report suggested to introduce changes within the existing structures.[194] In any case, tough choices (e.g. investments in technology versus in personnel to care for frail elderly) should also be based on a societal debate with a structured consultation process of citizens and patients.

8.3.2 A lot of freedom to introduce innovations

Medical innovations are introduced before reimbursement decisions

The competition between hospitals to attract patients drives, according to stakeholders, hospitals to invest in medical innovation, even before there is sound evidence about its clinical effectiveness and/or safety. Belgium is by some described as a leading country on the domain of medical innovation. The freedom to innovate is good in a sense that it makes medical evolutions possible. Yet, medical innovation should not be a goal on itself. Medical innovation is only valuable when it serves the societal goals. Stakeholders assess that a more regulated freedom is desirable to make sure that the right innovations are incited and the wrong innovations restricted. After all, not all new technologies are innovations and many new technologies are pushed on to the market without having an added value. The industry markets these new technologies as medical innovations since this allows them to bargain for higher prices than the existing technologies. This requires reimbursement as well as price-setting decisions to be substantiated with well-documented, transparently brought scientific evidence on clinical and cost-effectiveness.[193]

> *"Si on regarde ce qui s'est fait comme break-through… On invente des nouvelles machines mais qui font à peu près la même chose que l'ancienne, mais avec une nouvelle carrosserie dessus. Il n'y a pas vraiment de break-through formidable, énorme, utilisable pour une grande partie de la population. Il y a des innovations pour des petits*

[oo] The title of this section is based on Tettig (1994).[192]

morceaux de gens qui… Des nouvelles formes de protonthérapie. C'est vrai que ça marche aussi bien que les classiques sur n'importe quel cancer et ça marche mieux sur certains un peu spécifiques, mais si on veut faire ça pour tous les cancers, on ne sait pas le payer… Donc il faut bien travailler avec autre chose."

A well-known example to illustrate this is robot-assisted surgery for radical prostatectomy. The company attributed a number of advantages to robot-assisted prostatectomy compared to a conventional technique: reduced incontinence, reduced erectile dysfunction, shorter length of hospital stay and less peri-operative blood loss. Only for the latter, however, there was supporting evidence. Also for other surgical specialties there was no evidence to support the claims of the manufacturers that robot-assisted surgical techniques were superior to conventional techniques.[79] In addition, it was also shown that, for most indications, robot-assisted surgery is more costly than conventional techniques. Despite the poor evidence and absence of reimbursement at the time the KCE report was published, at least 20 of these robotic surgical systems were already in use.[79] According to hospital administrators, hospitals acquire robot-assisted surgical systems because *"the robot shows that our hospital and our doctors are technological front-runners"*.[79] The importance of marketing was confirmed by the interviewed stakeholders in this study. If one hospital markets itself with robot-assisted prostatectomies, many others will follow because they fear to lose their market share or find difficulties to attract physicians.

"In het huidig systeem gaat die arts zeggen: ah, ik moet met die robot beginnen werken. Hoewel dat ik dat eigenlijk niet graag doe, want ik moet dat weer leren. Want dat is een leercurve, hé. Maar toch ga ik het doen, omdat ik geloof dat dat in de toekomst dé manier zal zijn om veel patiënten te hebben. In het huidige financieringssysteem wordt het wel degelijk bevorderd dat je veel patiënten hebt."

"Oui, l'innovation…Les hôpitaux se mettent en avant en disant : « voilà, on a ouvert un nouveau service avec un tel nouvel appareil, quand on peut dire à un article dans les journaux qu'on a installé un nouveau robot qui permet de faire des interventions moins invasives plus sûres, et cetera. On se met en évidence. L'innovation, ben ça permet aussi d'attirer des médecins, les médecins aiment bien ça, quand on leur offre des nouveautés, des innovations et qu'on leur promet de s'introduire là-dedans. Donc, ça, c'est des facteurs qui alimentent très fortement le… enfin, l'envie d'innovation."

Another example of a surgical innovation that was introduced and diffused in the Belgian market prior to a reimbursement decision is TAVI (Transcatheter Aortic Valve Implantation). Given the absence of reimbursement for TAVI, the cost of about € 20 000 had to be borne by patients or hospitals. In 2011, KCE Report 163[195] recommended, based on a full health technology assessment (HTA), to only provide reimbursement for a restricted group of patients[pp]. KCE estimated that between 25 and 30 patients would meet the criteria and recommended to restrict this surgical intervention to one or two centres. However, at the time of the publication of the KCE report, TAVI was already in use in at least 15 centres.[195] Since August 2014, the RIZIV–INAMI reimburses TAVI to a restricted group of patients meeting certain conditions (maximum 42 in 2014, 58 in 2017 and 100 in 2015 and 2016) and to a restricted group of hospitals (n=13). Participating hospitals must now register data on patients, device used, complications and follow-up of outcomes.[196]

"En dan ontstaat er een circuit dat de firma die die klep produceert, die probeert te introduceren in alle mogelijke ziekenhuizen. En elk ziekenhuis dat zichzelf innovatief vindt, gaat die klep beginnen plaatsen. … En zo ontstaat er een circuit van 6-7-10-12 centra die plots met die klep bezig zijn zonder dat er in het RIZIV al een beslissing is genomen over: gaan we die klep al dan niet terugbetalen? En zo ja, voor welke patiënten? En zo ja, gaan we dat beperken tot enkele centra, ja of nee? En zo ontstaat er altijd een soort wildgroei, een beweging van: iedereen is er al lang mee bezig vooraleer dat de besluitvorming komt. En op het moment dat men dan tot die besluitvorming komt, zegt

pp *"Patients with symptomatic severe aortic stenosis in whom correction of the aortic stenosis is considered as possibly beneficial but who are considered to be inoperable due to anatomical factors by a heart surgeon who is independent of the heart team treating the patient are eligible for treatment with and reimbursement of TAVI with the Sapien® valve, if one is prepared to pay a relatively high price for TAVI."*[195]

men: ah ja, maar diegene die er al mee bezig zijn, die gaan we nu toch niet meer kunnen stoppen?"

Patients and hospitals have to pay the bill

Physicians are free to use medical innovations once they are on the market. If these medical innovations are not reimbursed, it often occurs that patients or the hospital (who sometimes negotiate with the medical devices companies that they receive a discount to level out the extra costs for the devices) have to pay the bill. This therapeutic freedom and the lack of financial accountability are assessed as problematic. After all, it entails the risk that physicians use medical devices that cause financial problems for patients and/or hospitals while cheaper or reimbursed alternatives (with equal or perhaps better effectiveness) are available.

"Als je dan ankers steekt die niet terugbetaald worden. Een paar 100 euro, dat komt op die factuur. Voor veel mensen is dat veel geld, hé. Als je een factuur van het ziekenhuis krijgt van 1000 euro. En weet je wat het strafste is? Dus rond die ankers bijvoorbeeld. 300 euro per stuk. Ze hebben er soms twee of drie nodig. Dus de patiënten komen klagen. Je *[als ziekenhuis]* betaalt. Of anders moet je procederen, hé. … Dus op een bepaald moment heb ik gezegd: kijk, we gaan die terugbetalen en ik nodig die firma uit. Die firma komt hier zitten. … Ik eis een korting voor het bedrag van hetgeen wij moeten terugbetalen aan die patiënten. Dus stel 1 op de 5 komt klagen: ik moet een korting hebben op mijn ankers van 20%. Die mens komt dan doodleuk zeggen: maar dat is geen probleem, hé. We hadden dat ook al veel eerder gedaan. Want het terugbetalingstarief dat ze binnen twee jaar gaan vastzetten is maar de helft van hetgeen we nu aanrekenen."

8.3.3 Poor use of scientific evidence in the decision-making process

The use of scientific evidence in the Belgian decision-making process is still in its infancy

Health technology assessment is seen as a very useful methodology to introduce cost-effectiveness information in the decision-making process. Nevertheless, stakeholders assess that the way decision makers deal with HTA is still in its infancy in Belgium. Advices of HTA agencies such as the KCE are free of obligations for policymakers or arrive too late. At this moment, the public accountability of authorities is limited to an annual presentation to the Parliament of the Minister of Social Affairs and Public Health of a report on the extent to which the KCE recommendations were implemented. It is assessed by various stakeholders that scientific evaluations of new technologies and devices are insufficiently used in the decision-making process. Usually because of lobby-work or expert advice which is not entirely free from conflict of interests, it happens that technologies are introduced and reimbursed even if they are not as effective or cost-effective compared to the existing ones. In addition, it is also noted that objective cost data are insufficiently used in the price-setting process.

"Er is ook het risico, met ons besluitvormingssysteem, dat ook niet-bewezen technieken in dat kanaal geraken. Dus dat men zegt van: het is zo veel beter. En als er genoeg gelobbyd wordt, dat het dan toch terugbetaald wordt."

KCE Report 100[193] evaluated the use of scientific evidence by the Drug Reimbursement Committee (CTG–CRM) and the Technical Committee for Implants (TRI–CTI). This report illustrated that in both committees there was (at the time of its publication in 2008) a growing awareness of the potential relevance of clinical and economic evaluations. Yet, despite the efforts to 'rationalise' the decision-making process and to verify the scientific evidence when reimbursement requests are made, the process remains mainly an interactive deliberation process. It was shown that clinical effectiveness was the most important scientific criterion used, while cost-effectiveness was sometimes considered in the CTG–CRM but only rarely in the TRI–CTI. Both committees attached more importance to budget impact than to the ICER.[193] Stakeholders interviewed within the context of the current study confirmed these observations. Stakeholders also assessed the approval process for the reimbursement of drugs as much more efficient and evidence-based compared to that of medical devices. This follows from the fact that the pre-market clinical evaluation requirements in Europe are very limited for medical devices compared to drugs. Consequently, decisions for drugs are much more straightforward since they can rely on a more robust evidence base. This problem is extensively explained in KCE Report 158[197] and summarised in Chapter 16 of the current study that presents an international comparison on innovation payment policies.

"Voor geneesmiddelen is het beter en gemakkelijker om een onderscheid te maken: wat is nu een reële innovatie en wat is geen reële innovatie? Omdat heel het proces van erkenning van geneesmiddelen bij de Food and Drug Administration en bij EMA veel duidelijker is. … Die hele technology assessment van medisch materiaal staat nog veel minder ver dan de klassieke trials bij geneesmiddelen. En de klassieke trials bij geneesmiddelen komen ook onder druk, hoor. Omdat men meer en meer gaat naar zeer gespecialiseerde producten, die zeer duur zijn en waarbij men zegt: de klassieke trial van twee keer 2000 patiënten, de ene product A en de andere product B, kunnen we hier niet toepassen. En dus ook daar komt de vraag meer en meer: wanneer hebben we voldoende evidentie om een product toe te laten voor een bepaald nichesegment?"

The diffusion of innovation is not well structured, in terms of eligible patients and centres

The **clinical indications** for which the reimbursement is approved are often **not specific enough**, leading to higher patient volumes and thus higher reimbursements than expected.

Stakeholders also pointed out that the experts that are consulted during the negotiation phase on the reimbursement of new technologies are not always entirely free of conflict of interest, and may somewhat deceive the payer. A typical example is that experts put forward very **narrow indications** that only apply for a restricted number of patients. At the moment when the new devices are reimbursed the indications **are enlarged**. As such, the volume of patients for which these innovations are used increases and risks to cause budgetary derailments, as was, according to some stakeholders, the case with for instance Implantable Cardioverter Defibrillators (ICD). This stresses the importance of integrating more objective scientific information (cost-effectiveness, cost calculations) from independent parties, in the decision-making process.

"En over hoeveel patiënten gaat dat gaan? Want we moeten een budget kunnen berekenen. Dat zal niet zo veel zijn. Als we de indicaties goed stellen en goed omschrijven, dan gaat dat maximum over 1000 patiënten per jaar. 1000 euro, dat is zo veel, dat is het budget dat moet begroot worden. Oké, discussie goed, er is toch wel iets voor te zeggen. We keuren dat goed. We voorzien in het volgende akkoord dat die techniek moet geïntroduceerd worden. Binnen het jaar, wat zien we? Dat die 1000 patiënten, dat dat er 5 of 10 000 geworden zijn. Dus dat het budget 5 of 10-voudig is overschreden. Dus die technische commissies worden gewoon dikwijls in de luren gelegd door experten. En als dat nu de professoren zijn en de topexperten in hun gebied. … Ja, wie zijn wij dan om dat gaan tegen te spreken natuurlijk."

When the reimbursement of new interventions is approved, almost every Belgian hospital includes the intervention in its care package. The Belgian hospital landscape is not sufficiently differentiated (see section 4.3.3) to release innovations in a staged and restricted way.

Article 35bis allows restricting reimbursement in time and setting with the obligation to evaluate its implementation

Stakeholders are positive about the possibilities provided by article 35bis[qq] which allows RIZIV-INAMI to reimburse new interventions upon certain conditions and to a restricted number of centres. As an example, since 1 October 2009, RIZIV-INAMI conditionally reimburses robot-assisted prostatectomies on the basis of a convention. The convention was renewed on 1 January 2013 for a period of three years. Currently, 24 institutions have signed the convention and get conditional reimbursement for robot-assisted prostatectomies. Conditions pertain to, amongst other, a minimal expertise level for the surgeon and the obligation to submit data to the Cancer Register.[198] According to the stakeholders it will be important though that the convention will not be renewed pro forma in 2016, after the evaluation period, and that the gathered study results will be effectively used in the revision.

Previous programming was not in all cases considered successful

In the rare cases where the diffusion of innovations was restricted, the unintended effects were insufficiently monitored and tackled when they appeared. The introduction of MRI-scanners, for instance, was restricted by programming, whilst CT-scanners were not. This resulted in a high

[qq] Article 35bis, which was still the applied legislation at the time of the interviews, has been replaced by a list on 1 July 2014 (see section 8.2).

consumption of medical imaging that causes irradiation. Compared to other western countries, a relatively low number of MRI but a high number of CT-scans are performed in Belgium.[35] This illustrates that programming has potential pitfalls and should be aligned with other policy leavers such as recognition criteria and payment incentives. It should also be in balance with programming of co-existing and competing technology (see KCE Report 106[33] for more details).

In addition, there is a tradition to neglect the programming rules in Belgium. An example is the programming of PET-scanners. Despite the programming criteria there is a high number of PET-scanners per 1 000 000 population compared to other countries. In 2012, Belgium had 2.43 (hospital-based) PET-scanners per 1 million population while the OECD-average in that year (or the latest year available) was 1.91 (or 1.98 when also PET-scanners in other settings were included).[16] Moreover, it was observed that several PET-scanners were put in place outside the legal programming criteria.[83] The investments of these 'illegal scanners' are not paid by the public authorities but if hospitals have another recognised scanner of the same type they can charge physician fees anyway. Moreover, the dual payment system for medical imaging does not add to the transparency of the system.

Innovation is also about disinvesting in old technology

New innovations are often introduced without abolishing the old and less effective ones. According to stakeholders, this does not promote good clinical practice and entails the risk of duplication of interventions. Innovation should not only be regarded as investing in new technologies but also as eliminating obsolete technologies. This shortage of regular revisions results in a fee catalogue (and the use of these activities in clinical practice) which is in fact obsolete.

> *"Mais je vous dis, en même temps, les acteurs eux-mêmes ne sont pas toujours prêts à abandonner les vieilles techniques pour les remplacer aisément par des nouvelles. C'est aussi, du point de vue de l'autorité, un peu compliqué de se dire qu'on ne fait qu'augmenter le magot et que jamais on ne va récupérer quelque chose. La nomenclature est encore nourrie, truffée par ci par là, d'actes complètement dépassés et qui continuent à être remboursés et effectués… Il faudrait une dynamique, un examen permanent de l'adéquation de la nomenclature par rapport à la réalité scientifique. Mais bon, ça veut dire aussi que tous les médecins doivent à chaque fois se remettre à niveau, se former, voilà, ça demande un investissement."*

The current system is also a break on innovation

Whilst the processes for reimbursement of drugs, implants and invasive medical devices have been sped up considerably (see sections 8.1 and 8.2), it often still takes considerable time to adjust the RIZIV-INAMI fees for surgical and medical procedures, e.g. for radiotherapy. Stakeholders also assess that due to the budget constraints, rapid reimbursement of innovations has become more difficult.

> *"We hebben een beleid waarbij dat het inderdaad mogelijk is dat, als er nieuwe prestaties of medicaties of producten op de markt komen, dat we een systeem hebben om eigenlijk binnen het jaar te kunnen vragen aan het RIZIV om te zorgen dat dat gedekt wordt door de ziekteverzekering. Dus in die zin, nieuwe technieken die bewezen zijn kunnen snel ter beschikking komen van de bevolking. Medische effectiviteit, wetenschappelijke studies. Het kan. Echter, met de beperking van de budgetten de laatste jaren wordt dat moeilijker en moeilijker. Dus het wordt meer theoretisch."*

8.4 Suggested solution elements from stakeholder consultations and literature

8.4.1 Select the most promising technologies based on HTA or coverage with evidence development in research

Hospitals receive their budget and have relatively large freedom to allocate it. Stakeholders state that this freedom is no guarantee that the right innovations, i.e. with an added value for the patient and society, are introduced. Therefore, some stakeholders are of the opinion that an earmarked budget for innovation could support medical innovation via so-called (see Chapter 16) coverage with evidence development (CED) – in research. This CED should be restricted to technologies with good indications that they are promising and safe and that the CED will allow to effectively answer the remaining research questions at stake. Conditions should be imposed on an appropriate research design and evaluation process by a research team. This evaluation should be restricted to a selection of institutions that meet predefined criteria (i.e. volume and expertise) and are engaged to follow an evaluation protocol (see section 8.4.2). After 2-3 years of research, a final decision should be made, for which indications and under what conditions (e.g. only in reference centres) the technology will be reimbursed.

> *"Tenzij dat men echt zegt van: het blijft zoiets gespecialiseerd, dat we het eigenlijk nuttig vinden dat het maar in die drie centra die experimenten doen, het beschikbaar blijft. Dus het blijft toegankelijk voor alle Belgen die er nut bij hebben, maar we beperken het aantal centra omwille van de zeer gespecialiseerde aard daarvan. Ja. Dus dat lijkt mij een goed mechanisme voor zaken waarvan dat je eigenlijk niet zo gemakkelijk kunt zeggen: we gaan nu een puur wetenschappelijke studie opzetten in een labo om te bewijzen dat dat nuttig is of we kunnen zo maar uit de literatuur halen uit andere landen dat dat al bewezen nuttig is, dus we kunnen direct naar implementatie op grotere schaal gaan. En zeker voor bepaalde chirurgische technieken of het gebruik van bepaalde materialen is dat soms nodig, omdat op dat vlak de wetenschappelijke literatuur natuurlijk minder uitgebreid ontwikkeld is dan bijvoorbeeld voor medicatie, hé."*

However, such a procedure should only be applied to a selection of technologies (see above: good indications for being promising and safe) while a health technology assessment (HTA) should be the standard. An HTA can be performed by KCE, making alliances with other international agencies to avoid duplication of efforts. When applicable, HTAs from other agencies should be re-used as much as possible.

This construction (i.e. evaluating new technologies via CED and HTA) requires a consistent and consequent attitude of the authorities. If a negative decision (i.e. decision not to reimburse the innovation) is made based on the evaluations, this decision should be supported and not overruled by a later decision based on pressure from the general public or the industry (e.g. media coverage of 'patients that are not receiving the innovative care they need' guided by the industry).

8.4.2 Reference centres and hospital networks

Medical innovations should only be introduced when they are societally beneficial. Therefore, it is important that in the initial phases of diffusion, there is a strict programming with progressive implementation. A better structured hospital landscape with reference centres is a way to make such progressive implementation possible (see Chapter 4). Some stakeholders, therefore, propose to restrict the initial introduction of high-risk and very expensive medical innovations to reference centres. They acknowledge that this is not an easy task as the identification of reference centres will require very strict but objective quality criteria (e.g. expertise, volume threshold). Although there is lot of expertise in the university hospitals, for some treatments and pathologies there appears to be more expertise outside the university hospitals. Therefore, they find it important that also non-university hospitals are eligible to be recognised as reference centres as long as they meet the predefined criteria. The prescription of very expensive and rare medications (e.g. metabolic disorders) could be linked to expertise requirements of the prescribing physician. This can be linked to reference centres where also an evaluation of innovations is made.

> *"Mais, alors, il faut structurer les choses, … c'est vraiment une structuration avec des centres de référence, oui, qui ont l'expertise, qui ont suffisamment d'activités pour faire les choses de manière qualitative. Aujourd'hui, on n'a pas cette politique-là, ça, c'est sûr. On a*

une programmation, mais qui est comme ça un peu plic-ploc et qui finalement n'est pas respectée sur le terrain. C'est ça la réalité."

8.4.3 Public procurement could be envisaged for a number of technologies

Some stakeholders put forward the idea to organise public procurement especially for very expensive lab tests as a way to push down the prices and to spur suppliers towards efficiency. Centralisation of very expensive lab tests (e.g. oncogenetic testing) via public procurement could temper the costs that are charged without affecting patient care. Lab tests, after all, can be easily performed at a distant location without threatening geographical patient accessibility.

"Voor bepaalde dure labotechnieken dan vooral, anatome pathologie, klinische biologie, zou men eigenlijk openbare aanbestedingen moeten maken. Voor die hele dure tumormarkers die nu op komst zijn… Ja, elk ziekenhuis gaat dat nu willen doen. … Maar als we nu zouden zeggen: we doen… per gewest of per provincie, dat is allemaal te bekijken, één labo. Iedereen mag inschrijven, zowel de privé als de universitaire als de gewone ziekenhuislabo's. We doen een aanbesteding. Dat zijn de kwaliteitscriteria. Geef uw beste prijs. … Dan mag je wel zeker zijn dat we wel een redelijk correcte prijs gaan betalen en dat je gegarandeerd bent van de kwaliteit. En daar is het geen probleem om patiënten te verliezen. Het is heel gemakkelijk om staaltjes van een patholoog of tubes van een bloedcel te versturen, zonder dat de patient dat weet dat dat ergens anders gebeurd is."

8.4.4 Action required at European level

As stated earlier, high-risk medical devices easily find access to the European market as the demands for CE-marking are only weak compared to the demands in the US and compared to the demands for drugs. The best solution for this problem requires action at the European level, where the EU device directive should require pre-market data that demonstrate 'clinical efficacy or effectiveness'. In order to decrease the financial hurdle of research for manufacturers, payers in Europe could consider, as is the case in the US, to co-finance innovative high-risk devices used in pre-market clinical trials. While awaiting such a new EU directive, authorities can improve the transparency about the available clinical data.[197]

Key points

- **Medical innovation is an important cost-driver which risks, if not properly managed, to derail the national healthcare budget.**
- **Hospitals and healthcare providers have a lot of freedom to introduce innovations before a reimbursement decision is taken. Patients or hospitals then pay the bill. Since market authorisation demands for medical devices are only weak in Europe, there is often large uncertainty about the added value of the newly introduced technologies.**
- **Since not all new technologies are innovative, reimbursement decisions should assess their incremental cost-effectiveness ratio compared to currently used technologies. The reimbursement of innovation should be structured in terms of eligible patient population and eligible healthcare providers. Some stakeholders propose to restrict the initial introduction of high-risk and very expensive medical innovations to reference centres.**
- **For new promising technologies with good indications (but not sufficient evidence) that they are safe and (cost-)effective, coverage with evidence development (CED) in research is suggested while HTA should be the standard for the assessment of most procedures. In both cases, a negative evaluation should result in a negative decision about reimbursement.**
- **Coverage with evidence development mechanisms exist for both drugs and devices. For drugs, a temporary reimbursement contract, linked to gathering data and an evaluation, is possible for of maximum duration of 3 years. For devices, a temporary reimbursement is possible in the context of a restricted clinical application. Under specific conditions, it is also possible to close a contract up to a maximum of 5 years, linked to an evaluation of gathered information.**

9 REMUNERATION OF MEDICAL SPECIALISTS

The remuneration system of medical specialists differs greatly across and usually also within countries (see Chapter 14). Every country has a unique system and this is also true for Belgium.

In this chapter we describe the remuneration system of Belgian medical specialists (section 9.1), the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (sections 9.2 to 9.7) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 9.8). We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions or study centres of sickness funds) were performed to retrieve information about or relevant to the Belgian hospital system. Incentives of different remuneration systems as well as an analysis of the payment system abroad can be found in Chapter 14.

9.1 The remuneration system of medical specialists and their role in hospital governance

This section outlines different medical specialist payment systems[rr] currently in use in Belgium as well as the relationship of medical specialists and hospital management.

In order to understand the way medical specialists in Belgium earn their money, we have to make a distinction between how fees are determined and the remuneration system of the medical specialist, which goes together with his/her employment status.

9.1.1 How are fees determined?

The nomenclature

Health insurance pays for medical and paramedical services based on a fee schedule, called 'nomenclature', which lists almost 9000 unique covered services and their payment rates or tariffs.

The nomenclature is a **list of billing codes representing (almost) all medical and paramedical fees as well as reimbursement codes** for services and products that are fully or partially reimbursed by the compulsory health insurance system. The list is determined by Royal Decree and is updated regularly. Besides legally published nomenclature codes, the National Institute for Health and Disability Insurance (RIZIV-INAMI) also makes use of similar codes that are published through periodical circular letters to the sickness funds ('pseudocodes') or in specific manuals with billing instructions for healthcare providers ('instruction codes').

The list of reimbursable billing codes contains for each item the professional qualification needed to be eligible for reimbursement, a code-number, a description of the item, a key letter according to the medical specialty, a coefficient and application rules. The coefficient gives for each procedure the relative value compared to other procedures with the same key letter. Multiplying the coefficient by the value of the key letter determines the amount of payment to the provider concerned (i.e. the fee). For example, the key letter N refers to consultations, visits, advice and technical acts of GPs and other medical specialists and the key letter D to availability. The Health Insurance Act of 1963 contained nine categories of reimbursed services. At that time, the nomenclature was created primarily as a tool for distributing the healthcare budget among the various healthcare providers, based on a fee-for-service payment system.[199] At present, the nomenclature contains ten chapters, classified into 36 articles.[43]

Not all reimbursed intellectual or technical services are included in the nomenclature. For some services reimbursement is fixed by Royal Decree (e.g. chronic renal dialysis) or by project financing (e.g. telemonitoring in chronic heart failure).[199]

It should be noted that the fees cover more than only the intellectual and physical activities of the physician. In most cases the fee also covers the (direct and indirect) costs related to the medical activity (e.g. nursing staff; equipment).

Payment rate for individual services: result from a negotiation process

In general, services or products not included in the fee schedule are not reimbursable. The type of reimbursable benefits and their amounts (total fee and reimbursement) are determined through **a process of negotiations with the various parties involved within RIZIV-INAMI, all within pre-set budgetary limits** (see Chapter 3). The negotiated fee or 'convention tariff' is settled in agreements (for physicians and dentists) and conventions (for other healthcare providers).

The process of negotiations involves the following major steps. In a first step, the Technical Medical Council (TGR-CTM) makes a proposal (with technical content) to modify the nomenclature. Next, the National Commission of Sickness Funds and Providers, the so-called 'Medico-Mut', negotiates on the tariffs, and more specifically, on the value of the key letter. Proposals are reviewed by the Insurance Committee and the Commission for Budgetary Control and the General Council ensure that spending is kept within the pre-set budgetary limits. The Minister of Social Affairs endorses the proposal. This procedure, in which only a change in the value of the key

[rr] A description of the remuneration system for general practitioners (GPs) is out of scope of this chapter.

letter has to be approved by several committees, is much faster than changing the nomenclature, which has to be done by Royal Decree.[199]

Table 18 gives a brief overview of the role and composition of the bodies at RIZIV-INAMI involved in modifying the nomenclature.

Table 18 – Role and composition of the bodies of RIZIV-INAMI involved in modifying the nomenclature

Body	Composition	Role
Technical Medical Council	• Medical specialists of universities • Provider organisations • Sickness funds	• Proposal to modify nomenclature
Medico-Mut	• Provider organisations (1/2) • Sickness funds (1/2)	• Negotiations on agreements and conventions • Decision to send proposal of Technical Medical Council to Insurance Committee • Final decision on tariffs
Insurance Committee	• Provider organisations (1/2) • Sickness funds (1/2) • Employers (consultative voice) • Employees (consultative voice)	• Approval of modifications of nomenclature • Establishment of budget per sector • Approval agreements and conventions
General Council	• Provider organisations (consultative voice) • Sickness funds (1/4) • Employers (1/4) • Employees (1/4) • Government (1/4)	• Development of global health policy • Establishment of the global annual budget
Commission for Budgetary Control	• Provider organisations • Sickness funds • Employers • Employees • Government	• Drafting of a quarterly report on expenses and revenues • Budgetary control of agreements and conventions and modifications of the nomenclature

Source: Regueras (2013)[200]

On top of the negotiated fee or convention tariffs, medicals specialists are allowed to charge fee supplements under certain conditions (see Chapter 10).

Although nowadays payment rates for services and products in the nomenclature are mainly the result of negotiations, when the nomenclature was introduced by the Health Insurance Act of 9 August 1963, **the underlying criteria to determine tariffs were more objective**. At first, rough estimations were made of the complexity of the service and of the time needed to provide a service. The payment rate was then determined by comparing these estimations for a limited number of representative services per discipline. Quality of the care process or risks were not taken into account.

Next, payment rates for additional diagnostic and therapeutic procedures were determined by comparison.[199] For example, appendectomy, which is a basic intervention in abdominal surgery, served as a reference to calculate the higher payment rates for longer and more complex surgery such as cholecystectomy (times two), gastrectomy (times three) or duodenopancreatectomy (times four). By differentiating the coefficient as well as the value of the key letter according to time and complexity, the fee for all services can be determined.

Over the years, this method of determining the fee level by comparison with a number of standard procedures has been abandoned.

Lump sum payments for clinical biology and medical imaging

In the 1970s and 1980s, expenditures for clinical biology and medical imaging, which are both medical disciplines responsible for a considerable share of total expenditure on physician fees, were booming. While until then a prospective payment system was introduced only for non-medical costs (see Chapter 5), it was decided at the end of the 1980s to apply a mixed payment system for clinical biology and medical imaging. Lump sum payments were introduced in 1988 for clinical biology and in 1991 for medical imaging.[18, 10]

Clinical biology

The medical activities for laboratory tests for hospitalised patients are reimbursed as follows:

- A lump sum per admission which is determined at the national level and consists of a basic lump sum and an additional lump sum (two tariffs) depending on certain characteristics of the clinical laboratory of the hospital (e.g. the number of staff, guarantee of continuity).
- A lump sum per day is hospital-specific and partially depends on case-mix data.
- A fee-for service component which was reduced to 25% of the value for this service before the introduction of lump sums for the inpatient hospital sector.

The lump sum per admission and per day are both independent of whether or not tests were performed and of the number of those tests.

Medical imaging

In analogy with laboratory testing, the payment system for medical imaging include since 1991 a mix of lump sums and fee-for-service:

- A lump sum per admission or the so-called consultancy fee (hospital independent amount). Its primary purpose was to cover costs linked to the assessment of the clinical situation and the choice of the most appropriate medical imaging test. The amount of the lump sum was determined at the national level.
- A second lump sum amount per admission determined by the hospital's case-mix (All Patient Refined Diagnostic Related Groups (APR-DRGs) and severity level) and by the national average expenses for medical imaging per hospital stay.
- A reduced fee-for-service theoretically equals 75% of the former value for the service.

9.1.2 How are medical specialists paid in Belgium?

Whatever the employment status of the medical specialist (self-employed or salaried) the same fee applies. At least, as far as the convention tariff is concerned because in certain circumstances, physicians are allowed to charge supplements (see Chapter 10). However, how a medical specialist earns his/her money depends on the care setting, the employment status and on the medical discipline.

The different possible remuneration schemes (e.g. FFS; salary, contractual regulated percentage on the FFS or on the pool of FFS) for hospital-based medical specialists are stipulated in Article 146 of the Hospital Act.[116]

Central collection of fees and cost arrangements

Whatever the remuneration system, **a central collection of fees is compulsory for all hospitalised patients** (including one day care) but not for ambulatory patients (Article 147 of the Hospital Act[116]). Fees for ambulatory patients are, therefore, not always included in the central collection of fees, which can be organised by the hospital or by the Medical Board.[18]

The Hospital Act (Article 154)[116] stipulates that physicians have to help to finance the costs of medical activities in the hospital. The compulsory **financial agreement** between hospital management and the hospitals' physicians about the physician contribution to the operating costs (space, equipment, staff, overhead services) of the medical activities is, however, not regulated by law which causes a lot of variability in the type of financial agreements across hospitals. The two 'pure' forms of cost arrangements are a 'deduction as a percentage' and 'real cost coverage'. Both forms have advantages and disadvantages (see Table 19) but can be summarised as follows:

- **Deduction as a percentage.** This means that a fixed percentage of the physician's fee is ceded to the hospital to cover operational costs. Percentages can differ according to the medical discipline or type of service. Imbalances in nomenclature can be partly rectified by applying different percentages. In this case, there is no guarantee of total cost coverage and therefore the hospital may bear a great part of the financial risk. Furthermore, this type of contribution does not inherently stimulate rational use of medical resources.[18]
- **Real cost coverage** implies that the physician reimburses the costs of his/her activities to the hospital. Therefore, it is the physician who bears the financial risk (if costs increase, the deduction also increases). Although this gives more incentives to a rational use of medical resources, there is less solidarity in this system and it is harder to correct for nomenclature imbalances. Furthermore, such a system is administratively more complex compared to deductions made via fixed percentages.[18]

Table 19 – Advantages and disadvantages of different cost arrangements between the hospital and physicians

	Deduction as a % of the fee	Real cost coverage
Guarantee for cost coverage		
• **Medical department**	No	Yes
• **Entire Hospital**	No	No
Rational use of resources	No	Yes, per entity
Hospital-wide policy	Possible	More difficult
Solidarity	Possible	More difficult
Administrative burden	Low	Very High

Source: Kesteloot and Van Herck (2011)[138]

Yet, in In order to avoid the disadvantages of both previously described systems, most hospitals use **mixed forms**. Examples of mixed forms are:

- A system of real cost coverage for direct costs combined with a contribution in terms of a percentage for indirect cost coverage. This mixed system avoids endless discussions about the accuracy of the overhead cost calculation while it maintains an incentive of rational use of resources on which the medical services have an impact.
- A system of real cost coverage combined with an (additional) deduction as a percentage of the fees to, for instance, finance an investment fund. As such, an incentive is given to conduct a hospital-wide policy in terms of investments with involvement of both physicians and hospital management.
- A system of real cost coverage combined with profit sharing. The physician fees have to cover at least the real costs and profit is shared between hospital and physicians. Different schemes to distribute and allocate the profit margins are possible (e.g. % of the profit can go to a

fund to finance initiatives not covered by the hospital budget (Budget of Financial Means; investments in infrastructure).

- A system with a contribution as a percentage of the fees combined with a condition of minimal cost coverage (e.g. as soon as real costs are covered the percentage of deductions on physician fees gradually decreases).
- A fixed remuneration for the physician combined with a variable remuneration depending on, for instance, profit of the department or turnover growth. It is also possible to link this variable remuneration to specific functions and roles (e.g. chief of medical department, member of the medical council, etc.).[138]

The last example of **salaried physicians** is not implemented on a large scale in Belgium. In general, a distinction can be made between **university and non-university hospitals**. In almost all acute non-university hospitals, medical specialists are self-employed and operate under a fee-for-service system (with one of the cost-arrangement methods described above). In the case of university hospitals, physicians receive a monthly salary. Because salaries are not influenced by the growth of fees, medical activity and financial awareness are stimulated by other measures, for instance by linking growth of medical staff to sufficient growth of fees or activity or by attributing bonus payments (e.g. scientific output, profit of the medical department).[18, 138]

9.1.3 *Reference amounts to tackle inappropriate variability in hospital practice*

Introduction

The system of reference amounts was introduced in 2002 with the aim to detect and control large inappropriate variability in hospital practices for a selection of frequent and less severe pathologies for which medical practice can be harmonized and standardised.[18]

At the start the system only concerned a feedback report to the hospitals. Financial consequences were only introduced from 2009 (based on 2006 data) onwards. In addition, at two moments in time important changes to the calculation of the reference amounts were introduced (i.e. changes concerning the hospital stays starting from 2009 and 2013, see below).

Definition and calculation method

The reference amount is a standard by which a hospital is compared. It is calculated as the national average expenditure raised with 10%. This average is calculated per APR-DRG, per severity of illness (SOI) category (only categories 1 and 2 are included, the so-called low severity stays) and per type of medical activity. Three groups of medical activities are included:

- clinical biology (with exception of the lump sum payments);
- medical imaging (with exception of the lump sum payments and m agnetic resonance imaging (MRI) services);
- other technical activities (internal medicine, physiotherapy and various medico-technical services).

The reference amounts are only calculated for of 34 APR-DRGs (22 surgical and 12 medical APR-DRGs). It (initially) only concerned inpatient hospital stays but the system has been extended to day care (see below: 'Revision of the system').

Calculation of amounts that are reclaimed by RIZIV-INAMI from the hospitals

The calculation method includes two steps. In the first step the *hospitals are selected* that will have to refund amounts to RIZIV-INAMI. This selection is based on a calculation of the difference between real expenditures and the reference expenditures[ss] (i.e. number of stays multiplied by the reference amounts) per APR-DRG, per severity level and service group. In case of a positive difference for all APR-DRGs, severity levels and service groups taken together, hospitals are selected.[18]

In a second step, *the amount to be refunded* is based on the difference between real expenditures and median reference expenditures (number of stays multiplied by national median expenditures) per APR-DRG, per severity level and service group. Unlike step one, compensation between APR-DRGs, severity levels or service group is not possible since only the APR-DRGs with a positive difference (real expenditure>reference

[ss] Outliers Type II (Q3 + 2*IQR) are excluded from total expenditures.[18]

expenditure) are taken into account. The amount that is reclaimed by RIZIV-INAMI is the sum of all positive differences as far as it exceeds € 1000.

Refunds are reclaimed retrospectively

The calculation of the reference amounts is based on the linked AZV-SHA (Hospital billing data: 'Anonieme Ziekenhuisverblijven'/'Séjours Hospitaliers Anonymisés') and MZG-RHM (Hospital Discharge Dataset: 'Minimale Ziekenhuis Gegevens'/'Résumé Hospitalier Minimum') databases. There is a time lag of three years between the sanction and the year of registration (e.g. refunds on the hospital stays of 2010 are reclaimed in 2013), mainly because of data validation.

Revision of the system

Although the basic methodology remains the same, some important revisions were introduced at two moments (i.e. hospital stays from the year 2009; hospital stays from 2013).

The first modifications were introduced for the calculation of the hospital stays of 2009. First, expenditures for physiotherapy are no longer included in the group 'technical services' for 5 APR-DRGs (this exclusion rule was removed in 2012). Second, expenditures for the three types of medical activities (clinical biology, medical imaging or other technical activities) made within 30 days before the hospital admission (called 'Carenztijd' in Dutch or 'période de carence' in French) for one of the 20 surgical APR-DRGs can be included when executing step 1 and 2 as described above. This measure was taken to avoid that hospitals would manipulate their data to avoid being sanctioned by the reference amounts. Third, provisional reference amounts are calculated and communicated to the hospitals. As such, 204 different reference amounts (i.e. 34 APR-DRGs*2 severity of illness categories*3 types of medical activities) are communicated to the hospitals.[12] This allows hospitals to adapt their behaviour to the standards and it reduces the risk of a downward spiral of the average national amounts, which can further be prevented by setting minimal threshold values for the reference amounts.[18]

A second set of modifications was introduced for the calculation of the hospital stays of 2013 of which the inclusion of day-care lump sums (with the exception of plaster lump sums and Mini lump sums – see section 6.1.2) was the most important one.[12]

9.1.4 The role of the medical specialist in hospital governance

The governance structure of Belgian hospitals includes at the highest hierarchical level the **hospital board**. Each hospital needs to have a hospital board that is endowed with the responsibility for the hospital activity in terms of organisation, functioning and finances.[201] The hospital board appoints a general hospital manager (CEO) who is responsible, in collaboration with the other members of the management board (chief nursing officer, chief medical officer, chief of finances), for the day-to-day management of the hospital.[201] In this section we describe in short the involvement of physicians in the hospital governance as it is foreseen by the Hospital Act. For a more detailed description we refer the reader to reference books such as Callens and Peers (2008)[68] and Cuypers et al. (2009).[202]

Article 18 of the Hospital Act structures the medical activities in hospitals in three tiers: the **chief medical officer** who takes the general lead; the different medical chiefs of departments and the medical staff including all physicians of the hospital. The chief medical officer has the important responsibility to involve physicians in the hospital activities in an integrated way (Article 21 of the Hospital Act).[116] The chief medical officer is appointed by the hospital board (after a reinforced advice of the medical council) and could be described as the 'manager of the medical activities in the hospital' responsible for all aspects of patient care and in particular the medical, paramedical and nursing care and quality of patient care. It should be noted that physicians have professional medical autonomy. The regulations imposed to physicians by means of the Hospital Act concern the working conditions (e.g. organisation of working hours and on-call availability) and not the therapeutic and intellectual activities. The degree of the say of the hospital management in the working conditions of the hospital physicians varies according to their employment status. In the vast majority of hospitals physicians are self-employed while only in university and some public hospitals physicians are employee or civil servant.[203]

Each hospital is entitled to have a **medical council** that consists of physicians elected by the medical staff. Involvement in hospital policy is implemented via a list of 18 topics (e.g. yearly budget estimates; instalment/change/closure of medical departments) for which the hospital management is obliged to ask the advice from the medical council. The hospital management is not obliged to follow this advice. However, the

advice for six (e.g. general agreement between medical staff and the hospital, determination of staff that is financed via deductions on physician fees) of these 18 topics a so-called 'reinforced advice' is required. This implies that in case the hospital management disagrees with the reinforced advice (and in practice fails to achieve consensus with the medical council after a deliberation process) a quite cumbersome arbitration process is started that requires the appointment of a mediator. When there is no consensus about the mediator, he/she will be appointed by the Minister of Health.[68] The activities of the medical council go beyond the formulation of advices on 18 topics; examples are: agreements with hospital management about rules of central collection of medical fees and the tariffs for deductions to cover hospital costs; the independent decision to organise the central collection of physician fees; representation in the medical ethical committee.[68]

The legislator also created the possibility (if the medical council agrees) to replace the advices by the medical council by a procedure with direct deliberation between physicians and hospital management. In such cases a '**permanent deliberation committee' (POC) of physicians and hospitals** is installed with an equal representation of both parties. However, if the medical council or the hospital administrator disagree or the POC fails to find a consensus, there is a fall back on the normal procedure.

Since 2002, each hospital is required to have a **'financial commission'** with an equal representation of hospital management and representatives of the medical council. This commission discusses financial issues such as the yearly budget estimates and the year account.[201] In case the POC does not take up this role, it is mandatory to install such a commission.[203]

9.2 Critical appraisal: large but decreasing income differences between medical disciplines

9.2.1 Differentiation in remuneration of medical specialists is considered unfair and not transparent

There is substantial differentiation in remuneration of medical specialists. It has been estimated that, on average, the **lowest and highest-earning disciplines differ by a factor of three**.[204] Table 20 shows for a selection of disciplines the annual gross income after deductions but including fee supplements (per full-time equivalent (FTE)). The eight highest-earning disciplines are given in the top part of the table, the eight lowest-earning in the bottom part. The average income per discipline hides large differences between specialists of the same discipline.

Table 20 – Annual gross income after deductions and including fee supplements, in euro

Medical discipline	Average annual income in 2010
Nephrology-dialysis	€ 425 505
Clinical biology	€ 355 103
Radiology	€ 338 378
Neurosurgery	€ 315 796
Stomatology	€ 289 839
Anaesthesia	€ 279 554
Ophthalmology	€ 271 857
Orthopaedics	€ 262 638
Gynaecology	€ 199 432
Emergency medicine	€ 189 881
Geriatrics	€ 187 606
Paediatrics	€ 179 461
Pneumology	€ 179 326
Oncology	€ 179 100
Psychiatry	€ 174 879
Neurology	€ 157 536

Source: Swartenbroekx et al. (2012)[204]

However, stakeholders claim that the real dispersion of income **can amount to a factor of ten** because self-employed physicians are often organised in partnerships that can take different forms per discipline and across disciplines. Moreover, they negotiate different deductions on physician fees with the hospital management and different contracts within these partnerships, and they can charge different amounts of fee supplements.

Many stakeholders perceive these large differences as unfair and defend equal pay for equal work. There is a general perception that the **income differences are not sustainable** and should be remediated.

It should, however, be noted that the abovementioned differences in income levels (a factor of ten) are estimates from stakeholders. In Belgium, there is no transparency on physician incomes. The figures in KCE Report 178[204] are the best available estimates but they are based on a limited number of hospitals. Seventy-seven Belgian hospitals were invited to participate in the study, but only 13 hospitals provided aggregate data by specialty for the year 2010.

9.2.2 *Intellectual activities are lower valued than technical interventions*

A general observation made by stakeholders is that '**technical interventions' are higher valued than 'intellectual activities'.** However, it was also pointed out that this distinction between intellectual and technical acts is not so straightforward. The disciplines labelled as 'technical discipline' such as anatomo-pathology also require serious intellectual efforts. Nevertheless, in the remaining of this chapter we will continue to use, for reasons of simplicity, the terminology technical and intellectual activities knowing that the basic problem is that the time for consultations (e.g. clinical assessment, talking to patients and their relatives) are far less rewarded than activities that require the use of equipment.

Disciplines such as child psychiatrists and geriatricians 'suffer' the most from the low tariffs for consultation time. Stakeholders state that **these medical disciplines are confronted with severe staff shortages** and that part of these shortages can be attributed to the large income differences between disciplines. In 2011, Zorgnet Vlaanderen, the largest umbrella organisation of hospitals, conducted a survey among the Flemish hospitals on the recruitment of hospital physicians.[205] Twenty-six out of the 52 Flemish acute, non-university hospitals participated in the study. The results of the survey revealed that 56% of the hospitals had difficulties in hiring geriatricians, followed by emergency care specialists and paediatricians. 92% of hospitals answered that it had become more difficult to attract medical specialists over the last decade. Several explanatory factors were identified: insufficient availability of certain disciplines, feminisation of the job and a difficult work-life balance. Vacancies that remained open for a long time were for emergency medicine, geriatrics, gynaecology, endocrinology, physical medicine, ophthalmology and paediatrics. The Royal Decree of 12 June 2008 concerning the planning of medical supply determines a minimum number of GPs, child and adolescent psychiatrists, emergency physicians and geriatricians for the years 2008-2018. However, these minima are not met in reality and the only sanction universities are facing is that they have to reach the minima by 2018 at the latest.

Yet, it should be noted that the so-called technical disciplines also contribute most, via the deductions, to compensate for the underpayment of the hospital budget. As such, the differences between the disciplines are to a certain extent levelled out. However, differences remain high and according to stakeholders, some hospitals even impose deductions on surveillance fees.

> *"Als klinisch bioloog of als radioloog met, willen we maar zeggen, 600 000 euro naar huis gaan. Gemakkelijk 700, 800… En waar iemand die pediater is of geriater of endocrinoloog of psychiater, het moet stellen met 150 000 of 200 000 euro. Ik heb het over netto belastbaar, hé. Dus na aftrek van de kosten. Dan zegt iedereen: dat klopt niet. Als het ergens zou moeten veranderen, zou het net omgekeerd moeten zijn. Namelijk die die veel patiënten ziet en veel wachtdiensten moet doen, die zou net meer moeten verdienen. Ja, met alle respect voor een klinisch bioloog of een radioloog, maar dit is een vrij technische job. Ik bedoel: je ziet eigenlijk geen patiënten, of nauwelijks. Dus zijn dat dan degenen die absoluut zo veel meer moeten betaald zijn, zelfs in verhouding met de graad van verantwoordelijkheid?"*

9.2.3 *What determines the level of fees: objective data or bargaining power?*

The large differences in fees between disciplines have a historical ground. The fact that the fee per intervention includes the remuneration of the physician as well as a payment for the costs of for example equipment and staff, explains the differences between technical and intellectual acts. Although there was initially a closer link between the actual costs and the level of reimbursement, this link blurred over the course of years and bargaining power became more important.[199] As a consequence, the fee for intellectual acts (e.g. for consultations or surveillance) does not cover costs

anymore and the fee for technical activities is much larger than actual costs (e.g. for certain laboratory analyses or medical imaging).

Stakeholders state that because the disciplines with predominantly technical acts are overrepresented in the Medico-Mut and negotiate better fees for their own disciplines, they became the big earners. This resulted in a distortion of physician fees with **those disciplines that have historical strong lobby groups also having better fees**. Although the involvement of physicians in the negotiation process is perceived as legitimate because they are medical experts, stakeholders emphasize that physician unions also benefit (or suffer) from the decisions taken on the tariffs and are therefore not free of conflict of interest.

There is a strong plea to **make more use of objective information** (e.g. cost data, evidence about effectiveness and cost-effectiveness) in the decision-making process instead of the current practice with tariffs per intervention largely based on negotiations. Moreover, when the cost of an intervention decreases (e.g. in clinical biology or for an echography) the tariffs are rarely adapted resulting in some very lucrative interventions.[199]

It is, however, noted that due to the current budgetary constraints there is a renewed tendency to ask for more justification when new tariffs are set.

9.2.4 *The remuneration chasm between disciplines decreased over the years*

Stakeholders acknowledge that **income differences between disciplines have decreased in the last decade**. The recalibration of physician fees has been done in both an explicit and implicit way. The explicit way was the increase in remuneration for the intellectual acts, paid by a larger macro budget or by skipping a year of fee indexation of the better earning disciplines at the benefit of the lower earning disciplines. An example of the implicit way is the substantial cost saving in clinical biology and medical imaging without affecting the disciplines that have more intellectual acts. Stakeholders translate this measure as 'saving money there where the money is'.

As a result, some internal medicine disciplines such as endocrinologists receive now much better tariffs for their consultation time.

Although some stakeholders indicate that the differentiation in remuneration between disciplines is exaggerated, others point out that despite the abovementioned efforts the impact on fees of the highest-earning outliers remained limited with still too large differences as a result.

> *"Ik heb toevallig onlangs eens bekeken wat een endocrinoloog verdient. Ik denk in 2009 is ervoor gezorgd dat het honorarium van een raadpleging van een endocrinoloog, diabetoloog fors opgewaardeerd is. Die mensen hebben eigenlijk geen technische prestaties, alleen raadpleging. Nu, voor een diabetesraadpleging, kan je er zes op een uur doen. Zes keer 50 euro. Met wachtlijsten van 2-3 maanden, waar je er de hele dag 5-6 per uur kunt zien. Als je dat dan uitrekent, kom je niet ver af van de best betaalde technische disciplines. … En ik ken eigenlijk geen enkele technische prestatie die diabetologen doen. Die doen eigenlijk alleen maar raadpleging. En enkel toezicht op hospitalisering. Dus als je die hun inkomen nu, na die opwaardering, zou berekenen, ik denk dat er heel wat zogenaamde technische disciplines de dag van vandaag niet gaan komen. Maar bon, dat is ook heterogeen. Kijk naar voltijds, dat wordt ook zelden in rekening gebracht. Heel veel vrouwen werken deeltijds. Ja, men vergelijkt het inkomen van de ene met de andere, maar men corrigeert dat meestal niet voor full-time equivalenten, enzovoort, enzovoort."*

> *"Pour la nomenclature des actes médicaux, il y a à peu près 9000 actes médicaux. Elle est obsolète. Elle privilégie les actes techniques au détriment des actes intellectuels. Alors on me répond que l'on a fait des revalorisations ces dernières années. C'est exact en gériatrie, pédiatrie, neurologie, on a fait des revalorisations. … La revalorisation dont on me parle ... Ce sont de fausses revalorisations. Elle joue oui, un médecin indépendant particulier il a peut-être 15 % en plus et à l'échelle médicale c'est vraiment très marginal."*

9.2.5 *The remuneration chasm between disciplines is smaller in university hospitals with salaried physicians*

According to stakeholders, the difference in physician income between disciplines is less extreme in university hospitals. There is a system of basic salaries with additional modules allowing a differentiation between disciplines. However, the differences between disciplines are, according to stakeholders, less pronounced and can be explained by factors such as night work or risks. Stakeholders claim that there is also less tension between hospital management and the medical council compared to non-university hospitals. This can be attributed to the fact that in academic hospitals physicians are salaried and do not have to bear any costs. Yet, it should be noted that no transparent figures about these (smaller) income differences between medical disciplines in university hospitals exist.

> *"Men heeft een gesalarieerd systeem, maar er is een modulatie naar boven toe. Maar er is een minimum waar men nooit onder gaat. Maar een modulatie naar boven toe. En die is gebonden aan wat ik zou zeggen markteconomische standaarden. … Iemand die zeer ingewikkelde neurochirurgie doet, dat die wat meer verdient dan iemand uit een wat, tussen aanhalingstekens, makkelijkere discipline met minder verantwoordelijkheid, minder nachtwerk, minder wacht, weet ik veel. Als dat binnen de perken blijft, dat wordt door de gemeenschap hier aanvaard. Men vindt dat billijk. Iemand die regelmatig 's nachts uit zijn bed moet komen, een chirurg die levertransplantaties doet, dat die beter vergoed wordt dan iemand die bijvoorbeeld dermatologie… Daar ligt niemand van wakker bij ons. Maar die verschillen zijn afgevlakt."*

9.3 Critical appraisal: the fee-for-service system contributes to accessible patient care but risks to derail the macro budget

9.3.1 *The fee-for-service system contributes to accessible healthcare services*

The FFS system has an important historical merit as it helped, since the sixties, to drastically expand the Belgian healthcare services offer. After all, a FFS payment system gives physicians a clear financial incentive to produce and innovate. The existence of a payment system that rewards activity can be seen as one of the factors explaining the relatively few waiting lists in the Belgian healthcare system. In addition, it stimulates the entrepreneurship of physicians, which triggers them to work hard, to try new things and helps to prevent underprovision of care. Stakeholders pointed out that this FFS payment system is an important factor in the permanent high scores of Belgium on the Euro Health Consumer Index, indicating that Belgian citizens are very satisfied with their healthcare system.[36] Several stakeholders stressed the importance of keeping such an incentive in a future (reformed) hospital payment system.

> *"Ik blijf er trouwens ook een voorstander van dat we het systeem van de honoraria niet afschaffen. Men moet een positieve incentive geven voor het entrepreneurschap van de artsen. Ik denk dat dat één van de grote sterktes van ons systeem is. Maar het verband tussen wat het ziekenhuis krijgt voor zijn modale exploitatie om dat te koppelen aan die artsenhonoraria en de afdrachten, vind ik een gevaarlijk systeem"*

9.3.2 *The tarification system helps us to keep track of what happens within the system*

Thanks to the FFS system he care processes are known, there is a trace of what is happening in the system. This allows policymakers but also hospital management to take purposeful action. For example, when there is a substantial decrease of activities in a medical department the hospital management can decide to reduce the staffing levels of these departments. Therefore, it is suggested to keep always a FFS component in the payment system. This will allow policymakers to adjust the amount of lump sums in case the activity profiles change.

"Le fait d'avoir une facturation par acte permet évidemment d'établir facilement des recettes par service. Pour le gestionnaire c'est quand même très important. On rencontre le service d'orthopédie ou le service de dermatologie ou le service de gastro-entérologie on peut parler chiffres et activités en disant, mais enfin votre personnel est plus adapté à votre activité qui est en chute qui est en hausse. On a des recettes facilement imputées aux différentes séries de manière indirecte. Si on a un système global il faudra faire preuve d'imagination."

9.3.3 Fee-for-service stimulates overproduction

Belgium is known for its high consumption of medical services: macro-level expenditures under pressure

Belgium is known for its high consumption of medication (e.g. antidepressants[35]), medical imaging (e.g. CT-scans[33, 206]), medical devices (e.g. pacemaker implants[207]) as well as surgical procedures (e.g. cataract surgery[106]). This high consumption in combination with the absence of direct incentives for evidence-based patient care contribute to unjustified practice variation and unmotivated deviation from evidence-based practice guidelines (see Chapter 12), which is a well-documented area of concern in the Belgian healthcare system. In KCE Report 42 it has been shown, for instance, that for a selection of procedures (such as caesarean section and hysterectomy, knee arthroscopy and knee replacement) geographical variation remained after controlling for epidemiological and socioeconomic factors as well as for the density of providers or the supply of equipment.[41]

Many stakeholders point the FFS system out as the culprit of the high production of medical services in Belgium because of the inherent incentive for production: the more one produces the more one earns (see Chapter 14). Therefore, the FFS system is seen as a major threat for the sustainability of macro-level healthcare expenditures. After all, the macro budget under a FFS payment system is determined by the price and the volume, which complicates the control of macro-level expenditures. If tariffs are decreased, there is a risk that the volume will increase. This can be illustrated by a recent attempt to save money in the domain of cardiology. Initially, payers wanted to abolish the reimbursement of electrocardiograms (ECGs). Given that part of ECGs are justified, this austerity measure provoked a lot of resistance and an alternative measure was introduced, i.e. a decrease in the reimbursed tariff for coronary catheterizations. However, this alternative measure does not guarantee cost savings since it only concerns the price and not the volume.

"Cela ne permet pas une gestion économique et rationnelle des prestations puisque plus j'en fais plus j'ai des sous, donc pour l'INAMI il n'y a pas moyen de régler le budget des honoraires puisque c'est toujours une régulation par le prix qui peut être compensée par le volume. Donc on voulait faire des économies dans le secteur de la cardiologie, on a supprimé le remboursement de l'électrocardiogramme dans l'hôpital. Cela a été une levée de boucliers, à juste titre, en disant on ne fait plus d'électrocardiogramme. Il y en avait quand même qui étaient justifiés et pour compenser ils ont diminué le remboursement de la coronarographie. Et donc c'est toujours, comme on ne régule pas le volume, et bien on ne régule pas le prix fois le volume."

Besides the FFS payment system, also other factors contribute to overproduction of medical services

While a FFS system in itself includes an incentive to produce (see Chapter 14), this incentive is in Belgium reinforced by the structural underpayment of the hospital budget (see Chapter 5), and also by inefficient hospital management, according to some stakeholders. In case hospitals have financial problems, one of the first strategies of the hospital management is to ask their physicians to produce more. This is not surprising since deductions on physician fees are one of the main revenue sources for hospitals (see Chapter 2). Others question this practice. They admit that a FFS payment system does not give an incentive for efficiency but deny that hospital managers ask their physicians to produce more to receive more revenue.

"Men stelt dat dikwijls zo voor dat beheerders achter ons gat zitten om: draai eens wat meer onderzoeken. Eigenlijk, ik heb dat eerlijk gezegd nog nooit geweten. Maar het systeem is er ook niet op gebouwd om elke dag in vraag te stellen: wat we doen, zou dat niet met wat minder kunnen? Dat is iets anders. Ik denk niet dat hier veel mensen rondlopen die nu elke dag zitten te zien: waar kan ik de nomenclatuur nog even wat plunderen? Zo werkt dat niet. Maar ik zie wel elke dag dat er labonderzoeken aangevraagd worden die eigenlijk absoluut niet nodig zijn. Of men nu iets aanvraagt, een dossage, die in se wel nuttig is, maar gewoon niet de moeite doet om te gaan te kijken: het is vorige

week al gedoseerd. Waarom zou ik het nu terug doen? Dus in een systeem dat je er verlies aan doet, ga je die extra inspanning wel doen om dat even te checken. In een systeem dat dat er allemaal niet toe doet en het wordt toch betaald, dan zegt men: ja, oké, ik ga dat even op dat blad aankruisen en het labo zal het wel betalen."

In addition, production is encouraged by the existing overcapacity in acute-care hospital beds (see Chapter 2) and by imbalances in the fee levels. A pneumonologist specialised in asthma, for instance, will be tempted to carry out (unnecessary) lung-function tests (with a relatively high tariff) to compensate for the long consultation times (with a relatively low tariff). Other examples are medical imaging and clinical biology, both with a large share in total expenditures, but at the same time also very lucrative (for both hospitals and physicians). Profit margins in these domains help to compensate for deficits elsewhere in the hospital. Hence, according to stakeholders, Belgium has a tradition of overproduction in both areas. Policy makers recognised this problem and introduced lump-sum payments in both areas with variable success (see below).

"Dus mochten we een nomenclatuurherijking kunnen doorvoeren, waardoor dat een per prestatie gedreven financiering voor verschillende specialismen ongeveer een gelijkaardig inkomen geeft, zou het al veel beter zijn, denk ik. Want dat is toch wel een bijkomend aandachtspunt, vind ik. Je hebt enerzijds de mogelijke nadelen van per prestatie, in die zin dat men gaat overconsumeren. Maar anderzijds, of men al dan niet overconsumeert, hangt ook af van hetgeen dat je per act kunt verdienen. Als je voor een welbepaalde act niet zodanig veel kunt bijverdienen, ga je niet overconsumeren. Consultaties brengen relatief weinig op, versus technische prestaties. Dus wat zie je? Wordt er overgeconsumeerd in consultaties? Niet zodanig. Het zijn vooral de technische prestaties die eraan vasthangen. Een pneumoloog die gespecialiseerd is in astma, bijvoorbeeld. Als die een consultatie doet bij iemand met astma… ongeveer 40 minuten. En dat brengt 35 euro op. Ik bedoel… Dan is de neiging zeer groot om te zeggen: we gaan daar wat longfunctietesten bij doen, want dat brengt een veelvoud op. Was dat absoluut nodig? Nee. Die pneumoloog wist al lang wat hij moest weten zonder die longfunctietesten. Maar het compenseert het een en het ander."

9.3.4 Does FFS help in preventing underutilisation in vulnerable groups?

As described above, with a FFS payment system overproduction of healthcare services is a risk. The other side of the picture is that there is, according to stakeholders, relatively low underprovision of care in the Belgian healthcare system.

However, despite the strong incentive for production there are also many vulnerable groups for whom care is still underprovided. For example in Brussels, despite the high concentration of hospitals there is a problem of underconsumption of care (especially preventive care) in vulnerable groups. To reduce this problem, some stakeholders propose to further invest in multidisciplinary primary care practices, funded by risk-adjusted capitation payments. A first evaluation has shown that these are quite successful in reaching vulnerable groups (e.g. preventive care; screening; etc.). [91]

"Het meest paradoxale voorbeeld is Brussel, waar enerzijds iedereen weet dat je nergens zo'n concentratie hebt van ziekenhuizen en van apparatuur en van zware diensten. Dan zou je moeten verwachten dat de Brusselse populatie vier keer zo veel behandeld wordt als elders. En dat blijkt dan niet zo te zijn. Het blijkt dan zo te zijn dat men van buiten Brussel naar hier komt. Dat is dus een verklarende factor. Maar dan anderzijds, de Brusselse bevolking zelf, en zeker de migrantenbevolking, en zeker zij die het systeem niet te goed kennen, dat die er gewoon niet geraken. Dat is heel paradoxaal, hé. … Eigenlijk zouden we moeten ook, als nieuw financieringssysteem, inzetten op zorg die bijna gepusht wordt, en dat gaat dan vooral om preventie en opvoeding, naar doelgroepen die het echt nodig hebben en die meer gezondheidswinst gaan boeken dan anderen. Dat is een heel boeiend onderwerp, hé, waar je dan moet nadenken over: wat is de rol van, bijvoorbeeld wijkgezondheidscentra? Is dat geëvalueerd dat die echt wel op dat punt beter scoren? Ik weet dat men daar wat evaluaties over gedaan heeft. En die waren niet slecht. Je zou nog meer kunnen inzetten op gezondheidsopvoeding, preventie, gemeenschapsmaterie. Je zou nog meer kunnen inzetten op screenings bijvoorbeeld, die heel pushgericht is. Screening naar die doelgroepen. Het zijn ook die doelgroepen die niet bij Kind en Gezin komen. Het zijn de doelgroepen die niet aan borstkankerscreening doen, die ook de uitstrijkjes niet

inleveren, enzovoort. Dus ze zijn al van in het begin minder… Minder gezondheidsverwachting van bij de sociale herkomst. Minder kans om gestudeerd te hebben, dus nog minder kans om bewust met gezondheid om te gaan. Voedingsgewoonten die enorm meespelen. En dan is ons gezondheidssysteem ook nog niet in staat om daar echt wel een kentering in teweeg te brengen."

9.3.5 FFS hampers multidisciplinary collaboration

Coordination of care and communication with patients and family is undervalued in the FFS payment system. Physicians lose money if they sit together, for instance, to discuss treatment plans of patients. In addition, physicians are not always easily referring patients to other colleagues, since this holds the risk that they lose their patient (and thus lose money). Stakeholders emphasize that this situation will have to be remediated given that coordination will rapidly gain importance with the increasing prevalence of (multimorbid) chronic patients and the ageing of the population. The remuneration of 'multidisciplinary oncological consultations' (MOC-COM) is seen as an example where multidisciplinary collaboration is remunerated and that could be further expanded (see Chapter 11). However, it should be noted that unintended effects should be monitored.

"Comme chacun est financé pour faire des actes, tout ce qui est maladies chroniques, vieillissements, etc., on est extrêmement mal loti, parce que chacun paie pour faire des actes, mais personne ne paie pour se coordonner aux autres, que ce soit en ambulatoire ou en hospitalier et il y a une concurrence entre tout le monde."

"De geneeskunde van vandaag is niet zomaar een beetje interdisciplinair. Ze is gewoon uit zichzelf interdisciplinair. … Op vandaag is dat geroemde financieringssysteem contraproductief voor samenwerking. Letterlijk contraproductief. En dus daar moeten we iets aan doen. Je moet de samenwerking bevorderen. Je kan dat op verschillende manieren doen. Je kan bijvoorbeeld doen zoals in het multidisciplinair oncologisch consult. Ze hebben daar een nummer voor bedacht: een coördinatiehonorarium. Dat dient voor niet anders dan voor die artsen samen rond te tafel te brengen en over één patiënt te doen overleggen van wat nu het beste zou zijn in dit geval."

9.4 Critical appraisal: alternative payment methods not sufficient to counterbalance incentives for production with fee-for-service

The negative risks of fee-for-service found in literature and also pointed out by stakeholders could be mitigated by other ways of paying medical specialists or by combining different systems to achieve a better balance of incentives.

According to stakeholders, lump sum payments have the potential to incite physicians to work efficiently under the condition that the lump sums are well calculated, transparent, linked with the physicians medical activities, etc. However, stakeholders agree that these conditions are not met with the current payment system for clinical biology and medical imaging.

Some stakeholders underline that in the discussions about reforms there should be a distinction between the way physicians are paid and the reimbursement system of medical activity. It is, for instance, possible to pay physicians a fixed salary under a fee-for-service system, as is the prevailing system in university hospitals, and at the same time have overproduction because hospital management incites physicians to produce. But it is also possible to pay physicians per intervention or per patient in a hospital payment system that is pathology-based. Even an approach that integrates hospital and medical specialist payments by paying hospitals a fixed amount per (type of) patient, allows different ways of paying medical specialists for their work (salary, fee-for-service, combination of different payment methods), as regulated in the contractual agreement between specialists and the hospital.

9.4.1 Risks, disadvantages and arguments against lump sum payment

A lump sum payment does not give an incentive to produce as much as possible, but **risks to stimulate patient selection** (only treating patients for which the lump sum is lucrative) **and underproduction of care**, such that quality of care could be jeopardized. This is especially so when payers introduce lump sums as a blunt measure to achieve cost savings. Stakeholders repeatedly pointed out that a lump sum payment system is **vulnerable for linear cost-saving measures** and referred to the cost savings that were realised by the lump sum payment for pharmaceutical specialties (see section 5.2. in Chapter 5).

> *"Als je forfaitair gaat werken, … dan heb je natuurlijk de neiging om niks te doen. Niks… Of zo weinig mogelijk. Dat is iets anders…… Rationeren en rantsoeneren, dat zijn dingen waar dat maar twee lettertjes verschil in zitten, maar die een gigantisch verschil uitmaken. En in een forfaitair systeem word je gestuwd in de richting van rantsoenering. Ik wil rationeel werken. Ik wil niet rantsoeneren."*

9.4.2 Lump sums for clinical biology and medical imaging had only a modest and temporary effect

Immediately after the introduction of the lump sum payments for clinical biology, there was a slow-down in expenditures. Yet, the effect was only temporary and very soon expenditures started rising again. Stakeholders point to several reasons for this failure:

- The current implementation of lump sum payments in the Belgian hospital payment system is **too fragmented** to control the overproduction problem. The salami slicing of policy measures (i.e. lump sums for medical imaging/clinical biology/pharmaceutical specialties; partial lump sums combined with an important FFS-component for clinical biology and medical imaging) is not coherent and does not change the behaviour of the physicians.

  > *"Et donc tous les saucissonnages ont eu un effet délétère, c'est que tous les forfaits sont devenus très impopulaires et surtout ils n'ont pas amélioré le comportement avec l'histoire de la compensation du prix volume…. Les changements de comportement n'existent pas vraiment à cause de ce saucissonnage, à cause du retard de calcul. Donc ce décalage entre l'activité des médecins, parce qu'aussi c'est un raisonnement par tranches séparées, puisqu'on a un forfait de biologie-clinique d'un côté, un forfait d'imagerie, de l'autre, etc. Et donc il n'y a pas réellement un raisonnement global."*

- **Physicians who prescribe the tests for clinical biology or medical imaging are not financially affected** by the payment system. The missing link between the medical activity (prescription behaviour of treating physician) and the payment (remuneration of clinical biologists and radiologists) and the time lag between the activity and the financial consequences are stipulated as important reasons for the failure to temper the overproduction by the current lump sum payments.

  > *"Binnen de klinische biologie, in het labo zien ze de patiënten niet, hé. Dus als daar een moeilijke patient komt, die al twee infarcten gehad heeft en weet ik veel welke problemen heeft, die weten dat niet, hé. Je ziet wel dat dat een grote aanvraag is of een kleine aanvraag. … De eerste drie jaar, van 88 tot 91, heb je gezien dat het aantal testaanvragen daalde. En sindsdien is dat nooit meer gestopt met stijgen. Dus dat is een heel voorbijgaand fenomeen. Alhoewel klinische biologie voor 80% geforfaitariseerd is. Wij doen hier testen beneden kostprijs. … Dus je moet dat aanvullen met het bedrag dat je krijgt uit uw forfaitair honorarium. En dus heeft men altijd gedacht van: we gaan hier wel stoppen met testen… Dat is dus niet waar. En men vergeet dat. Men zegt altijd: je gaat de overproductie of de overconsumptie bestrijden daardoor. Sorry, de geschiedenis heeft geleerd dat dat van zeer voorbijgaande aard is."*

- **The share of lump sum payments is still too limited.** The incentive to work efficiently and to prevent overproduction is counterbalanced by the remaining percentage paid on a fee-for-service basis. Therefore, it is suggested to increase the percentage of lump sum payment to a level that it is no longer beneficial to produce as much as possible.

"Quand en biologie on dit 3/4 doivent être forfaitarisés donc les médecins prescripteurs doivent savoir intégrer le fait que la biologie est forfaitarisée. Moins de prescriptions pour rester dans le cadre du forfait. Ce n'est même pas vrai parce que soit que cela a été calculé précisément par l'hôpital, soit que c'est le feeling du biologiste. Je prétends que la dernière analyse marginale qui est faite sur les machines, il n'y a plus de frais fixes, le technologue est là il n'y a plus rien. Recevoir un tarif de 1/4 de la valeur est encore plus intéressant que les coûts de cette dernière analyse. Coût marginal par rapport à la recette marginale. Et donc le message il est flou. Est-ce qu'il faut réduire la prescription de biologie pour entrer dans le forfait ou cela reste intéressant. Et malgré cette mesure qui date de 1990, on continue à prescrire."

9.4.3 Reference amounts miss their effect and are a source of frictions

Number of hospitals affected by the reference amounts

In 2014 (data year 2011), an amount of € 2 329 363 on a total amount of expenditure of € 39 337 421 (5.6%) was reclaimed from 10 different hospitals (Brussels: n=6; Wallonia: n=4; Flanders: n=0). The reclaimed amount per hospital was equal to € 232 936 on average (see Table 21). Over the years, the number of penalized hospitals and the yearly total amount of reclaimed budget has decreased.[208]

Table 21 – Reference amounts: selection of hospitals, total expenditure and reimbursed amounts

	2009 (2006 data – 2006 method)	2010 (2007 data – 2006 method)	2011 (2008 data – 2006 method)	2012 (2009 data – 2009 method)	2013 (2010 data – 2009 method)	2014 (2011 data – 2009 method)
Number of selected hospitals (%)	34/125 (27.2%)	32/125 (25.6%)	30/116 (25.9%)	23/124 (18.5%)	19/118 (16.1%)	10/114 (8.8%)
Total expenditures	€ 44 822 886	€ 45 414 585	€ 46 119 883	€ 42 636 272	€ 41 413 186	€ 39 337 421
Medical imaging	€ 15 336 099	€ 15 675 786	€ 16 029 434	€ 16 291 373	€ 15 687 864	€ 4 892 780
Clinical biology	€ 6 289 410	€ 6 523 980	€ 6 844 574	€ 7 224 400	€ 7 098 481	€ 6 556 007
Technical medical services	€ 23 197 377	€ 23 214 819	€ 23 245 875	€ 19 120 499	€ 18 626 841	€ 17 888 634
Reclaimed amount (% total expenditures)	€ 5 982 577 (13.3%)	€ 5 410 342 (11.9%)	€ 4 944 073 (10.7%)	€ 3 549 799 (8.3%)	€ 3 413 324 (8.2%)	€ 2 329 363 (5.6%)
Medical imaging	€ 1 908 862 (12.4%)	€ 1 667 687 (10.6%)	€ 1 644 329 (10.3%)	€ 847 805 (5.2%)	€ 866 080 (5.5%)	€ 604 185 (4.1%)
Clinical biology	€ 780 569 (12.4%)	€ 801 206 (12.3%)	€ 813 802 (11.9%)	€ 653 129 (9.0%)	€ 661 227 (9.3%)	€ 441 924 (6.7%)
Technical medical services	€ 3 293 146 (14.2%)	€ 2 941 449 (12.7%)	€ 2 485 942 (10.7%)	€ 2 048 865 (10.7%)	€ 1 886 017 (10.1%)	€ 1 283 254 (7.2%)

Source: RIZIV-INAMI (2014)[208]

Too limited in scope and content

The original intentions of the minister who implemented the system of reference amounts in 2002, were far more ambitious, namely the introduction of a prospective pathology-based system. As this proposal encountered much opposition from both the hospital management as well as from physicians, a compromise 'à la belge' was created with concessions in scope as well as in content/calculation method.

The scope was limited to a selection of APR-DRGs (currently 22 surgical APR-DRGs and 12 medical APR-DRGs) only including inpatient stays in low severity categories (1 and 2). This narrow scope is, according to stakeholders, one of the reasons why the reference amounts have missed their effect. After all, the reclaimed budget of about € 3.5 million corresponds to only 0.03% of total hospital revenues (data for the year 2009).[10]

> *"10 jaar geleden wou minister Vandenbroucke dat doen [introductie all-inclusive pathologiefinanciering]. Toen zei men in de Multipartite: nee, dat is niet goed, want dan stapt men af van de betaling per acte. En dan verliest de Medicomut zijn macht. Dus dat prospectief systeem voor artsen werd eigenlijk afgeschoten. We zijn dan eigenlijk overgestapt, en dat was uiteindelijk het compromis onder Vandenbroucke om te zeggen: we gaan geen prospectief systeem maken, maar we gaan een referentiebedragsysteem ontwerpen waarbij een betaling per act blijft, maar waarbij men a posteriori gaat kijken wat de gemiddelde uitgave is, en wat men meer dan de gemiddelde uitgave gepresteerd heeft, moet men terugbetalen. Het nadeel is dan dat je met een recuperatiesysteem zit. Het is ook maar op beperkte schaal toegepast, zodanig dat het zijn effect gemist heeft."*

The exceptions on the content (e.g. lump sums for clinical biology and medical imaging are excluded) of the reference amounts contribute to the fragmentation of the system. After all, lump sums are only deemed to have effect when they cover the entire clinical package of a pathology or group of patients (e.g. dialysis patients). The current system based on the average amounts of (part) of the medical activities is far away from 'evidence-based tariffs' and does not make sense for the clinicians concerned.

> *"Je pense qu'un système forfaitaire bien calculé, bien pondéré, peut effectivement responsabiliser le prestataire dans une décision plus économique, dans la mesure où on met des garde-fous, et on va peut-être en parler, et dans la mesure où à la fois cela doit être quand même proche de son activité et qu'il retrouve son co-business, sinon il y a trop de décalage par exemple, les prix de référence sont le mauvais exemple. Il y a un décalage dans le temps et dans le contenu. Dans le temps parce que c'est deux ans et demi après ces actes, et dans la détermination du volume parce que c'est trop moyenné. Et donc, même si c'est des packages, il n'y a pas moyen de revenir à sa qualité d'activités justifiées ou moins justifiées, rembourser c'est bon. Donc, ça, c'est le mauvais exemple, et mauvais exemple aussi parce qu'on ne responsabilise pas suffisamment sur un trajet de soins puisqu'on fait un petit peu à la marge du prix de référence avec une sanction on/off, un petit peu de forfait de biologie-clinique à 75 %, un petit peu de forfait en imagerie médicale, et donc c'est la technique du saucisson du salami, et donc le médecin il voit un patient ou il voit éventuellement des groupes de patients, si on faisait un forfait pour chaque dialysé, donc il verrait... , il a ses cent patients à dialyser et il peut voir un groupe de patients, il peut avoir un raisonnement sur un groupe de patients. Mais il ne peut pas avoir un raisonnement sur la biologie-clinique, ou une partie des médicaments, une partie de la biologie-clinique."*

Retrospective refunds

Due to the delay in data availability together with the refusal of physicians and hospital management to give up the FFS as payment method, the system of reference amounts is not developed as a prospective pathology-based payment system**.** Physicians can continue to work under the FFS system, but if the expenditures of a hospital exceed the reference amount, the surplus of expenditures can be reclaimed by RIZIV-INAMI. This retrospective reclaiming of money causes many disputes between hospitals and the authorities but also between physicians and hospital management, especially since there is a time lag of 2.5 years. According to hospital managers, they are penalised (they have to bear part of the financial penalties) while it are the physicians who decide about medical acts (and possible overproduction). This argument especially holds for the Carenz-period since hospitals are also penalised for the medical activities of physicians working outside the hospital context. However, the argument of hospital management that they have no impact on the reference amounts, is contradicted by others saying that it is a joint responsibility of hospital management and physicians. The example is given of a case where a group

of physicians working in two different hospitals (in the same city) are penalised in one hospital but not in the other. This difference can, according to stakeholders, be explained by different management styles. In one hospital physicians were stimulated by the hospital management to perform many activities (resulting in overproduction and refunds for the reference amount pathologies) while in the other hospital the management did not interfere with the clinical activities of the physicians (no penalties for overproduction).

There is general consensus among interviewed stakeholders that a system of retrospective refunds does not work.

> *"Als je verder gaat en nu kijkt naar die referentiebedragen. Ja, daar wringt iets aan. Men gaat tegen ons gaan zeggen: ah ja, beste ziekenhuizen… referentiebedragen, als je meer voorschrijft voor dezelfde pathologie, dan… we gaan die honoraria terug afnemen. Dat komt dan een stuk van bij het ziekenhuis, maar we hebben er eigenlijk niets aan te zeggen. De artsen schrijven voor. Maar het gaat eigenlijk nog verder dan dit. Wat zegt men vandaag? We gaan ook kijken wat er in de ambulante sector gebeurd is. Maar dat zijn dan dikwijls… Dat is dikwijls voorschriftgedrag van bepaalde artsen. Ik weet niet, huisartsen, specialisten… Die eigenlijk volledig buiten de controle van onze structuur vallen. Dus de vraag is: hoe kan je ons eigenlijk daarvoor verantwoordelijk stellen als je er niet in slaagt om dit op een hoger niveau te krijgen?"*

The calculation method is regarded as unfair and vulnerable for gaming

Due to the two-step calculation method, small differences in consumption can have large impacts for hospitals. If the total sum of reference amounts for a hospital is exceeded by only € 1 001, for instance, the hospital will be penalised while in the case of € 999 overspending there is no sanction. This small difference in the first step of the calculation (where the positive difference in one reference amount can be levelled out by a negative difference from another reference amount) can result in large financial penalties in the second step of the calculation (since only reference amounts with a positive difference between the real expenditure and reference expenditure are taken into account). This is considered as unfair especially since sanctions follow more than 2.5 years after the facts. Provisional reference amounts are calculated and communicated to the hospitals with the aim to give hospitals the opportunity to adapt their behaviour but also to prevent a downward spiral of the average national amounts.[18] Despite this system of provisional feedback, stakeholders indicate that more frequent and faster feedback about their consumption behaviour is needed in order to allow them to adapt their behaviour. Now the verdict to refund comes (despite the system of provisional calculations) all too often as a surprise. Another point of critique is that the system is vulnerable for gaming, e.g. not registering certain activities to avoid that the total sum of reference amounts is exceeded.

> *"Je crois qu'on n'a pas vraiment abordé ça, mais élargir les montants de référence à une centaine d'autres DRG comme on le fait, c'est multiplier les vices du système, c'est tout à fait aberrant. Ce n'est pas parce qu'on va augmenter le nombre de DRG qui seront soumis au système qu'on aura un système plus vertueux. C'est un système aberrant, c'est un système complètement con. En plus, on vous repère sur un rien du tout. Pour un certain traitement, ils ont dépassé de 89 euros le seuil, donc ils ont été punis de 90 000 euros, à rembourser. 89 euros, c'était à l'époque deux scanners. Donc si sur l'année précédente, ils avaient fait deux scanners de moins, ils n'étaient pas dedans. Après ça, on peut m'expliquer que c'est un système logique, et l'information préalable, ils informent les gens, etc. Ce n'est pas vrai. Ils nous donnent un pré-calcul du montant de référence au mois de mars pour nous dire ce qui va se passer au mois de novembre, en disant : comme ça vous pouvez vous adapter. Mais c'est calculé sur le truc de trois ans avant. Si on s'adapte maintenant, c'est dans trois ans qu'on aura la répercussion. C'est vraiment des conneries de paranoïaques. Ça c'est plutôt négatif."*

> *"Le calcul des montants de références c'est aussi le jackpot, c'est la loterie. Je vais vous dire pourquoi c'est la loterie. C'est en septembre, octobre, que l'on reçoit un document de l'INAMI disant que vous êtes touché par les montants de références ou vous ne l'êtes pas. Jusqu'à présent [hôpital XX] ne l'a jamais été. ;.. Je vois bien chez les collègues, ceux qui sont visés, ils dépassent parfois un petit peu parce que simplement la méthodologie change, première étape on utilise la moyenne, seconde étape on utilise la médiane. Donc un simple*

déplacement de quelques euros peut vous entraîner à un remboursement de € 250 000."

An expansion of the system of reference amounts is possible and was also a planned action in the government agreement.[66] However, stakeholders have divergent opinions on the desirability of such an expansion. The opponents point to the many shortcomings, such as the disproportional sanctions for hospitals who exceed the total sum of reference amounts compared to other hospitals or the retrospective refunds, of the existing system and argument that simply increasing the number of APR-DRGs will only add to these problems. Moreover, changing the system of reference amounts to a more prospective system also includes the risk that it is detrimental for the macro budget. In the current system, about € 3 million is reclaimed from hospitals that exceed the budget but there are also many hospitals that do not reach the level of the reference amounts for a total amount of € 6 million in 2012[tt]. Fixing a prospective payment for the current selection of pathologies at the level of the reference amounts would increase the macro-level healthcare expenditures.

Although the system is not perfect, other stakeholders are more positive about an expansion of the reference amounts to further control the overproduction. Nevertheless, such an expansion should only take place on the condition that some shortcomings are tackled. The system should be made more prospective and more transparent and hospitals should receive more feedback and benchmarks.

"Dus het zal wel beter zijn als dat systeem nog ietsje meer transparant was, dat men dat online zou kunnen opvolgen: zitten we tegen die drempel of niet. Dat men een beetje preventief zijn consumptie zou kunnen binnen de perken houden. Maar als al de rest niet lukt, heb ik er eigenlijk geen probleem mee dat dat niet-perfect systeem toch nog wat zou uitgebreid worden, want ik denk dat dat toch wel een rem vormt op het voorschrijven."

9.4.4 A system of salaried physicians: more solidarity between disciplines or unproductive physician workforce?

In addition to the FFS and the lump sum system, medical specialists can also be salaried. In Belgium, besides some exceptions, only university hospitals work with salaried physicians (see Chapter 7). Differentiation in income between disciplines is less pronounced in university hospitals than in non-university hospitals. Stakeholders evaluate a system in which physicians are paid a salary, compared to other systems, as follows.

Advantages of a system with salaried physicians

- They have more room for multidisciplinary collaboration.
- They have less incentives to (over)produce (cave: the hospital management can force physicians to produce) and less incentives for overconsumption.
- It allows a human resources policy that is more directed at a work-life balance for the new generation of physicians and gives physicians a better social protection.

Disadvantages and risks of a system with salaried physicians

Some stakeholders fear that the currently very productive physician workforce will have less incentives to produce. This might help to mitigate the problem of overproduction but risks to turn into a situation where underprovision of care becomes a problem and where physicians will adopt a 9-to-5 mentality. Other stakeholders refute this argument and refer to the numerous examples of professionals who are intrinsically motivated and work outside the classic 9-to-5 schedules even in a salaried system. Nevertheless, many stakeholders emphasize that being self-employed is an important part of the professional culture of Belgian physicians. They warn that a system of salaried physicians does not at all fit into this professional culture and runs the risk of pushing physicians towards private practices.

"Ce qui est toujours la grande menace, que si on est des salariés, on ne va plus bien soigner les gens. On ne soignerait les gens que parce qu'on a un intérêt personnel. Non, non. Ca je ne comprends même pas

[tt] Note that these figures are based on stakeholder comments and were not verified.

que les médecins acceptent de donner cette image de leur groupe professionnel. Et je crois qu'ils ne mesurent pas le regard qu'on peut porter à entendre ça."

Opponents of a system with salaried physicians indicate that it will inflate the macro-level budget because higher social security contributions will have to be paid (see also Chapter 7 on university hospitals). According to some stakeholders, this explains why a system of salaried physicians has never been implemented. Nevertheless, this is contested by others. The social security contributions will indeed increase but on a macro level the money will be reinjected in the budget and can be spent by the social security system. This money is not available in a system of self-employed physicians. Moreover, public authorities miss a lot of money because of the fiscal optimisation practised by self-employed physicians.

9.5 Critical appraisal: the distribution of physician fees within the hospital results in a struggle for money

9.5.1 The disparity in deductions within and between hospitals gives physicians negotiation power

There are **many different models within and between hospitals for the deductions of physician fees** resulting in substantial variation in the amount of deductions. On a macro level, approximately 42% of physician fees is transferred to the hospital,[25] but stakeholders estimate that this figure **varies between 25% and 65%**. The hospital management is sometimes forced to reduce the deductions on physician fees for certain disciplines (especially for disciplines where there is a shortage) to attract or retain physicians from these disciplines to their hospitals. Physicians use this shortage during negotiations with the hospital management. Stakeholders also claim that there is a structurally organised shortage in some disciplines via lobbying in the planning commission to acquire or maintain a favourable bargaining position.

Some hospitals work with deductions based on costs while others work with a fixed percentage. Stakeholders in favour of the former argue that this model stimulates physicians to work efficiently because it induces them to negotiate with firms on the price of equipment and to avoid the unnecessary use of staff or equipment. However, this model also entails a potential risk of underprovision of care. Other stakeholders prefer a model with a fixed percentage because it allows a more homogenous strategic policy, supported by physicians and hospital management.

"La rétrocession et puis chaque hôpital a un modèle différent. Vous n'en trouvez pas un avec le même modèle. Vous avez autant de modèles de rétrocession avec des pools, des pools par service, avec une prise en charge du matériel médical. Enfin, sur les frais fixes, sur les forfaitaires. Vous avez toutes les formules possibles et imaginables. C'est pour ça que c'est compliqué quand on commence à mettre… fusionner les hôpitaux, le statut du médecin hospitalier est souvent un gros sujet de conversation parce qu'alors il y a des médecins qui avaient un système favorable, on dit : « ben, vous avez un caractère extinctif."

"Een zuivere kostendekkende afdracht, dat is voor mij de beste manier van werken. Dat responsabiliseert de artsen ook het meest. Met het risico dat men ook weer zal vervallen in onderconsumptie en risico voor kwaliteit."

"Ja, ik vind dat een zeer goed systeem. Want wij zitten direct in contact met de leveranciers. Wij zijn op de hoogte van de nieuwste technologie. Is die zijn prijs waard of niet? En als we het zelf betalen, dan zullen we ook zelf wel goed afwegen of dat verantwoord is."

The variation in deductions is mentioned as an important hurdle in case hospitals merge. Stakeholders also fear that it will hamper a fluent introduction of fees that only cover the intellectual and physical labour of the medical specialist. Decreasing the heterogeneity in physician deductions is seen as an important step towards a more integrated payment system of the hospital and medical specialists.

"Et c'est là que les problèmes se posent parce qu'effectivement, ceux qui sont prélevés à 25% ne sont pas d'accord de passer à un prélèvement moyen à 40% comme tout le monde et ceux qui sont prélevés aujourd'hui à 55 ou 60% n'attendent qu'une seule chose, qu'on mette tout le monde à 40 car eux vont tout de suite avoir une rémunération qui va augmenter. Pour moi, l'élément fondamental du passage à un financement plus intégré entre prestation médicale et coût hospitalier, il est là. Si on parvient à résoudre ce problème-là, je pense que voilà, on aura essentiellement …On aura vaincu l'obstacle essentiel, le reste sera négocié, devra avoir des phases de transition

mais je pense que sur le fond, il n'y a pas beaucoup d'arguments légitimes pour s'y opposer."

9.5.2 Physician partnerships: is there enough solidarity to pursue a balanced human resources policy?

Pooling of physician fees at the hospital level is exceptional. In most hospitals, there are partnerships per medical discipline with different financial agreements between but also within hospitals as a result. Stakeholders indicate that especially in small partnerships, there is a lack of solidarity between physicians within the partnership. When one of the partners in the partnership is absent from work because of, for example, sickness leave or maternity leave, this implies a loss of income for the other colleagues in the partnership. While there is no rationale to differ maternity leave between disciplines or even between healthcare professions such as nurses, the maternity leave a physician is entitled to, is determined by the individual contract within the partnership. There is **no real human resources (HR) policy for physicians in hospitals**. This lack of HR-policy is problematic since the expectations of the physician workforce regarding the work-life balance are changing.

"Als dat een kleinere associatie is … dan is dat echt vrouwonvriendelijk. Er bestaan nog toestanden waarvan je niet gelooft dat het nog waar is. Dat de mannelijke dokters aan de vrouw zeggen: ja, moest je nu wel uw kleine kopen want het is nu net winter en in de winter hebben we het druk, enzovoort. En hoe lang blijf je thuis? We moeten toch geen vervanger zoeken voor u? Kun je niet rapper terugkeren? Dat soort rechtstreekse en onrechtstreekse druk. Dus als we iets willen doen voor de 62% vrouwen die in de toekomst, binnen zo veel jaar, het korps zal tellen, dan moeten we een sociale HR-politiek kunnen voeren."

The system of pooling physician fees within partnerships creates many frictions since **loss of productivity of one implies an income loss for the group.** Consequently, many discussions in hospitals are about money and not about patient care. Hospitals can be considered as a conglomeration of small and medium-sized enterprises (i.e. the different partnerships that exist within a hospital) rather than one large organisation with a joint mission (see also Figure 23). This constellation causes many frictions between disciplines but also between physicians and the hospital management.

"Enfin. De afdrachten veroorzaken altijd een moeilijke relatie tussen beheer en artsen in het ziekenhuis. Als we werken naar een nieuw financieringsmodel, denk ik dat de arts meer als arts moet kunnen beschouwd worden en minder als kmo binnen een ziekenhuis. Uiteindelijk is een ziekenhuis nu een conglomeraat van kmo's, hé. Ik bedoel… Rond een vaste stam natuurlijk, maar… Ik vind dat eigenlijk op zich niet zo'n na te streven verhouding tussen de medische sector in een ziekenhuis en ziekenhuisbeheer. Dat is niet zo gezond."

The current system shifts the responsibility to develop a HR-policy for physicians to the physicians and the medical board. The money-driven system and the imbalances in fees between disciplines hamper solidarity between physicians and disciplines. In some hospitals, however, there are arrangements for starting physicians where solidarity of the colleagues is asked during the first two years to launch the career of the new physician and allow him/her to gain sufficient patient clientele.

9.6 Critical appraisal: involvement of physicians in hospital policy: does it result in a joint strategy for high quality of patient care?

9.6.1 A dual payment system creates tensions between the hospital management and physicians

According to some stakeholders, the dual system of fee-for-service remuneration of medical specialists and a budget for non-medical activities has some advantages. Since physicians contribute to the operating costs of the medical activities they perform, physicians and hospital management have to negotiate about deductions on physician fees. As such, **physicians have a voice in decisions** and can resist when hospital management wants to take unjustified measures.

Others point out the many frictions and unnecessary discussions because of the dual system. In fact, it forces physicians and hospital management to **focus discussions on money issues** (i.e. the size of deductions on physician fees) **rather than on quality of patient care**. Moreover, the incentives of both parties are not aligned. The hospital management is incentivised to shorten the length of stay (LOS) which causes frictions among (some disciplines of) medical specialists who are incited to produce as many interventions as possible because of the FFS system. Shortening

the LOS implies a shorter time window per patient to perform activities. This is not true for all medical disciplines. Surgeons, for instance, draw little benefit from a longer LOS. The higher the turnover of patients, the more patients they can operate and the higher their income. The contrast of these incentives is less pronounced in academic hospitals where physicians are salaried.

The deductions on physician fees **put physicians in a powerful position against the hospital management.** Physicians often demand something in return for their money, e.g. increased supplements, freedom or a larger say in management decisions. Participation in hospital management decisions is, in se, desirable. However, the current hospital payment system is a major barrier to achieve the 'co-management' model. The different and inconsistent incentives cause a struggle for power rather than collaboration between hospital management and physicians. In fact, some argue that this contributes to a perverted situation where physician unions want to maintain the structural underpayment of the hospital budget to keep their power.

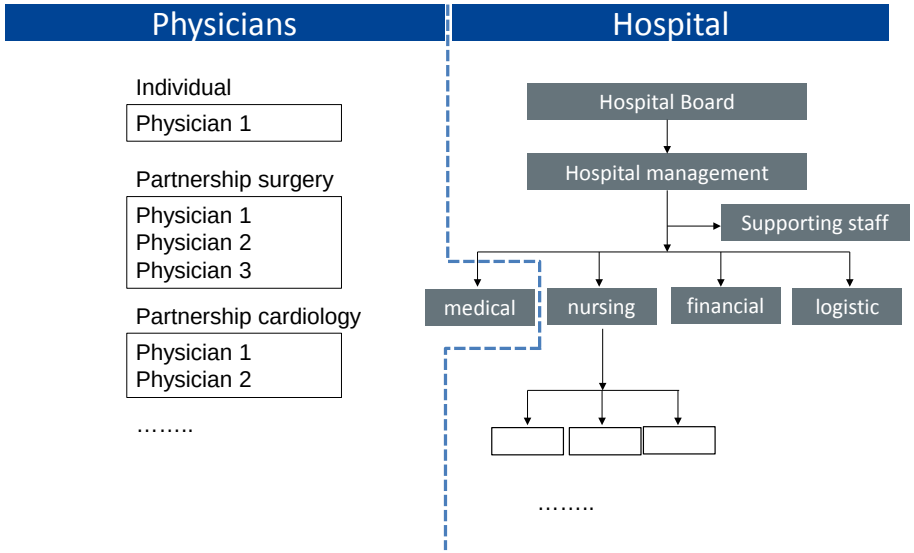
The fact that there are no national agreements about the size and content of the deductions, the outcome of negotiations is hospital-dependent and often heavily influenced by the power balances. Both the stakeholders representing the hospital management as the stakeholders representing the physicians were critical about the outcome of these negotiations. As noted above, stakeholders from hospital management criticize the often exaggerated demands from physicians (e.g. patient supplements). Physicians, on the other hand, are critical about the efficient use of the (entire) hospital budget (e.g. large overhead costs, large salaries for hospital management, inefficient human resources policy) resulting in situations where deductions are claimed on 'pure professional physician fees' (e.g. fee for permanency).

> *"Dus dat is een heel ongezond systeem. Het is ook nooit zo bedoeld geweest, maar het is wel zo geëvolueerd. En sommige artsensyndicaten hebben gezegd: ja, intellectueel is dat wel niet goed. Maar eigenlijk in een systeem van machtsverwerving in het beleid van ziekenhuizen, is dat nog niet zo slecht. Want als die beheerder naar ons komt en ons geld nodig heeft, dan zeggen wij: ja, we willen wel betalen, maar we gaan toch eerst een keer klappen. Ah ja, waarover zullen we praten? Ah, dat zal ik nu een keer zeggen waarover we zullen praten, aangezien ik betaal. Wie betaalt, bepaalt. Dan zeggen we: we willen dit… En dat gaat dan meestal over: we willen meer controle hierop en willen niet dat dat nog gebeurt en we willen ook niet meer dat presteren, maar we willen liever iets anders. Dat is zo. Dat is een zekere machtspositie. En de beheerder die naar een compromis moet evolueren, want als hij geen akkoord heeft, kan hij ook niet verder, die zegt dan: het is goed. Ik doe dat. En eigenlijk is dat niet zo'n gezond systeem."*

9.6.2 Legal structures for physician involvement in hospital policy insufficient for harmonious hospital governance

It is extensively described that the traditional and historically grown 'four different worlds' in hospitals (i.e. the trustees; the board of directors; the physicians; the nurses) as described by Mintzberg also apply to the Belgian hospital setting,[209] causing frictions. Bridging the different partitions is an important hurdle to be taken to achieve integrated policy in hospitals.[201, 210] In this section we focus on the legal initiatives that aimed to integrate the medical activities in the hospital activities. This is a challenge since most hospitals have a dual organisation structure including a quite hierarchically structured set of departments (e.g. nursing department; logistic department; financial department) and a medical department that in most hospitals is a conglomerate of several partnerships between self-employed physicians. The medical department is far less hierarchically structured because the medical profession is characterised by the (persistently important) medical autonomy but also because most physicians are self-employed (with professional activities also outside the hospital).

Figure 23 – Dual organisation structure of hospitals



Source: Dewitte (2012)[210]

As such, the legislator took several measures that aimed to involve physicians in the hospital policy. The Belgian Hospital Act aimed with the changes in 1986 (i.e. creation of the two functions: the chief medical officers and chiefs of medical departments; the medical council) to integrate the medical activities in the general hospital policy.[68] Nevertheless, the impact of these legal measures is heavily contested:

- The law describes the integration of medical activities in the hospital activity as an important responsibility of the **chief medical officers**. Nevertheless, in practice the chief medical officers and the medical chiefs of departments have little tools to implement a global medical policy in the general hospital organisation in a decisive way.[203] Moreover, their role is somewhat caught in the 'duality of the hospital' since chief medical officers have to wear two different hats: one hat as member of the board of directors and one hat as member of the medical staff. This causes frictions with both the board of directors and the medical staff.[203]
- Also the **role of the medical council** is criticized. The medical council has only an advisory role regarding the hospital management which is far from leading to an integrated approach between hospital managers and medical staff. The medical council is seen as a 'physician union committee' that uses its 'advisory role' to defend physicians' interest rather than a place where physicians work in a concerted way together with the hospital management on a joint policy plan.[203] Yet, the medical council has in most hospitals an important voice. After all, they often have a lot of moral authority. In addition, there are out of the list of 18 possible advices, six so-called reinforced advices which implies that in case the hospital management disagrees with the reinforced advice of the medical council (and fails to achieve consensus with the medical council) an arbitration process is started. Nevertheless, some physicians play down their influence with the arguments that they always surrender in case of disputes to avoid that patient care is affected or because the arbitration process always favours the hospital managers.

  "En als wij nu vinden: ja, het ziekenhuis is niet zuinig beheerd. Eigenlijk vinden we dat onverantwoord dat je dat maar blijft… Dan zegt men: nee, we doen dat niet. Maar dan moet de medische raad ook echt de macht hebben om nee te zeggen. Terwijl als ze nu tot die interne conclusie komen, dan stelt men een bemiddelaar aan en die geeft uiteindelijk de beheerder toch gelijk."

  Other stakeholders deny this and state that despite the little use of the 'arbitration procedure', the moral authority combined with the system of deductions gives a lot of power to the physicians.
- The legal possibility of a **'permanent deliberation committee' for physicians and hospitals** is in practice only implemented in very few hospitals since physicians are afraid to erode the competencies of the medical council.[203]

The failure of these legal structures to better harmonize the hospital management policy with the medical policy makes failures and successes dependent on ad hoc collaboration between physicians and hospital management. Despite the many good intentions and examples of physician involvement in the general functioning of hospitals (e.g. participation in ad hoc hospital committees that work on quality improvement projects), this

form of collaboration is very vulnerable. In fact, the pace of progress is always determined by the 'slowest involved stakeholder'.[203]

9.7 Critical appraisal: tension between hospitals and private practices

9.7.1 What drives physicians to work in a private practice?

The competition between hospitals and private practices is perceived as unfair by some stakeholders. Stakeholders mention the following reasons why physicians are leaving the hospital (entirely or partly) and start working in private practices or extramural centres:

- Hospital managers charge deductions on the fees of hospital-based physicians not only to cover direct costs (e.g. equipment and nursing staff) and indirect costs (e.g. overhead costs of the human resources department, parking spaces, etc.) but also to compensate for the structural underpayment of the hospital budget (see Chapter 5). In private practices fees are used to pay for own equipment, staff and office. Also from a fiscal point of view working in a private practice is more profitable. In addition, costs are often higher in hospitals, since hospitals have to follow more rules and regulations (e.g. higher quality standards, higher staff costs caused by better collective agreements, etc.).

  "Als je iets veilig kunt doen buiten het ziekenhuis, moet je goed zot zijn, financieel gesproken om dat nog in het ziekenhuis te gaan doen, hé. … Ik vind dat niet helemaal goed, hé. Wie trekt er weg? De plastisch chirurgen, de oftalmologen, bepaalde zaken in de orthopedie… Want wat gebeurt er dan? De hele moeilijke zaken, de complexe zaken, die blijven dan in het ziekenhuis. Maar je kunt dat niet tegenhouden, hé. En Europa is daar bijna gangmaker in. Maar als je nu zelf de keuze zou hebben. Stel, ik ben oftalmoloog en ik ga mij specialiseren in een paar ingrepen. Niet de moeilijkste, maar een paar ingrepen. Cataract. Je hebt tienduizenden mensen met cataract. En de bevolking wordt ouder. En die krijgen allemaal cataract. Dus ik ga me als jonge oftalmoloog, ik zie dat hier nu gebeuren, privaat vestigen. Ik doe een investering van een paar miljoen. Pak twee miljoen. Dan moet je een bank vinden die u dat wilt financieren. En ja, de molen draait, hé. De molen draait. Als je hetzelfde doet hier, dan betaal je kosten aan het ziekenhuis. Je wordt nooit eigenaar van de gebouwen. Je betaalt kosten. In uw privépraktijk betaal je ook kosten. Maar 25 jaar later of 30 jaar later is dat wel van u. En heb je een materieel goed dat je daar over hebt. Dus financieel gesproken, je zou bijna een dommerik moeten zijn of een idealist om datzelfde werk nog in een ziekenhuis te gaan doen."

- Physicians have **more autonomy over their work schedule** in a private practice. For example, they can choose to work during out-of-office hours or not. In addition, some stakeholders point out that hospitals should give hospital-based physicians more flexibility to organise their consultations as they want. Nowadays, some physicians leave the hospital since they perceive their hands are tight by the hospital organisation (e.g. it is the hospital that determines where and when consultations can take place).
- Physicians have **more freedom in charging fee supplements** (see Chapter 10). Therefore, some of the lower paid disciplines (e.g. paediatricians, dermatologists) leave the hospital and (almost) exclusively work in private practices where they can top up their earnings with fee supplements.
- The **quality criteria and audits are less stringent**. Yet, this does not necessarily imply that quality assurance processes are automatically better in hospitals compared to private practices. It was, for instance, pointed out by stakeholders that the majority of private labs have an 'International Organization for Standardization' (ISO)-certification while hospital-based labs do not have such certification. However, the strict regulation of hospitals with regard to quality and safety of care does not apply to extramural centres.[45] A 'hospital' is legally defined in the Hospital Act. Market entry for hospital services is restricted by government regulation. First, a hospital has to fit into the national planning, which is then translated into programming standards and criteria. Second, it has to fulfil several recognition criteria, for example concerning hygiene, safety and quality of care, before it is allowed to operate (see Chapter 2). Extramural centres do not fall within the scope of this legal definition and also the recognition criteria do not apply to these centres. Apart from the recognition criteria, there are other rules and initiatives targeting the promotion of quality of care in hospitals. We

refer to KCE Report 225 for an elaborate description and analysis of quality and safety regulation in extramural centres as compared to hospitals.[45]

"Meer en meer artsen verdwijnen uit het ziekenhuis, vestigen zich in kleine en grote zelfstandige units waar ze heel die vaste structuurkosten niet hebben: eerste voordeel. Tweede voordeel: geen wachtdiensten moeten doen. Derde voordeel: de tarieven kunnen vragen die ze willen. Vierde voordeel, ja het zijn er vier: geen kwaliteitscontrole en geen inspectie hebben. Ja, dat is geen eerlijke concurrentie."

9.7.2 Are there risks to a further shift of medical specialist care towards private practices?

(Financial) accessibility of healthcare services

Stakeholders warn for the risk of 'cherry picking' of patients, where physicians working in private practices select only those patients that are 'financially lucrative'. In general, this lucrative group of patients includes younger, healthier and wealthier patients. As such, there is a risk that in the long run the financial accessibility of specialist care will be threatened. After all, if more and more physicians start working in a private practice, patients will be forced to go to these practices which have more freedom to charge fee supplements.

Moreover, since medical specialists are allowed to also select the services they provide in a private practice, they can also select the more lucrative services threatening the geographic accessibility of specialist care.

"Ja. Ik vind dat een bijzonder nefaste evolutie. Ik denk dat dat niet gunstig is. Omdat dat inderdaad puur gaat over cherry picking. Dan doe je de prestaties met een goede nomenclatuur of de patiënten met weinig kosten in de privépraktijk. En al de slecht betaalde prestaties of de moeilijke patiënten die meer tijd of meer ondersteuning vragen, verschuif je naar uw ziekenhuispraktijk."

Quality of care

Given the less stringent quality standards and audits stakeholders warn for the risk of lower quality of care in private practices than in hospitals. A second risk they mention is that continuity of care is not guaranteed. The availability of after-care services in the private clinics during out-of-office hours, for example, is not guaranteed which can pose problems in case a patient develops complications.

"Maar het heeft risico's, hé. Het heeft risico's. …Continuïteit van zorgen, hé. Want als je als patiënt in zo'n oftalmologische kliniek bent geweest en ze hebben u de vrijdagnamiddag om 15u geopereerd en tegen 's nachts of de zaterdagmorgen loopt er iets mis… Het zal niet simpel zijn om bij diezelfde oftalmoloog… Het zal onmogelijk zijn. Dan ga je naar het ziekenhuis. Waar dat ze dan afspraken mee gemaakt hebben, hé. Het is dan wel correct georganiseerd. Ze hebben dan wel een afspraak gemaakt. Maar ja, je moet daar toch voorzichtig mee zijn."

Manpower problems

Stakeholders warn that the competition between hospitals and private practices causes manpower problems. In fact, especially in medical disciplines at the lower end of the income spectrum for which care can be organised in private practices (e.g. paediatricians, dermatologists) there are recruitment problems in hospitals.[205] This shortage of specific disciplines in hospitals can cause problems with accessibility of specialist care (e.g. permanency of physicians cannot always be guaranteed). Physicians who work in a hospital have to bear the burden of the out-of-office hours permanence, which on its turn risks being a reason for these physicians also to leave the hospital. In addition, it is also noticed that for disciplines with a shortage, there is also the risk of a shortage of training places making it difficult to remediate the problematic state of affairs.

"Donc il y a une compétition entre les conditions de travail et des rémunérations trop intéressantes à l'extérieur de l'hôpital et trop peu intéressantes et trop difficiles à l'hôpital. C'est un des gros défis. Par exemple les pédiatres, on a assez de pédiatres en Belgique. On ne manque pas de pédiatres. Mais il est tellement plus intéressant d'avoir son cabinet à domicile plutôt que d'être dans un service hospitalier où vous avez les gardes, voilà."

Less money in the system

Some stakeholders fear that a further increase in private, commercial initiatives, for example private labs, will drain profit margins out of the healthcare sector for the benefit of shareholders.

9.8 Suggested solution elements from stakeholder consultations and literature

9.8.1 Recalibrate the tariffs in the nomenclature

Urgent need to recalibrate the nomenclature

Several stakeholders emphasize the urgent need to recalibrate the nomenclature because the recent adjustments in tariffs to decrease income differences between disciplines are insufficient. They say that the current system feeds supply-induced demand (e.g. in cardiac surgery) while for other disciplines there is a shortage of physicians (e.g. child psychiatrists) who cannot sufficiently meet the demand of the population. Moreover, stakeholders state that the differences between disciplines are too large to leave the decision about fee harmonization between disciplines to the medical profession. They fear that there is not enough solidarity between disciplines and therefore propose to have a larger societal debate on this topic with at the end a clear political decision.

> *"Maar zelfs de artsen zijn er onder mekaar nooit in geslaagd om het te herzien, hé. … … solidariteit onder artsen? Dat is gewoon waanzinnig, hé. Want je peinst toch niet dat die geld gaat krijgen van mij, en… Zo gaat dat, hé. En die verschillen zijn zodanig groot… Dat moet op een of andere manier overstegen worden. Er gaat iemand het lef moeten hebben en ook durven zeggen van: kijk, we gaan het… ik ga niet zeggen gelijkschakelen, maar we gaan het eerlijker verdelen. … De cijfers staan in De Tijd, hé. Relatief representatief van wat er gaande is. We hebben hier ook nefrologen lopen. Dat is 3 keer wat sommige andere hebben, hé. Dat zijn toch wel maatschappelijke debatten, hé. En als er daar niemand het lef gaat hebben om te zeggen: dat gaan we veranderen. … Er moet solidariteit komen."*

> *"Et donc, si on n'ajuste pas rapidement la nomenclature, ça s'appelle le réétalonnage, ben vous avez des choix de services dans les hôpitaux qui sont faits en fonction de la rentabilité de la nomenclature, mais pas en fonction de la réalité des besoins. Le plus bel exemple, c'est la cardio quand même. La chirurgie cardiaque ou… Les angioplasties. Tous les hôpitaux veulent l'avoir, tous. Parce que ça rapporte. Ce n'est pas nécessaire d'en faire partout, mais ça rapporte. Personne ne veut faire de la pédiatrie, la pédiatrie ça ne rapporte pas. Aujourd'hui, il y a des hôpitaux qui envisagent de fermer des services parce que ça ne rapporte pas. Mais ce n'est pas parce qu'ils ne répondent pas à un besoin, mais tout simplement parce que l'écart par rapport au tarif de la nomenclature est intéressant ou pas intéressant. … ça fait déjà 13 ans qu'on le dit – c'est le réétalonnage de la nomenclature."*

At the same time, stakeholders acknowledge it will be very difficult to harmonize the tariffs of the nomenclature since it will require substantial decreases in the most lucrative interventions and disciplines to recalibrate the tariffs in a budget-neutral way. If the lobby-groups of the best-earning disciplines have more power than the minister of health, the recalibration will never happen. Stakeholders also indicate that it is not realistic to think that the differentiation can be levelled out completely. Some even indicate that this is one of the reasons why a more inclusive pathology-based system is on the policy table, because it shifts the responsibility of the distribution of the budgets across the disciplines towards the individual hospitals and disciplines.

> *"Et donc, ça oriente le choix des études, ça oriente le choix des services. Tout ça parce qu'on a la nomenclature qui ne correspond pas à la réalité des frais. Alors, on peut évidemment dire : « on ne va pas toucher à la masse des honoraires, on va la répartir. » Mais, quand vous répartissez, vous devez retirer à certains et en donner à d'autres. Et donc, ça dépendra de la force des lobbys en place et la force politique de la ministre ou du ministre."*

A second obstacle for a recalibration mentioned by stakeholders is the very detailed list of nomenclature codes which makes it infeasible to determine each tariff on the basis of objective and scientifically sound information. The detailed list also hampers a good maintenance of the tariffs. There is no common practice of reviewing the costs of an intervention and adapting the tariffs accordingly in a systematic way. After all, conducting cost studies for thousands of interventions is not realistic. Therefore it is suggested to group nomenclature codes and avoid too detailed coding before the recalibration exercise starts. As a first step, the implications of lessons from international experience for the Belgian nomenclature, for example in France or Luxembourg (see Chapter 14), could be explored.

Given the time needed to recalibrate physician fee levels, some stakeholders propose to top up the fee level by bonuses of those disciplines where there is a shortage such as child and adolescent psychiatrists or geriatricians.

Equal pay for equal work: what factors can still explain remuneration differences?

As noted above, many stakeholders point out that the current differences in remuneration between medical disciplines are not based on objective factors. More objective factors to differentiate between fee levels could be:

- the number of hours of work;
- the number of out-of-office hours of work;
- physical burden;
- risk;
- required expertise and training;
- etc.

The nomenclature codes and values do not allow a career policy. The monetary values per nomenclature code are the same for everyone, irrespective of the expertise and knowledge level of the physicians. It is suggested to differentiate the tariffs according to the expertise level of the physicians.

> *"Heb je al een keer ooit in de Medicomut over een loopbaan van een arts horen spreken? Neen. Uw nomenclatuurnummer van uw 1ste patiënt aan uw 30 jaar, als je afgestudeerde specialist bent, is dezelfde nomenclatuurnummer als die van uw 65 jaar. Het is precies alsof dat heel uw leven hetzelfde gebleven is, terwijl dat je enorm geëvolueerd bent, dat de geneeskunde geëvolueerd is, dat de manier van werken geëvolueerd is, dat je eigenlijk ook als mens geëvolueerd bent, dat je meer ervaring hebt, dat je misschien andere dingen liever doet. En daar wordt allemaal geen rekening mee gehouden."*

Better financial reward for care coordination activities

Stakeholders are in favour of better rewarding coordination of care and multidisciplinary collaboration, which are labour intensive activities. A number of (still relatively isolated) initiatives have already been taken, such as introducing specific nomenclature codes for the multidisciplinary oncology consultations (MOC-COM). The nomenclature for these consultations allows specialists from different disciplines to convene within a planned meeting with purpose to discuss the overall care of an individual patient and to develop a strategic plan of diagnosis, treatment and follow-up. It is an example of how 'pay-for-coordination' can be integrated in the FFS (see Chapter 11). Although most stakeholders agree that more financial incentives should be provided to stimulate coordination of care, they disagree about how this should be implemented. Some favour to integrate it in the current FFS (analogue to the MOC-nomenclature), while others are more in favour of 'lump sum payments' whether or not integrated in pathology based payments.

Methodology developed by an independent research team in close collaboration with stakeholders

In Chapter 14 these factors are listed for the selected countries as well as the approaches followed by other countries to measure/quantify these different factors A recalibration exercise in Belgium could start with the development of a methodology that is inspired by these international available scales which could be used to make the differentiation factors more objective. The selection of scales, should not necessarily be limited to scales used to calibrate physician fees. There are also some very instructive examples available in the general human resources management literature (e.g. HAY-classification[211]). This exercise will demand dedicated resources allocated to a research team that operates independently but consults field expertise intensively in a structured and systematic way. Although fee levels for non-medical staff included in the nomenclature are out of scope of this study, a recalibration of the nomenclature should take comparable factors into account for the non-medical staff.

> *"De HAY-classificatie, bijvoorbeeld, is gefocust op loon en renumeratiesystemen, internationaal. En die werken met parameters. En ze wegen dat. Ze zeggen bijvoorbeeld: uw opleidingen, uw graad van verantwoordelijkheid, belangrijkheid van uw functie, weet ik wat, stress… Wij zouden kunnen zeggen: ja, uw opleiding, uw opleidingsduur. Nu, een psychiater, die heeft ook een lange opleidingsduur. Dat zal nog niet zo veel verschil maken met een klinische bioloog, dus… Graad van verantwoordelijkheid, laat ons herhalen dat dat alle twee belangrijk is. Je zou kunnen zeggen: belastende factoren, arbeidsvoorwaarden, arbeidsomstandigheden.*

Het kan zijn dat er heel veel wachtdiensten zijn in de ene job en veel minder in de andere. Urgentie, stress… Enfin, men moet dat objectiveren. Je zou kunnen een loontapijt moeten maken, waar je reliëf brengt in het gewicht en waar je objectiveert waar de verschillen mogen zitten."

Transparency and societal debate

In parallel to this preparatory work on the methodology, the current differences in income should be further studied (e.g. by investigating the tax declaration forms) to create transparency about the income differences within (e.g. cardiology exist of different sub-disciplines with potentially high income differences) and between disciplines.

"We denken: een belangrijke maatregel is transparantie. Ja? Zichtbaar maken. En we denken dat die zichtbaarheid zich niet alleen afspeelt op het specialisme, want daar krijgen we al wat zichtbaar… Maar ook op het niveau van de individuele specialist. We denken dat er heel veel verschillen zijn qua individuele specialist. Wat we ook zien is dat die profielen… Als we bijvoorbeeld spreken over de cardioloog… Er zijn wel wat verschillende soorten cardiologen. Er is niet één soort van cardioloog. Die doet andere dingen. En om te zeggen: iedereen… Een cardioloog is gelijk. Nee. Er zijn wel wat verschillende. En we moeten ook die activiteiten van die cardiologen of van die specialisten mee in rekening nemen, dat onderscheid wel wat maken. En dus dat betekent: als je zou denken aan die herijking, is dat geen eenvoudige opgave, hé. [lacht] Maar dat betekent dat je daar toch wel wat moet in doen op basis van de gegevens die beschikbaar zijn"

Some stakeholders refer to the recent societal and political discussions on defining an acceptable income level of CEOs of state-owned companies and propose to have a similar discussion on physician incomes. The argument is that also self-employed physicians are paid via public means. Therefore, future efforts should focus on decreasing the large differentiation between disciplines in a budget-neutral way on the basis of transparent but simple criteria. Some stakeholders propose to also have a discussion on incomes of hospital management.

"Mais si on garde la nomenclature, il faut alors, à mon avis, effectivement, revoir comment on partage les revenus de cette nomenclature entre les médecins et entre les médecins et la structure. Et donc c'est toute la question: pur, pas pur. Tout ça existe dans les textes d'INAMI. On a déjà pris des lois depuis longtemps en disant qu'on permettait de séparer l'intellectuel, etcetera. Jusqu'ici, on n'a pas véritablement mis ça en application, donc c'est vrai qu'il faudra sans doute trouver, faire preuve d'imagination, voir avec les médecins, notamment, et les autres prestataires comment on peut trouver un équilibre, mais certainement avec quelque chose qui serait plus juste au niveau de la répartition des prises en charge pour un médecin. Je pense qu'une heure pour un médecin, c'est une heure de médecin… et il y a peut-être des grandes catégories qu'on peut faire pour certaines choses, mais, je veux dire, le temps passé, l'acte intellectuel, que ce soit pour passer une heure en discutant avec un patient ou une heure derrière une machine, je ne suis pas sûr qu'il faut des différences à ce point importantes…"

Keep fee-for-service with the fee only covering intellectual and physical work of the physician

Many stakeholders are in favour of keeping the fee-for-service payment system for medical specialists on the condition that the fee only covers the intellectual and physical work of the physician and no longer also direct or indirect costs made to provide their services. In other words, they are in favour of keeping the fee-for-service payment system provided that deductions are abolished. We call this fee a 'professional fee'.

The pathology based payment system can be further expanded by integrating other elements of the BFM in the same payment bundle (e.g. pharmaceutical products) but also by integrating some elements that are currently covered by the FFS but for which actually the hospital administrators are responsible (e.g. infrastructure, staff). This would make it possible to make the shift towards professional fees, a payment system that provides the physicians an income without deductions for the hospital budget. This option is already possible under the current laws. Keeping a an important FFS-element is largely supported by the stakeholders since it keeps an incentive in the system to produce which is important to keep an highly productive workforce, to maintain the accessibility of care (i.e. no major waiting lists) and to prevent underprovision of care. Of course, it will

be important to monitor and discourage overconsumption (e.g. closed budget). It is suggested by some to implement this new system in two steps. First, the pure physician fee (i.e. covering the intellectual or physical activities of the physician) could be earmarked. Next, the payment for the other elements than intellectual activities could be integrated in the hospital budget. It will also be necessary to ensure that (besides the regulated patient supplements) patients are not billed extra.

> *"We gaan een onderscheid maken tussen het deel vergoeding voor de intellectuele acte. Dat zou naar de artsen kunnen gaan. En een deel vergoeding voor de praktijkkosten. En het deel praktijkkosten gaat gewoon naar de voorziening waar dat de arts zijn praktijk uitvoert. Dat zou een gedeeltelijke oplossing kunnen zijn als 1ste stap…"*

Prerequisites to move from the current system towards a 'professional fee'

Stakeholders gave several prerequisites that need to be fulfilled to move from the current system towards a professional fee:

- The nomenclature needs to be simplified, which can be realised by regrouping some of the codes to more homogeneous groups. Such regrouping has the advantage that it will increase transparency, facilitate the use of more objective data (i.e. the current fragmented and detailed nature makes it very difficult to base tariffs on objective cost data) and make it more straightforward to monitor and maintain the system.
- The main determinant of the professional fee should be the working time of the physician, meaning that an hour of communication with a patient should be remunerated in the same way as an hour working with equipment.

  "Je pense qu'une heure pour un médecin, c'est une heure de médecin… et il y a peut-être des grandes catégories qu'on peut faire pour certaines choses, mais, je veux dire, le temps passé, l'acte intellectuel, que ce soit pour passer une heure en discutant avec un patient ou une heure derrière une machine, je ne suis pas sûr qu'il faut des différences à ce point importantes."
- Earmarking the professional fee and the part that covers the operational costs in the fee-for-service system would simplify the payment system: the professional fee is the income of the physician while the part that now covers operational costs could be attributed to the hospital budget, the private cabinet, or the private laboratory.

  "Een 1ste stap zou al kunnen zijn dat we zeggen bijvoorbeeld voor de honoraria: we gaan een onderscheid maken tussen het deel vergoeding voor de intellectuele acte. Dat zou naar de artsen kunnen gaan. En een deel vergoeding voor de praktijkkosten. En het deel praktijkkosten gaat gewoon naar de voorziening waar dat de arts zijn praktijk uitvoert. Dat zou een gedeeltelijke oplossing kunnen zijn als 1ste stap… Voilà. Ja. Ja. Ja. Ja, dus het luik praktijkkosten gaat dan eigenlijk naar de voorziening die de dienst uitbaat."
- The co-management of physicians will need to be organised differently. The deductions on physician fees (to pay for operational costs) are a vehicle to involve physicians in the hospital administration via the medical council at the meso-level or the Medico-Mut at the macro-level. Abolishing the system of deducutions will require new forms of co-management both at the meso- and at the macro-level.

  "Mais, donc, l'honoraire pur, on l'a dit tout à l'heure, c'est évidemment le pouvoir de décision des médecins au sein de l'hôpital. OK. Mais c'est aussi, au niveau macro, le pouvoir de décision de la Médicomut. Ça, c'est clair. Donc, effectivement. Il y a aussi cet enjeu-là qu'on a un peu perdu de vue, mais qui est un enjeu fondamental sur le plan politique. C'est clair que, si maintenant, on bascule les honoraires, enfin la partie des honoraires, dans le budget des moyens financiers, ça va quand même être difficile de dire : « ben oui, écoutez, ça veut dire que les partenaires n'ont plus rien à dire, plus grand-chose à dire, sur toute cette partie-là du financement hospitalier. »"

Risks and disadvantages of a 'professional fee'

The opponents of a professional fee indicate that this system also entails many risks and disadvantages:

- Some stakeholders fear that a system of professional fees will never be implemented as such. They refer to the current practice for anaesthetists. Although their fee is already now a professional fee, only meant to pay for their work and not for direct or indirect costs of personnel and equipment, in many hospitals they also have to contribute in the costs of equipment they use while this should stricto

sensu be covered by the hospital budget. Therefore, some stakeholders fear that moving to a system of professional fees will not work in practice, since hospital administrators will always ask physicians to contribute in case of insufficient financial means. Surveillance fees are another example: some hospitals also charge deductions on these fees, while they have no link at all with direct or indirect costs.

"Un très bel exemple, c'est l'anesthésie. Parce qu'à part l'anesthésie, aucun honoraire n'est pur. La nomenclature dit : ça paie l'anesthésiste et c'est tout. Et ça ne paie pas une machine ou autre… Il y a des hôpitaux où, les anesthésistes devaient eux-mêmes payer le monitoring et le respirateur en salle d'op. Donc c'est quoi pur, impur ? Ce qu'on va extraire comme argent dépend d'un rapport de force, c'est tout, ou de la sensibilisation des gens. C'est pas parce qu'il est pur qu'on ne va pas le ponctionner. Les honoraires de surveillance, ok, il n'y a pas de matériel, on va avoir le malade dans un lit et c'est tout, mais c'est ponctionné, prélevé, de la même façon que les autres. Pourtant les consultations dans un hôpital, c'est la charge des médecins. Un lit doit rester couvert par le reste. Donc, c'est des discussions sans fin. Le matériel de salle d'opération qui est normalement valorisé dans le B2. Eh bien, les hôpitaux disent : « j'ai pas assez, donc ils demandent quand même de l'argent, et les médecins ils disent : non. Alors, ils ont une boîte chirurgicale de base avec laquelle ils ne savent rien faire, mais s'il veut des ciseaux comme-ça, un écarteur comme ça, alors il doit payer, soit directement, ça c'est les hôpitaux [XX], c'est hallucinant. Ça fait 35 ans que ça dure, c'est depuis 1987. Eux, c'est le docteur qui paie tout le matériel chirurgical. Une paire de ciseaux pour faire des découpes d'artères, on n'est pas loin des 1500 euros. Et ils paient. Pourtant c'est du matériel qui est statutairement dans le BMF. Et c'est tout le temps comme ça. Donc tout ça, c'est des disputes un peu illusoires."

- Stakeholders see the system of deductions, especially when deductions are made to cover direct costs, as an incentive for efficiency. Physicians will not invest in unnecessary equipment or staff since this will increase the deductions on their fees. If this incentive is removed, there is a risk that physicians will work less efficiently.

"Het probleem is dat men altijd over afdrachten spreekt als 1 geheel. En dat is eigenlijk al fout. Ik heb u daarstraks gezegd: er zijn diensten waar de kosten in de honoraria voorzien zijn. Dat zijn medisch-technische diensten, bijvoorbeeld klinische biologie, medische beeldvorming, dialyse, nucleaire geneeskunde. Die honoraria zijn hoog, maar die zijn erop voorzien dat je daar alle kosten van betaalt. Nu, als je die kosten betaalt, terugbetaalt aan het ziekenhuis bijvoorbeeld, of het ziekenhuis trekt die af van uw omzet en keert u het saldo uit, dat is voor mij geen afdracht. Dat is gewoon de normale kosten. …Dus je mag gerust zijn dat er niet 1 of 2 verpleegkundigen of labotechneuten te veel zullen staan als de bioloog die zelf moet betalen. Die zal dat zelf wel managen. Maar dan moet hij ook de tools krijgen om het te kunnen managen. ….. Dus kosten zijn voor mij geen afdrachten. Die moeten wel op factuur verrekend worden en niet met een algemeen, ondoorzichtig percentage."

Transitional measures

It is clear that such a recalibration will require transitional measures to achieve more balanced income levels between medical specialists in a thorough but a gradual way (e.g. yearly decreases in the higher income groups by 2%; yearly increases in the lower income groups by 5%).

"We zouden een soort van overgangsperiode moeten kunnen creëren waar dat je start met een herijking waarbij dat iedereen ongeveer hetzelfde verdient als dat hij vandaag verdient. Dus één die vandaag 300 000 verdient, die zal met die herijking ook ongeveer aan 300 000 komen. En dat we dan pas die verhouding één over drie die we vandaag zien, dat de minst betaalde specialismen gemiddeld gezien drie keer minder hebben dan de meest betaalde specialismen, dat daar geleidelijk aan, door bijvoorbeeld hier te zeggen van: kijk, het nieuwe geherijkt honorarium gaat met twee procent per jaar dalen en dit gaat met vijf procent per jaar stijgen. Want dat finaal resultaat dat we dan binnen vijf jaar bereiken, dat strookt met die zeven aspecten."

9.8.2 Increasing lump sum payment for physicians in the future?

Lump sum payment of physician fees to achieve more efficient prescription behaviour

Some stakeholders suggest to use pathology-based payment for the hospital budget covering the operational costs as well as paying physicians via a lump sum system. Given the historical division between BFM and the FFS it is suggested to keep both payment stream separated. Yet, this is the most far-reaching proposal for reform. In most propositions physician remuneration stays for the largest part a FFS system. Yet, some stakeholders suggest to increase the lump sum payment in some high volume-high cost areas.

Medical imaging and laboratory testing represent a substantial share of the physician fees (and medical imaging is an important factor of inappropriate exposure to medical irradiation). Therefore, it makes sense to increase the lump sum payment part for these domains (especially for medical imaging). It will force the radiologist to make arrangements with the prescribing physicians in order to decrease overconsumption of medical imaging. Since the prescribing physicians are not financially affected by their behaviour, some stakeholders question that increasing the lump sum payment part for medical imaging will have effect. Therefore it will be important to give radiologist additional tools to help to achieve the reduction in overconsumption. In any case, the lump sums need to be based on transparent and fair criteria and this will require detailed cost data. To keep track about what is going on in the system, it is suggested to keep always a part based on FFS.

> *"Je pense que pour la paix des ménages, on a tout intérêt à garder des forfaits séparés et rassemblés dans une enveloppe, mais qui soient identifiés, en tous cas, et garder quand même une trace des actes qui sont faits réellement au patient. Donc simplement voir comment je fais évoluer les forfaits. Est-ce que je dois les augmenter parce qu'ils ont des technologies qui coûtent plus cher ou, au contraire, je peux les diminuer parce que telle machine ou tel médicament n'est plus employé et coûte moins cher aujourd'hui ? Donc, si on veut suivre l'ensemble de l'activité, il faut garder des indicateurs d'activité."*

Lump sum payment can increase efficiency, but will it also increase multidisciplinary collaboration?

Lump sum payments for physician fees will potentially lead to discussions between physicians about the distribution of the money. For complex cases, for instances, the implication of 10 different physicians during the hospital stay is no exception. As care becomes more complex, more actors from different disciplines are involved. Distributing the lump sums over the different actors will create frictions and disputes and will not necessary facilitate multidisciplinary care. Although the payment mechanism for the care should not be confused with the payment for the income of the physician (e.g. pin theory physician still can receive a payment per activity provided by the hospital while the hospital receives a lump sum per hospital stay from the payer), many stakeholders think that it will result in the unmentionable salary-system for physicians. Nevertheless, more hybrid forms (e.g. a mixed system of a salary that is dependent on performance parameters) are possible.

> *"Ik ben er absoluut niet tegen dat ook voor de honoraria er meer geforfaitariseerd wordt, maar ik ben niet van plan van in een all-infinanciering: eerst een gevecht met de beheerder gaan te leveren: wat schiet er voor ons over? En dan onder mekaar een gevecht te gaan leveren: welke stukje is hier voor de internist of voor de anesthesist of voor de chirurg of voor de radioloog. Dat is een onmogelijke zaak….. Ja, ik ziet dat niet goed zitten, want als je bij sommige mensen… Ik spreek nu even over de zwaarste pathologieën. Kan het zijn dat er daar 10-12 artsen bij betrokken geweest zijn. Ja, hoe moet je nu dat forfait dan gaan verdelen? Moet je dan met een tikklok: ik ben nu zo veel minuten bij deze patient geweest van datgeen tot…? Dat is toch niet mogelijk? In zo'n geval, denk ik, dat je ons beter bedienden maakt. Alhoewel dat ik eigenlijk voorstander ben van het zelfstandige systeem."*

> *"Een potentieel nadeel van loondienst dat je natuurlijk mensen krijgt die zich wegstoppen. En zeggen van: ik krijg op het einde van de maand toch mijn loon. Dus met andere woorden, waarom zou ik me inzetten? En die dus veel minder activiteiten gaan beginnen doen. Tenzij dat je dan in het loondienstsysteem weer parameters gaat invoeren en zeggen: kijk, je krijgt 100% van uw loon, mits dat je 20 patiënten per*

dag ziet. En als je er maar 10 per dag ziet, dan gaan we dat loon halveren. Maar dan ga je weer weg van het concept van loondienst."

9.8.3 Hospital governance: a joint strategic of hospital management and medical staff

The involvement of physicians in hospital governance is crucial. All **strategic** (investment) decisions should be supported by the physicians as well as by hospital management. Therefore, it is important to search for the governance structure that results in collaboration between physicians and hospital management in order to revert the money-driven discussion into strategic discussions about patient care. Examples abroad (e.g. the Netherlands, France) can be informative for adjusting governance structures in the hospital act that aim to give stronger incentives for hospital management and physicians to work on integrated policy plans. Both countries took very different options (France: via government regulation; the Netherlands: via market competition). Nevertheless, in both scenarios hospitals and physicians were stimulated to accommodate the differences in policies between the organizational and medical policies via joint policy plans. In addition, the leaders on the field had the authority to make these policies work in daily practice.[203, 205]

The importance of the involvement of physicians in the hospital governance was stressed several times by the stakeholders **when reform proposals were discussed**. It is pointed out by the stakeholders that the elimination (or decrease) of deductions from the physician fees will clearly change the power relations within hospitals. On one hand, it will take away a lot of the tensions and frictions between hospital administrators and physicians that originate from the duality in the payment system. The lack of clarity of what part of the physician fee is meant for the physician's income and what part is meant to pay for staff and infrastructure is seen as a major cause of problems between hospital management and physicians. On the other hand it will be required to develop new forms of physician involvement since the current provisions (medical council; chief medical officers) fail to result in an integrated policy. It will be, for instance, be important that physicians have their say in the spending of these budgets (e.g. purchase of equipment or the composition of the teams) but more important wiil be that they have a substantial voice in general strategic decisions of the hospital. If a reform fails to achieve a sufficient involvement of physicians in hospital governance, new problems will arise. After all, one of the most important reasons why physicians are opposed against shifting the deductions for investments and operational costs to the hospital budget payment system is that they fear to lose participation (and power) in these decisions while they stress that medical expertise is required to make accurate decisions on these topics.

Some stakeholders came up with the idea to shift the operational costs and investment costs that are currently paid via the deductions on physician fees towards an **investment fund** that is co-managed by the physicians and the hospital management. Some stakeholders in favour of such a reform proposed to keep a certain extent (but obviously far less than the 40% deductions on physician fees) of deductions on physician fees since they are necessary to enable physician involvement in hospital governance. They see 'co-payments' still as the best way to achieve co-management. Other stakeholders, in favour of such a reform, suggested to shift the deductions entirely towards the hospital budget via pathology-based payments. Yet, the general idea of such an investment fund is to pool the current deductions in one fund which is co-managed by physicians and hospital management, deciding jointly about strategic decisions. These suggestions of co-management are clearly going one step further than the current advisory role of the medical council.

"Ik denk een evenwichtiger model is een… Ik denk wel dat er een afdracht van honorarium moet blijven bestaan. Want co-financing is nog altijd de beste manier om co-management te stimuleren. Maar in plaats van 40% zou dat eigenlijk een stuk lager moeten liggen. En dan kom ik opnieuw tot mijn investeringsfonds. Steek die afdracht dan bijvoorbeeld in een investeringsfonds, waar dat dan de helft vanuit de honoraria komt, de helft vanuit budgetfinanciële middelen, en waarbij dat directies in ziekenhuizen gezamenlijk discuteren over: welke investering gaan we nu doen in functie van het strategisch belang van het ziekenhuis? Dan heb je veel meer, vind ik, een inhoudelijke discussie. Wat hebben we nodig om een goede kwaliteit van zorg aan te bieden? Hebben we een nieuwe NMR nodig? Of hebben we een nieuw toestel nodig of noem maar op? Maar heeft dat een duidelijk doel, zijnde de strategie van het ziekenhuis? … Weg van de centen. Meer naar strategie."

In order to assure that these investment funds depend less on the negotiation capabilities of hospital managers versus physicians, it is important to determine earmarked budgets at the macro-level. In addition, it will be important to disconnect these earmarked budgets from the FFS, to decrease the drive for (over-)production. It is, therefore, suggested to base the size of these budgets on objective cost data during the activity based costing calculations to determine a tariff per DRG. The investment funds can as such be financed via the pathology-based payment system including an earmarked amount that will have to be transferred to the investment fund. This latter suggestion, however, does not exclude a FFS-payment for the professional part of the physician fee which is seen as an important element to maintain a high accessibility of our healthcare system. For some stakeholders who represent the hospital sector the suggestion of co-management with earmarked budgets is seen as a bridge too far since they fear it will block a flexible management (e.g. HR-policy) that is adapted to the specific context of the hospital.

Although these investment funds are already possible in the current context, they solely depend on the goodwill of both physicians and hospital management. It will require much legal preparatory work (e.g. proprietary rights) to make these investment funds work in practice. It is, for instance, important that legal guarantees are provided to prevent hospital managers to claim this budget unilaterally to keep the 'hospital budget in balance', especially with the tight budgetary context in which hospitals operate today.

Another suggestion made by stakeholders of an entirely other order is the involvement of physicians in the hospital board. This suggestion should be framed in the guidelines of good hospital governance,[201] for instance, by allowing physicians to appoint an independent expert in the hospital board.

9.8.4 Regulation and financial incentives to provide patient care at the most appropriate setting

Consultations medical specialists: is the hospital setting appropriate?

Stakeholders acknowledge the difficulty in finding solution elements to resolve the tension between private and hospital practices. European legislation, after all, makes it difficult to differentiate tariffs according to setting-of-care. In addition, it is questioned if it is desirable to make stand-alone private practices prohibitive. It is recognised that such a measure could stimulate an undesired form of hospital-centrism. Some stakeholders even indicate that it is undesirable to organise consultations in the hospital setting if they can be safely organised elsewhere. After all, the hospital setting is much more expensive (e.g. higher overhead costs). It is suggested that hospitals contract the physicians for their hospital activities. Some stakeholders want to see an evolution towards more integrated care by abolishing the stand-alone private practices and stimulate (or even force) them to take part in an integrated care network. Nevertheless, it appears that the opinions about the appropriate setting for medical specialist are quite divergent and deserve a societal debate. Also hospitals with private practice within hospital walls – considered only to attract patients for profitmaking reasons

> *"Mais au bout du compte, est-ce qu'il est nécessaire qu'un hôpital ait de gros plateaux de consultation. Il peut tout aussi bien avoir des relations contractuelles avec des médecins qui sont en dehors. Il a déjà un contrat indu avec les médecins qui sont là. Donc, les gens viennent. Pourquoi est-ce qu'il faut dépenser des fortunes pour faire des plateaux de consultation gigantesques dans les hôpitaux ? C'est 3500 euros le mètre carré de construction neuve, ou 4000 pour certains hôpitaux. Vous aménagez un truc chez vous, vous êtes à la moitié du prix. Donc, rien que ça. Pour moi, finalement, les gestionnaires y tiennent comme à la prunelle de leurs yeux, mais je trouve que ça leur coûte une fortune en gestion des frais : des salaires, des horaires, des trucs – c'est 37h30 et pas 37h32 et tous ces trucs-là, la gestion sociale du personnel qui est dedans. L'immobiliser en surface, répondre à des normes d'incendie qui sont bien pires que celles qui sont dans un cabinet privé. C'est des frais, des frais, des frais… Si on facture aux médecins de l'hôpital dans nos hôpitaux les frais directs et pas les frais indirects… Si*

on devait leur facturer les frais indirects, on serait à du 60 euros de l'heure. Pour une consultation au prix INAMI, le chirurgien est à 24. Ce n'est pas faisable. Ca n'est tenable dans les hôpitaux que parce que la charge des consultations est payée par les autres honoraires d'hospitalisation, mais finalement, on met de l'argent dans une dépense inutile, en tout cas qui pourrait être faite à moindre coût et si on veut un peu maigrir toutes les dépenses inutiles, ça c'est des dépenses inutiles."

Solidarity to cover out-of-office hour's permanency

Out-of office hours should be the responsibility of all physicians. It is not in line with the recommendations of the' order of physicians' that the burden of the out-of-office hours is only torn by hospital physicians. It is suggested to install legislation that also forces private practice physicians to participate in out-of-office permanency and make out-of-office hours permanency compulsory for all specialists (including those working in private practices) in a rotation system or oblige each specialised physician to work a minimal amount of time in the hospital setting.

"Dus wachtdiensten zouden eigenlijk… Wat eigenlijk de bedoeling van de orde van geneesheren en de deontologische code is, is dat de continuïteit van zorg een verantwoordelijkheid is van alle artsen. Nu wordt dat zo niet toegepast. Eigenlijk zou men moeten zeggen aan die orthopedist van zijn privékliniek: u moet meedraaien in de wacht. Daar… En dat gebeurt natuurlijk niet."

Same tariffs for same care, and is care really the same?

- According to some stakeholders the product in private practices and hospital based ambulatory care is not the same. They stress that there is a real difference in patients attending consultations in the hospital setting (patients with more comorbidities, lower socioeconomic profile) compared to the private practice consultations and suggest to differentiate the tariffs accordingly. Moreover, some suggest to restrict the reimbursement of specific interventions based on clinical grounds to the hospital setting.
- Another suggestion is to pay physicians for the extra tasks they perform (e.g. organisation of out-of-office hours). Next, patient supplement rules should be similar in hospitals as in private practices. The measures for limiting supplements in hospital care have the unintended effect that even more physicians leave the hospital. After all, the patient supplements can still be freely charged in private practices. Therefore some stakeholders ask that more harmonious measures are taken to restrict patient supplements.
- Finally, it is suggested to not integrate depreciation of equipment capital investment costs for expensive medical equipment in the physician fees but to shift it to the hospital budget. This is a far-reaching measure which would in practice make ambulatory private practices impossible (i.e. no budget provided to set up the private practices). Therefore, some suggest to offer physicians who want to provide specialist care in private practices a similar tariff as physicians working in hospitals to cover the intellectual and physical activities. On top of this professional fee a 'practice allowance' can be provided to cover personnel, infrastructure and investment costs. These allowances can be differentiated in function of the number of patients, in terms of continuity (i.e. including out of hours duty or not), multidisciplinarity, medical infrastructure, quality assurance etc.

Adjust some anomalies in the current organisation and payment system

- The imbalances in the current tariffs should be levelled out. After all, the fees per intervention differ between but also within disciplines. There is a tendency of cherry picking by private practice physicians. The interventions and patients that are lucrative are set aside for the private practices while the other interventions are for the hospitals.
- Resolving the problem of structural under-payment will decrease the pressure of hospital administrators to negotiate more deductions on physician fees. Solving this problem will eliminate a push-factor towards private practices.
- Limit the number of hospitals which will lead to a greater pool of physicians per discipline. As such, physicians will have to be less frequently on duty during out-of-office hours.

Same care and same tariffs require same quality standards

The evolution towards private practices is hard to be stopped. After all there are economical disadvantages (both from a societal as from a physician'

point of view) to organise the care in the hospital when it is safe to perform it outside the hospital. Hospital structures are more expensive for the society than private cabinets while private cabinets are more beneficial for physicians (less costs but also acquiring ownership from the real estate). In addition it is supported by the EU legislation. It will be important to deal with the risk of cream skimming, and to maintain continuity of care. Others think that this evolution is a threat for public health and stress that the same accreditation procedures and quality standards apply for both settings.

Restrict lump sum payments to those activities that cannot be performed in the ambulatory care setting

The high physician deductions entail the risk that physicians are pushed away from hospitals towards private practices. Private practices offer many advantages from a physician's perspective: no deductions, increased autonomy, no out-of-office hours, tax benefits, etc. Moving towards a lump-sum payment system for hospital specialists is a further push-factor towards private practices. Hence, lump sum payments should be used for those services only that are not carried out by specialists in private practices such as out-of-office hours, hierarchical functions, and coordination activities.

> *"Ik denk dat je voor een stuk specialisten die in een ziekenhuis werken forfaitair zou kunnen betalen voor x aantal taken die in een ziekenhuis moeten gebeuren. Bijvoorbeeld, toezichtshonoraria. Dat heb je al. Bijvoorbeeld, permanentiehonoraria, van wacht zijn. Bijvoorbeeld, iemand die diensthoofd wilt zijn. Die pakt er ook een heleboel bijkomende administratie bij. Geef die daar een forfait voor. En dus zodanig dat je een inkomen hebt dat voor een stuk uit forfaits bestaat, een stuk uit per prestatie, maar waarbij het forfait stimuleert om taken te doen die we nodig hebben en die iemand die dat de privé zit, niet moet doen. Dus door daar forfaitair wat bij te geven aan iemand die in een ziekenhuis werkt, krijg je een surplus tegenover diegenen die dat forfait niet hebben. Dus geef een forfait niet om het plezier van te forfaitariseren, maar geef een forfait om bepaalde taken te vervullen. En in een ziekenhuis kan dat zijn: permanentie, toezicht, diensthoofdschap. Bij een huisarts is dat die coördinatie rond chronische zorg. Maar iemand die thuis dermatoloog is en die dat allemaal niet moet doen, die heeft dat forfait niet. En die gaat dan minder verdienen."*

Key points

The FFS

- **In Belgium the predominant payment system for medical specialists is FFS. The Belgian context is specific (when compared to other countries) since also operational costs and investment costs are paid via the FFS. As such, hospital management has to negotiate deductions on physician fees with the medical specialists. The outcome of these negotiations is different depending on the hospital and the medical discipline (on average 42% of the physician fees is deduced but this can, according to stakeholders vary between 25% and 65% across hospitals). This system gives physicians power and responsibility but also results in endless money-driven discussions.**
- **FFS has the main advantage of rewarding activity of specialists. It is recognised that the FFS system contributes substantially to the high accessibility of Belgian healthcare services. The importance of keeping such an incentive (although drastically reformed) in a future hospital payment system is stressed.**
- **The main disadvantage of a FFS system is that it may lead to overproduction and excessive healthcare expenditures. In Belgium this drive for (over-)production is reinforced by:**
  - **the structural underpayment of the hospital budget and the subsequent claims on physician fees by the hospital management (i.e. higher deductions on physician fees are asked to compensate these deficits);**
  - **the (too) high capacity of acute hospital beds;**
  - **the substantial imbalances in tariffs stimulates the production of lucrative medical activities.**
- **The FFS does not stimulate care coordination and multidisciplinary collaboration while this will gain importance (e.g. increasing prevalence of multi-morbidity and chronic conditions).**

Income imbalances

- **There is substantial variation (lowest and highest earning disciplines differ on average by factor 3) in income within and between medical disciplines. These income differences are a result of the insufficient use of objective information in price setting (which makes tariffs vulnerable to lobbying); the slow or insufficient updates (tariffs are obsolete). Technical interventions are, in general, more lucrative than non-technical activities (e.g. consultation time). As a result of these imbalances there is a shortage of specialists in certain lower-earning disciplines (e.g. geriatricians) and a (too) high production of interventions with a lucrative tariff.**
- **Past efforts to decrease imbalances are acknowledged but considered as insufficient. Instead, an urgent and thorough recalibration of the physician fees is required. The recalibration will include two main axes: shift from operational and investment costs towards the hospital budget; differences can remain if they are based on objective criteria. This recalibration will require transparency about physician fees and a development of a sound methodology (inspired by international examples: chapter 14) by an independent research team that consults stakeholders intensively.**

Lump sum payments

- **Lump sum payments offer an alternative to the FFS. The disadvantage of lump sums is that activity is not stimulated and potentially results in underprovision of care. The advantage is that expenditures can be controlled.**
- **In Belgium, several lump sums (e.g. pharmaceutical specialties; medical imaging; laboratory testing) were introduced. The limited impact of the Belgian lump sum payments on expenditure growth is explained by the partial (e.g. substantial part remains FFS) and fragmented implementation. In addition, physicians who prescribe laboratory tests and medical imaging are not affected by those lump sums.**
- **Also the system of reference amounts aimed to control expenditure growth for frequent standard pathologies. The principle is that for hospitals that exceed the reference amount (including technical activities and the FFS-part of clinical biology and medical imaging) refunds are claimed by the payer. This system is heavily criticised:**
  - **Retrospective (i.e. 2 years post-factum) reclaiming of physician fees via the hospital causes many frictions between the hospital and the payer and between the hospital management and the physicians;**
  - **The limited scope (only 34 APR-DRGs) and content (e.g. lump sums for clinical biology and medical imaging excluded) failed to have effect;**
  - **The calculation method is perceived as unfair and vulnerable to gaming.**

Private practices

- **Physicians increasingly opt to work in private practices. Reasons are, for instance, the income benefits (no deductions on physician fees; more freedom to charge patient supplements; fiscal advantages; property acquisition); the less stringent quality criteria/audits and more autonomy over their work schedule (e.g. less on call).**
- **The shift of specialist ambulatory care towards private practices can endanger financial accessibility; quality and continuity of patient care.**
- **Incentives should be provided to ensure that medical specialist ambulatory care is provided at the most appropriate setting. This can include regulations (e.g. the obligation to be on call; same quality criteria) and financial incentives (e.g. shift of investment and operational costs towards the budget of hospitals and to practice allowances for private practices).**

Involvement of physicians in hospital governance

- **The involvement of physicians in hospital governance is crucial. However, the current legal provisions (e.g. advisory role of the medical council; function of chief medical officer) failed, in general, to harmonize the hospital and the medical policy. Failures and successes dependent on ad hoc collaboration between physicians and hospital management. Despite the many good intentions and examples of physician involvement in the general functioning of hospitals (e.g. participation in ad hoc hospital committees that work on quality improvement projects), this form of collaboration is very vulnerable.**
- **Any reform of the hospital payment system should include a reform of the involvement of physicians in hospital governance with the aim to achieve joint strategic planning of management and medical staff in all hospitals. A possible scenario is the instalment of investment funds that are co-managed by physicians and hospital management.**

10 PATIENT SUPPLEMENTS

10.1 Regulation of supplements in the Belgian healthcare system

10.1.1 Patient cost sharing in Belgian health insurance

The Belgian compulsory social health insurance system, which does not provide medical services but reimburses costs, is characterised by coverage of nearly the entire population for a wide range of services. In general, reimbursement does not cover the full cost of the service. Patient cost sharing is an inherent feature of the health insurance system. Various forms of cost sharing are implemented: co-payments (a flat rate per item), coinsurance (a percentage of the cost per item) or a combination of both. Along with these, there is an income-dependent stop loss, called the system of maximum billing. These forms of cost sharing are called **direct forms of cost sharing**.[212] Co-payments and coinsurance rates are the difference between the official 'convention' tariff for a service and the part of this tariff reimbursed by the National Institute for Health and Disability Insurance (RIZIV-INAMI). The level of reimbursement depends on the type of service provided, the income and social status of the patient and the accumulated amount of co-payments and coinsurance rates already paid for a given year.

In addition to co-payments and coinsurance rates, **indirect forms of patient cost sharing** exist, **over and above the convention tariff**. In some cases, **services are covered but patients pay 'supplements' on top of the official tariffs**. These include fee supplements, which are the difference between the official tariffs and freely set fees by providers, (capped) material supplements and room supplements.[212, 213] In other cases, services are not covered by the compulsory health insurance, there is no convention tariff and **patients pay the full price out of pocket**. Examples are some medical services or products such as non-covered implants or over-the-counter drugs, parapharmaceutical items (e.g. personal thermometer) and also diverse non-medical items for inpatients such as costs of a refrigerator, telephone or television in the hospital room.

In the remainder of this chapter, we focus on the supplements charged on top of official tariffs. Therefore, the regulation and amounts should primarily be seen from the perspective of hospitals and physicians (the amount of supplements that is charged) and less from a patient perspective (the amount of money really paid, which also depends on the availability or not of a private insurance policy).

We first give a brief overview of the regulation of supplements in Belgian hospitals (section 10.1.2), the evolution of supplements charged by hospitals (section 10.1.3) and insurance policies covering supplements (section 10.1.4). Next, we discuss the strengths and weaknesses of the current system of supplements as perceived by stakeholders. In section 10.2 stakeholder arguments for charging supplements are discussed while section 10.3 presents problems with and unintended effects of charging supplements. Section 10.4 contains stakeholder opinions on the further restriction of supplements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on previous KCE reports and reports from study centres of sickness funds.

10.1.2 A brief overview of the regulation of supplements

Over the years, the Belgian authorities have already taken several measures to protect patients from excessive supplements. We make a distinction between fee, material and room supplements. Although supplements can be charged by healthcare providers other than physicians, the overview is limited to physicians because the debate on charging supplements as a way to compensate for a structural underpayment of hospital services is focused on supplements on physician fees and not on supplements charged by other providers.

Fee supplements

The fees charged by physicians **depend on whether or not they subscribe the convention between physicians and sickness funds**.[213] The convention is an agreement in the National Commission of Physicians and Sickness Funds, the so-called 'Medico-Mut', between representatives of physicians and sickness funds on the tariffs for healthcare services (see section 3.2.2 in Chapter 3).

The Health Insurance Act stipulates the procedure for signing an agreement.[214] Physicians who sign up to the convention have to adhere to the fees defined in the convention and receive certain benefits in return, such as a supplemental pension plan. The convention comes into force 30 days after publication in the Belgian Official Journal, unless more than 40% of the physicians refuse to sign it. Since the convention is applied by district ('arrondissement'), a second condition for the convention to come into force in all districts is that no more than 50% of general practitioners (GPs) and 50% of other medical specialists refused to sign the convention. Conventions are usually signed for a period of two years. In case there is no agreement, existing regulation continues to apply or maximum fees can be determined by Royal Decree.

Physicians can also be partly conventioned (i.e. only during specific hours of the day or week). If not conventioned, physicians can determine their fees freely (except in some cases, see below) and the patient pays the difference between the convention tariff and this fee. The convention applies to hospital-based physicians as well as physicians working in an ambulatory setting (physicians can combine both). However, in the national convention of 2009-2010 it was agreed that partly conventioned physicians may ask supplements only to ambulatory patients but not in case of an inpatient or day-care stay.[215]

The percentage of physicians who signed the convention differs a lot between medical specialties and between regions (Flanders, Walloon Region and Brussels). Table 22 gives the percentage of physicians who did not sign the 2013-2014 convention for a selection of medical specialties.[216]

Table 22 – Percentage of physicians who did not sign the 2013-2014 convention between physicians and sickness funds

Medical specialty	% refusals
General practice	12.13%
All medical specialties	23.48%
Obstetrics and gynaecology	51.25%
Ophthalmology	58.59%
Orthopaedics	39.44%
Internal medicine and endocrinology-diabetology	6.10%
Paediatrics and paediatric neurology	12.00%
Cardiology	20.92%
Psychiatry	12.17%
Clinical biology	3.35%

Source: RIZIV-INAMI[217]

While the Health Insurance Act lays down the rules for the convention, the Hospital Act (article 152) stipulates the rules for charging fee supplements.[215, 218] The Act stipulates that in the general arrangements between the hospital and medical specialists the maximum amount of fee supplements that can be charged should be included. This maximum amount applies whether there is a convention or not.

Over the years, possibilities to charge fee supplements for a hospital stay have been reduced. In Table 23 the current regulation (since 1 January 2013) is summarised.[219, 220] The right to charge fee supplements mainly depends on the choice of type of hospital room: single, two-person or common room. Before 1 January 2013 protection in common or two-person rooms was limited to some specific groups of vulnerable patients. Since then fee supplements in these room types are no longer allowed, except for non-conventioned physicians for a day-care stay.

Room supplements

Regulations are stipulated in the Hospital Act (article 97).[218] The right to charge room supplements also depends on the type of hospital room a patient chooses. Room supplements can be charged only if the hospital has at least 50 percent of its beds available for treatment without supplements. Also for children accompanied by a parent, a sufficient number of beds[uu] without supplements should be available.[213] Since 1 January 2010 room supplements can only be charged in a single room. Before that date, they were also allowed in a two-person room under certain conditions.

[uu] The law does not specify the number or share of rooms without supplements.

Table 23 – Regulation of fee and room supplements for a hospital stay, by type of room (2014)

Choice of room	Fee supplements	Room supplements
Common room	Not allowed, except by non-conventioned physicians for a day-care stay	Not allowed
Two-person room	Not allowed, except by non-conventioned physicians for a day-care stay	Not allowed
Single room	Allowed by conventioned and non-conventioned physicians, except when stay in single room is (only) due to: • the medical condition of the patient or technical conditions for investigation, treatment or supervision necessitating a stay in a single room; • the unavailability of two-person or common rooms; • the patient being admitted to an emergency unit or intensive care unit; • a child being admitted with an accompanying parent. A maximum supplement is determined by the hospital.	Idem as fee supplements The supplement is freely determined by the hospital, there is no maximum amount.

Source: Christelijke Mutualiteiten[219, 221]

Material supplements

The first national agreement between suppliers of implants and sickness funds (in December 1996 but effective since August 1997) substantially improved the protection of patients. Since then, regulations on charging supplements for implants and invasive medical devices[vv] have been tightened gradually. For example, in 2011 the reimbursement of a long list of orthopaedic materials, such as artificial bypass grafts or screws to fix some dorsal vertebra, increased.

The amount of material supplements that can be charged by hospitals depends on the type of material and on whether or not the material is reimbursable by compulsory health insurance. Until 1 July 2014, implants and invasive medical devices could be found in articles 35 and 35bis of the nomenclature and they qualified for reimbursement if they were on a limitative list. Since 1 July 2014 reimbursement rules have changed (see section 8.2 in Chapter 8).

The reimbursable devices are divided into (a) implants and long-term invasive medical devices and (b) invasive medical devices for short-term use. They are ranked in one of the following reimbursement categories:

- Cat. A: reimbursed on the basis of the individual price when they are included in a nominative list;
- Cat. B: no lump sum reimbursement without being on a nominative list;
- Cat. C: no lump sum reimbursement when they are included in a nominative list;
- Cat. D: lump sum reimbursement without being on a nominative list;
- Cat. E: lump sum reimbursement when they are included in a nominative list;
- Cat. F: reimbursed on the basis of the selling price (incl. VAT);
- Cat. G: reimbursed in the context of a restricted clinical application;
- Cat. H: reimbursed in the context of a contract with the RIZIV-INAMI.

Some devices are excluded from being reimbursement by the compulsory health insurance:

- devices belonging to reimbursement categories B or C with a selling price that is higher than the reimbursement basis increased with a predefined safety limit percentage;
- devices belonging to reimbursement category A whose selling price exceeds the ceiling price.

For devices belonging to reimbursement categories A, C, or G, the individual price mentioned in the nominative list is the maximum selling price that can be charged by the distributor to the hospital.

The coinsurance rate for patients ranges from 0% to 88% depending on the reimbursement category.

Obligation of the hospital to inform patients

Hospitals are obliged to present an **admission notification form** on which patients or their legal representative declare the choice of room type and whether they want to be treated at the convention tariff or not.[222, 223] The notification form has to be presented for an inpatient and day-care stay.

The notification form informs patients of fee supplements, room supplements, co-payments and the advance payment that is charged. It is not a cost estimate, since it is in many cases impossible to estimate the patient cost at the moment of an admission (e.g. the length of stay or even the services that will be provided can very often not be determined in advance). In addition to the notification form the patient receives a document explaining the notification form and a **statement of prices** of the most common goods and services in the hospital, such as costs related to the comfort of the room, eating and drinking, hygienic products, laundry costs, costs for someone who accompanies the patient and costs for other diverse goods and services.[215]

Since 1 July 2014 hospitals have been obliged to provide on their website the name or service to contact in case a patient wants individualised information. Also all information in the notification form or the statement of

[vv] Implants are devices or tissues that are placed inside or on the surface of the body (for at least 30 days) whereas invasive medical devices mainly refer to endoscopic and/or viscerosynthesis material.

prices should be available on the website. The **website of the hospital** should also add a link to the **website of the RIZIV-INAMI** on which information on the convention status of all physicians can be found.[218, ww]

Supplements in an ambulatory setting

Supplements paid in the ambulatory sector (in policlinics and in private practices) are less regulated and only partial information is available since, contrary to supplements charged in a hospital setting, registration is not compulsory. A recent online survey organised by the Christian sickness funds revealed for the first time information on the supplements charged by medical specialists in an ambulatory setting.[224] However, concrete initiatives have been taken to introduce greater transparency of ambulatory care costs. The major breakthrough regarding transparency will be that from 2015 onwards, the healthcare certificate that patients receive when they visit a doctor will mention explicitly the supplement paid over and above the official tariff. Although this measure does not regulate the amount of supplements charged in an ambulatory setting, it increases transparency for patients and authorities on price variation in specialist services.[225]

10.1.3 Evolution of supplements charged in a hospital setting between 2004 and 2012

Supplements raised in a hospital setting (inpatient and day-care stays) are stated on the hospital invoice, which is made available to the patient who has to pay the amount of co-payments and/or supplements, and to the sickness fund the patient is enrolled in. The following figures are based on co-payments and supplements[xx] paid by patients and thus received by hospitals for patients enrolled in the Christian sickness funds, representing 42% of the population.[226]

Inpatient stays

Total patient cost (co-payments and supplements) in a **single room** is more or less stable over recent years (see Figure 24). This is mainly due to a decrease in material supplements.[yy] However, between 2004 and 2012 (real) fee supplements show a yearly increase of 4.2% on top of inflation.

In **two-person or common rooms**, patient costs decreased by 21% between 2004 and 2012 as a result of a series of policy measures. These measures include the abolition of room supplements in 2010; the financial incentive for hospitals for not charging fee supplements in two-person rooms between 2007 and 2010; better reimbursement of material costs by the compulsory health insurance. In 2012, patients paid on average € 294 in a two-person or common room.

There is an increasing divergence between the patient cost of a hospital stay in a single room and in a two-person or common room. In 2012, patients paid on average € 1346 per admission in a single room, which is four times the amount paid in a two-person or common room. Half of the amount in single rooms consists of fee supplements. In 2012, 23% of all admissions were in a single room (to a large extent for deliveries) but they represent 56% of total patient cost for inpatient admissions.

Large differences between hospitals and provinces exist. Fee supplements are by far the highest in Brussels, sometimes up to 400% in single rooms. The maximum fee supplement is determined by each hospital separately. In almost half of the hospitals the maximum supplement is 100% or less.[zz]

The total amount of patient cost also depends on the **hospital department**. In 2012, fee supplements in a single room amounted to € 1140 for a surgery, € 376 for internal medicine, € 146 for paediatric care, € 698 for a delivery/maternity services and € 241 for geriatric care. In general, fee supplements are the highest in the more technical disciplines.

When we compare the above figures of the members of the Christian sickness funds to the figures of the Socialist sickness funds (28% of the

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ww Inserted in the Hospital Act by the Act of 7 February 2014 concerning diverse stipulations on the accessibility of healthcare.

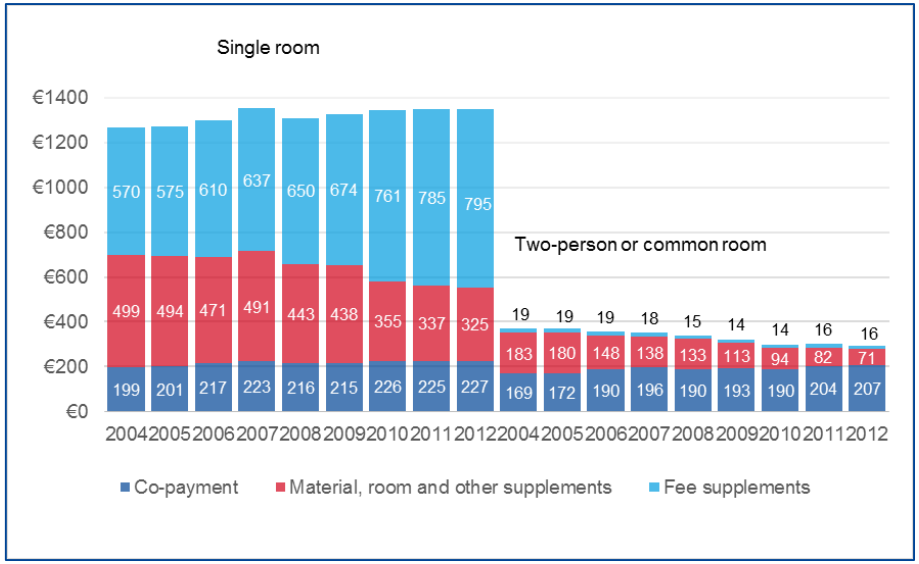
xx All data refer to supplements which are mentioned on the hospital invoice. In reality, the amounts patients really pay depend on the hospital insurance coverage.

yy In Figure 24 no distinction is made between material, room and other supplements.

zz 100% is calculated as the amount of the supplement divided by the convention tariff (fee plus co-payment).

population), we find similar amounts per type of room, but a smaller proportion of admissions in a single room (18.2% versus 23%).[227]

Figure 24 – Mean co-payments and supplements per inpatient stay (in €), by type of room (2004-2012; 2012 prices)



Source: Crommelynck et al. (2014)[165]

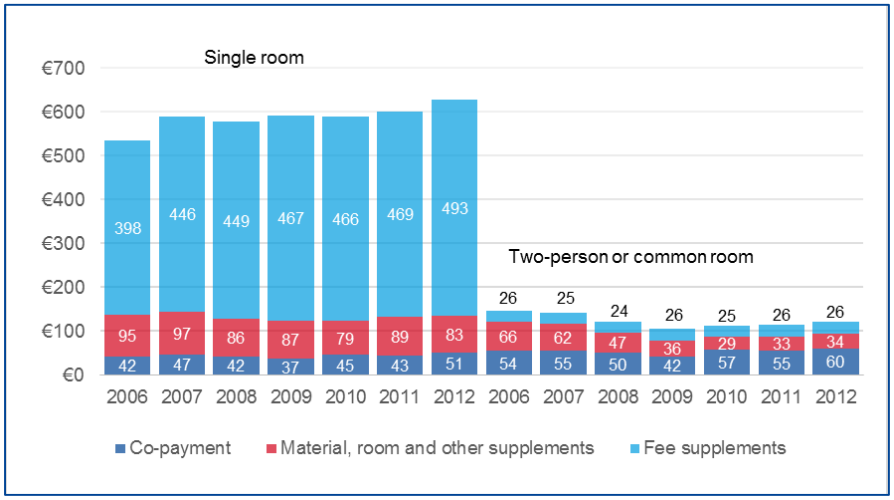
Stays in a day-care surgery centre

Public payments to hospitals for the care provided in a day-care surgery centre are described in section 6.1.2 in Chapter 6.

Only 6%[aaa] of the stays in a day-care surgery centre in 2012 was in a **single room** but with large differences between hospitals (up to 20%) and provinces (from 2% to 10%)**.** The average patient cost was equal to € 627, of which € 493 were fee supplements (see Figure 25).

In **two-person or common rooms**, patient costs equalled € 119 in 2012. The average amount of fee supplements (€ 26) is only 5% of the average amount in a single room (€ 493). In 2012 only 14 of the 110 acute hospitals charged fee supplements in two-person or common rooms in a day-care surgery centre, with one hospital responsible for half of all fee supplements charged. For inpatient stays, it is not allowed to charge fee supplements in these rooms (since 1 January 2013).

Figure 25 – Mean co-payments and supplements per stay in a day-care surgery centre (in €), by type of room (2006-2012; 2012 prices)

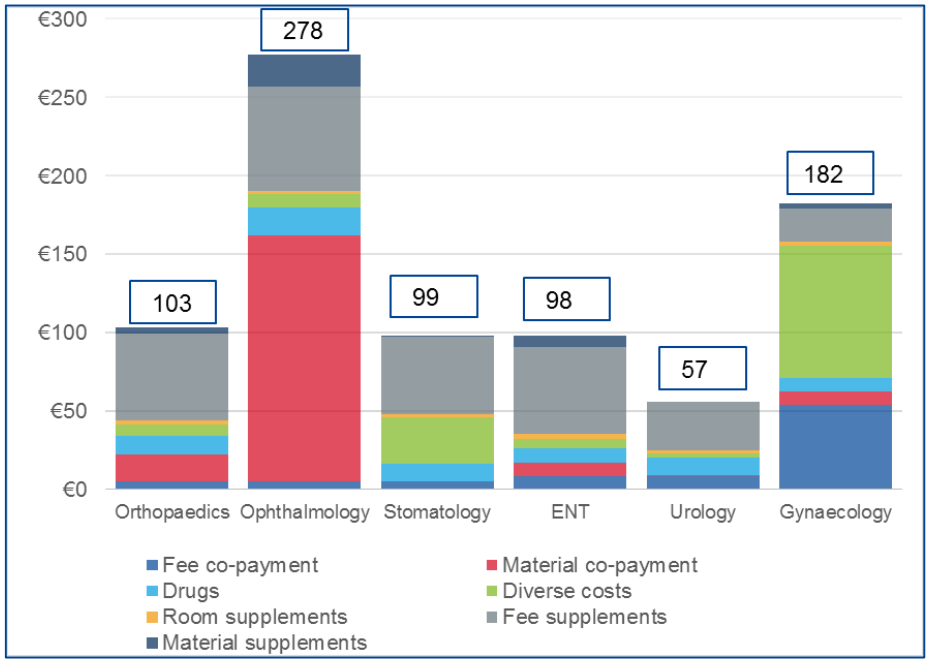


Source: Crommelynck et al. (2014)[165]

aaa This percentage is an underestimate of the real percentage of stays in a day-care surgery centre because only stays for which a room supplement was paid, were counted.

As was the case for inpatient stays, also for stays in a day-care surgery centre the hospital department to which a patient is admitted largely determines patient costs. In some departments material co-payments are high (e.g. for lenses in ophthalmology), whereas a gynaecological intervention entails large 'diverse costs'[bbb] (see Figure 26).

Figure 26 – Total patient cost in a day surgery centre in 2012



Source: Crommelynck et al. (2014)[165]; ENT=ear, nose and throat

Supplements as income source for hospitals

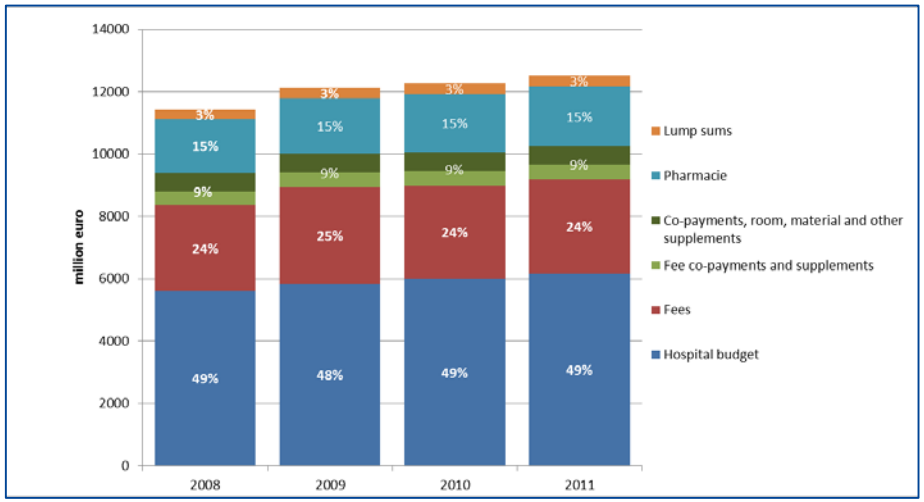
For patients enrolled in the Socialist sickness funds (representing 28% of the population), the average cost of a hospital stay in 2012 was € 5458 of which 91.6% was paid by compulsory health insurance and 8.4% by patients.[227]

Figure 27 shows total income of acute hospitals for inpatient and day-care stays as well as the share of each income source for the period 2008 to 2011. Public sources are the budget of financial means (BFM), physician fees[ccc], the hospital pharmacy and a number of lump sum payments (e.g. for non-surgical day-care stays and rehabilitation conventions); private sources are co-payments, material, room and other supplements and fee supplements. The share of private sources equals about 9% of total hospital income. While total hospital income has increased over the years, the share of private sources has remained stable.

[bbb] Diverse costs include in vitro fertilisation (IVF)-treatments for women older than 43 years of when more than six treatment cycles are needed.

[ccc] The share of the BFM and fees differs from the results of the MAHA-study[24] because in Figure 27 ambulatory fees are not included. In the MAHA-study (results for 2012) the share of the BFM equals 39% and physician fees 41%.

Figure 27 – Total income of acute hospitals for inpatient and day-care stays, by income source (2008-2011; 2011 prices)



Source: Crommelynck et al. (2013)[10]

10.1.4 Hospital insurance

Supplements are not reimbursable by compulsory health insurance but people can buy private supplementary health insurance. Private health insurance is offered by the sickness funds and by private for-profit insurers. Private insurance offered by for-profit insurers is always voluntary, albeit often offered by employers as part of the compensation packet, while insurance offered by sickness funds can be voluntary or compulsory.[ddd] In general, compulsory hospital insurance offered by sickness funds guarantees a lump sum per day in hospital while voluntary hospital insurance offered by sickness funds also reimburses costs, albeit limited to a number of days per stay or per year or to a maximum reimbursement amount.[229] Hospital insurance offered by private for-profit insurers always reimburses costs, but as is the case for sickness funds, limited to a maximum reimbursement amount. Sickness funds only offer individual contracts covering the policyholder and his/her dependents, private-for-profit insurers offer individual (policyholder and dependents) and collective (employer-based) contracts.

Insurance premiums charged for individual and collective contracts by private for-profit insurers increased from € 761.1 million in 2007 to € 1042.6 million in 2012. In 2011, reimbursements of private for-profit insurers amounted to € 879.78 million versus € 756.96 million for sickness funds, of which € 285.91 million for hospital stays. The sum of both amounts represents 4.2% of total healthcare expenses (public and private sources) in 2011.[229]

ddd Since 1 January 2012 the activities of the sickness funds are split into two separate parts. Local sickness funds no longer offer insurance classified under class 2 (health) or class 18 (assistance) of non-life insurances. These are now offered by 'societies of mutual assistance'. These societies are part of the same national association as the sickness fund(s). European Union law only applies to the supplementary health insurance offered by these societies. All other activities offered by the local sickness funds are compulsory for all enrolees.[228]

10.2 Critical appraisal: stakeholder arguments for charging supplements

10.2.1 The conventional tariff: a social or a normal tariff?

According to stakeholders, supplements are the result of a historical (silent) agreement between the sickness funds and the physicians. In 1964, it was agreed to keep the conventional tariffs per intervention relatively low on the condition that physicians could charge supplements for those patients that can afford it. As a consequence, some consider supplements as part of the regular physician fee and the conventional tariffs as the physician fees for socially deprived patients. The system of conventional tariffs gives patients who cannot afford or prefer not to pay supplements the security that they receive the same level of care but in a different setting, i.e. two-person or common hospital rooms instead of single rooms. Patients who can afford it pay supplements, which are regulated by a convention.

> *"Het supplementensysteem … dan moet je teruggaan in de historiek: hoe zijn de supplementen en het systeem van de deconventie ontstaan? Omdat er in feite op een zeker moment 50 jaar geleden bij de stichting van de ziekteverzekering… in het systeem van overleg van mutualiteiten en artsen, is er een stilzwijgend akkoord dat de tarieven relatief laag worden gezet. Als je kijkt naar een tarief voor een heupprothese in België versus Nederland versus Duitsland, dat ligt bij ons een stuk lager. En men heeft altijd gezegd van: goed, we zijn akkoord met een relatief lager tarief, op voorwaarde dat we dan voor mensen die het zich kunnen permitteren een supplement mogen vragen. Dat is in feite een historisch zo gegroeid systeem. ... We zijn akkoord om aan relatief lage tarieven te werken, mits een mogelijkheid om supplementen aan te rekenen aan diegenen die dat uit eigen zak, niet meer ten laste van sociale zekerheid, kunnen en willen betalen. Dus met supplementen heb ik op zichzelf geen probleem. Maar supplementen duidelijk vastgelegd binnen het kader van een conventie, zodanig dat er voor patiënten tariefzekerheid bestaat. Diegenen die het zich niet willen of kunnen permitteren, die worden even goed behandeld."*

> *"Mais les suppléments c'est comme les honoraires. Ça finance l'outil. Ce n'est pas choquant. C'est un honoraire. On dit supplément d'honoraire, mais c'est plutôt l'inverse, il y a les honoraires normaux et les honoraires sociaux. Supplément c'est en un raccourci de langage vous savez, c'est tiré des discussions de Médicomut en disant on va donner quelque chose de plus que le tarif INAMI. Mais en fait, c'est l'inverse. Le tarif Inami, c'est un minimum consenti pour que le prestataire ait un peu d'argent quand il soigne quelqu'un qui a besoin d'être soigné et qui ne sait pas payer l'honoraire. C'est ça le système de l'assurance maladie. Donc alors supplément, oui, concernant le mot, mais pour moi, il n'y a pas de raison de faire une différence entre le supplément d'honoraire et l'honoraire."*

In the same line, stakeholders consider the system of conventional tariffs as useless if supplements can no longer be charged. Physicians decide not to sign the convention to be able to charge supplements. If that option is taken away, the usefulness of a system with both conventional and non-conventional tariffs will disappear.

> *"Ja, als er geen supplement voor de artsen is, dan is heel het conventiesysteem om zeep natuurlijk."*

Another argument in favour of supplements given by stakeholders is that the system of supplements allows more variation in physician income. The conventional tariffs are too restricted (i.e. the intervention is always paid at the same price) and do not allow a differentiated pay based on the expertise, experience and knowledge level of the physicians. Supplements allow such a differentiation in physician income but also require a deontological code between physicians.

> *"Il ne faut pas oublier que, dans tous ces débats suppléments, conventions… l'honoraire de convention ne prévoit aucun bonus à la fonction. C'est le même que vous soyez chef de service ou professeur ou juste sorti de l'université, ni aucune évolution de type barémique, l'expérience n'est pas valorisée non plus. Donc, la seule façon de dire ça fait [x] ans que je fais ce genre de truc et je le fais très, très bien et je suis spécialisé dans ce genre de choses-là et là, je maîtrise mon art et je sais ce que je fais, alors c'est logique que le type demande plus."*

Comparable arguments were advocated in the appeal that was instituted to the Constitutional Court of Belgium[eee] by the largest physician syndicate and several physician partnerships.[230] With the appeal they aimed to set aside articles 23 to 29 of the Programme Law of 27 December 2012, abolishing the possibility to charge fee supplements in two-person or common rooms for an inpatient stay (see Table 23). In the appeal they argued that the new regulations on fee supplements

- are not meant to increase accessibility of healthcare but to restrict competition between hospitals in attracting the best physicians;
- aim to meet the demands of sickness funds and private insurers because they have to reimburse the fee supplements paid by their affiliates;
- threaten the financial balance of some hospitals;
- create a loss of income for physicians;
- threaten the quality of care;
- discriminate physicians who work most of the time in a hospital setting;
- discriminate certain physicians who are not able to work in a private practice to circumvent the more stringent rules, e.g. surgeons.

Other stakeholders contest the fact that the current tariffs per intervention are low. They consider the current conventional tariffs as sufficient and thus do not see any reason to charge supplements for medical activities.

> *"Ça voudrait dire aussi, s'il y a un supplément, c'est qu'on considère que la nomenclature aujourd'hui, c'est une sorte de nomenclature de base et on peut demander plus que cette nomenclature de base. Alors que, selon moi, quand je vois la discussion qu'on a au niveau Conseil Technique Médical (CTM) et autre, généralement, on essaye quand même que les honoraires couvrent, a priori, le coût de l'acte. Et donc si l'acte est couvert, il n'y a pas besoin de demander le supplément. Il y a pas de raison de dire, ben voilà, s'il faut 50 € pour un acte, il n'y a pas besoin de dire: « Il me faudrait 100 € parce que… » … sauf si on considère aujourd'hui que les honoraires sous-financent certains actes, mais on est loin du compte."*

10.2.2 Structural underpayment of hospitals

One way to compensate for a structural underpayment of the hospital is by increasing the deductions on physician fees. Supplements indirectly compensate for the hospital deficits because increasing deductions result in higher supplements. Recent austerity measures have affected both physician income and hospital budgets and, according to some stakeholders, supplements are all too often seen as an easy way to keep physician income but also hospital budgets at the same level as before the austerity measures. Moreover, some physicians charge more supplements to compensate for decreased activity levels (e.g. patients are attracted by larger centres) and keep their income at the same level.

> *"C'est vrai que la solution du supplément est une solution facile pour financer tout le monde. Aussi bien l'hôpital que le prestataire par rapport à des économies qui sont faites, soit dans le BMF, soit dans les actes de prestation. Donc c'est vrai que le supplément aujourd'hui permet de compenser des diminutions sur les honoraires normalisés en nomenclature, notamment."*

> *"Wat ik gevaarlijk vind vanuit het standpunt van de artsen, is dat sommigen hun activiteit zien dalen, om wat voor reden dan ook. Ik hoor dat in sommige kleine ziekenhuizen, dat de activiteiten dus weggezogen worden naar grotere centra. Die zien hun omzet dalen. En dan probeert men dat te compenseren met supplementen. Ja, dat is uw gebouw op drijfzand zetten natuurlijk, hé. Dat je op den duur ga je een supplement vragen op 0."*

Nevertheless, resolving the problem of the structural underpayment will not necessary lead to a reduction in supplements because some physicians consider supplements as part of their regular income.

> *"Donc, je ne vois pas parce que demain l'hôpital serait mieux financé, que le médecin, va dire: « Ben non, finalement, je laisse tomber mon supplément. » Je pense qu'il y aura moins de pression des directions hospitalières, ou gestionnaires, pour faire des suppléments, puisque l'hôpital serait financé correctement.… Aujourd'hui, c'est vrai qu'il a tout intérêt à augmenter les suppléments avec les médecins, puisque ça lui*

[eee] The appeal was rejected by the Constitutional Court on 17 July 2014.

permet d'avoir des rentrées d'argent… Je ne suis pas sûr que c'est vertueux en tant que tel…"

According to some stakeholders, the total amount of patient supplements is by far not enough to set off the structural underpayment of hospitals.

10.3 Critical appraisal: problems with and unintended consequences of supplements

10.3.1 Different tariffs for the same care and a threat for the financial accessibility

Different room, different fee, same care?

Some stakeholders consider charging fee supplements to patients hospitalised in single rooms as a strange and unacceptable system. In fact, different tariffs are charged for the same type of care. Interviewees emphasize that higher tariffs (via the supplements) will and should not result in more or better care. On the contrary, some suggest that there is less surveillance in single rooms than in rooms with two or more beds. In the latter, surveillance is given by roommates but also by nurses who are more frequently and for longer periods in these rooms. In their literature survey, van de Glind et al. (2007)[231] found only scarce evidence with respect to the effect of single rooms on selected outcome measures (privacy and dignity, patient satisfaction with care, noise and quality of sleep, hospital infection rates, recovery rates, and patient safety issues). The authors found that single rooms have a moderate effect on patient satisfaction with care, noise and quality of sleep, and the experience of privacy and dignity. Conflicting results were found for hospital infection rates and there was no evidence on recovery rates and patient safety. As far as we know, there is no such evidence for Belgium.

Charging room supplements for a single room and for the accompanying luxury is a completely separate topic and is considered as an acceptable practice by all interviewed stakeholders.

"Het is nonsens om te zeggen dat een honorarium in een eenpersoonskamer hoger moet zijn dan in een kamer van 2 en 3. De medische zorg kan niet verschillen omdat je in een kamer alleen ligt in plaats van een kamer met 2 of 3. Het ligt anders voor de kostprijs van een eenpersoonskamer versus een meerpersoonskamer."

"Diegene die bereid is om meer te betalen in een meer luxueuze omgeving, mag niet betere zorg krijgen dan diegene die zich dat niet kan permitteren. Dat is zeer streng te bewaken, vind ik."

Increased premiums of private hospital insurance

Hospitals and physicians take advantage of patients with private hospital insurance by charging supplements. Stakeholders fear that in the long run this phenomenon will increase the insurance premium drastically and make private hospital insurance inaccessible for a growing group of people. Stakeholders claim that certain sickness funds put pressure to reduce fee supplements because the hospital insurance they provide mainly pays a fixed amount per day.[230]

There are no official data on the total number of individuals or households with private hospital insurance. Only some partial figures are available. In 2012, 1 576 000 individuals (policyholder and dependents) were covered with a private for-profit insurer via an individual contract and 3 892 000 via a collective contract.[232] However, people can be insured by an individual and collective contract at the same time which makes it impossible to know the unique number of individuals with a hospital insurance. In addition, about 2 600 000 individuals (policyholder and dependents) have a voluntary hospital insurance with one of the sickness funds.[233] Again, people can have a private hospital insurance with a sickness fund and with a private for-profit insurer.

Supplements should not compensate for mismanagement

The alleged practice of asking patients to pay for malfunctioning hospitals or flaws in the system is considered as totally unacceptable by some stakeholders. They point out that the practice of deductions on fee supplements is a rather recent phenomenon, since 10 to 15 years ago deductions only applied to fees and not to fee supplements.

"… et ça se traduit à l'intérieur de l'hôpital par un prélèvement de plus en plus important de l'hôpital sur ces honoraires supplémentaires, ce qui n'est pas du tout la tradition puisqu'il y a 10 ou 15 ans de cela, l'honoraire supplémentaire était totalement exonéré de prélèvements par le gestionnaire."

"Donc, si c'est pas la norme de financement qui est en cause, c'est plus un problème de gestion. Et, si c'est un problème de gestion, il est évidemment inacceptable (en supposant même qu'il y ait un lien de cause à effet)… il est totalement inacceptable que ce soit les patients qui payent un problème de gestion."

10.3.2 Uninformed patients

Despite the information obligation, many stakeholders acknowledge that the system of supplements is not transparent enough or that patients are insufficiently informed. The fact, for instance, that supplements are not only charged by the treating physician (e.g. the surgeon) but also by the anaesthetist, the radiologist, etc. can cause unexpectedly high patient bills. Physicians are responsible for the medical activities and they decide which medical disciplines are required and what type of medical devices are used. Since both elements have an impact on the patient bill it is important that hospital management and physicians collaborate to correctly inform patients about their bills. Nevertheless, some stakeholders also minimalize the problem of uninformed patients. They indicate that the identity of hospitals with high supplements is an open secret and patients have enough alternatives to receive high-quality patient care.

"De supplementenrekening. Men spreekt altijd van: hoera, hoera, het is 100% of het is… Voor een eenpersoonskamer, 100%. We hebben dat dankzij de conventie kunnen beperken, of wat. Wat gebeurt er? Wat is 100%? 100% van wat? Dat is een procent. Men denkt: dat is van de behandelende arts. Dat is niet waar. In het regime kan het zijn van de behandelende arts, maar dat kan tegelijk ook nog zijn voor de anesthesist, als het over een chirurg… Tegelijk ook nog voor de klinisch bioloog. Tegelijk ook nog voor de radioloog. Ja, dan is dat niet 100%. Ja, dat blijft 100%, maar het is maal 4 op hetzelfde bedrag."

"Il y a la question des honoraires supplémentaires en chambre particulière qui doit être analysée et peut-être un peu plus contrainte en tant que telle mais enfin bon ce n'est pas du tout désobligeant pour eux dans ma bouche: celui qui va à [hospital x], il sait qu'il va à [hospital x] quoi, voilà, s'il ne veut pas avoir les tarifs de [hospital x], il y a suffisamment d'hôpitaux de bonne qualité autour de [hospital x] pour choisir un autre hôpital et, sincèrement, je ne connais pas beaucoup de situations dans le pays où on peut dire qu'un patient n'a pas accès à des soins de bonne qualité avec un accès financier raisonnable."

In theory, patients have many tools at their disposal to be informed about the hospital policy on supplements. Examples are the website of some of the sickness funds providing information on supplements and/or the advance payment; the website of RIZIV-INAMI where people can find the convention status of all physicians; the admission notification form providing information on supplements and the advance to be paid. However, there is also evidence that in reality patients have difficulties in making cost-conscious choices in case of a hospital admission.[234]

10.3.3 Unhealthy competition between hospitals

Physicians use supplements as a bargaining instrument. They sometimes play hospitals off against each other to maximize the amount of supplements that they can charge. If hospital administrators do not agree, they threaten to leave the hospital (to another hospital or to private practices). Therefore, some stakeholders are of the opinion that the system of supplements should be better regulated and made less variable between hospitals.

"Parce que moi, ce qui me fait peur c'est que les hôpitaux, ils vont pressuriser leur personnel pour que les médecins gardent le pouvoir et ils vont se rattraper sur tout ce qui va échapper au système… Et donc, soit faire partir en privé, soit demander un supplément d'honoraires. Et donc les hôpitaux qui n'ont pas cette possibilité-là, ils vont mourir. Or, ce sont eux qui ont un rôle social très important, donc voilà, moi je trouve, c'est toutes des choses pour lesquelles il faut être conscient."

10.4 Suggested solution elements from stakeholder consultations and literature

Findings from the stakeholder interviews and round-table discussions revealed **divergent opinions on the further restriction of supplements**.

Current regulations are good enough

Some stakeholders underline that supplements already have been heavily restricted over the course of years. Nowadays, physicians can only charge supplements in single rooms, for a day-care stay and in ambulatory care. They believe that further regulation runs the risk of encouraging a further shift of certain medical disciplines from hospitals towards private practices resulting in a dual healthcare system (i.e. one for the rich and another one for the poor). They are of the opinion that patients who want more comfort or who have special demands (e.g. they want to be treated by one particular physician) should pay more and that current regulation should not be changed.

> *"Si on veut du confort, si on veut des choses particulières, si on veut un prestataire particulier, ok, mais dans ce cas-là, le jeu c'est qu'on accepte le contrecoup financier que cela exige. Je ne crois pas qu'on…je ne vois pas en tout cas ici de système qui pourrait mieux fonctionner que celui qui est en place actuellement et j'aurais tendance à dire « ne changeons pas quelque chose qui marche »."*

Further restriction of supplements is needed

Another group of stakeholders fear that due to the fact that hospitals are no longer allowed to charge fee supplements in two-patient rooms, fee supplements in single rooms will further increase. Therefore, they suggest to further restrict patient supplements. Some interviewees propose to just stop charging supplements on medical activities. Others suggest to limit fee supplements to a maximal percentage or amount to preserve the financial accessibility of our healthcare system.

> *"On peut envisager un plafonnement des honoraires supplémentaires peut être pas tout de suite à 100% (…), mais je dirais à 200%, me parait aujourd'hui en tout cas une limite au-delà de laquelle les prélèvements deviennent excessifs. … Voilà. Il n'y a pas énormément d'hôpitaux qui sont à 200% mais il y en a quand même quelque uns parmi les hôpitaux universitaires, quelques hôpitaux de niveau de patientèle socialement plus favorisés et que là, ça commence effectivement à devenir excessif et si on mettait dans un premier temps une barrière, une limite à 200% pour tout le monde, je pense qu'on aurait limité les abus, on aurait contré les abus, on aurait quelque chose qui ne déstabiliserait pas le système aujourd'hui encore une fois dans le cadre d'une réforme plus importante du financement. Après, pour moi, il est possible de descendre plus bas, peut être à 150, peut être à 100% maximum mais le faire aujourd'hui comme une question de principe, me semble dangereux pour les raisons que j'ai évoquées en termes de financement de l'hôpital et pas vraiment utile encore une fois parce que je pense qu'il n' y a pas, sinon pas du tout, de cas de patients qui ne peuvent pas avoir accès à des soins de qualité parce qu'ils auraient des honoraires supplémentaires à payer qui soient rédhibitoires."*

An exception can be made in case patients have special preferences. The majority of stakeholders see nothing wrong with charging room supplements for luxury such as special equipment in the rooms. As living standards evolve, the notion about what luxury is should also evolve.

> *"Waarom wil je een eenpersoonskamer? Om een beetje rustig te leven. Ja, omdat je daarvoor kiest. En je wilt daar iets meer voor betalen. So be it. En als je daarvoor verzekerd bent, zo veel te beter. En dan krijg je misschien… Dan heb je wat meer rust. Ja, en dan moet het dan ongeveer zijn zeker, hé? Uw televisiescherm is misschien wat groter, maar voor de rest is dat toch niet spectaculair. Je mag daar… Zoals in uw businessclass in het vliegtuig, dat kost ook veel. Maar je hebt er ook iets voor: je kunt uw benen wat langer strekken… Neem nu dat dat 30% meer kost. Dan zal ik zeggen: ja, dat is acceptabel."*

How to reconcile two fundamentally non-matching viewpoints?

The discussion eventually boils down to a clash between two quite opposite viewpoints. On the one hand, the viewpoint of some physician groups, who emphasize that they exercise a liberal, self-regulating profession where, in principle, fees can be freely set, and where convention tariffs are a concession to keep healthcare accessible for the poor. On the other hand, there is the perspective of the patient or citizen, paying lifelong contributions

for a social, solidary health insurance and expecting predictable, affordable out-of-pocket payments when getting ill.

Key points

- **Over the years, possibilities to charge fee supplements for a hospital stay have been reduced and now mainly depend on the choice of type of hospital room. Room supplements can only be charged in a single room.**
- **There is an increasing divergence between the patient cost of a hospital stay in a single room and in a two-person or common room. In 2012, patients paid on average € 1346 per admission in a single room, which is four times the amount paid in a two-person or common room. Half of the amount in single rooms consists of fee supplements. Large differences between hospitals and provinces exist.**
- **The share of private sources (co-payments and supplements) in total hospital income is about 9%. While total hospital income has increased over the years, the share of private sources has remained stable.**
- **Most stakeholders have no problems with charging room supplements for extra comfort or luxury.**
- **Stakeholders have very divergent opinions on the further restriction of fee supplements. Some physician groups emphasize that in a liberal, self-regulating profession fees should be freely set. Others stress the importance of an accessible healthcare system, for which citizens pay contributions and expect predictable, affordable out-of-pocket payments when getting ill.**

11 PAYMENT INCENTIVES FOR INTEGRATED CARE

Traditionally, care delivery as well as payment systems have been built around single diseases and single settings (e.g. hospital setting; rehabilitation setting; general practitioner (GP) practice; physiotherapy practice) with hospitals being the point of gravity of the healthcare sector. However, in recent years several initiatives have been taken to simulate continuity and coordination of care across settings for both acute as well as chronic patient groups to obtain more integrated care.

Integrated care – a working definition

There is a wide range of definitions and interpretations of the integrated care concept. In this chapter we propose a working definition (adapted from Nolte and Pitchforth, 2014[235]) building on the goal of integrated care. We consider initiatives seeking to improve outcomes for those with (complex) health problems and needs by overcoming issues of fragmentation through linkage or coordination of services of different providers along the continuum of care.

In this chapter we focus on **financial incentives stimulating integrated care.** A distinction can be made between initiatives for acute and initiatives for chronic conditions.

For **acute conditions** there is an international trend to extend the episode to be covered by the case-based payment, such as the Diagnosis Related Groups (DRGs), to (pre- and) post-acute care to counterbalance the potential unintended consequences (e.g. premature discharges) of the strong incentive for efficiency of prospective payment systems. Extending the scope of the 'bundled payment' system aims to stimulate care coordination across providers and healthcare settings (see section 11.3.1).

The ageing population and the rising prevalence of patients with two or more **chronic conditions**, or multi-morbidity, resulted in experiments with new forms of payment systems that aim to promote continuity and coordination of care as well as the allocation of financial resources to the provider who is best suited to deliver each element of the care needed. These payment initiatives for patients with chronic conditions also often entail an incentive to shift the point of gravity away from hospitals to the primary care setting (see section 11.3.2).

The financial initiatives for the coordination and integration of care for patients with acute as well as for patients with chronic conditions can be categorised as follows:[236]

- Separate payment for coordination or extra effort: payment for coordination of care provided by different care providers;
- Pay-for-Performance (P4P): payment or financial incentive associated to improvements in the process and outcomes of care (the prerequisites for P4P-programmes are described in Chapter 12);
- Bundled payment for a group of services for a specific disease involving multiple providers;
- Global payment, risk-adjusted payment for the full range of services related to a specified group of people.

In this chapter we first describe the existing financial incentives in the (hospital) payment system that specifically aim to stimulate the coordination and integration of care (section 11.1). Next, we describe the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (section 11.2) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 11.3). We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organisations such as the OECD or the WHO) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, interesting international initiatives or best practices were added for illustration. This chapter heavily relies on KCE Report 207.[2]

11.1 Current Belgian financial incentives to stimulate integrated care

In this section we describe some Belgian payment initiatives that aimed to stimulate the coordination and integration of care. The Belgian initiatives mainly focus on oncology, patients with chronic conditions and mental healthcare. The description in this chapter is, however, not exhaustive. For a more detailed description of payment incentives for patients with chronic conditions such as the 'Protocol 3' projects which aim to reallocate budgets for residential long-term care towards 'alternatives for institutionalisation', we refer to KCE Report 190.[64] This section rather aims to describe the most important trends and experiments undertaken by Belgian authorities.

11.1.1 Separate payments for coordination or extra effort

Multidisciplinary oncology consultation (MOC)

Multidisciplinary oncology consultations ('multidisciplinair oncologisch consult'/'consultation oncologique multidisciplinaire') or MOCs allow specialists from different disciplines to convene within a planned meeting with purpose to discuss the overall care of an individual patient and to develop a strategic plan for diagnosis, treatment and follow-up.[237] Since 2003,[238] MOCs have been introduced in the fee-for-service (FFS)-catalogue, the so-called 'nomenclature', under the form of three nomenclature codes (one for the coordination, two for the participation). A MOC could initially only be billed once per calendar year. In 2010,[239, 240] the MOC-nomenclature was

reformed and the restriction of one MOC per calendar year disappeared. Three categories of MOC were specified:

- the first MOC can be billed only once at the diagnosis phase;
- the follow-up MOC can be billed '*if required by the evolution of the disease and treatment plan'* but gets a lower reimbursement;
- a second-opinion MOC (i.e. the supplementary MOC), which can be billed by a hospital (with a care programme in oncology) to which the patient was referred because the result of the initial MOC did not result in a concrete treatment plan.

The maximum number of reimbursed intra-muros specialists[fff] increased from four to five. Another strong financial incentive to discuss oncology patients in the MOC is that some of the supportive staff in the oncological centres (psychologist, nurse, social worker, dietician and data managers) are directly financed on the basis of the number of MOCs performed in the centre.

Besides the MOC, there are other nomenclature-codes in the national FFS-catalogue that aim to promote the coordination of care with specific care plans and multidisciplinary consultations such as 'bariatric consultation before a surgical intervention', the 'diabetes passport', the multidisciplinary consultations for paedo-psychiatric patients with a requirement to send a report to the GP.[64]

Care trajectories for diabetes and chronic renal failure

The care trajectories ('zorgtraject'/'trajet de soins') for '*chronic renal failure'* and for '*patients with diabetes type 2 who no longer respond to oral treatment'* were developed to enhance the collaboration in care between the patient, the GP, the specialist and other caregivers.[241] The collaboration between the caregivers is described in a 'care trajectory' contract (duration four years) based on evidence-based practice guidelines. The GP has an important coordination role, the medical specialist a supportive role and the patient has an active role in the management of his/her disease. Financial incentives are given to the physicians (yearly lump sum of € 80 per patient for GP and medical specialist) and to the patient (complete reimbursement of consultations, access to self-management material, education sessions e.g. on dietetics, etc.). The consultations, however, are still reimbursed on a FFS basis. Local multidisciplinary networks ('lokale multidisciplinaire netwerken'/'réseaux multidisciplinaires locaux', LMN-RML) who receive a yearly sum depending on the number of inhabitants in the region were set up to enhance the collaboration between all caregivers (especially between the GP and the specialists). Each LMN-RML has a care trajectory coordinator who has to facilitate collaboration within the area of the LMN-RML. The geographical area in which the LMN-RML is active is defined by its initiators, the National Institute for Health and Disability Insurance (RIZIV-INAMI) does not provide guidelines based on parameters such as population density, surface. The only criterion is that there is at least one hospital within the area of an LMN-RML. [241]

11.1.2 Bundled payment for a group of services for a specific disease

An example of a payment system where different services for one specific disease are 'bundled' into one lump sum are the '**Conventions' (agreement) for functional rehabilitation** concerning several chronic conditions (e.g. AIDS, haemophilia, chronic fatigue, spina bifida).[64] These conventions aim to pay for the holistic care of patients suffering from a chronic disease that has an impact on their psychic, social or work (or school) functioning. Services covered by these agreements are provided by a multidisciplinary team (physicians but also non-medical professionals) and often cover the labour cost of non-medical professionals (e.g. social workers, psychologists) for whom there is no fee schedule as well as activities related to the multidisciplinary work (time spent in multidisciplinary consultations, etc.). Usually, these services are part of a broader diagnostic or therapeutic programme provided for a specified period. Programmes can be organised in outpatient or in institution settings.[64]

[fff] At least one of the four medical specialists needs to have surgical expertise in oncology, or a recognition in medical oncology, or radiotherapy-oncology, clinical haematology or haemato- or paediatric oncology.

11.1.3 Global payment, risk-adjusted payment for the full range of services related to a specified group of people

Capitation payment for (a minority of the) GP-practices

In Belgium there are two parallel payment systems in general practice: a (pre-dominantly) fee-for-service system and a capitation system. Only a minority of the patients (approximately 3%) are treated under a capitation system. Under this latter system, patients are registered on a list at the multidisciplinary GP practice or 'community health centre' (approximately 100 such community health centres exist). All inhabitants living in a defined geographical area are eligible to be on that list. Patients that are registered in such a GP-practice receive a wide range of services[ggg] by these centres but are excluded (except during out-of-office hours care) from reimbursement in other primary care practices. These centres receive a monthly capitation payment for every patient on their list divided in three lump sums: medical care, nursing care and physiotherapy'. This payment used to be calculated as the average cost per beneficiary with the same characteristics under the fee-for-service system (increased by 31% to compensate for differences in socioeconomic status of the patient population or possible savings in secondary care). Since 1 May 2013, a new calculation method (based on the model of financial responsibility of the sickness funds) was introduced with a needs-based, case-mix adjusted payment taking into account social variables, morbidity, age, sex, functional status, income, etc. of the patient.[91, 242-244]

Article 107 contracts for mental healthcare

Belgium has a tradition of organising mental healthcare in large psychiatric institutions. With 152 psychiatric beds per 100 000 inhabitants, Belgium is ranked second in the European Region of the WHO.[245] In succession of the 'Therapeutic Projects' which aimed to achieve a deinstitutionalization of mental healthcare services in Belgium,[246] the 'Interministerial Conference on Public Health' of 28 September 2009 has decided to proceed with the implementation of Article 107 of the Hospital Act to create care circuits and networks (via pilot projects with a budget guaranteed for a period of three years). A care circuit should cover the full range of mental health services tailored to the specific needs of a target age group. The budget-neutral reform aims to reallocate as much resources as possible from the residential setting towards the outpatient setting.

Five care functions to be provided by care circuits in mental healthcare[247]

1) Activities on prevention and promotion of mental healthcare, early detection, screening and diagnostic. Involvement of the primary care in developing this function is important.

2) Ambulatory teams (mobile services) offering intensive treatment for both acute and chronic mental health problems in their home environment. A mobile service is an alternative to hospitalisation.

3) Rehabilitation teams focusing on recovery and social inclusion. The programme is tailor-made and ensures that patients can develop skills for an independent functioning in daily life.

4) Residential intensive treatment for both acute and chronic mental health disorders. This function is intended for persons with problems in such a severe stadium that delivering help in their own natural environment is temporality inappropriate. Typical for units is a short stay, a high intensity and frequency of care.

5) Specific housing facilities for patients with limited opportunities for integration into the community. Ultimately, the aim is to make integration into the community easier.

[ggg] The range of services provided by community health centres can include: health promotion and prevention, screening, curative care, palliative and rehabilitative services (consultations and home visits), integrated home care by an interdisciplinary team, nursing services, community oriented health promotion, nutrition services, social work and dental care.

Applying 'article 107' of the Hospital act signifies that hospitals (i.e. psychiatric hospitals and psychiatric units of general hospitals) that signed a contract can allocate a part of their budget in a flexible way to encourage collaboration with other (health-)care actors within a defined geographical area. Hospital beds can (temporary) be taken out of service. The budget foreseen for these 'residential services' can as such be used for multidisciplinary mobile teams who provide treatment, follow-up and rehabilitation of patients with mental health problems at home or other places of residence (functions 2 and 3 in the textbox). Hospital beds can also be (temporary) taken out of service to intensify care in specific residential facilities (function 4). Hospitals that act as 'network coordinator' are responsible to take the lead in the reallocation of resources among partners. They receive an additional lump sum payment (€ 400 000 to cover the additional costs of staff and operational costs such as transportation; € 100 000 for the coordinator; € 225 000 to cover the medical coordination function by a psychiatrist). In 2013, the federal government earmarked € 6.5 million for a next wave of nine new projects resulting in 19 loco-regional projects in total.[248]

11.2 Critical appraisal: does the current hospital payment system stimulate integrated care delivery?

Stakeholders indicate that the current (hospital) payment system does not match with the increasing need for more integrated care. Especially for patients with multiple chronic conditions new payment schemes are required to stimulate integration between hospitals, primary care, home care, etc. Stakeholders acknowledge the first steps (e.g. article 107 projects; care trajectories for diabetes type 2 and chronic renal failure) taken by the authorities in this respect but stress that more work in this domain will be needed (on a larger scale at a faster pace) to meet the future challenges. In this section we mainly describe the recent evaluation of these initiatives based on research reports. In addition we add some perspectives of the stakeholders that were interviewed in the context of this study.

> *"Een ander epidemiologisch fenomeen, …is .. de evolutie naar meer en meer chronische zorg, meer en meer zorgen voor ouderen, want dat valt dikwijls samen. … hartfalen, diabetes, nierfalen, kanker eigenlijk ook, dementie. Dat zijn eigenlijk ziektes die wat gerelateerd zijn aan de leeftijd en die zich in grote, grote, grote groepen van de bevolking voordoen. … En daar zal het toekomstige organisatiemodel zich veel meer bewegen tussen de eerste lijn, de thuiszorg, en de tweede lijn, de streekziekenhuizen. We moeten nog eens terugkomen op die kleinere ziekenhuizen. En noch het organisatiemodel noch het financieringsmodel zal dan mogen hetzelfde zijn voor dat soort zorg, als dat het is voor de verdere evolutie in de acute zorg. Dus als we bijvoorbeeld zouden zeggen: ja, fee for service, of ik weet niet wat, in een of andere context. Ja, voor chronische zorg zou je toch wel een andere richting moeten opgaan, denk ik. Dat zal veel meer te maken hebben met abonnering, met vaste bedragen die een totaalzorg bieden aan bepaalde cliënten. Die repetitief bepaalde check-ups moeten ondergaan. "*

Multidisciplinary oncology consultation (MOC)

Since 2003, the number of MOCs has continuously increased, to reach 98 696 MOCs in 2011 (of which 72 452 first MOCs). Follow-up MOCs were billed 25 760 times, and supplementary MOCs are virtually not billed (484 cases in 2011).[249] The number of cancer patients discussed in a MOC increased from 63% in 2007 to 68% in the first semester of 2008. Yet, some groups of cancer patients (e.g. bone- and soft tissue sarcoma, malignant melanoma, thyroid cancer) are less discussed in MOCs. Some stakeholders are positive about this result and point out that the gradual implementation process, and intermediate adjustments (e.g. initially limited magnitude of the budget; enlarging indications; distinction between types of MOCs) contributed to its successful implementation. Also other measures, such as the financial support for the data managers via the National Cancer Plan, contributed to this rise in number of MOCs. Data managers, after all, relieve physicians from the registration burden. In addition, making payments for additional supportive staff (e.g. social work, psychologists) dependent on the number of MOCs created an extra drive for the MOCs. The MOCs also contributed to the accuracy and completeness of the data registered in the 'Belgian National Cancer Register.' One of the main limitations is that currently it is not possible to trace down the extent of compliance to the

recommendations of the MOC.[249] Currently the KCE is performing an evaluation of the MOCs.[hhh]

It is acknowledged by stakeholders interviewed in the context of the current study that coordination of care and multidisciplinary collaboration is labour intensive and should be better rewarded. Some of the stakeholders refer to the nomenclature codes for the 'multidisciplinary oncology consultations' (MOC) as a best-practice example to pay for communication between disciplines. Yet, they point out that it is still a relatively isolated initiative which could be considered to enlarge to other domains.

> *"Als ik kijk, [de] huisarts, hoeveel tijd die erin steekt naar zorgplanning en van die toestanden… Hij [zit samen met patiënt en/of familie]: hoe gaan we nu de zorgplanning maken? [Dat kan een half uur duren]. Dat is dan coördinatie rond de zorg van [de patiënt]. Die huisarts krijgt daar niks voor. Dat is toch niet normaal? Dat zit niet goed in het systeem. de honoraria, ... Daar is, denk ik, nog werk aan een betere honorering voor niet-direct fysisch patiëntgerelateerde activiteiten. De MOC is daar een voorbeeld van. Maar die MOC, dat is goed voor oncologie, maar is in feite nog niet getransplanteerd in andere terreinen, vind ik."*

> *"Maintenant, il y a, effectivement, certains financements dans le cadre de la nomenclature qui favorisent la collaboration, le trajet de soins, ... L'article 107 sur la santé mentale, on reconditionne le financement pour autre chose, plus médecine globale, etcetera. Mais, dans le BMF en tant que tel, sauf si ça m'a échappé, je ne vois pas, par exemple, une partie quelconque dans laquelle on finance pour aller discuter avec la première ligne, la seconde ligne, la ligne ambulatoire, les kinés, les paramédicaux… Il y a quelques éléments de financement… quand on fait les coordinations aux soins palliatifs ou quand on fait un certain rôle de coordinateur, ça oui, mais ça reste, pour moi, très minime et assez limité."*

Care trajectories for diabetes and chronic renal failure

The RIZIV-INAMI recently published a comprehensive report that evaluated the care trajectories on diabetes and chronic renal failure.[241] As such, the critical appraisal of the care trajectories is mainly based on this report. Nevertheless, stakeholders interviewed in the context of the current study commented that the current 'care trajectories' initiatives are too isolated to induce drastic improvements in the collaboration between primary care and specialists, and in fact entail the risk to introduce 'inequality' by disease. Moreover, interviewees consider that the lump sums of the care trajectories (divided between GPs and medical specialists) are insufficient to achieve integrated care.

> *"Non, ce ne sont pas des financements intégrés, ce sont des financements saucissonnés. Chacun continue à toucher des honoraires à chaque niveau, etc. Il n'y a pas de financement intégré. Il y a le passeport du diabète. Le patient doit aller là, là, là ou là. Mais chaque acteur individuellement continue à toucher son argent. Il n'y a pas du tout d'intégration… L'idée oui, ok. Il faut faire attention à la diététique, il faut faire du sport, il faut faire ceci, on va l'envoyer chez le podologue pour… Ok, mais voilà, le patient reste libre de faire ce qu'il veut et chaque prestataire est totalement indépendant des autres. …Je pense que des trajets de soins ne peuvent se concevoir que si c'est totalement intégré, si c'est un opérateur qui gère tout de A à Z, qui est financé pour cela.*

The evaluation commissioned by the RIZIV-INAMI shows that the number of enrolled chronic renal failure patients exceeds the expected number of patients while for diabetes type 2 patients the excepted number is not yet reached. At the start of the care trajectories the target population for diabetes and chronic renal failure was estimated to be 70 000 and 7000, respectively. From June 2009 until April 2013 a total of 56 128 contracts were closed: 33 529 for diabetes and 22 599 for chronic renal failure. Each month about 600 new contracts are signed for diabetes care trajectories and 400 new contracts for chronic renal failure care trajectories. The evaluation included:

hhh http://kce.fgov.be/study-program/study-2013-16-hsr-evaluation-of-the-multidisciplinary-team-meetings-in-oncology

- Evaluation of the impact of the care trajectories on processes and outcomes. The data collection was considered a success in itself. After all, it was the first time that Belgian GPs, on a large scale, submitted data from their electronic patient records (or manual input via a web-survey) in a systematic way to a central database with the purpose to evaluate process and outcome indicators. 75% of all GPs with patients in a care trajectory submitted data: 60% for all patients; 15% for part of their patients. As a result, 79% of the patients included in a care trajectory were registered. The results show that patients targeted by the care trajectories were indeed those patients that were included: patients that required more medical care and an intensive follow-up in the years prior to the start of care trajectories. In addition, it was shown that for patients in a care trajectory the compliance with evidence-based practice guidelines improved (e.g. frequency follow-up HbA1c; statins usage). However, the study design and the registered data (observational retrospective cohort study without control group with data collection over a short period) did not allow to conclude that the health outcomes of patients within a care trajectory improved substantially (nor within the group of patients in a care trajectory; nor compared to controls). Therefore, it is recommended that in the future data extraction from the electronic patient records are submitted to a secured data-platform where these data can be linked to administrative databases (i.e. sickness fund data) in order to make (before/after and included/not-included) comparisons possible.[250]
- A patient satisfaction survey for patients with diabetes (Total: n=614; patients in a care trajectory diabetes: n=292). Patients in a care trajectory are highly satisfied (77% is satisfied; 74% experiences care as better than before inclusion in the care trajectory; 65% would recommend the inclusion in a care trajectory to other patients). Despite these figures, the survey and a parallel qualitative study revealed that both GPs as patients experience a clear need for more information about the care trajectories; the diabetes-trainer is insufficiently known; GPs have to be motivated to take up their role as care coordinator.[251]
- An online survey among diabetes trainers in primary care (response rate: 30%) and centres with a diabetes convention (response rate 60%). Although the high satisfaction of diabetes trainers about their job, they stressed the importance of increasing the time and financial compensation per session. In addition it has been shown that the collaboration between centres with a diabetes convention and diabetes trainers in primary care depended heavily on the loco-regional context. In areas with an important facilitating role of the care trajectory coordinators, the collaboration between the primary and secondary care level was better than in other areas.[241]
- An evaluation of the role of 'local multidisciplinary networks' (LMN-RML) by means of focus groups and document analyses. In general, the LMN-RMLs are appreciated by the stakeholders.[241] Yet, although the governance structures of LMN-RMLs are gradually more and more multidisciplinary composed, the de facto multidisciplinary collaboration remains limited. It is recommended that the RIZIV-INAMI provides more guidelines about the role of LMN-RMLs, their governance structure and the care trajectory coordinators. However, this should be conceived as a frame of reference with flexibility and autonomy to adapt to the local context. It is suggested that the RIZIV-INAMI organises activities such as training, information exchange between LMN-RMLs.[252]

Based on this evaluation it was recommended to continue with the care trajectories for diabetes and chronic renal failure but not to extend this model to other chronic conditions before the improvement of quality of care is clearly confirmed. In addition, a set of recommendations was formulated to improve the current care trajectories (e.g. take into account the complexity of multi-morbidity; strengthen the evaluation of the performance of care trajectories by the creation of a global evaluation platform; IT-support) which can be consulted in the report published by the RIZIV-INAMI.[241]

Capitation payment for (a minority of the) GP-practices

In KCE Report 85[91] both payment systems for GP-practices (i.e. pre-dominantly FFS and capitation-based system) were evaluated. The results showed that healthcare expenditures by the RIZIV-INAMI are equivalent in both systems; co-payments for the patients are higher in the fee-for-service system; the proportion of patients from lower socioeconomic groups and from younger age groups are higher in the capitation system; expenditure for secondary care is lower under the capitation system; quality of care, in general, is similar in both systems. However, a better quality was observed for specific activities in the capitation system, i.e. more preventive activities and prescription of antibiotics in accordance with EBM guidelines.[91]

Article 107 contracts for mental healthcare

As a consequence of art. 107 projects about 1100 psychiatric beds were closed (90% chronic beds). The actual yearly caseload for the first wave of projects was 6293 with a temporary closure of 750 beds.[89] The evaluation of article 107 projects was recently published.[253] We refer the reader to this report for more information. In this chapter we focus on those topics that are relevant for the reform of the hospital payment system:

- The geographical areas in which art.107 projects operate. Most art. 107 projects focused on mobile teams (outreaching teams) and none of the projects developed all five care functions. In large geographical areas as well as in areas covering both urban as rural areas the implementation of the core functions was slowed down. In addition, it has been shown that projects with very strict geographical boundaries with for the radius of action of outreaching teams, problems occurred (e.g. relationship with physicians and with other art. 107 projects in the neighbouring areas).[253]
- Networks:
  - Composition: In the first year, the composition of formal and informal partners of the networks hardly changed and not all potential partners were included yet. Barriers for expanding networks identified among some potential partners were: 'fear to loose autonomy'; 'role within the network is unclear'; 'Pillarization of the sector'. Most projects operate with partners from the psychiatric and (mental) healthcare sector and GPs were the professional group that was most difficult to involve. In most networks hospitals are still the focal point indicating that it is hard to move away from a hospital-centred healthcare system.
  - Coordination: power games (especially in projects with many partners or in projects with partners with large input of resources) and cultural differences hindered smooth coordination of some projects.
  - The fragmentation of competencies over the federal and federated entities created difficulties for functions 1 (i.e. prevention and promotion); 3 (i.e. rehabilitation teams) and 5 (i.e. specific housing).
  - As a consequence of too little resources to develop fully fledged outreaching teams it was reported that projects opted to: 1) implement teams in specific sub-regions while not covering other sub-regions; or 2) developed teams for the full region with under-capacity to meet the needs of the region.[253]
- Patients and care providers:
  - No significant differences in patient measures (i.e. quality of life and mental health related quality of life; degree of recovery as perceived by the patients; satisfaction about the care) were observed for patients treated by art. 107 outreaching teams compared with patients treated by conventional care. Although patients are, in general, satisfied about the care they receive, results indicated that some care needs were not met sufficiently such as contact with peers; continuity of care and information for relatives.[253]
  - In general, healthcare professionals were satisfied. Also the informal caregivers experienced art. 107 as positive, but they also experienced a need for more support on the following domains: financial and administrative support; peer sessions for family members; support with domestic tasks; information via involvement of family members in treatment and education of patients; campaigns against stigmatization.[253]
  - The art. 107 projects were described by some stakeholders as a model that could inspire the development of payment schemes for the acute hospital are setting to enable the reduction of acute hospital capacity and to develop alternatives in other settings such as primary care and outreaching teams.

"Ik denk ook in de Belgische context dat we voorlopig eigenlijk nog te veel zorgvoorzieningen hebben en zorgverstrekkers die allemaal standalone werken. Dus dat we echt wel structureel moeten zorgen dat er betere mechanismen zijn voor samenwerking. Hoe dat je dat dan juist moet doen… I… Mijn concreet advies dat ik al een tijd aan het geven ben, is: we moeten ook in de acute zorg naar een aantal experimenten gaan, stijl artikel 107. Dat we daar echt voor bepaalde pathologiegroepen zouden moeten aflijnen van: kijk, met de huisartsen enzovoort kunnen we dat allemaal samen doen. Kijk overheid, dit is ons

voorstel. We zetten daar normaal zo veel bedden voor in. Dit is eigenlijk het totaal budget dat er naartoe gaat. Garandeer ons dat budget en wij gaan tonen dat het beter en anders kan. Maar pak ons niet alle besparingen dan af. Dat is ook een model dat je ziet in o.a. de States, hé. Men realiseert dan besparingen. Een deel van die besparingen gaat terug naar de overheid onder de vorm van budgetdaling. En de rest van de besparing mag je houden om terug te investeren, bijvoorbeeld in nieuwe technieken of meer patiënten te zien voor hetzelfde geld of wat dan ook."

11.3 Suggested solution elements from stakeholder consultations and literature

11.3.1 (Pre-) and post-acute bundled payment

There are several examples from other countries of **initiatives aiming to combine acute care expenditure control with improved care coordination across care settings**. In the Netherlands, for instance, the Diagnosis Treatment Combinations ('Diagnose Behandel Combinaties', DBCs) or the Dutch DRG-system covers the whole spectrum of inpatient and outpatient hospital care relating to a specific diagnosis, from the first specialist visit to the end of the care process (treatment completed), including: inpatient days, outpatient visits, laboratory services, medical imaging services, medications, medical materials, (surgical) procedures, etc. As long as a patient is treated for the same condition, the hospital does not receive an extra payment. Yet, in case, a patient is readmitted or develops a complication (e.g. hospital acquired infections) a new DBC can be coded.[2]

Lessons can also be learned from Medicare that traditionally provided separate payments to providers for each of the individual services they furnish potentially resulting in fragmented care with minimal coordination across providers and healthcare settings (e.g. inpatient hospital services are bundled into 'stays,' skilled-nursing-facility services are bundled into 'days,' and home-health-agency services are bundled into 'episodes'[254]). Its 'bundled payments for care improvement' system equally started from a DRG-based system, and includes bundled payment arrangements under one of four potential models (prospective versus retrospective; bundle covering the entire care episode versus a separate bundle for the in- and outpatient care episode). There are 48 different clinical conditions included in the system with an episode time span of 30, 60 or 90 days after discharge.

The need to enlarge the scope of the payment system beyond the borders of the inpatient care setting is also expressed in Belgium, and there have been a number of bottom-up initiatives with integrated care pathways across care settings (e.g. in hip replacement). Yet, in these projects, the current payment system was perceived as a strong barrier, e.g. hospitals are not stimulated to employ outreaching teams. Nevertheless, some stakeholders point out that this experience with evidence based 'transmural' clinical pathways offers the opportunity to start experimental prospective pathology-based payment schemes that also include the pre- and post-acute care activities covering the costs incurred in primary care, rehabilitation settings etc.

"Et donc, ayons un financement à la pathologie forfaitaire qui couvre tout le trajet. Bon. On pourrait imaginer, si je prends l'itinéraire clinique, qui est fort développé déjà en Flandre. … Et dire : « voilà, l'itinéraire clinique pour telle pathologie, ça commence par un acte et ça se termine après et donc si c'est bien cette pathologie-là, on englobe tout là-dedans. » Ça, c'est possible quand c'est bien délimité. L'itinéraire clinique, c'est, je commence quinze jours avant un premier examen ou une semaine avant, c'était un autre examen, puis l'admission, on fait ça, deux jours après, ben ça… Après cinq jours, il sort et, puis, le sixième jour, on l'appelle parce qu'il est à surveiller et cætera. Donc, mais ce n'est pas malade chronique, c'est des parties aiguës. … Oui, c'est une pathologie aiguë qui est bien définie. Qu'on peut définir facilement et qui pourrait reprendre le pré et le post complets. Bon, pour prendre un autre exemple, un accouchement, on dirait : « voilà, on vous donne un forfait et, bon, vous… la maman reste vingt-quatre heures, mais elle a des soins à domicile et des soins et des services à domicile, mais on vous donne le forfait. » Ben, elle reste à l'hôpital ou elle ne reste pas à l'hôpital. C'est un peu le choix du patient. … on pourrait imaginer effectivement un all-in qui n'est pas forcément lié à l'hôpital … Bien sûr, il y a un passage à l'hôpital, mais ce passage à l'hôpital fait partie de l'ensemble du trajet qui peut être réduit, qui peut être augmenté. Ça, je crois que ça c'est quelque chose qui doit être de l'ordre du possible pour de pathologies aigues."

Furthermore, lessons can be drawn from the international examples that should be taken into account in the design of potential future Belgian projects:

- Select conditions:
  - for which there is a sound evidence-base;
  - associated with a relatively low financial uncertainty for the providers. A standard measure of financial risk is the degree to which costs for patients with a given condition seen by a particular provider vary, after controlling for health – such as complications and other conditions – and demographic characteristics. Essentially, the remaining variability is unrelated to patients' or providers' observable characteristics and is thus difficult to incorporate into a payment system;
  - in which there is high variability/inefficiency in care, and that can be reduced without compromising patient outcomes. This is typically measured by the variation across providers in adjusted costs for a given condition. If the variation in costs is unrelated to patient outcomes, it reflects inefficiency on the part of providers. [255] Best-practices (e.g. integrated care pathways across settings for hip replacement) can be used as a starting point.
- Post-acute care window: the length of the episode must be determined. Longer episodes provide greater assurance that patients' conditions have stabilized and patients do not need ongoing care. However, longer episodes also imply more variation in costs across patients and therefore place increased financial risk on the hospital or other provider. It seems logical to determine the post-acute care window for each condition based on the available specific evidence-based clinical pathways for which there is a high degree of clinical consensus.
- Service scope: the precise services included in the bundled payment amount must be determined.
- Use payment weights and outlier payments to take into account heterogeneity caused by a patient's condition (e.g. chronic conditions).
- Monitor unintended consequences: since most programmes are too recent to make a thorough evaluation unintended consequences such as a reduction in the number of post-acute providers in a hospital's referral network, reduction of the number of services, decreased accessibility, adverse risk selection etc., and their impact on patient outcomes should be monitored.

11.3.2 Chronic care

Traditionally, care delivery has been built around single diseases, with predominantly hospital-centred systems focusing on treatment of acute illnesses. Initiatives to simulate continuity and coordination of care across settings for acute patient groups were described in section 11.3.1. DRGs or any other payment based on a care episode share some major weaknesses: they cannot resolve broader, system-level problems and they provide insufficient incentives to reduce the number of episodes. This will become problematic in the light of the emerging prevalence of patients with multiple chronic conditions. Therefore, several countries started to experiment with innovative approaches and payment schemes to achieve integration of chronic care. Despite this fair amount of experimentation, literature reviews and research reports[235, 256-258] reveal that still very little is known about how integrated payment schemes should be designed and implemented best to achieve the results they aspire to achieve (e.g. better coordination, reduction of costs, better patient outcomes). Most of the incentives have been applied in very specific settings or are at an early stage of implementation, with little or no evaluation available as yet.[256] Countries should therefore take a cautious approach when designing and implementing integrated care schemes with the use of financial incentives and innovative payment models, particularly as success in one setting may not be transferable elsewhere due to different cultural and organisational contexts across systems.[236] However, practice experience as well as the description of international practice examples can provide hints and clues about what works and does not work. In this section we therefore describe some international examples that emerged from research reports[235, 256-258] and stakeholder interviews.

11.3.2.1 Separate payment for coordination or extra effort

In various countries, one or more providers are receiving financial support and/or incentives for coordination activities or other extra activities (e.g. use of electronic patient record) that aim to result in enhanced integrated care for the chronically ill.[236]

A first example can be found in Austria, where national level budgets were allocated for the integration and coordination of care by pooling 1-2% of the budget of social health insurers (outpatient care) with that of regional governments (inpatient care). These budgets were available for integrated care projects between primary and secondary care.[258] As part of this reform, a disease management programme for diabetes was implemented based on EBM guidelines. This was accompanied by a pay-for-coordination scheme. Physicians (i.e. GPs who followed training sessions on care coordination) received an initial premium (€ 53) upon patient enrolment in the disease management programme, supplemented with a quarterly payment (€ 25) in addition of the regular FFS-payments.[258]

A second example is the French reform (the Health Insurance Reform Act – 2004) initiative targeting the primary care sector to promote the expanded use of disease management programmes for 30 chronic diseases including diabetes, COPD, cardiovascular diseases, musculoskeletal diseases and certain cancers.[258] Initiated as a negotiation between the social health insurance and the association of general practitioners, the aim of this programme was to improve quality of care, patient monitoring, promote continuous medical education to communicate common guidelines to care providers, alleviate financial burden associated with unnecessary procedures, and strengthen the role of the general practitioner. It was accompanied by a payment for coordination as GPs received a supplemental € 40 for care coordination and patients benefited from waived co-payments, self-education and training programmes. In addition, in January 2008, France implemented a five-year scheme to improve preventive services and care coordination in primary care. Additional fees (to the traditional fee-for-service) were made available to group practices which consist of groups of self-employed medical and paramedical health professionals on a single dedicated site.[236, 258]

Also in Ontario (Canada) and Germany, similar payment schemes were identified. Providers in Germany also receive additional payment for disease-specific education programmes for patients registered in the disease management programmes. In Ontario physicians receive various financial incentives to work in multidisciplinary GP practices, the so-called 'Family Health Teams' (FHT). Under this scheme, physicians are paid according to a blended funding model that includes payment by capitation, some fee-for-service payments, bonuses for achieving preventive care targets, and payments for extending the range of services (e.g. care coordination activities for patients with chronic conditions such as diabetes and serious mental health conditions; paying the salaries of interdisciplinary team members and providing funding for the development of electronic medical records).[236]

The review of Tsiachristas et al. (2013)[258] identified several barriers regarding the pay-for-coordination schemes such as: GPs rejected the notion of the compulsory training in care coordination as demanded under the Austrian scheme; considered pay-for-coordination less attractive than FFS (Austria); additional administrative requirements (France); reallocation hospital and GP budgets by leaving this initiative to the respective partners without providing them a concrete incentive to do so.

The given examples are similar to the Belgian 'lump sum' which GPs and specialists receive for their patients who signed a 'care trajectory contract'. As such, the lessons learned from these experiences might also apply to Belgium. Based on the international comparison, Tsiachristas et al. (2013)[258] illustrated that pay-for-coordination is often a first step to stimulate integrated care since its implementation is considered as feasible with little effort.[258] Nevertheless, considering that pay-for-coordination schemes only increased coordination in a limited way, it is suggested to combine it with other payment schemes, such as P4P or bundled payments.[236] Along the same lines, stakeholders pointed out that limiting the care trajectories to two conditions excludes many patients with chronic conditions. Moreover, the care trajectories come with specific requirements (e.g. multidisciplinary collaboration platforms for diabetes; diabetes trainers). It would have been more practical when these requirements were generic and could be applied to other chronic conditions as well. This emphasizes the need for a payment system that remunerates the GPs to take up the medical coordination for all their patients with chronic conditions, for example, by increasing lump sum payments for the global medical record (GMD-DMG). As such, more far-reaching integration of payment schemes will be required.

"Ja. De simpelste manier daar, is dat je zegt: we gaan het GMD optrekken, hé. Smijt dat bij de pot van de GMD's, zodanig dat het globaal medisch dossier voor de huisarts een belangrijkere financiële bedrage is. En dat dus de huisarts wel degelijk over een vast inkomen beschikt voor de coördinatie van de zorg van die chronische patiënten, whatever de pathologie is. Want meneer Janssens heeft wat alzheimer en COPD en hypertensie. En die gaat dus bij de pneumoloog, cardioloog en de uroloog. De huisarts werkt mee, hoor. Maar meneer Peeters heeft diabetes, hypertensie en nog iets anders. Dat is dan weer een ander pakket. En voor meneer Peeters, omdat die diabetes heeft, wordt die huisarts wel betaald. Maar voor meneer Janssens, omdat die geen diabetes heeft, wordt die niet betaald. …. Dat klopt niet."

11.3.2.2 Bundled payments for a specific disease involving multiple providers

DRG-type schemes are not designed to stimulate integration of care across care settings for care with a long time span. Some countries are therefore experimenting with alternatives that are more compatible with service integration. These payment schemes are often 'bundled payments for single conditions' and can in this context best be described as 'a single payment for all multidisciplinary care required by a patient for one particular chronic disease during a predefined period of time'.[6] The implementation of bundled payment schemes is challenging since the content of the care bundles and a price per bundle needs to be determined. Bundled payments are attractive for payers since they face little financial risk. Healthcare providers, on the other hand, receive a strong incentive for efficiency.[6] In this section we describe the '**Keten-DBCs' in the Netherlands** as an example of a bundled payment scheme for single chronic conditions.

Contrary to the Belgian 'care trajectories for diabetes and chronic renal failure' where financial incentives for integration are mainly limited to 'pay-for-coordination and extra effort', in the Netherlands an experimental bundled payment scheme was developed. This innovative scheme was first piloted providing an annual payment for the complete package of care for patients with chronic diseases. After a 3-year experimentation period for diabetes only, health insurers are now able to purchase all healthcare services needed for patients with diabetes, COPD, or vascular risk management through the payment of a single fee to newly created contracting entities, called care groups. Care groups, involving multiple healthcare providers, are clinically and financially responsible for all assigned patients in the care programme. The care group can either provide the various components of care itself through one of its own GPs, or it can subcontract other health providers to deliver the care, such as GPs outside the care group, dieticians, specialists and laboratories. National disease-specific healthcare standards determine the services to be covered in the care bundles but the price for each bundle of services is the result of individual negotiations between insurers and care groups to stimulate competition. Preliminary evaluation of bundled payments for diabetes care showed higher cost increases than for patients not enrolled in a disease management programme.[259] One possible explanation are start-up costs. However, opponents doubt whether patients with co-morbidities gain from arrangements focusing on one condition. Although incentives may integrate along care pathways, e.g. for patients with diabetes, they create a new form of fragmentation.[8]

Some of the interviewed stakeholders advocated to start with experiments of bundling of payments for a range of services during a certain period of time or even move to more population based capitation-like payments. A first step could be to calculate (based on the current care provision) for a specific patient group (e.g. diabetes) the current costs for hospital and ambulatory care and bundle this in one budget. This budget could be provided to the chain of ambulatory and hospital based services in one bundle for a group of patients with the commitment that savings can be reinvested in care (e.g. for new developments). It can also come with the obligation to treat more patients for the same amount in the second year of the programme to realize macro-level savings. These bundles should also include the physician fees with preferable nationally-agreed earmarked budgets for these physician fees. A care coordinator could be in charge of this budget. Yet, opinions about the focal point of an integrated care network differ. Some views defend 'hospital-centrism' because of the fragmented state of affairs of the primary care level, which is still dominated by single-handed GP practices or small group practices. As such, making primary care practices as the cornerstone of integrated care networks is seen as unrealistic and not feasible (e.g. lack of workforce, IT-systems). Others acknowledge (some) of these problems but stress the importance to strengthen primary care practices to enable them to take up this role. This

will require a myriad of reforms such as the payment mechanisms, task delegation, IT-infrastructure, education, etc.

> *De financiering gaat dat ook moeten volgen. Ik denk meer en meer een financiering die instellingsgebonden is of type verstrekker gebonden is, dat dat meer en meer achterhaald is. Dat we toch meer in toenemende mate zullen moeten gaan naar financieringsvormen die eigenlijk de patiënt volgen. …bundeled payments. Ja, ik denk wel dat dat de toekomst is. Dat we inderdaad gaan naar geïntegreerde financieringspakketten die zorg gedurende een bepaalde periode voor een bepaalde groep of een bepaalde populatie zelfs, gaan omvatten. … Hoe dat je dat dan concreet gaat doen? Ik denk, je hebt daar overgangsfases in, hé. .. Eigenlijk de 1ste fase van bundeled payments is dat men de bestaande financieringssystemen bekijkt. En zegt van: ja, gemiddeld, voor dat soort patiënten, voor een diabeticus, heb je x ziekenhuiszorg en zo veel endocrinologen en zo veel dit en zo veel dat nodig. We steken dat allemaal in 1 pakket. Al die zorgverleners werken samen en we geven hen… Voor die behandeling of opvolging van 100 diabeten, geven we hen dat budget. En ze mogen dat budget houden. Ze mogen dat anders besteden zoals dat ze willen. Maar we vragen hen bijvoorbeeld de garantie dat ze binnen 2 jaar of binnen 5 jaar met datzelfde budget 120 patiënten doen. Ik zeg maar iets. Dus dat je eigenlijk impliciet een besparing hebt. … Maar je krijgt een stuk budgetgarantie om… En dan heb je ook de veiligheid dat je uw zorg ook kunt anders gaan organiseren, omdat je niet meer gebonden bent aan… Bijvoorbeeld elke huisarts zegt van: ja, maar ik moet mijn consultatie doen, anders heb ik geen inkomen. …. de artsenhonoraria, …is ook een onderdeel van de bundled payments. Dus met andere woorden vanuit uw ziekteverzekering is dat 1 globaal bedrag dat je ter beschikking stelt. Hoe dat dat dan verder verdeeld wordt, lijkt mij dan… Ofwel kan je daar… … nationaal afspraken over maken dat er bepaalde stukken moeten naar de artsen gaan. ….”*

11.3.2.3 Global payments covering medical needs of a specified group of patients per period of time

An alternative approach is to develop risk-adjusted capitation payments to cover some (partial capitation) or all (full capitation) of the medical needs of a specified group of patients for a specified period of time (in most cases one year). Capitation payments remove the link between payment and specific services, which gives providers more flexibility. However, certainly with full capitation, providers bear the whole financial risk, creating incentives for risk selection and quality skimping. In Belgium, the payment schemes for the ‘community health centres’ can be considered as a case-mix adjusted capitation payment for primary care services. Nevertheless, some stakeholders point out that including hospitals in such a capitation system is difficult given the high degree of patient mobility in Belgium. In this section we describe two examples of a transition towards global payment arrangements: the Gesundes Kinzigtal Integrated Care model in Germany and Accountable Care Organizations in US Medicare. One of the key principles of both models is ‘shared savings’, a concept that is advocated by many (pre-dominantly hospital-based) stakeholders.

> *“Shared savings? Een deel van de winst moet terug naar de mensen die dat veroorzaken. Ik keer een keer terug op dat voorbeeld vanuit Intermountain. Ik vind dat een heel sprekend voorbeeld. Waarom zouden wij een verpleegkundige betalen om in die thuiszorg…? De winst die daaruit komt is zelfs een nadeel voor ons als ziekenhuis vandaag binnen het huidige financieringssysteem. Wij kunnen dat niet alleen. De huisartsen moeten ook betrokken zijn. Als we samen zijn, we kunnen dat niet beter organiseren. Die patiënt gaat minder complicaties krijgen. Dus dat systeem wordt goedkoper. Die zorg wordt goedkoper. ***** moet terug naar die drie die dat samen georganiseerd hebben, op een of andere manier. Dat moet je in uw systeem krijgen. Ze noemen dat shared savings?”*

Gesundes Kinzigtal Integrated Care initiative

The Kinzig valley is a **'**geographically clearly delimited area' in the Southwest of Germany with a total population of about 60 000 inhabitants in the western and central Kinzigtal region. This is the service region of one of the few population-based integrated care systems called 'Gesundes Kinzigtal Integrated Care' covering all sectors and indications of care for a specified population (about 31 000 people are registered). It is coordinated and managed by a regional integrated care management company.[260] The company was founded by two organizations: MQNK or 'Medizinisches Qualitätsnetz-Ärzteinitiative Kinzigtal e.V.' and 'OptiMedis AG', a German healthcare management company with a background in medical sociology and integrated care management.[260]

The members of MQNK are physicians familiar with the region and its people and represent about 56% of all GPs and specialists in the region. As such they are aware of the strengths and shortcomings of the region's healthcare system.[261] The fact that 66% of the shares of 'Healthy Kinzigtal Ltd.' are owned by MQNK members ensures that the interests of local physicians remain dominant.

"The Gesundes Kinzigtal Integrated Care model is in the first place an organisational model characterised by five key components:

- Individual treatment plans and goal-setting agreements between physician and patient;
- Patient self-management and shared decision-making between physician and patient (physicians receive training in shared decision-making);
- Follow-up care and case management (with clearly defined care coordinators);
- 'Right care at the right time' (whereby tailored arrangements are made for patients that need to be seen urgently despite long waiting times for certain services);
- A system-wide electronic patient record (which is used to regularly analyse patient data and identify high-risk patients.

Actively enrolled members receive enhanced care coordination across all sectors, access to physicians outside normal hours, and discounts for gym memberships among other benefits."[2]

"Besides organisational innovations it also includes an innovative payment model. Profit is derived solely from realised savings relative to the average costs of care, which is then shared between the management company and the sickness funds on the basis of a negotiated shared savings contract. Importantly, health care providers continue to be reimbursed in the same way by statutory health insurers, with additional pay-for-performance reimbursement provided by Gesundes Kinzigtal GmbH (the management company) for services not normally covered but which are considered important to achieve better quality of care. In addition, all providers are given a share of the company's profit on the basis of individual provider performance – an innovative alignment of the interests of heath care providers and health insurers to achieve efficiencies. Collectively, these additional payments comprise 10%-15% of providers' other income."[2] The safeguards against risk selection have been successful, not only in preventing traditional risk selection, but in primarily enrolling members with above average morbidity and costs.[2]

Accountable Care Organizations (ACOs)

US Medicare's 'Accountable Care Organizations' or ACOs are healthcare organizations that include doctors, hospitals, and other healthcare providers, who voluntarily come together to provide coordinated care with the agreement that they are held accountable for the overall costs and quality of care for an assigned population of patients.[256] Contrary to some European models (e.g. Keten-DBCs in the Netherlands) which are dominated by GP practices, ACOs also comprise hospitals. The ACO payment model links the reimbursement of providers to their performance on quality measures and reductions in the total cost of care. Payers establish quality benchmarks and risk-adjusted spending targets, based on expected spending, for a defined group of beneficiaries in an ACO. Provider groups, accountable for the overall costs and quality of care for their patients, receive a share of the savings for achieving both financial and clinical targets.[256] ACOs able to generate savings will have to make at least three different allocation decisions: 1) saving allocation for operating budgets and infrastructure reinvestment versus provider incentives; 2) division of savings among provider groups (e.g. GPs versus specialists); 3) allocation of savings within provider groups.[262]

Patients do not have to enrol but are attributed to the ACO on the basis of their patterns of service use. That is, if a patient typically sees a primary care physician who belongs to an ACO, all of that patient's care is attributed to that ACO. A minimum of 5000 patients must be enrolled in an ACO. Because the freedom of patient's choice is guaranteed under US-Medicare's legislation, ACOs are responsible for the cost and quality of care provided by specialists outside their organisation. To reduce its risk, an ACO may contract with out-of-network providers who agree to abide by its requirements. ACOs must be able to collect information on the quality of care, create new incentives, and accept and distribute bonus payments. Building these capabilities will entail substantial up-front costs for new legal entities, information systems, and other infrastructure. This is identified as a major barriers for participation since most primary care physicians do not work (yet) in large multispecialty groups.[2]

The ACOs are at an early stage of implementation, and are just now being tested and evaluated.[256] Only some ACO evaluation studies have been published, and these evaluations have, given the recent nature of these models, a relatively short duration (i.e. 1-2 years). The published studies illustrate that there is some improvement in cost and quality. However, several of the ACO studies reported cost savings with a comparison of actual and predicted costs instead of comparing savings with a matched comparison group of providers. As such it is difficult to know whether the results are real and can be sustained.[256] Therefore, payment models such as ACO which are highly context specific can only inspire policymakers to design, implement and evaluate their own innovative payment schemes.[2] Success in one setting may, after all, not be transferable elsewhere due to different cultural and organisational contexts across systems and it requires more rigorous evaluations of the impact of these reforms before up scaling them.

Key points

Acute care:

- **Several countries include post-acute care services in the treatment episode that is covered by the DRG payment to counterbalance the unintended consequences (i.e. premature discharges) of the DRG-incentive for more efficiency. Extending treatment episodes beyond hospital care is best tested on high-volume DRGs with large inappropriate practice variation and a strong evidence base (e.g. clear, indisputable clinical practice guidelines available).**

Chronic care:

- **The ageing population and the rising prevalence of chronic diseases underscore the need for new innovative payment approaches that incorporate appropriate financial incentives for integrated care. Countries are experimenting with different types of payment schemes.**
- **A review of the literature allowed to classify these payment schemes in 4 broad categories: 1) separate payment for coordination or extra effort; 2) payment or financial incentive associated to improvements in the process and outcomes of chronic care (P4P); 3) bundled payment for a group of services for a specific disease involving multiple providers; 4) global payment, risk-adjusted payment for the full range of services related to specified group of people.**
- **However (preliminary) evaluations do not show that one payment scheme outperforms another. When designing payment schemes for integrated care it is important to adapt them to the local context and to monitor its potential impact and unintended consequences.**

Belgian initiatives:

- **Some first steps have been taken on different fronts (e.g. care trajectories for chronic renal failure and diabetes; MOCs; case-mix adjusted capitation payments for (a very small) number of GP practices. Although some first evaluations show promising results, a more thorough evaluation is needed to extend these payment schemes to other disciplines and patient groups.**

12 PAYMENT INCENTIVES FOR QUALITY OF PATIENT CARE

Quality of care is a multidimensional concept that can be defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge"[iii].[264] In Belgium, there are several policy levers to influence quality of patient care, such as accreditation, public reporting, programming or payment, for which the related competencies are situated both at the level of the federal authorities as on the level of the federated entities (see Chapter 3). Reforms in the payment system should take great care not to discourage or lose a quality of care dynamic, but on the contrary foster and stimulate it. In this chapter we will only **focus on specific payment incentives aiming to improve the quality of patient care**, beyond the general payment structures such as the B2 payment for staffing norms as part of the hospital budget. Providing a comprehensive overview of all Belgian policy initiatives aiming to enhance quality of patient care is beyond the scope of this report. Nevertheless, throughout this chapter we will make use of text boxes to briefly explain policy initiatives that were discussed by the interviewed stakeholders. Payment initiatives to support the development of integrated care and care coordination, both dimensions of quality of patient care, such as article 107 projects in mental healthcare, care trajectories for diabetes and chronic renal failure or multidisciplinary oncological consultations are described in Chapter 11.

In this chapter we first describe the existing financial incentives in the hospital payment system that specifically aim to increase quality of patient care (section 12.1). Next, we describe the strengths and weaknesses of the current system as perceived by stakeholders and supplemented with information found in literature (section 12.2) as well as possible solution elements for weaknesses in the current system as suggested by stakeholders or found in literature (section 12.3). We refer to the disclaimer below for the critical appraisal and solution elements.

Disclaimer. The critical appraisal and solution elements are based on stakeholder consultation and literature. Critical appraisal and solution elements without a reference were proposed by stakeholders during face-to-face interviews and round-table discussions. The cited literature is not a result of a systematic literature review. Conducting a full systematic review for each of the topics was beyond the scope of this study. The referenced literature is mainly based on a systematic screening of previous KCE reports and reports from Belgian government agencies. In addition, ad-hoc searches (e.g. Belgian academic institutions, study centres of sickness funds, international organisations such as the OECD or the WHO) were performed to retrieve information about or relevant to the Belgian hospital system. Finally, interesting international initiatives or best practices were added for illustration. This chapter heavily relies on KCE Report 207.[2]

12.1 Financial incentives in the Belgian hospital payment system that specifically aim to increase quality of patient care

12.1.1 Structural payments and project funding in the hospital budget to support quality improvement initiatives

The B4 part of the hospital budget for acute hospitals represents 13.4% of the BFM (1 January 2014).[76] While originally the B4-part only contained one item to compensate hospitals for revenue losses as a result of bed closure, nowadays it contains more than 40 different items. Most of these items are meant **to cover costs incurred by extra obligations imposed to hospitals** such as coding of data, auditing hospital accounts, bonus payments for nurses with a special nursing title or special nursing competency. Several of these extra obligations financed by the B4 items are quality improvement initiatives. Below we describe some of these items more in detail: hospital hygiene, nosocomial infections, geriatric liaison (as an example of a pilot project that recently was structurally embedded in the B4) and quality and patient safety contracts. Nevertheless, also other initiatives or obligations can be considered as policy measures to improve the quality of patient care, such as the allowance to organise continuous education for nurses, the cancer plan, a care coordinator for patients with

[iii] A former KCE report by Vlayen et al. (2006)[263] proposed the following dimensions of quality of care: safety, clinical effectiveness, patient centeredness, timeliness, equity of care, efficiency of care, continuity and integrativeness.

severe burn injuries, paediatric liaison, a malnutrition team, clinical pharmacists and collaboration in a capture area.

Hospital hygiene allowance

The Royal Decree of 7 November 1988 obliges hospitals to have a nurse and a physician who are specialised in hospital infection control taking up a set of tasks that are detailed in the law (e.g. developing, implementing and monitoring of a hospital policy on the isolation of patients with infectious diseases). Hospitals receive a budget based on the number of justified beds (see Chapter 5) and type of services. The minimum budget guarantees one full-time equivalent (FTE) infection control nurse (€ 53 105 per FTE; index of 1 July 2007) and 0.5 FTE infection control physician (€ 81 709.74; index of 1 July 2007). Hospitals also receive a 10% add on to cover the operating costs of the hospital hygiene department.[265] A hospital only receives the hygiene allowance on the condition that it participates in the surveillance programme on nosocomial infections organised by the Scientific Institute for Public Health and a working group on the antibiotics treatment policy is installed.[266, 267]

Nosocomial infections

There is a compulsory data collection on nosocomial infections (organised by the Scientific Institute for Public Health) for which hospitals receive a financial compensation.[265] This amount has recently been increased (1 January 2014) to make a specific monitoring of multiresistent infections possible resulting in a total budget of € 22 310.[76, 132]

Pilot projects – Geriatric liaison teams

The B4-part of the hospital budget funds pilot projects on telemedicine, data registration, quality improvement initiatives etc. Since 2007, for instance, the Federal Public Service of Public Health (FOD-SPF) funds internal geriatric liaison teams in hospitals via pilot projects on an annual basis. The main aim of internal geriatric liaison teams is to share the core geriatric principles and multidisciplinary expertise to all medical staff and care teams, and for all hospitalized older persons not hospitalized in an acute geriatric ward. In 2013 funding of internal geriatric liaison teams corresponded to a budget of € 16 884 208 for 92 hospitals. Each hospital received the same budget of about € 184 000 to finance a team of four FTEs (nurse, occupational therapist, speech therapist, dietician, and psychologist) that is supported and supervised by a geriatrician.[268] Since 1 January 2014, this project funding is structurally embedded in the B4- and B9-parts of the hospital budget. Every acute hospital with a recognised geriatric department (in addition to general surgery and internal medicine departments) is funded to develop and implement a geriatric liaison team. The budget guarantees a minimum of 2 FTEs (1 FTE equals € 58 000) but is limited to a maximum of 6 FTEs. The number of FTEs depends on the number of inpatient hospital stays of patients of 75 years or older in non-geriatric wards. There are also two specific reimbursement codes for geriatricians, one for a consultation in a non-geriatric ward (maximum two per hospital stay) and one for the participation in a multidisciplinary team meeting (with a maximum of two per week).[76, 268]

Quality and patient safety contracts

To coordinate the activities concerning quality and patient safety a budget of € 5.8 million[jjj] is distributed across hospitals according to the number of recognised beds with a guaranteed minimum budget of € 10 000.[76] To be eligible, hospitals have to sign a quality and patient safety contract with the FOD-SPF, which launched a 5-year nationwide programme in 2007 to implement quality and patient safety initiatives in Belgian hospitals. In January 2013, a second 5-year program (2013-2017) was launched. This second 5-year programme is built around four generic themes (i.e. patient safety management system, leadership, communication, patient and family empowerment) and four specific themes (i.e. high-risk medication, safe surgery, patient identification policy, integrated care).[269] For each of the generic themes strategic objectives (e.g. 'safe surgery' is a priority in the quality management of hospitals where all involved actors take their responsibility to implement innovative instruments and methods to guarantee safe surgery) and specific criteria are set that should be fulfilled by the hospitals (e.g. a safe surgery checklist is used for each invasive procedure). Hospitals need to submit yearly progress reports to the FOD-SPF.[269, 270] To support hospitals with the implementation of the 'quality and patient safety contracts' the FOD-SPF offers several activities[271] such as free education (in collaboration with academic teams), a national patient safety week, information campaigns and the organisation of surveys to

[jjj] Acute hospitals only. The total budget for all hospitals is € 7.8 million.

evaluate the impact of the contracts (e.g. implementation safe surgery checklist).[272]

12.1.2 Financial penalization for readmissions

In 2013 a task force at the National Institute for Health and Disability Insurance (RIZIV-INAMI) was installed to increase efficiency in the Belgian healthcare system. One of the measures of this task force was the introduction of a reduced payment for readmissions from 1 January 2014 onwards.[273] The variable payment[kkk] for hospital admissions was limited to 82% in case it concerned a readmission within the same hospital within a 10-day period. The task force calculated that this would result in a cost saving of € 7.3 million per year. This policy measure is an austerity measure rather than a measure to support quality of patient care.

12.2 Critical appraisal: focus on structures rather than on processes or outcomes

12.2.1 Payment for structures and norms

Stakeholders indicated that the FOD-SPF has a historical tradition of focussing its quality of care strategy on the **recognition of norms** (e.g. staffing ratios, architectural norms) and the instalment of quality structures (e.g. colleges of physicians[lll] installed since 1999 with the aim to develop quality indicators, a registration model, perform quality audits, submit an annual report to the Multipartite structure[mmm] and to give feedback to hospitals and physicians).[274] These policy measures are considered as necessary but not sufficient and resulting in a too restrictive view on quality of patient care. Moreover, some of the norms, in particular those on nurse staffing ratios, were judged by stakeholders as being outdated, too rigid and underpaid.

> *"A la santé publique, ils ont complètement déraillé pendant cinquante ans, c'était quand même très amusant. Puisqu'on est parti d'une approche très structuraliste. La qualité dans l'hôpital s'est traduite: l'hôpital respecte des normes: normes d'architecture, normes d'organisation, normes de personnel, niveau de formation du personnel, diplômes du personnel, mètres carrés, la lumière, les trucs et les machins… Je ne dis pas que c'est étranger à ça, mais ça c'était l'alpha-oméga … tout ça, eh bien, c'est la qualité..."*

Stakeholders acknowledged that specific **payments of quality structures,** such as payments for quality coordinators through the 'patient safety and quality contracts' and for infection control nurses and physicians, are a valuable first step in the launch of quality improvement initiatives. It is recognised that since the introduction of structural payments for hospital infection control nurses and physicians and the associated obligations to install 'antibiotics working groups',[275] substantial progress on these domains has been achieved. Nevertheless, since everyone receives this budget, regardless of progress towards or preservation of high quality results, stakeholders questioned the strength of these incentives. They are rather considered as acquired rights and there is a risk that they no longer stimulate hospitals to improve (or preserve) towards excellent quality of patient care. A next step could therefore be to link bonuses to performance, based on process and outcome measures.

Stakeholders also acknowledged that despite the limited monetary amounts, the quality and patient safety contracts have contributed to a culture shift in Belgian hospitals and generated many quality improvement initiatives (e.g.

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kkk Since 2002 the hospital budget has been divided into a fixed and a variable part. The fixed part is paid by the sickness funds to the hospitals on the basis of monthly advances ('provisional twelfths') and includes (theoretically) 80% of the subparts B1 and B2 and 100% of all other parts. The remaining variable part includes (theoretically) 20% of the subparts B1 and B2. For general hospitals, the variable part is paid according to the number of admissions (10% of the budget) and the number of nursing days (10% of the budget). The variable part of payments also refers to the lump sums per day for medical imaging and clinical biology, the lump sum per admission for pharmaceutical specialties and the lump sum per admission for physician permanency. Day-care stays are excluded.

lll Colleges of physicians exist for the following domains: cardiac pathology; geriatrics; emergency care; intensive care; chronic renal failure; mother and neonate; medical imaging and nuclear medicine; radiotherapy; reproductive medicine; oncology; paediatrics.

mmm The Multipartite structure is a consultative body that was established to build bridges between the RIZIV-INAMI and the FOD-SPF (see Chapter 3).

prevention of pressure ulcers; prevention of nosocomial infections). The results of a 'patient safety culture measurement' in 2011 generated, in general, (slightly) better results than at baseline (start of the patient safety contracts with a patient safety culture measurement between 2007 and 2009). Nevertheless, the results also indicate that Belgian hospitals should pay more attention to the transmission of patient care information, reporting of (near) incidents and staffing. The positive evolution on the dimension of 'management support for patient safety' confirms the increasing attention of the hospital management towards patient safety.[276] The next wave of projects which demands more strategic quality improvement plans with clear targets receives support from the interviewed stakeholders. Nevertheless, it was repeatedly stressed that the next step to take is providing payment for quality processes and outcomes.

> *"En matière de qualité, qu'est-ce qu'il y a? Il y a le fameux contrat qualité avec les SPF, très bien, mais c'est tout à fait marginal. Cela représente 100.000 euro pour les plus gros hôpitaux et 10.000 euro pour les plus petits. .. Grâce à cela on peut se payer un coordinateur qualité que l'on avait déjà par ailleurs, mais cela permet de financer cette personne. … La première étape c'était financer la structure qualité et la seconde étape c'est un bonus, fonction du développement à la clef. Le Ministre s'était arrêté à la première étape. Le plus facile. .. Oui on nous finance un médecin hygiéniste et une infirmière hygiéniste, bon très bien, mais c'est aussi financer une structure. On ne finance pas la bonne hygiène, on ne finance pas les résultats. On ne finance pas les processus."*

12.2.2 Financial disincentives for quality of patient care

For more than two decades most industrialised countries gradually introduced Diagnosis Related Groups (DRG)-based prospective payment systems for hospitals. DRG-based payment systems as such do not provide incentives to improve the quality of patient care.[277] Yet, a recent KCE report[2] studying prospective payment systems in five countries, concluded that the current body of evidence does not support the concerns about the potential adverse effects on quality of care of these payment systems. It should be noted, however, that in all of the studied countries corrective measures (within and outside the payment system) were taken to counterbalance the potential adverse effects of the DRG-based payment system on quality of patient care (see section 12.3.1 on quality incentives embedded in the DRG-system).

In this paragraph, we summarize the critique on the current Belgian hospital payment system, which includes disincentives for quality of patient care. There are **no direct incentives for evidence-based patient care** neither in the hospital budget nor in the physician remuneration system. This shortcoming contributes to the unjustified practice variation and unmotivated deviation from evidence-based practice guidelines, which is a well-documented area of concern in the Belgian healthcare system. [35, 41, 82, 278, 279] The recent series of KCE reports[86, 110, 111, 280] on 'quality indicators in oncology' illustrated important practice variations. KCE Report 150[110], for instance, reported important differences in process indicators between low- and high-volume hospitals. High-volume hospitals performed more multidisciplinary oncological consultations, more breast-saving surgery, more adjuvant radiotherapy after breast-saving surgery or mastectomy and better reporting of the cancer stage.

In fact, the All Patient Refined (APR) DRG-based payment of the hospital budget[nnn] is, as other DRG-based payment systems, thought to provide incentives for hospitals to limit the services per patient which can have positive[ooo] as well as negative[ppp] effects on the quality of patient care.[6, 277] Stakeholders criticized the fact that the current payment system **financially rewards complications,** as complications can result in a higher severity of illness and a higher payment.

> *"Ik zie geen enkele prikkel in de financiering op kwalitatief vlak. Integendeel. … slecht werken wordt beloond, goed werken wordt gestraft. Slecht werken in de zin van: als je daar allemaal heel slordig*

nnn In the current hospital payment system measures such as the system of reference amounts, justified length of stay, the lump sums for hospital pharmaceutical products, clinical biology and medical imaging aim to reduce practice variation but have an economic perspective rather than an evidence-based-medicine perspective (see Chapters 5 and 9).

ooo E.g. reducing unnecessary services, facilitating activities such as coordination of care, not chargeable under a fee-for-service scheme.

ppp E.g. reducing services that are beneficial to the patient, including pre-mature hospital discharges resulting in readmissions.

mee omspringt, en je krijgt veel complicaties.. Ja. ja. Als ik een heropname mag doen, verdien ik nog een keer geld. Als ik slecht opereer en ik zeg: je moet een keer terugkomen… Dan zou je toch niet mogen beloond worden? Dan mag ik aan hetzelfde tarief het een 2de keer doen. Je gaat toch niet zeggen dat dat kwaliteitsprikkelend is, hé?"

In addition, the hospital budget could stimulate hospitals to discharge patients earlier than clinically appropriate, potentially resulting in (financially rewarding) **readmissions** and undesired shifts in care burden towards primary care.

A recently published study, based on data of the year 2008, evaluated the incidence of readmissions in Belgian acute hospitals to be 1.5% for 1-month readmissions (variability: 0.82%-5.55%) and 2.1% for 3-month readmissions (variability: 1.17%-6.40%).[281] Readmissions were identified *as "second admissions for the same patient with the same APR-DRG code"*[qqq] using data of 45 hospitals. The total cost of a within 3-month readmission was estimated at € 2247-5409 per hospital stay, amounting to € 280 091 per year for all Belgian hospitals. However, it remains unclear from the literature to what extent readmissions are preventable. [282] Therefore, the authors used several cut-off points of the financial impact of reducing excess readmissions (e.g. € 7.8 million/year when all hospitals above the 90th percentile reduce their readmissions to this level and € 17.6 million/year when all hospitals above the 70th percentile reduce their readmissions to this level, both for 3-month readmissions). Despite several methodological shortcomings, preventive actions that reduce the incidence of hospital readmissions seem to have the potential for improvement of quality of patient care while simultaneously the cost of healthcare delivery can be reduced.[281] Therefore, the recent Belgian penalization system for readmissions (see 12.1.2) is appealing, at first sight. Nevertheless, the way it was implemented is heavily contested by the interviewed stakeholders. The all-cause readmission penalization is assessed as an unfair measure since it is too blunt and does not only concern avoidable readmissions (e.g. readmission for other conditions or due to pre-mature self-discharge against medical advice). Penalizing all-cause hospital readmissions also penalizes appropriate, evidence-based readmissions or readmissions that are unrelated to the prior discharge. In addition, given the lack of a case-mix correction, it disproportionately penalizes hospitals that treat the sickest and poorest patients. It is also questioned that the measure will result in cost savings in the long run.

"Je suis très perplexe par rapport à ça. En tout cas de la façon dont c'est envisagé maintenant en Belgique, pour des mesures d'économie, c'est débile. Toutes pathologies confondues, si vous revenez dans les dix jours, on ne vous paie plus le forfait à l'admission. D'abord, c'est débile en termes économique, parce que le mécanisme de toute façon s'autorégule, le prix par admission n'est que le résultat de la division d'un numérateur par un dénominateur. Si on change le dénominateur, si on refait le calcul, le prix va changer. Ca n'a aucun impact à terme. Pendant trois ans, on a une économie parce qu'on a trois ans de retard et puis au bout de trois ans, on revient de toute façon au même niveau. C'est absurde, en terme économique. En terme médical, c'est encore plus absurde. Ce n'est pas parce que vous êtes opéré aujourd'hui, vous sortez et vous vous cassez la jambe que… voilà… c'est la vie. Il n'y a pas de relation cause à effet. Donc, c'est pas comme ça non plus qu'on mesure non plus s'il y a une mauvaise qualité de départ ou pas."

12.3 Suggested solution elements from stakeholder consultations and literature

Whatever option is taken to reform the hospital payment system, it is important that the effects on the system level are carefully monitored such that timely adjustments are possible. In addition, it is considered as a good policy practice to pro-actively check the effect of each new rule in the payment system on quality of patient care. Internationally, many additional initiatives have been taken to guarantee or improve quality in countries that introduced DRG-based payment systems. Besides incentives unrelated to payments, such as accreditation, public reporting, audit and feedback, most countries also integrated incentives for quality in their payment system. In

[qqq] APR-DRG 693 chemotherapy and APR-DRG 691 leukaemia were excluded from the analysis since readmissions in these APR-DRGs occur as a normal component of the treatment episodes.

this section we focus on these specific payment incentives for quality that can be divided in two main categories: payment incentives within the DRG-based payment system and outside it, i.e. pay-for-performance (P4P) programmes. Yet, it should be noted that some programmes combine several of these mechanisms in one model, such as the US Prometheus program which combines P4P with best practice tariffs.[283]

The payment incentives aiming to support the development of integrated care initiatives, which is also a dimension of quality of patient care, are described in Chapter 11.

12.3.1 Quality incentives embedded within the DRG-based payment system

Most countries initiated quality incentives in their DRG-based payment system (mostly as demonstration projects), some time after the set-up of their prospective payment system. Based on the lessons learned from these initiatives, as well as the best practices described by the interviewed stakeholders, we can distinguish four main approaches:

- integration of evidence-based practice in the DRG-based payment system;
- inclusion of post-acute care services in the treatment episodes;
- incentives to prevent readmissions;
- monitoring and reporting of hospital-acquired conditions and never events, rather than excluding them from payment.

Integration of evidence-based practice in the DRG-based payment system

There is a strong plea for including evidence-based practice as a parameter in the future DRG payment system, and base the DRG tariffs more on the evidence-based components of the care than on average observed costs per episode. Although it is a highly attractive idea to include evidence-based components in the payment system, there are, to our best knowledge, no such systems that have been widely implemented and robustly evaluated. Only the English 'best-practice tariffs (BPTs)' can serve as an example. The English BPT-program has three goals: (1) incentivize the appropriate care setting for a set of surgical procedures (e.g. cholecystectomy in day care); (2) reduce variability in the entire care pathway (e.g. cataract); (3) evidence-based BPTs. In this section we focus only on the latter (see text box). The program selects high-volume conditions for which there is, despite a sound evidence-base, significant unexplained variation in practice. Stakeholders state that the share of care that can be considered as 'elective standardized care' is potentially high.

> *"Standaardiseerbare electieve zorg is een zorgvorm die veel voorkomt. En dat is veel meer dan dat wij aannemen dan dat het is. Electief wil zeggen: ik ga vandaag naar de dokter. Ik heb pijn aan mij knie. We gaan toch een keer kijken met artroscopie. Ja, dat is planbaar, hé. Dat moet nu niet vandaag. Ik kan gerust nog wel een week verder, chirurgisch kleine ingreepjes, enzovoort. Dat is electieve zorg. Die moet je groeperen ook volgens klinische paden. Denk aan het voorbeeld van klinisch pad heupprothese, of knieprothese. Dat bestaat allemaal. Dat bestaat ook in de praktijk. En wat wilt dat zeggen? Ja, u hebt die diagnose. U komt binnen die dag. U wordt geopereerd. Dag 2 wordt u… moogt ge alweer recht en word je gerevalideerd. En dag 3 gebeurt er dit en dag 4… En vanaf dag 7 mag je terug naar huis. Dat noemen we electieve, meestal chirurgie. Maar ook veel dingen die in de dagkliniek gebeuren vallen onder die definitie: geplande dagopname, cataract, glaucoom… De veelvuldig voorkomende ingrepen."*

Best Practice tariffs, an example of including evidence-based practice in DRG-payment systems: the Fragility Hip Fracture Best Practice Tariff in England[284]

For fragility hip fracture the aim is to incentivize hospitals to prepare patients quickly to surgery, to stabilise them quickly, to respond to their frail conditions and complex needs and to provide adequate post-surgery care.

The best practice tariff for fragility hip fracture is made up of a base tariff and a conditional payment, payable if all of the following characteristics are achieved:

surgery within 36 hours; shared care by surgeon and geriatrician; care protocol agreed by geriatrician, surgeon and anaesthetist; assessment by geriatrician within 72 hours; pre- and post-operative abbreviated mental test score assessment; geriatrician-led multidisciplinary rehabilitation; secondary prevention of falls; bone health assessment.

The evaluation of a BPT for fragility hip fracture, for instance, relied on submission of data to a 'national Hip fracture Database'. The quality of data collected from this non-mandated register was not always good resulting in 61% of payments without valid documentation and thus no proper evidence of compliance.

Evidence-based BPTs contain a base tariff (paid irrespective of whether the characteristics of best practice are met) and a conditional component that is paid when the evidence-based practice standards are met. The base tariff is set below the national average cost, and hospitals that are below average performers have therefore an added payment incentive to change practice. This conditional payment resulted initially in higher tariffs than the mean national costs but over time evolved to tariffs that resulted together with the base tariff in a tariff comparable with the national average cost to ensure that macro expenditures did not grow too much with the introduction of BPTs.[285] This system of base and conditional tariffs is not followed for all BPTs. In fact, another option is to set the price of the base component and give a payment to shift to 'better practice' via the additional component. Under this option there is no reduction in the base tariff and there is no negative financial consequence of not achieving best practice. As a consequence, macro-level costs will be higher.[285]

One of the critiques after a first evaluation of the English BPTs was that for the individual hospital or specialty, the actual amount of BPT was often not substantial enough. Therefore, hospitals considered that BPTs did not provide much payment incentive. Nevertheless, it helped them to focus attention to a specific area of clinical practice and was viewed as 'recognition for doing the right thing'. The detailed evaluation of the three BPTs shows a real impact, but the Audit Commission recommended to simplify the payment models of the tariffs and to accompany BPTs by public reporting of quality.[286]

Incentives to prevent readmissions

Although a recent KCE report showed that in most countries readmission rates did not increase after the introduction of a prospective case-based payment system, the evidence base is too limited to take general conclusions.[2] In addition, several countries took initiatives within (e.g. penalization for high readmission rates) and outside the payment system (e.g. supporting discharge planning) to prevent inappropriate readmissions.

Medicare's readmission reduction program[2]

A readmission in this context is defined as 'an admission to a hospital within 30 days of a discharge from the same or another hospital.' Hospitals include short-term inpatient acute-care hospitals excluding critical access, psychiatric, rehabilitation, long-term care, children's, and cancer hospitals.

The conditions included are acute myocardial infarction, chronic heart failure and pneumonia. 'Certain readmissions that are unrelated to the prior discharge' and 'certain planned readmissions for procedures related to the acute myocardial infarction (AMI) measure' were excluded. In 2015 COPD, elective total hip arthroplasty and total knee arthroplasty will be added to the list.

The **analysis process and methodology** are complex and look at three years of discharge data and at least 25 records for each condition. The excess readmission ratio includes adjustments for clinical factors such as patient demographic attributes, co-morbidities, and patient frailty. Hospitals are compared with a national average readmission ratio that generally applies to a hospital's patient population and the applicable condition. If the rates of readmission are deemed excessive, the **hospital's payments are decreased up to 1%** for all Medicare payments (the penalty increased to 2 percent in 2014 and will go up to 3 percent in 2015). Payments for medical specialist services are not directly affected, only payments for hospital services.

Penalizing hospitals with high readmissions rates is motivated by the numerous studies that have demonstrated that readmission rates can be reduced by interventions that try to improve the transition from care in the hospital to care in the community (e.g. discharge planning, liaison nurses, shared electronic patient record). In addition, it has been shown that lower readmission rates might be achieved by the use of hospital-wide strategies and capacities rather than by pathology-specific approaches. [287] Although stakeholders acknowledge that a refinement of the Belgian initiative to penalize readmissions is technically complex and readmission rates based on administrative databases are not always accurate[288], they stress that the

limitations of the current system can be partly mitigated by the lessons learned from the more refined international initiatives. Stakeholders do not support that 'low quality performance' is used as an excuse for 'austerity measures'. They recommend to restrict financial consequences of readmissions towards those readmissions that are inappropriate from an evidence-based medicine point of view. They also point out the risk of patient selection (e.g. avoiding admissions of patients from nursing homes as they are known to be prone to be readmitted more often).

> *"C'est une méthode un peu brutale et linéaire …. on a vu en Allemagne, en Angleterre, et chez Medicare avec les 30 jours pour la chirurgie qui était élective au départ et qui est réadmis par les urgences et qui est pondéré par un case-mix de pathologie. Donc certaines pathologies sont immunisées. Par exemple, un patient cancéreux ou leucémique qui est dans un état critique, s'il est réadmis dans les 30 jours, ce n'est pas nécessairement de gaieté de cœur, donc il y a des réadmissions justifiées. Mais cela on n'en tient pas compte du tout. Tout le monde a le même case-mix de risques en terme de réadmission et au lieu de le mettre à 30 jours on le met à 10 jours et on pénalise tout le monde à la même enseigne. Et donc celui qui a 7 % de réadmissions dans les 10 jours et celui qui a 2 % de réadmissions, c'est nécessairement qu'il gère différemment leurs cas. Et que celui qui a 7 % sera beaucoup plus pénalisé et donc ça veut dire que c'est de sa faute. Ça les responsabilise. Ce n'est pas nécessairement une bonne porte d'entrée."*

Indeed, it will be important to refine the measure of readmissions such that they reflect 'potentially preventable readmissions'.[289] This will include the development of readmission measures that are based more on clinical data to detect avoidable readmissions that are linked to a prior discharge only. It is, for instance, not the purpose to penalize hospitals that admit a patient with an appendectomy ten days after being discharged for a knee arthoplasty. In the Medicare system, the roll out of these more refined measures took place in a stepwise manner. The program focused first on a limited selection of specific pathology groups (e.g. AMI, COPD), and then, when the measures were considered as accurate, the system included more pathologies. Next to corrections for clinical differences also research on adding socio-economic data to the hospital readmission calculations is done.[290] A recent evaluation of the impact of community-level factors on hospital readmission rates illustrated that a substantial amount of the variation in readmission rates is explained by primary care factors and the quality of nursing homes. As such, the readmission penalizations have their limits and should be supplemented with other incentives that also involve primary care and nursing homes (e.g. bundled payment including the post-acute care phase).[291] Finally, it will be important to align the existing initiatives about readmissions. The Flemish Quality Indicators Project[292] (see text box) for instance, defines readmission different than the RIZIV-INAMI. The former defines readmissions as *'the proportion of readmissions via an emergency department of the same or another hospital within a period of seven days after discharge from the hospital'* whereas the RIZIV-INAMI defines readmissions as '*admission to the same hospital within a period of ten days after discharge from the hospital*'.

Flemish Quality Indicators Project[292]

The development and implementation of quality indicators is one of the three pillars of the Flemish policy related to quality of patient care. Besides the quality indicators, the Flemish government supports the accreditation of hospitals and development of a new model for auditing the quality of patient care. This new audit model consists of unannounced hospital sites visits during which the direct practice for an entire care trajectory (e.g. surgical care) is audited with a focus on hygienic conditions, patient safety and communication.[293]

The Quality Indicators Project, called VIP², was launched after a collaboration agreement was made between the Flemish Association of Medical Directors, the Flemish Government, patient organisations, scientific and professional organisations, with the objective to define relevant process and outcome indicators to objectify the quality of the delivered care with the purpose (1) to improve processes continuously and (2) to publish the results on the website of the hospital.[294]

By the end of 2013, 35 quality indicators in five domains (oncology, mother & child, cardiology, orthopaedics and hospital wide) were being defined and/or implemented.[292] Hospitals participate on a voluntary basis and some (not all) already published some results on their website, mostly on breast cancer survival and patient experiences.

For the 'hospital-wide indicators', for instance, the following indicators were selected:

- Readmissions: the proportion of readmissions via an emergency department of the same or another hospital within a period of seven days after discharge from the hospitals;
- Patient experiences: (1) average score of patient's assessment of the hospital performance; (2) degree to which the hospital is recommended by the patients to friends and family;
- Patient-centeredness of hospital websites: a score that indicates to what extent the hospital website meets the information requirements of patients;
- Medication safety: proportion of medication prescriptions that are filled out correctly;
- Incidence of MRSA – sepsis: incidence of sepsis with MRSA within a defined period;
- Hand hygiene: proportion of healthcare professionals that comply with the seven basic conditions for hand hygiene;
- Patient identification: percentage of present and correct patient identification wristbands;
- Safe surgery checklist: level of implementation of the safe surgery checklist.

Penalizing hospitals for never events and hospital-acquired infections

One of the potential perverse effects of All Patient Refined (APR)-DRG-based payment systems (this also counts for the B2-part of the hospital budget calculation with 'appropriate length of stay per APR-DRG') is that hospitals can receive extra budget for patients that develop complications during their hospital stay, because they end up in a higher severity class. Rewarding poor quality is counter-intuitive and stakeholders stressed that this 'anomaly' should be remediated. Some advocate the exclusion of complications from the APR-DRG calculation or the integration of a penalization in the DRG-based system for hospitals that have a relative high proportion of 'potentially preventable complications' or 'never events' as is the case in some other countries (see text box).

"Je moet die complicaties uit uw financiering halen op een of andere wijze. En misschien het omgekeerde: de ziekenhuizen die duidelijk minder complicaties hebben, dat ze die eigenlijk op een of andere manier moeten stimuleren. Daar bestaan methodieken voor. Dus je hebt daar Potential Preventable Complications. Dat gaat over ratio's. Want je hebt altijd wel ergens complicaties. Maar dat gaat over ratio's. Waarbij dat je zou kunnen zeggen van: ja, als je, ik zeg maar iets, als ziekenhuis duidelijk minder complicaties hebt, gaan we uw financiering positief stimuleren, dan een ziekenhuis die in een omgekeerde situatie zit."

"Les never-event en Angleterre qui ne sont pas financés et donc c'est sûr qu'il n'est pas logique de financer une induction de soins fautifs, l'oubli d'une compresse."

Payment penalties for hospital-acquired conditions and 'never events'[2]

Medicare no longer pays hospitals for additional costs associated with ten hospital-acquired conditions (e.g. foreign object retained after surgery, specific types of nosocomial infections, stages III and IV pressure ulcers, falls and trauma). The budgetary impact of not paying for only ten hospital-acquired conditions has been found to be negligible in the Medicare system and to be unlikely to encourage providers to improve quality.[295]

The National Health Service (NHS) in England is no longer paying for treatment that results in one of the national 'never events' (i.e. serious patient safety events that are largely preventable), nor for treatment of the consequences of a never event. Examples are: wrong site surgery; retained foreign object post-operation; wrongly prepared high-risk injectable medication; wrong route administration of chemotherapy; death or severe harm as a result of intravenous administration of epidural medication.

While this approach is attractive to some, the interviewed stakeholders identified several barriers to implement it. It will not be easy to obtain valid and reliable data. For instance, complications (hospital-acquired) will have to be disentangled from co-morbidities (already present upon admission).[2] In fact, the Belgian hospital discharge dataset (MZG-RHM) foresees such a distinction (since 2008) and in the APR-DRG v20 grouper this calculation of severity of illness (SOI) without hospital-acquired secondary diagnoses is the default option. Nevertheless, the Belgian APR-DRG grouper was adapted such that all secondary diagnoses are used in the calculation of the APR-DRGs and the corresponding SOIs. After all, the coding quality is unknown (i.e. there are no publicly available audit reports) and some stakeholders indicate that the 'present on admission coding of secondary diagnoses' is a theoretical coding option which is hard to put in practice, especially since the data are coded based on medical declarations several weeks after the patient's discharge from the hospital. In addition, previous research illustrated that the validity of a selection of adverse events based on the MZG-RHM was poor.[296] Finally, stakeholders point out that there is a risk that penalizing or rewarding hospitals based on their diagnosis coding could heighten the risks of 'gaming' or coding manipulation,[297] as is described in the literature.[2]

Stakeholders also stressed that such penalties risk to re-introduce the 'blame and shame culture' in Belgian hospitals which can be detrimental for quality of patient care. This would be a step back, since patient safety culture in Belgian hospitals only recently[276] improved by the interplay of many quality initiatives, both bottom-up initiatives (e.g. development of clinical pathways) as well as government supported initiatives (e.g. patient safety contracts) and a combination of both (e.g. Flemish indicators projects). In addition, such financial penalties can result in defensive reactions which are counter-productive (e.g. increase inappropriate prophylactic prescribing of antibiotics).[297] Not paying for complications or excluding complications from the calculation of the hospital budget also risks to result in adverse patient selection, or undesirable transfers of these patients to other hospitals.[297]

Rewarding complications via the hospital payment system is not desirable. At the same time, the hospital payment system should not entail incentives for hospitals to refrain care to patients with complications. After all, not all complications can be prevented or attributed to (inappropriate) care delivery of a specific organisation or provider. Once a complication develops, it should be treated. When complications are excluded from payment, there is a risk that patients do not receive the care they need. In addition, the financial consequences are not always carried by those responsible for it (e.g. many so-called nosocomial infections are imported by patients from nursing homes).

> *"Si on considère en quelque sorte que toute forme de complication d'une certaine nature ne devrait pas arriver et que si elle arrive c'est l'hôpital qui doit en supporter les conséquences, on risque de nouveau de tomber dans la sélection adverse pare qu'on va interdire à l'hôpital en quelque sorte que certaines complications arrivent parce qu'elles seraient considérées comme étant de son fait, on va aboutir inévitablement à ce que quand elle arrive l'hôpital va essayer de trouver une solution qui pourra éventuellement faire sortir le patient quand même et à ce moment-là il sera réadmis dans un autre hôpital ou on découvrira le patacaisse on lèvera les bras au ciel comment est-ce qu'on a pu nous envoyer une cochonnerie pareille …. Donc là aussi je pense que le système de financement n'est pas la bonne approche pour ça. A partir du moment où la complication est là, elle doit être soignée, à partir du moment où elle doit être soignée, il y a une justification pour que le financement intervienne pour que le patient soit garanti d'être soigné. Après qu'il y ait une forme de pénalité rétrospective sur base de données statistiques de complications on peut encore l'envisager mais il faut être très prudent, dire ce patient là avec ce diagnostic et ses complications ne sera pas financés à mon avis ça aurait un effet pervers sur la qualité des soins."*

12.3.2 Pay-for-Quality (P4Q)

Hospital pay-forperformance programmes are worldwide increasingly part of the cocktail of interventions that have raised awareness of quality problems and directed resources and attention to addressing them. The pay-for-performance policy[rrr] of tying payment incentives to the quality of performance has strong face validity as it is based on the economic truism that 'money changes behaviour'.[299]

> *"Moi je pense que, de toute façon, toute politique qui veut améliorer quelque chose, si elle n'a pas une traduction financière ne fonctionnera pas. Il faut qu'il y ait une traduction financière… Je pense que la qualité doit être intégrée."*

Pay-for-performance goes further than the strict clinical outcome and can be expressed in structural, process and outcome quality criteria. Many pay-for-performance programmes, however, focus mainly on structure and process indicators.[2] The first hospital-based program is **Medicare's Premier Hospital Quality Incentive Demonstration** (PHQID) program which was later **reproduced in the UK** (see text box).

Examples of hospital-based P4Q-systems

Medicare's Premier Hospital Quality Incentive Demonstration (PHQID) program

A budget-neutral P4Q programme (1 or 2% bonuses versus 1 or 2% penalties) using 34 predominantly process measures for five clinical conditions (Acute Myocardial Infarction (AMI), Community Acquired Pneumonia (CAP), Chronic Heart Failure (CHF), Coronary Artery Bypass Graft surgery (CABG), hip or knee replacement surgery). Evaluation programmes showed initial (first two years) improvements in process measures that levelled off with longer follow-up (i.e. after six years).

No improvement on patient outcomes was found at any stage of the programme.[2] The value-based purchasing program is a nationwide P4Q programme that is based on PHQID, and that still needs to be evaluated; it includes clinical process measures (e.g. AMI, CHF); patient experience measurement; patient mortality (AMI, CHF, pneumonia); hospital-acquired conditions and a patient safety composite score.[299]
Advancing Quality is a P4Q-program which is based on the PHQID and was introduced in all NHS-hospitals in the Northwest region of England. Its implementation was associated with a reduction in mortality.[300] Important differences with the US program were the larger bonuses (4%) that were awarded to a greater proportion of participants (the PHQID-program only concerns Medicare-patients) and different baseline levels (much higher mortality rates in England compared to the US). In addition, bonuses were directly invested in quality improvement initiatives. The program was absorbed by a new, countrywide P4Q-programme: the Commissioning for Quality and Innovation (CQUIN). This program was not associated with an improvement in process or outcome measures. CQUIN is based on locally agreed targets and measures. Although local strategic and clinical input in P4Q-programmes was evaluated as valuable, it seems better to centralise technical design issues (e.g. defining indicators; agreeing thresholds; setting prices).[2]

In Belgium, so far, there are no hospital-based P4Q-programmes. Yet, some stakeholders indicated that the payment for structures such as 'hospital infection control nurses' or 'patient safety contracts' can be considered as a kind of pay-for-quality. Some advocate that this payment for quality structures should be complemented with pay-for-performance.

> *"Naar de toekomst zou ik het volgende willen bepleiten. Ik denk dat we nog altijd kwaliteit structureel moeten ondersteunen. Er moeten*

[rrr] Pay-for-performance or pay-for quality (when focusing exclusively on the quality component of performance) is explained by the US Institute of Medicine as 'the systematic and deliberate use of payment incentives that recognise and reward high levels of quality and quality improvement'.[298] It should be noted that P4P differs from a fee-for-service system (pay-for-activities) since P4P focuses on financial compensations based on achieved results on structure, process and/or outcome indicators. To avoid misinterpretations and because we focus on the quality dimension of performance we will use P4Q.

voldoende middelen voor kwaliteit voorhanden zijn en die moeten in het budget van financiële middelen worden opgenomen. Daarnaast dient kwaliteit en performantie in de financiering te worden beloond."

However, introducing P4Q-models in Belgium such as Medicare's 'value-based purchasing program' has proponents as well as opponents. The proponents stress that a reform of the hospital payment system offers an opportunity for change and recommend to integrate a P4Q-component from the start.

The arguments of the opponents are acknowledged as **potential risks** by the proponents. Nevertheless, they indicate, often backed up by evidence, that these risks **can be countered when certain prerequisites are met**:

- Gaming is the manipulation of data so that performance looks better than it is in reality in order to improve income. Although an early US-based study found that nursing homes tended to claim they were admitting extremely disabled patients, who then 'miraculously' recovered over a short period, gaming practices were not confirmed in more recent studies evaluating P4Q-programmes.[301] Stakeholders indicated that they fear serious data gaming when P4Q would be introduced. For other initiatives, such as peer review and voluntary benchmarking systems, there is a smaller risk for gaming. After all, if one participates in benchmarking initiatives it is mostly based on an intrinsic motivation to improve quality of patient care and the tendency to manipulate the data will be smaller compared to P4Q-initiatives. Some fear that the introduction of P4Q will result in a lot of bureaucracy (e.g. registration burden, quality commission meetings) and endless discussions about the validity of the data diverting attention away from quality improvement. Introducing P4Q, therefore, requires well designed data sets, a solid audit system to monitor the data system that is used for P4Q-programmes as well as an independent agency that generates and evaluates the results.[2] The data will have to be registered timely and preferably by means of readily available routinely collected databases to avoid the objection that a P4Q-system will demand too many resources to being implemented. Nevertheless, some stakeholders even suggest to only reimburse physicians once they have completed the MZG-RHM data registration.

  "…Nu, als ik daar wil aan deelnemen [benchmarking kwaliteitsindicatoren], dan is dat omdat ik voor mezelf wil weten: waar situeren we ons? Dus ik heb er dan geen belang bij om daar verkeerde dingen gaan in te vullen. De enige die je dan iets wijsmaakt, ben ik zelf. Maar koppel daar nu financiering aan, dan weet je toch zo dat er direct een aantal parameters op een andere manier gaan ingevuld worden als ze niet strikt controleerbaar zijn."

  "Je indicatoren moeten wel heel, heel streng controleerbaar omschreven worden, want anders zit je weer terug in het systeem van de melkerij."

- It will cause patient selection (i.e. cherry-picking). When differences in case-mix between providers are not adequately taken into account, providers have an incentive to select healthy/compliant patients and to avoid severely ill/non-compliant patients, especially for outcome and resource use measures. There is only limited and weak evidence to support this unintended consequence. Moreover, the studies reporting indications for risk selection were conducted in a context of public reporting.[302], [303] It should be noted, however, that adequate risk adjustment and exception reporting (i.e. a process used in, for instance, QOF to allow doctors to use their clinical judgment to remove inappropriate patients from achievement calculations for clinical indicators) are important in this context.[2] In addition, stakeholders advocate to keep the size of the P4Q-incentive within certain limits to avoid a too strong risk for cherry-picking.

  ".Als er te veel financiering aan de kwaliteit gekoppeld wordt, dan krijg je zeker cream skimming/cherry picking. … Als het pakket te groot wordt, dan gaat men de moeilijkere en complexe patiënten afschuiven en doorsturen. En dan zit het ander ziekenhuis met de gebakken peren natuurlijk. Maar als de basisfinanciering om het verwerven en het in behandeling nemen en het aantrekken van een patient voldoende hoog blijft, met de P4Q een stukje bovenop, dan ga je in elk geval zorgen dat je die patient niet zomaar rap… Je wilt die wel houden. En als je dan zorgt dat uw kwaliteitsparameters in orde zijn, krijg je er wat bovenop. Dat vind ik wel een goed systeem."

- Tunnel-vision could occur when P4Q-programmes may cause providers to focus disproportionately on aspects of care that are incentivized and possibly neglect other important aspects that are not. Good reliable data about quality of care are not possible in all domains. Consequently, P4Q-programmes often focus on a restricted number of disciplines such as elective surgery or other non-complex pathologies. It is much more difficult to define valid and reliable indicators for internal medicine, geriatric care, etc. There is also some evidence of tunnel vision, with some studies finding reductions in continuity of care and less improvement for excluded conditions than for included conditions. Therefore, it is preferable to have a broad set of measures (including e.g. clinical quality, patient satisfaction, continuity of care) with a predominantly hospital-wide focus (rather than pathology-specific indicators).[2] It is suggested to start with hospital-wide indicators that are known to cause safety problems to a large group of patients and are costly for the society (e.g. nosocomial infections, pressure ulcers). Moreover, to improve quality of care in these domains multidisciplinary teamwork is required and demand the implication of a wide range of healthcare professions (e.g. nurses, physicians) across the hospital. In any case, only indicators with a strong evidence-base, which can be influenced by hospital-based quality of care policy should be selected.

  "Ziekenhuisbreed zodanig dat ook iedereen in het ziekenhuis zich daar aangesproken door voelt. En dat iedereen samen werkt om te zorgen dat je die kwaliteit… Want als je zegt van: we gaan toespitsen op overleving na hartinfarct, dan voelt die pneumoloog zich niet betrokken. Als je zegt: we gaan het specifiek toespitsen op orthopedie. Dan gaat de abdominale chirurg zich niet betrokken voelen. Dat is het probleem van de orthopedisten. Dat is het probleem van de cardiologen. Dan heb je opnieuw geen cultuur in een organisatie die zegt van: we moeten hier in 1ste instantie veilige zorg aanbieden. En we gaan allemaal onze handen wassen. En niet alleen de cardioloog. En niet alleen de orthopedist. En we gaan allemaal zorgen dat op het moment dat die centrale katheter erin geschoven wordt, dat dat correct gebeurt, en dat die vastgehecht wordt zodanig dat die er niet uit kan floepen, om op die manier katheter gerelateerde scepties te verminderen. Je gaat, denk ik, veel meer een gezamenlijke cultuur hebben… En pakt ziekenhuisbrede kwaliteitsindicatoren: het vermijden van infecties, doorligwonden, longembolieën … Maar dat zijn er dan een stuk of 5, waarvan dat er 3 of 4 beschikbaar zijn, dat er 1 of 2 moeten ontwikkeld worden. Ik bedoel… Dat is doenbaar."

- There is a fear that connecting quality of patient care to money will undo the carefully built up (but still very fragile) patient safety culture to work in a non-defensive and open manner on quality improvement. Consequently, P4Q-programmes should be carefully pilot-tested and implemented gradually, in order not to disturb the willingness of healthcare providers to collaborate to other quality improvement initiatives (e.g. accreditation programmes; feedback and reporting of quality indicator results). The international examples, however, illustrate that it is possible to implement P4Q. The interviewed stakeholders point out that it will require political decisiveness from the responsible ministers. In addition, they indicate that P4Q (and in extenso 'Quality of Care Policy') requires agreements (e.g. common set of indicators) between the authorities at the federal level and the level of the federated entities.

  "Een goede minister. Het is moeilijk om dat te implementeren. Iemand die zegt: we doen het. Punt. Het is doodsimpel. Echt waar. Het is doodsimpel. De criteria waarop dat we dat kunnen vastklikken, die zijn zo te rapen."

  "De vraag is hoe dat gaat articuleren tegenover wat de gemeenschap wil doen inzake accreditatie en normen in de toekomst. Persoonlijk zou ik er toch willen voor pleiten dat er een samenwerkingsakkoord zou komen tussen de federale overheid en de gemeenschappen, want we zijn op 3 plaatsen bezig met kwaliteit: de FOD Volksgezondheid, het RIZIV en de Gemeenschappen.'

The evidence resulting from the international programmes does not allow to conclude that P4Q-programmes result in better quality. Although many studies have found improvements in selected quality measures and suggested that P4Q can potentially be effective, at this point convincing evidence is still lacking as is typical for health service and policy interventions. Magic bullets do not exist in this arena. [2, 302, 304] Proponents acknowledge this lack of robust evidence, but they still point out the importance of carefully considering the design elements that seemed to be instrumental in known successful programmes:

- to select and define P4Q-targets based on baseline room for improvement. Larger effects were found for measures and programmes with more room for improvement.[304] The different starting point in Northern England (e.g. pneumonia related mortality: 29%) compared to the US (e.g. pneumonia related mortality: 13%) is seen as one of the factors that can explain the effect differences of the original PHQID-program and its replication program in the North of England.[2] In addition, P4Q will not be so straightforward for all types of care and most stakeholders (in favour of P4Q) recommend to start with acute care. For patients with multiple chronic conditions, after all, it is recommended to plan care based on life goals as defined by the patient (in collaboration with the GP and primary care team).[64] Measuring the outcome of this goal-oriented care has, by its nature, a subjective component and makes it much more difficult to tie financial consequences to these results (compared to evidence-based process and outcome measures). Nevertheless, some stakeholders are in favour to extend the set of indicators for a P4Q-program in a later stage with 'patient experiences measures' as was recently done in Medicare's P4Q-program (i.e. Consumer Assessment of Healthcare Providers and Systems).[305]

  "Dus we moeten nu al beginnen met indicatoren rond veiligheid, die aan de maatschappij veel geld kosten zoals hospital acquired infections."

- to make use of evidence-based process and (intermediary) outcome indicators. There is evidence that process measures generally yield higher improvement rates than outcome measures.[302, 304] Moreover, in general, structure and process indicators are easier to implement and interpret than outcome indicators. Nevertheless, stakeholders also suggest to include outcome indicators (that can be linked to evidence-based processes) in the P4Q-programmes. It is known that adding a selection of outcome measures results in a greater buy-in from clinicians.[306]

  Stakeholders pointed out that chronic patients with multiple co-morbidities require a different approach. After all, there often is no robust evidence-base to develop quality indicators for these patient groups. In fact, good outcomes for chronic patients are outcomes defined by the patients themselves[307] and stakeholders doubt the feasibility and desirability to base payment on such indicators.

  "Cela me paraît assez évident de se baser pas seulement sur le processus de soins, mais sur le résultat."

  "Alleen moeten we voorzichtig zijn dat we kwaliteit in de acute setting, dat we dat niet onkritisch gaan overplanten op chronische zorg. Want wat is.. een chronische patiënt is een patiënt met multimorbiditeit: die heeft meerdere dingen, meestal 2-3 aandoeningen. … Die mensen zullen nooit meer genezen. Die zullen alleen met hun beperkingen moeten verder omgaan… Aan zo'n mensen moet je eigenlijk de vraag stellen van: wat is voor u kwaliteit? Dat is niet de objectieve wetenschappelijke kwaliteit van de verstrekte zorg, maar dat is wat voor die patiënt in de balans van zijn verschillende aandoeningen het meest prioritair is en waar hij voorrang wil aan geven in de mate waarin dat je daar ook aan kunt tegemoetkomen. Uiteraard moet je al uw verstrekkingen professioneel doen, enzovoort, maar het is toch een ander kwaliteitsbegrip.."

- to involve stakeholders (e.g. consulting the existing structures such as the colleges of physicians) and communicate the program thoroughly and directly throughout development, implementation and evaluation. Studies reporting involvement of stakeholders in target selection and definition seem to have found more positive P4Q-effects than those without stakeholder involvement.[304] Several studies that found no P4Q-effects related their findings to an absent or insufficient awareness of the existence and the elements of the P4Q-programme.[304]

- to focus on quality improvement and achievement and not on penalisation (e.g. bonuses for effective prevention of complications via P4Q should be larger than payment for treating complications in the APR-DRG payment system). The evidence suggests that absolute targets are to be preferred over relative targets.[302] In case of an absolute reward, anyone who performs well obtains this reward no matter how the others perform. It is suggested to set threshold targets at different levels in order to be able to reward those that improve as well as those who remain excellent (i.e. meeting the target for 100%). If the reward is relative, providers compete against one another to obtain a bigger share of the available money (the so-called 'tournament

approach').[298] Nevertheless, a recent study evaluating changes in the PHQID incentive structure does not confirm this evidence. The initial program only rewarded high-performing hospitals (top 20%), giving little incentive to the worst performers (obtaining bonuses considered as unrealistic). The incentive structure was redesigned such that not only the 20% best-performing hospitals were exclusively rewarded but also the top 20% of hospitals with the largest quality improvement. Nevertheless, surgical outcomes of the participating hospitals did not improve (more compared to other hospitals that did not participate in the PHQID-program).[308] In addition, it was stressed that the assessment and evaluation of the results of indicators used for P4Q-programmes is best carried out by an independent agency.

"Een beloning voor als je goed werkt, is veel beter dan een bestraffing. Daar geloof ik echt wel in."

- to distribute incentives at the individual level and/or at the team level or to give financial incentives at the organisational level with the formal arrangement that bonuses are directly invested in quality improvement initiatives (the feasibility of this prerequisite is questioned by some Belgian stakeholders: they fear that the tight budgetary context will not allow a sustainable engagement of the management to re-invest these bonuses in quality of patient care). The (limited) evidence illustrates the importance that frontline workers see a direct (financial) effect that is tied to their performance.[302] This was also reported as a difference between the PHQID-program and its replication in England that might have contributed to a different effect of the P4Q-program on patient outcomes. In the English hospitals, leadership agreed to invest awarded money in quality improvement, an engagement which was not made in the US-programme. The bonus money was invested in a range of quality-improvement approaches, including specialist nurses, new data-collection systems that linked performance feedback to clinical personnel, and participation in regular shared-learning events.[309]

"Ik denk dat we dringend af moeten van die duale relatie en van de relatie artsen versus beheer te zien als een versusrelatie. En als iets van 2 partijen die eigenlijk voortdurend bij wijze van spreken met getrokken zwaard tegenover mekaar staan. Dat hoeft helemaal niet. En daar moeten we van af. Eigenlijk hebben we 1 gezamenlijk belang, en dat is zorgen dat er goede zorg voor de patiënten wordt verleend, hé. Uiteindelijk … een bonus gaan geven in functie van het bereiken van een goed resultaat. En die bonus gaan we halen door het feit dat we bij iedereen een beetje afpakken. Dat, denk ik, is een betere manier om… … En die kan die bonus dan gebruiken om te herinvesteren in zijn ziekenhuis, liefst in associatie tussen artsen en directie."

- to carefully decide upon the size of the incentive: not so small that it is ignored or ridiculed; not so big that it perverts the energies away from the 'natural' professional drive for delivering a good service. However, very little evidence is available on dose-response relationships.[302] Nevertheless, the different incentive size is believed to be one of the factors that could explain the differences in results of a similar P4Q-program implanted in England and the US[2]

"On dit, effectivement, un pourcentage du financement est lié à des indicateurs de qualité établis et c'est un peu le système luxembourgeois, on a mis ça en place à un moment avec 1%, 2% du BMF, selon des indicateurs, on peut dire ça, mais ça peut être plus..."

"C'est très difficile et on parle de 2, 3, 4 % du budget pas plus."

- to embed P4Q-programmes in a larger quality improvement strategy. P4Q-programmes are, after all, often combined with other quality improvement initiatives such as feedback, education, public reporting, etc. Van Herck et al. (2010)[304] found that overall, P4Q appears to have had a large positive effect when it is part of a larger quality improvement strategy, although the evidence is not conclusive and not convincing.

  The stakeholders interviewed in the context of this study, commented on several of these initiatives and some stakeholders indicated that to foster an effective institution-wide quality culture, the active commitment of management is of paramount importance:

- *Accreditation*: The accreditation process is in fact a bottom-up initiative from the hospitals to obtain a certificate that demonstrates that the hospital meets the quality standards that are pre-defined by the accreditation commission. This accreditation process should, according to some stakeholders, not replace the basic quality standards that are set by the public authorities nor should it replace the quality audits of the public authorities. After all, from a public health point of view it is important that these basic quality standards are regulated and audited by the public authorities. Otherwise, if a self-regulated system is put in place there is a risk that some hospitals slip through the quality net. In addition, the quality audits performed by public authorities are more transparent than those performed by the accreditation commissions (see text box). Some stakeholders acknowledge the value of the accreditation process in itself and consider it is as an important tool to change the patient safety culture in hospitals. Nevertheless, some of the stakeholders suggest to reward hospitals financially if they acquire a hospital accreditation or add a P4Q on top of accreditation programmes. They believe that linking financial incentives to the accreditation process is needed for it to be successful.
- *Feedback*: Top-down quality initiatives (e.g. making the use of the safe surgery checklist compulsory) are considered as insufficient, if they are not connected with other quality improvement initiatives such as audit and feedback. Audit and feedback are proven to be more effective when the health professionals are not performing well to start with; the person responsible for the audit and feedback is a supervisor or colleague; it is provided more than once; it is given both verbally and in writing; and it is including clear targets and an action plan.[310]
- *Public reporting* is making data publicly available or available to a broad audience, about a health care structure, process, or outcome. There is evidence illustrating that public reporting does not influence the patient choice of provider but the referral behaviour of clinicians. In contrast with most industrialised countries, there is no public reporting tradition in Belgian healthcare. Nevertheless, some initiatives (e.g. the Flemish Quality Indicators, where hospitals make quality data available to the general public on their websites on a voluntary basis) can be considered as a step toward public reporting. Although this evolution is welcomed by some (and considered as an unstoppable process in line with societal expectations about accountability), others contest it. The opponents fear it will create a 'defensive culture' among healthcare professionals and it will risk to jeopardise the changing patient safety culture in Belgian hospitals. It is suggested by some stakeholders to invest in benchmarking and peer-review rather than in public reporting.[311]

Hospital accreditation can be defined as "initiatives to externally assess hospitals against pre-defined explicit published standards in order to encourage continuous improvement of the healthcare quality".[312] In **Flanders**, a few hospitals already acquired a hospital-wide accreditation from an accreditation body, recognised by the Flemish government[sss] while many others are currently in the application process. If a hospital chooses to opt for hospital-wide accreditation (to be obtained at the latest on 31 December 2017), they are exempted from a hospital-wide audit by the Flemish authorities (not from the targeted audits of care pathways). In June 2014, 60 of the 65 Flemish hospitals have chosen for a hospital-wide accreditation by an external accreditation body. Twenty-three hospitals chose for JCI and 28 for NIAZ. Nine hospitals did not (yet) make a decision and will be audited by the Flemish authorities on the basis of a self-assessment report.[314]

[sss] The Flemish government accepts hospital wide accreditations from ISQUA-recognised (The International Society for Quality in Health Care) accreditation bodies. In practice, Flemish hospitals choose between two accreditation bodies: NIAZ (Dutch Institute for Accreditation in Healthcare) and JCI (Joint Commission International). Recently, NIAZ and the Canadian International Accreditation Agency have signed an agreement by which the Dutch agency will adopt the manual and methods of the Canadian agency.[313]

In **Brussels and Wallonia**, the public authorities are reflecting and debating about this topic.[10] Recently, a Plateforme pour l'Amélioration continue de la Qualité des soins et de la Sécurité des patients (www.pags.be) has been launched with the hospital federations, the main sickness funds and all schools of public health as well as the association of medical hospital directors. The aim of this platform is to support quality improvement and, mainly for now, hospital accreditation. A small number of francophone hospitals has engaged in accreditation as yet, mainly with Canada's International Accreditation Agency.

Key-points

Current policy initiatives to support quality of patient care and appraisal of the current hospital payment system:

- **Belgian (federal) healthcare policy traditionally stimulated quality of patient care via the instalment of recognition norms (e.g. staffing ratios, architectural norms) and quality structures (e.g. colleges of physicians). In the current hospital payment system specific structures (e.g. hospital infection control nurses and physicians) and projects (e.g. quality and patient safety contracts) are foreseen to support quality of patient care. These specific payments for quality were assessed as valuable but insufficient by the stakeholders.**
- **During the last decade several quality improvement initiatives (e.g. quality and patient safety contracts; hospital-wide accreditation programmes; quality indicators: development, implementation, feedback and first steps in the direction of public reporting) created a new momentum with intensified attention for quality of patient care. This new quality culture is, however, still fragile and vulnerable.**
- **Both the hospital budget and the physician remuneration system do not include direct incentives for evidence-based patient care contributing to the inappropriate practice variation and unmotivated deviation from evidence-based practice guidelines.**
- **The APR-DRG based payment of the hospital budget is criticized as including incentives that negatively impact quality of patient care which are not or insufficiently counteracted by other measures in the payment system (within the DRG-based payment, or by means of P4Q). First, the current payment system financially rewards complications. The incentive to decrease the hospital length of stay (at least to or below the level of the national average length of stay per APR-DRG) could result in premature discharges resulting in turn in inappropriate hospital readmissions or undesired shifts in care burden towards primary care. Although hospital readmission penalizations are described in the international literature as a policy measure that simultaneously improves quality and saves costs, the concrete measure taken in Belgium is perceived as a blunt cost-saving measure.**

Internationally, potential adverse effects on quality of care of DRG-based payment systems are counterbalanced by adjustments within the DRG-based prospective payment system. Below we describe the comments from Belgian stakeholders on these examples as well as the lessons learned based on a literature review:

- **Although there is a strong plea from Belgian stakeholders to include 'evidence-based practice' as a parameter in the future DRG payment system (e.g. DRG-tariffs that are based on the costs for evidence based care components), there are little or no widely implemented and extensively evaluated systems described in the international literature. The Best Practice Tariffs in the NHS (England), is one of the rare initiatives in this direction. This system aims to align payment with compliance to best practices for a selection of high impact (i.e. high volume, significant unexplained variation in practice or outcomes despite a strong evidence base) DRGs (e.g. Fragility Hip Fracture).**

- **The perverse effect of the DRG-based payment system which rewards hospitals for complications because these hospital stays can end up in a higher severity of illness are internationally counterbalanced by either excluding complications from the DRG-calculation or by not paying for hospital acquired conditions or never events. However, the effects of the international examples are not persuasive and Belgian stakeholders fear more data gaming and the re-introduction of a 'blame and shame culture'. Another approach (see P4Q-initiatives which are discussed below) is to reward hospitals with low risk-adjusted complication rates (or penalize those hospitals with high risk-adjusted complication rates).**

Pay-for-quality (P4Q)

- **P4Q ties financial incentives to the quality of performance. This mechanism is increasingly used by policymakers to drive improvements in healthcare quality and has a strong face validity based on the economic truism that 'money changes behaviour'. Although many studies have found improvements in selected quality measures and suggested that P4Q can potentially be effective, at this point convincing evidence is still lacking.**
- **The literature points towards some important design elements that should be taken into account when designing P4Q-programmes in order to increase their potential effects: select P4Q targets with sufficient room for improvement; select process and (intermediate) outcome indicators which are evidence based; involve stakeholders intensively during programme development, implementation and evaluation; focus on quality improvement and (not only) on quality achievement; re-invest bonuses directly in quality improvement initiatives; monitor the potential unintended consequences (e.g. gaming; patient selection); carefully select the size of the incentive (not too small so that it is not ignored, not too large so that it results in unintended consequences such a tunnel vision).**

Multifaceted approach:

- **Quality improvement requires a multifaceted approach to foster an effective institution-wide quality culture (both including clinicians and management). As such, the carefully built up initiatives in the Belgian context (e.g. accreditation programmes, monitoring, organising feedback and providing transparency about results on quality indicators) could be further supported and developed. In any case, it should be prevented that reforms in the payment system are counterproductive and discourage these initiatives.**

PART II: AN INTERNATIONAL PERSPECTIVE ON SELECTED TOPICS

13 THE HOSPITAL OF THE FUTURE

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13.1 Introduction

"Hospitals play an important role in the health care system. They are health care institutions that have an organised medical and other professional staff, and inpatient facilities, and deliver medical, nursing and related services 24 hours per day, 7 days per week. Hospitals offer a varying range of acute, convalescent and terminal care using diagnostic and curative services in response to acute and chronic conditions arising from diseases as well as injuries and genetic anomalies. In doing so they generate essential information for research, education and management. Traditionally oriented on individual care, hospitals are increasingly forging closer links with other parts of the health sector and communities in an effort to optimize the use of resources for the promotion and protection of individual and collective health status."[315]

Put simply the rationale behind a hospital is a belief that concentrating treatment within a physical structure is beneficial both from a medical and an economic viewpoint. Concentrating care in hospitals leads to economies of scale, economies of scope and provides better quality of treatment. However, a hospital represents a major investment, and this investment is largely irreversible. Once built a hospital cannot easily be redesigned, it will tie up a large share of healthcare resources (both personnel and capital) and it will, by way of its location, be an important determinant for how the population can access services. From a health policy perspective important questions are therefore: What does an optimal hospital sector look like? What type of care should be delivered in hospitals? What is the right balance between centralisation and decentralisation of hospital services, between specialisation and diversification? How should hospitals be financed, and governed? What is the role of the market versus regulation? How can hospital care best be integrated with care from other parts of the healthcare system – and when exactly is care integrated? Does good outcome automatically follow from high volumes, and are large hospitals always more cost-efficient than small? How should hospitals be designed, organised and managed in order to deliver the best possible care for its patients?

These questions challenge policy makers as well as academics across countries and across healthcare systems. They are also questions that are largely without straightforward answers. This should not come as a surprise. Healthcare systems pursue multiple goals using a battery of policy instruments. Goals may be internally conflicting – think about the simultaneous quest for efficiency and equity – and instruments that support one goal may not support another. When policy makers navigate this field, the ambition should therefore first be to provide a precise formulation of the policy question that is addressed, second to see whether there exists evidence that is useful in addressing that particular question and, third, to verify that the evidence is produced in a similar contextual environment.

The theme of this chapter is the 'future role of hospitals'. It is a wide theme, and it encompasses at least **three questions:**

- What is the right balance between centralisation, specialisation and decentralisation of hospital services?
- What type of care should be delivered in which care setting (e.g. hospital, outpatient)?
- How should hospitals be organised to achieve integrated care?

Our ambition with this chapter is not to provide exact answers to these questions, indeed most of them do not have exact answers. Our aim is rather to provide a conceptual discussion of the issues they raise. Thus, this chapter will cover issues that are relevant on a system level, on the organisational level and within hospitals. We also discuss the interaction between hospitals and the remainder of the healthcare system, or what has come to be characterised as *integrated care.* We begin, in section 13.2, by describing the varying **institutional environments** that hospitals operate in. Healthcare systems differ across countries, as do models of healthcare and hospital governance. This leads to different challenges for the system, organisational as well as clinical level[34] that will have consequences for the questions addressed above. Next, we **briefly review the literature** on three vital issues: the relationship between competition, costs and quality, the relationship between volume and quality and the relationship between volume, scope and costs. The concept of **integrated care** is discussed in

section 13.3, where we also provide examples of successful models of integrated care. **Concluding remarks** are offered in section 13.4.

13.2 The institutional environment of the hospital

'Hospital' is derived from the **Latin word 'hospitale'** *(guest house/inn)* that was originally used to describe a 'shelter for the needy'. The earliest examples of buildings recognised as hospitals date as far back as to Byzantium in the 7th century.[316] The use of hospitals as a description of an institution caring for sick people is, however, not found before 1540. With the evolution of anaesthetics and surgical techniques hospitals **gradually evolved into places of medical and surgical care in the 19th century.** Admission to a hospital was now based on medical, rather than social criteria. The importance of hospitals in healthcare systems increased, and after the Second World War, it is fair to say that **healthcare systems have been centred around hospitals.** In particular, the teaching hospitals have in many ways become 'the centre of modern medicine'.[317]

The past decades have been characterised by a **rapid development in technology** as well as increased **specialisation of personnel**. Thus, it is no surprise that questions are raised about the future role of the hospital as we have come to know it.[317-319] Hospitals have multiple stakeholders, and they operate in an institutional and financial environment that differs between (and sometimes within) countries. A modern hospital is a high-tech institution providing complex services with the help of personnel from a large number of medical specialities. Furthermore, they are large physical structures, and there is substantial time lag from the decision is made to build a hospital to the point where the hospital is actually up and running. Thus hospitals will be planned and built on the basis of a perceived need and existing technology. A hospital represents a substantial capital investment, and a large part of that investment will represent sunk costs. Still hospitals are rarely built with a plan for the entire life-cycle of a hospital building, and there is a variety of models for how hospitals should be structured conceptually.[320] As a consequence, **once built, hospitals will not always be able to adapt quickly** to changes in demand, in technological possibilities or institutional environment.

A major challenge facing healthcare systems all over Europe is the **changing demographics**. A consequence of this is that healthcare systems and hospitals will face a population that is older, increasingly characterised by multi-morbidity and with a higher share of people that are demented. Also the declining ratio of the working to the non-working population will substantially increase the fiscal pressure on the system. On top of demographic changes we are likely to see future **advances in treatment technologies as well as pharmaceutical possibilities** that will further put pressure on the financial sustainability of the healthcare system.

The future hospital will provide both highly specialised technology-intensive services as well as personnel intensive specialised services. At the same time, **hospitals will be more integrated with other parts of the healthcare system**, and provide what essentially are fragments in the long-term care for patients with multiple chronic conditions. Thus the three questions posed in the introduction to this chapter can be re-formulated as policy issues on three levels: *macro* (system), *meso* (organisational) and *micro* (clinical).[34]

On the macro-level policy issues include:

- How to balance the use of markets versus the use of regulation and planning. This is equally relevant for the overall design of a healthcare system as it is for the hospital sector as a part of that system. This includes decisions about ownership, regulation versus competition, (de)centralising governance, and the role of politicians versus professions in the different levels of governance.
- How to choose a model of payment that incorporates the appropriate use of financial incentives in the hospital sector. This includes making decisions about whether (and how) to move towards paying for outcome and quality rather than for activity, how to bundle payment for services across different providers and how to balance a goal of increased efficiency with the dangers of patient selection and lower quality.

On the meso-level policy issues include:

- How to provide care in an environment where individual rights, consumer expectations and patient participation are likely to increase. Patient centred care will have implications for the internal organisation of services as well as for the integration of hospital care with community based services. In the future meeting patient expectations and responding to patient experiences may become just as important as clinical effectiveness.

- How to distribute functions between hospitals, what to centralise and what to keep decentralised. A hospital structure must balance goals of high quality, cost efficiency and equal and timely access to services against each other.

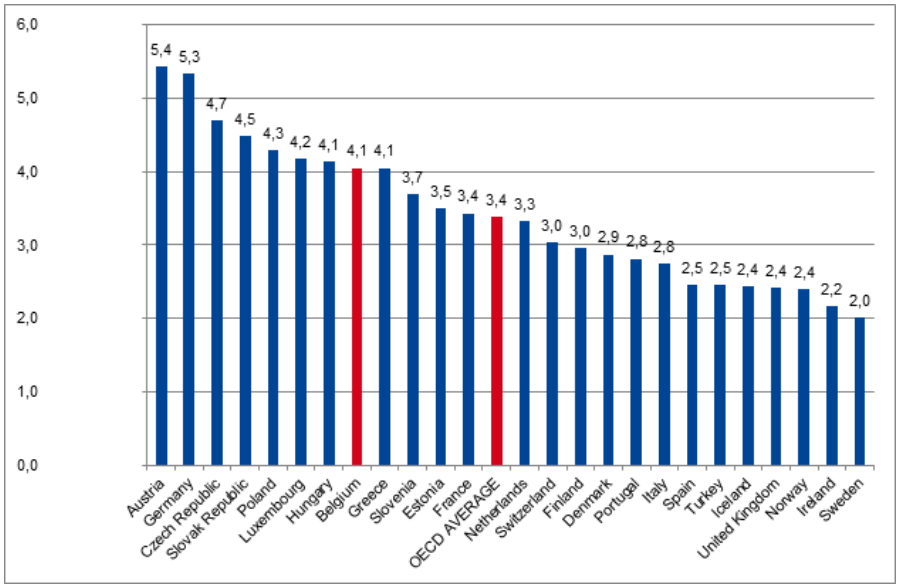
On the micro-level policy issues include:

- How to choose a model of internal organisation that balances management and (medical) professionalism. This incorporates issues such as professional autonomy, personnel management, clinical quality as well as clinical level management.[34]
- How to use incentives to obtain policy goals of efficiency and quality. Hospital payment models have largely moved from global (fixed) budgets to activity-based financing using systems such as the Diagnosis Related Groups (DRG)-system and also to systems that link payment to outcome. Payment models will affect individual as well as organisational behaviour and thus both the efficiency and quality of services.

13.2.1 Hospital capacity in Europe

To illustrate some of the diversity between countries in the structure, capacity and role of the hospital sector we present two figures. Figure 28 shows hospital capacity measured as number of acute care beds per 1000 population across European members of OECD in 2011 (or nearest year available).[321] While different shares of day care versus inpatient care is likely to affect the number of beds, the primary purpose of this figure is to show the large variations in capacity between countries. As we can see, Austria with 5.4 acute care beds per 1000 population has a hospital capacity more than two and a half times that of Sweden with 2 beds per 1000 population.

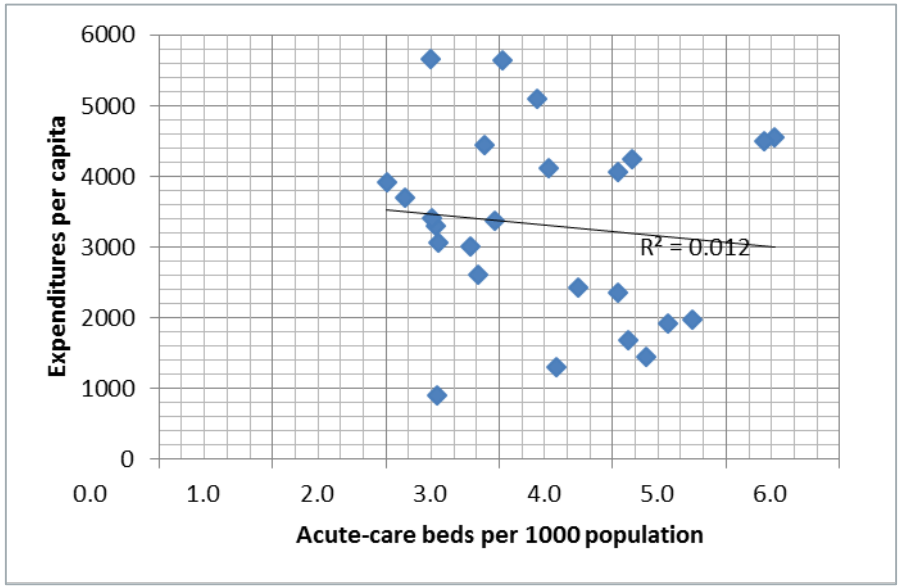
Figure 28 – Acute-care hospital beds per 1000 population, 2011 (or nearest year available)



Source: OECD Health Statistics 2013[321]

These **variations in capacity could be related to differences in healthcare spending**. The relationship between hospital capacity and healthcare spending is shown in Figure 29. While this is a partial relationship (i.e. not adjusted for other factors that may explain variations), it still is a clear indication of a weak relationship.

Figure 29 – Acute-care hospital beds per 1000 population versus PPP adjusted per capita health expenditure



Source: OECD Health Statistics 2013[321]; PPP=purchasing power parity

Hospitals provide an increasing amount of its care as outpatient or day care, thus the number of beds will gradually lose its meaning as a measure of hospital capacity. However, Figure 28 and Figure 29 are still sufficient to illustrate the variation between countries in the structure of delivery of hospital services. These differences highlight the need to take historical, cultural and system specific factors into account before basing policy recommendations on experiences from other countries. In short: context matters.

13.2.2 The macro level: healthcare system characteristics

The large variations between countries in healthcare spending, hospital capacity, structure and organisation have implications for both the scope and content of national health policy. While variations need not be systematically related to type of healthcare system, they suggest that a **description of characteristics of healthcare system is a useful starting point for a health policy discussion**. Traditionally healthcare systems have been lumped together based on their main source of financing: i.e. tax-based versus insurance-based systems (often referred to as Beveridge versus Bismarck systems).[322] In terms of the macro-level decisions that affect structure and performance of a healthcare system, however, the source of financing has in recent literature come to be viewed as of less importance.[323, 324] Thus, rather than labelling systems based on their source of funding, some argue that healthcare systems are more accurately described in terms of how they differ with regards to **regulation, financing and provision**. To further facilitate comparison, along each of these dimensions, systems are characterised as being dominated either by the **state, by societal organisations or institutions or by private actors.** Using this framework Bøhm et al. (2013)[323] group OECD countries into five different types of healthcare systems as described in Table 24. While this particular labelling of systems and countries of course may be contested, a systematic labelling of healthcare systems may facilitate a better understanding both of what policy directions are available and of whether policy is transferrable between countries.

Table 24 – Type of healthcare systems

Type of system	Regulation	Financing	Provision	OECD countries
National Health Service	State	State	State	Denmark, Finland, Iceland, Norway, Sweden, Portugal, Spain, United Kingdom (UK)
National Health Insurance (NHI)	State	State	Private	Australia, Canada, Ireland, New Zealand, Italy
Social Health Insurance (SHI)	Societal	Societal	Private	Austria, Germany, Luxembourg, Switzerland
Private Health System	Private	Private	Private	United States (US)
Etatist Social Health Insurance	State	Societal	Private	Belgium, Estonia, France, Czech Republic, Hungary, Netherlands, Poland, Slovakia Israel, Japan, Korea

Source: Bohm et al. (2013)[323]

National Health Service (NHS) systems are characterised by a state that dominates regulation, financing as well as provision. There are, however, differences between the countries labelled as NHS in Table 24, both in the size and role of the private sector, and of the role of the central versus local governments. The share of private hospitals is substantially higher in Portugal and Spain than in the UK and the Nordic countries. Also, devolution – political decentralisation – has long been regarded as one of the distinctive features of the Nordic countries.[325]

National Health Insurance systems are similar to NHS systems, with the exception of provision. Thus NHI countries will to a larger extent than NHS countries depend on private provision of services. This does not mean that private provision outnumbers public, but the number of private hospital beds is substantially higher than in NHS countries. In some cases (e.g. Canada) nearly all hospital beds are private (although not-for-profit).

Social Health Insurance is fundamentally different from the NHS and NHI systems as societal actors (i.e. public or private sickness funds) play a dominant role in both regulation and financing of healthcare. Furthermore, private (often for-profit) providers are more prominent in SHI countries. Again, there are differences between countries. The German healthcare system, although increasingly competition based, is still dominated by corporatist regulation, while Austria is characterised by a more prominent regulatory role for the state.[323]

Etatist Social Health Insurance is truly mixed with the state responsible for regulation, societal actors responsible for financing and (a substantial part) of provision in the hands of private actors. As we see from Table 24, the Belgian healthcare system would be classified in this category.

Private Health Systems have as their core feature coordination by market actors, financing by private insurance and provision by private actors. The US system is frequently described as a private system, although it should be remembered that nearly 50% of the financing in the US comes from public sources through the Medicare and Medicaid programmes.

The extent to which these systems differ with respect to **regulation versus competition** in the hospital sector is almost negligible. In England, with its centralised state-dominated system, pro-competitive reforms have been a main policy feature of the past 10-15 years. Also Germany, the Netherlands and France have seen reforms with the aim to increase competition among healthcare providers. Perhaps a more important distinction is between systems where **regulation is decentralised versus systems where it is centralised.** The Nordic countries, as well as some of the Southern European NHS/NHI countries have models of devolution/de-concentration

that limits the role of the state as a central regulator and planner. Also in Austria the hospital sector is governed by the nine states, making it similar to the devolved hospital sectors of Sweden and Denmark. This opens up for potential competition between regions (geographical areas), that may lead to potential overcapacity and a less than optimal hospital structure.[326]

The **importance of ownership** can be discussed, and this is reflected in the choice of regulation rather than ownership as a distinguishing variable. If the same set of regulations apply, differences in behaviour and performance may be marginal.[327] The difference between NHS and NHI countries are therefore rooted in historical and cultural differences, more than in a firm belief that one or the other solution is preferable in some undefined sense of health system performance.

Within a healthcare system decisions must be made with regards to the structure, payment and governing of the hospital sector. Depending on the type of system these decisions may be made by the state, devolved to local authorities, put in the hands of societal organisations or left to the market. Nevertheless, out of a healthcare system will arise a structure that determines the number of hospitals, their size, their scope and their location.

13.2.3 The meso-level: hospital types

As briefly noted above hospitals have evolved considerably from social institutions to what the Oxford dictionary now defines as "**An institution providing medical and surgical treatment and nursing care for sick or injured people**"[ttt]. As should be evident from the variations in capacity, countries both provide different levels of care and choose to provide healthcare services in different settings. The implication of this is that the term 'hospital' is too broad when the intention is to describe in detail the internal structure of a healthcare system. Put simply: between-countries comparisons of hospital capacity (as in Figure 28 and Figure 29) provide few answers, but raise several questions. One way forward would be to provide a more specific description of the types of hospitals. Again we enter unchartered territory: **no uniform classification of hospital types exists**. It is, however, possible to make a broad distinction between some 'stylized' groups of hospitals. Thus, typically hospitals are described according to degree of specialisation, size of population it provides services to and scope of services (see Table 25).

Table 25 – Different types of hospitals

Degree of specialisation	Catchment area/population	Status
Tertiary	National Regional Local	Teaching
Secondary	Regional Local	Teaching Non-teaching
General	Local	Non-teaching
Specialist	National Regional	Teaching Non-teaching

AMI=acute myocardial infarction; CABG=coronary artery bypass graft

Results are somewhat mixed, but all the **NHS studies indicate that increased competition also increases quality.** While the majority of the studies are concerned with the relationship between competition and quality for patients with heart attacks (acute myocardial infarction, AMI), the argument goes that the results can be translated to other parts of the hospitals as well. The assumed mechanism can be described as follows. Introduction of competition implies that hospitals with higher quality will attract more patients. Thus in order to preserve or even increase their market shares, hospitals will increase their overall effort. This will translate into all parts of the hospital and lead to reduced mortality. Thus when the empirical analysis detects a negative relationship between the level of competition and in-hospital mortality for, say AMI patients, this is interpreted as the result of an overall increase in effort. There is an obvious challenge in establishing the direction of the effect in this type of analysis. If patients

[ttt] http://www.oxforddictionaries.com/definition/english/hospital

(or GPs) systematically select hospitals with a reputation for high quality, their market share will increase and thus there will seemingly be a negative relationship between competition and quality. Most studies therefore use instrumental variables techniques to overcome this problem.

There are two additional factors to consider when evaluating the effects of competition. First, sufficient quality may in some cases only be obtained if there is a minimum volume of the activity within each hospital. If such a threshold exists for some patient groups, there is an argument for limiting the provision of these services to a smaller number of hospitals, i.e. reducing the potential for competition. Second, there may be economies of scale and/or economies of scope in the provision of hospital services. Again this would imply a degree of centralisation is to be preferred. We now look more closely at both these issues.

13.2.4 Is there a relationship between volume and outcome?

Outcome can be viewed as the relative change in health status that follows from an intervention involving the use of healthcare resources. This change may last for a specific period of time, thus it is generally recommended to combine measures of prolonged life with measures of the quality of life; i.e. through 'quality adjusted life years' (QALYs).[328, 329] However, in the literature discussing the volume-outcome relationship the most frequently used indicator of outcome is 'mortality rates for specific procedures or clinical conditions'. Higher mortality rates are regarded as a signal of lower quality and vice versa. A crucial question then is when mortality can be said to be the result of the hospital procedure? Two commonly used measures are inpatient (in hospital) mortality rate and mortality within 30 days after discharge. A weakness with in-hospital mortality is that it may depend on the organisation of care. In cases where patients are discharged early to other healthcare facilities in-hospital mortality is likely to be lower than when patients spend the entire episode in the same facility. On the other hand, the longer period after discharge that is used the higher the probability that mortality may be caused by other factors than the hospital treatment.

There are **several methodological issues to consider** when assessing the relationship between volume and outcome. First, while it seemingly would be more straightforward to measure volume than to measure outcome, it is important that proper adjustment is made for case-mix differences such as systematic differences in severity, age or other factors potentially affecting the outcome of treatment. If not differences in outcome may as well be the result of differences in the type of patients that are treated, and the resulting analysis without practical policy value.

Second, in the simplest form we are interested in whether there is an association between volume and outcome. For policy purposes, however, we will also be interested in how this association looks. Is there a linear relationship, is there a lower threshold for volume that need to be met in order for quality to be sufficient, does outcome increase above this threshold, is there an upper threshold over which quality will begin to deteriorate? We might not be able to answer all these questions, but unless the analysis is able to provide a reasonable estimate of the lower threshold for volume it will clearly have limited relevance for policy purposes.

Third, if practice makes perfect, then the relationship clearly is between volume and outcome. However, we need to establish whether high volume generates better outcomes or whether better outcomes generates higher referral rates and thus higher volume. Thus the question is whether 'practice makes perfect' or whether we see 'selective referral'.[330] Also, there is a need to establish whether the relationship is static or dynamic. A static relationship would imply that any high-volume unit would be expected to benefit from a relationship between volume and quality, a dynamic relationship would imply that this relationship is the result of accumulated skills, or experience. In this case shifting volumes from one hospital to another could involve 'stranding' of the experience that is built up.[331] Fourth, there is a need to establish whether a positive relationship between volume and outcome for a particular procedure is independent of the volume of other types of procedures in the hospitals; that is whether this is simply a question of scale or also includes issues related to scope.

The idea that the relationship between outcome and volume should have consequences for the organisation of hospital services is often attributed to **two papers** by health economist Harold Luft et al.[109, 330] dating back to 1979 and 1980. The initial paper[109] specifically related this to the question of an optimal hospital structure by asking 'Should operations be regionalized?' [109]The authors find a negative association between the volume of certain procedures and inpatient mortality rates. This association can be the result of the effect of volume on mortality or the result of selective referral to hospitals with higher quality. Regardless of explanation, however, the authors argue that data support regionalisation/centralisation of certain

procedures. In a follow up study[330] Luft et al. (1980) take the analysis one step further by asking:

- whether volume leads to better outcomes or vice versa;
- whether type of hospital (teaching status) is of importance;
- whether it is volume itself or accumulated experience that is the major driver for better outcomes.

He finds support for a volume-outcome relationship that goes both ways, depending on the type of service, but stresses important methodological challenges when trying to establish the direction of causality. The results also indicate that the effect of volume on outcome is through volume itself rather than through accumulated experience.

In the 35 years that have passed, there have been numerous studies looking for a possible volume-outcome relationship. In their review of the literature in 2002, Halm et al. (2002)[332] identified 135 studies that met their inclusion criteria, covering 27 procedures and clinical conditions. A decade later Pieper et al. (2013) provided a systematic review of systematic reviews[333] including 32 reviews covering 14 procedures and clinical conditions. Their results are summarized in Table 26. In between, the UK 'Cooperation and Competition Panel' published a study by the York Health Economics Consortium,[334] limited to reviewing systematic reviews published after 2000 and some recent primary studies, covering in total 73 studies. One can safely say that this is a field where there is no lack of research interest. The question is, of course, whether this formidable amount of research can guide policy makers in their search for an optimal hospital structure?

Table 26 – Assessment of hospital volume-outcome relationship

Procedure/Speciality*	Association volume/outcome
Pancreatic surgery	+++
Abdominal aortic aneurism	++
CABG/PCI	++
Bariatric surgery	++
Esophageal cancer	++
Breast cancer surgery	++
Radical prostatectomy	++
Radical cystectomy	++
Nephrectomy	++
Colorectal cancer	+
Lower limb arterial surgery	+
Lung cancer	+
Carotid endarterectomy	+
Knee arthroplasty	?

**Adapted from Pieper et al. (2013)[333]; CABG=coronary artery bypass graft; PCI= Percutaneous coronary intervention*

For the moment (setting aside the quality of the studies) **the main points that emerge from the medical literature on the volume-outcome relationship are:**

- First, there is, for a number of procedures and clinical conditions, an established association (that is: a positive correlation) between hospital volume and outcome, such that increased volumes are associated with lower in-hospital (and sometimes 30 day) mortality rates. However, although this association emerges both from primary studies and

sometimes from meta-analysis, statistical heterogeneity is often high and results not always statistically significant. This is reflected in the associations presented in Table 26 with only one out of 14 (pancreatic surgery) viewed as 'strong', eight out of 14 viewed as 'moderate' and four out of 14 as 'tendency'. We are not aware of studies trying to assess whether there is a positive association between the complexity of a patient/procedure and the volume-quality relationship but it can be suspected that the level of complexity influences the strength of the volume-outcome relationship.

- Second, a relationship between volume and outcome seems to be clearer between hospital volume and outcome than between surgeon volume and outcome. However, results differ between types of procedure and clinical condition. There seems, however, to be some support of Luft's[109] original finding that volume rather than accumulated experience is the major determinant in a volume-outcome relationship.
- Third, it is generally not possible from the medical literature to specify lower or upper volume thresholds for a volume-outcome relationship. Primary studies often differ in their characterisation of volume as 'high' or 'low', thus from a methodological point of view it is difficult to summarize the practical implications of a detected association in terms of recommended volumes. Often thresholds in primary studies overlap, so that 'high volume' in one study would be 'low volume' in another.
- Fourth, a general feature of the medical volume-outcome literature is the lack of discussion about the direction of causality that was raised in the original papers by Luft and colleagues. In some cases this is acknowledged in reviews, in other cases overlooked. Thus whether the effect is due to selective referral or 'practice makes perfect' is not known. This severely limits the value of these results in terms of guiding policy makers in (re)designing the hospital structure. There are a small number of studies, some unpublished and some in the economics literature, that focuses on the direction of the causality.[331] These studies suggest that individual physician volume is important in the sense that physician experience is portable across hospitals, but also that hospital volume in itself matters so that there are hospital specific aspects to the volume-outcome relationship. However, exactly what factors that contribute to a positive volume-outcome relationship is poorly understood. While the discussion of surgeon versus hospital volume is important, we cannot from the literature find any clear understanding about which systemic hospital characteristics that are of importance. Suggested factors are preoperative treatment, skills of surgical team and postoperative care. These remain, however, suggestions.

Thus, a positive relationship between outcome and volume exists for some, but not all types of patients. Ideally policy makers would want a list of procedures for which there is an established relationship, and they would want the concept of volume to be operationalized. What is meant by 'low' and 'high' volume, is the relationship continuous or are there thresholds above no further gain is to be expected? If so, what is the threshold, when do volume levels go from being 'low' to 'high'? Finally, before (re)structuring the hospital sector they would like to know the nature of the relationship between volume and outcome. Is it surgeon volume or hospital volume that is important? Is it possible to identify structural characteristics of a hospital that will lead to better outcome?

Unfortunately the literature provides policy makers with little practical guidance in this area. Threshold volumes are generally not established, the relative effect of (accumulated) surgeon experience versus hospital volume is not known, the importance of selective referral versus 'practice makes perfect' is unclear and probably varies between types of procedures and finally little is known about which support structures in a hospital that actually sets off a (possible) volume-outcome relationship.

Flipping the coin, there are two other issues related to volume-quality. First, concentrating the delivery of services in few hospitals effectively reduces the scope for competition. If, as discussed above, competition is likely to provide better quality there may be a trade-off between a (possible) volume-outcome effect and a (possible) effect of competition. Second, concentrating the delivery of services will reduce patient choice which may be of value by itself.

13.2.5 Are there economies of scale or scope in hospitals?

Even if there should be no systematic causal relationship between volume and outcome, size may matter because of its' relationship with costs. Thus economies of scale and economies of scope are concepts with possible important implications for hospital structure. In the presence of economies of scale or scope large(r) hospitals will be necessary in order to minimize (operational) costs. On the other hand larger hospitals imply fewer hospitals and thus less competition. This may again lead to increased costs and/or

lower quality of services. Finally, fewer hospitals imply that more patients will have to travel further to reach a hospital. There will also be costs associated with this, both direct costs and time costs, but also disutility associated with being treated in a hospital away from family and friends.

For policy makers this raises important questions:

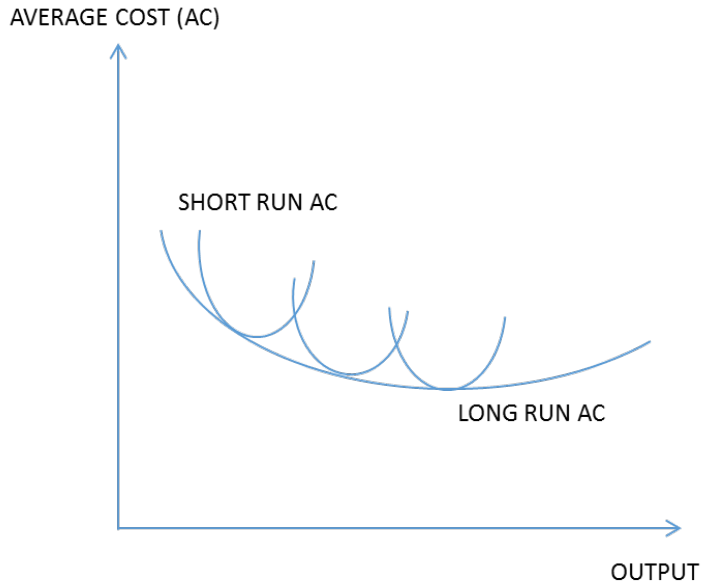
- At what size are (possible) economies of scale exploited, and at what size will there be (possible) diseconomies of scale?
- Does optimal size depend on the type of activities performed inhospitals, i.e. between what type of services are there (dis)economiesof scope?
- What is the trade-off between (possible) harmful effects of lack of competition and (possible) economies of scale?
- What is the trade-off between (possible) costs associated with increased travel time and (possible) economies of scale?

For the highly unrealistic case of a hospital that only treats one homogenous type of patients the concept of economies of scale is seemingly straightforward. In this case size (and patient volume) is optimal when unit costs are at their minimum level. Furthermore, optimal size will depend on the level of fixed costs and the relationship between (marginal) labour productivity and volume. In the real world, however, hospitals are seldom fully specialised, but rather treat a variety of patient groups as well as engage in other activities such as teaching and research. Thus **hospitals are**, using economic terminology, **multiproduct firms**. In this setting the optimal size will depend both on the volume and on the composition of activity: that is it may vary with the case-mix of the hospital. We return to this point below.

The classical justification for economies of scale is that the cost of fixed capital (buildings and medical equipment) is spread across a large volume of patients. In a hospital setting, where also labour is increasingly specialised, this may also apply to certain types of labour. Also sharing overhead costs such as management across a larger patient volume is believed to reduce unit costs. However, a discussion of optimal hospital size needs to make the distinction between short and long-run economies of scale. **Short-run economies of scale** imply that existing capacity is not fully utilized. This may typically take the form of low occupancy rates. **Long-run economies of scale** imply that a hospital with 100 beds has lower average costs than a hospital with 50 beds in a situation where beds are fully utilized. The important point here is that exploiting economies of scale is different from eliminating excess capacity.

Figure 30 below illustrates this by showing a 'typical' average cost trajectory. The bold line is the long-run function while the thin lines show short-run cost functions for given levels of capital. With Figure 30 in mind, consider now the following example. In the first case policy makers observe two mid-sized hospitals where there obviously is excess capacity as seen by low occupancy rates. Two (theoretical) options are available. Either reduce the number of beds in both hospitals; i.e. operate two smaller hospitals. Or close one hospital and move the patients to the other, now operating at full capacity. Choice of option will depend on the long-run cost-function, if these are increasing then the two hospitals should remain separate entities, if they are increasing they should merge.

Figure 30 – Economies of scale



Policy makers, however, will not only be concerned with the size, but also the composition of activities. Discussions about economies of scale must be combined with discussions about economies of scope. Formally there are **economies of scope** when the total costs of two (or more) activities are higher when they are done separately than when they are done together. Cost savings from doing activities together will often be related to share inputs such as equipment or overhead.

Traditionally economies of scale are discussed in relation to the 'optimal number of beds' in a hospital.[335] Discussions of economies of scope are more challenging because we then need to specify the types of activities that are involved. While economies of scale relate to the volume of services provided, economies of scope relate to the number and composition of different services provided within the same hospital. Thus, if there are economies or diseconomies of scope, the production of hospital services in a region could become more efficient by exploiting any cost savings that may stem from an optimal division of service production between units. While the theoretical concepts of economics of scope are well developed, only a limited number of empirical studies of hospital production have been concerned with scope.

Hospitals are multiproduct firms, using several types of services (nursing, laboratory, x-rays, surgery etc.) and combining these into the treatment of numerous patient categories. Since there is no precise definition of a hospital department or a clear understanding of the (potential) inter-dependencies between departments, it is not entirely clear how the concept of scope should be operationalized. A common solution is to separate outputs by type of acute service.[336] However, this may lead to 'arbitrary' and/or very context-specific analysis with results that need not be generalizable. Thus, rather than pick an ad hoc operationalization of hospital outputs, one ought to motivate the choice of output vector both by arguments related to the production technology and arguments related to policy issues. Often the policy issue is only broadly formulated as 'to what degree should hospitals be specialised'. **Specialisation** can be described in terms of treatment capacity (e.g. by the allocation of beds by speciality), in terms of use of different types of staff (by ratios of physician specialities or different occupations), or by the composition of diagnosis (e.g. International Classification of Diseases (ICD)-10 or DRG).

A search for systematic reviews of economies of scale and economies of scope in hospitals yields one result for hospital level analysis that dates back to 1997[337], and one result for a review for the effects of centralisation of cancer services.[338] This section is therefore based partially on an additional selection of work that specifically addresses the question of hospital or service level economies of scale or scope. A search in the grey literature reveals several policy documents as well as working papers. These are included where they have been found to be relevant. Aside from the review, the discussion is limited to studies published after the year 2000.

13.2.5.1 Hospital level economies of scale and scope

There are **methodological challenges** facing those analysing economies of scale in hospitals. What should be established is a technical relationship between inputs and outputs, and the existence (or non-existence) of economies of scale will depend on the assumptions made about this (unknown) technical relationship. Thus, the result of an empirical analysis will depend on choice of functional form in the estimation of cost or production functions. Second, differences in costs should be related to differences in volume, not type of activity. Thus case-mix differences must be properly accounted for. This involves either correctly specifying the output vector of a hospital or aggregating multiple outputs without imposing restrictions on the relationship to be estimated that will affect the obtained measures of scale.[339] Finally all inputs and their related prices must be properly measured. A variety of methodological approaches are used to overcome these challenges. In particular non-parametric analysis (such as data envelopment analysis) is often used to bypass the need for assumptions about functional forms and the need for input prices.[340]

When interpreting the results from the literature we also need to keep in mind that in a multiproduct setting what is generally estimated is what economists term **ray-specific economies of scale**: that is economies of scale keeping case-mix constant. It can be useful to think in simple terms of the share of emergency to planned care in a hospital. The (ray-specific) relationship between volume and costs may be different in a hospital mainly concentrating on emergency care than in a hospital mainly concentrating on planned care, even if their initial size in terms of number of beds is equal. In other words, the optimal size of a hospital will depend on its case-mix.

From the literature on scale economics the main points can be summarised as:

- First, any hospital level economies of scale seems to be exploited when hospitals reach size of roughly between 100 and 200 beds. Furthermore, when hospitals exceed a size of between 300 and 600 beds there seems to be diseconomies of scale. Thus the 'optimal' size seems to be in the range of 200-400 beds. In many countries the policy implication of this is that there really is no economic benefit in centralising the provision of hospital services, since hospitals generally are larger than 200 beds.
- Second, on a disaggregated clinical service level Leleu et al. (2012)[341] analyse degree of economies of scale for four types of intensive care units and find increasing returns to scale and optimal number of beds to be between 17 and 40, depending on type of ICU. Goncalves and Pita Barros (2009)[342] find evidence of increasing returns to scale in three important (from a cost perspective) types of diagnostic and therapeutic services; clinical pathology medical imaging and physical medicine and rehabilitation) in Portuguese hospitals. Kim et al. (2009)[343] find evidence of economics of scale in trauma centres. In the only systematic review we have found, Ke et al. (2012)[338] conclude that it is unclear whether centralisation of cancer services results in lower costs, and suggest the need for further research.

In their review of the literature Kristensen et al. (2012)[344] conclude that the picture emerging from the literature is conflicting due to several factors. First, economies of scale are analysed using a number of different methodological approaches (parametric and non-parametric), functional forms, different aggregation levels, different input and output measures and different methods for case-mix adjustment. Thus, they[344]summarize the evidence as 'scarce inconclusive or missing'. Adding to this picture is the changing technological environment best illustrated by the steady decrease in the number of beds. As number of beds increasingly is becoming a less relevant measure of size, so do the technology of hospital production change and the scale and scope properties along with it. In a review of economies of scale and scope for A&E services in the NHS, Goudie and Goddard (2011)[345] point out that scale and scope issues rarely are discussed in terms of their cost implications, but rather related to patient safety, quality and staff training. Thus, while there is some agreement within the medical organisations as to what type of services that are necessary to provide a fully operational A&E unit, this is consensus rather than evidence based.

Thus, for policy makers the message from the literature would be that **there is not much to gain in terms of reduced operational costs by increasing the size of hospitals much above 100-200 beds**. There might be economies of scope in providing certain types of services together, but the evidence on economies of scope is scattered and not easily transferred across study settings. Also important is the distinction between increasing hospital size through the merging of hospitals into larger organisations and the size of the single hospital.

13.2.5.2 Hospital scale and hospital mergers

In situations where policy makers believe that there are economies of scale and/or scope their chosen solution can be to **merge existing hospitals into a larger organisational unit.** The practical implications of a merger may vary. In some cases a merger will imply a full closure and transfer of activities of a hospital. In other cases mergers may result in a reconfiguration of services, for example, a concentration of emergency care services at one site. A third model may be closer collaboration between hospitals through formal or informal networks. Finally, in its most extreme variant a merger simply implies a common management. Thus the desired effects of merges should be described in terms of the specific purpose and content of the merger:

- Exploit short-term economies of scale by reducing excess capacity and thereby fixed costs?
- Exploit short-term economies of scale by reducing management, backroom staff and/or overhead costs?
- Exploit long-term economies of scale by reconfiguring services?

Most studies of hospital mergers are from the US hospital industry and focus on effects on market concentration, competition and price setting. There is, however, one study from the UK NHS by Gaynor et al. (2012).[327] They utilize information from what they describe as a wave of mergers in the UK in the period 1997 to 2006. The main driver behind mergers was financial pressure and the belief that mergers would cut costs, mainly by reducing management, backroom staff and overhead services. Thus, an economy of

scale in the provision of clinical services was rarely mentioned. The general conclusion of this work is rather bleak from the point of view of merger proponents. Costs were not reduced, productivity did not increase, but waiting times seemed to increase slightly as the level of activity was reduced. Given the possible adverse effects through reduced competition the authors caution that further mergers may not be an appropriate policy measure.

13.3 Integrated care – the relationship between hospitals and community/home care

Demographic data shows us that the population is ageing and also that the number of people with chronic conditions is increasing. One implication is that the way we think about healthcare services is bound to change. Future healthcare systems will have to be less about admitting patients with immediate onset of illness into a hospital with the aim of providing a concentrated treatment to cure, and more about patients that gradually develop complex (often multiple) chronic conditions that necessitates care for a long period of time, moving between different healthcare providers, social care providers and their homes.

Parallel to the **shift of focus from an acute, episodic to a chronic, integrated model of care,** technological developments as well as more cost-efficient means of transportation increasingly facilitates local provision of specialised care. Medicine is specialised, and although there are arguments for a shift of focus towards the generalist, also within a hospital setting it is difficult to see medicine as a science becoming less specialised.[318, 346] Notably the specialisation in medicine also brings with it a specialisation in other health professions, such as nursing. As health services have become, and will continue to become, more complex the necessity of coordinating care has become more apparent. Such coordinated care is generally referred to as 'integrated care'. The term integrated care, however encompasses many different models for coordination and cooperation. Some of these are formal, others informal. In this section our aim is not to present a full review of models of integrated care, but rather to provide a brief clarification of different types of integrated care, illustrated this with some examples of models of integrated care that are generally perceived to be successful.

13.3.1 What is integrated care?

When healthcare services delivered in the hospital only constitute a part of a larger set of services provided to the patient, and furthermore that coordinating the full set of services in some sense will benefit both the patient and the healthcare system, care need to be integrated. Note that **integrated care** is different from an integrated delivery system.[347] Integrated care presumes collaborative activities among participants, whereas **integrated delivery system** presumes structurally integrated organisations. The latter is neither a necessary nor a sufficient condition for the former.

A further distinction can be made between integrated care that is **disease based** (e.g. diabetes, COPD) or patient group based (e.g. mental health), and integrated delivery systems that are **provider oriented** (e.g. Veterans Administration in the US) or both provider and purchaser oriented (e.g. Kaiser or Geisinger in the US).[348] Finally, integrated care may contain several types of collaborative efforts such as **functional, organisational, professional and clinical integration**. While sometimes used interchangeably, there is also a difference between 'integrated care' and 'coordinated care'. When integrated care is interpreted as coordinated care, it fails to include the important aspect of patient centeredness as a key component.[349] Thus some would say that integrated care is coordinated care with the addition of an 'optimal amount of patient centeredness'.

It follows that the concept of integration is quite wide, one could even say vague. It is described and analysed using many synonyms; disease management, care management, managed care etc., 'Models of integrated care' will incorporate macro-oriented health system models as well as local models for coordination of care for specific patient groups. Integrated care is also used to describe both 'within' healthcare integration and integration between health and social care. Unfortunately, there are few empirical studies of comprehensive integrated systems and also the evidence on the effects of integrating health and social care is conflicting.[257, 348] Thus a sufficient evidence base for building models of integrated care is lacking, and we are left with examples of models that are perceived to represent some form of best practice. In the remainder of this section we first describe the most popular model of integrated care: the chronic care management (CCM) model. We will also briefly describe three examples of (perceived) successful integrated care. These are meant as illustrations, however, as the institutional and structural characteristics of a healthcare system

facilitate/hinder integration in different ways. Thus, a discussion of integrated care can never be totally separated from a discussion of how the delivery system is organised.

13.3.2 Examples of integrated care

One of the most cited general models of integrated care is the **chronic care management (CCM) model** originating from Wagner (1996).[350] The aim with the CCM model is to change care from 'acute and reactive to proactive, planned and population based'.[351] Thus the model includes six system changes, and stresses that all of them should be used. These changes affect the macro (system) level, the meso (care setting) level and micro (patient, healthcare professional) level. Table 27 describes the elements in more detail.

Table 27 – Chronic care management: overview

Model component	Goal	Element
Health system	Provision of safe, high quality care	Visible support for and promotion of strategies Incentives for quality, open and systematic handling of errors Facilitate coordination within and across organizations
Community	Mobilize community resources	Encourage patient participation Partnerships with community organizations Advocate for policies to improve care
Self-management support	Empower and prepare patients	Emphasize patients' central role Self-management strategies Mobilize internal and external community resources
Delivery system design	Assure effective and efficient care	Define roles and distribute tasks Support evidence-based care Clinical case management Regular follow up of care that is understood and accepted by patients
Decision support	Provide care consistent with science and patient preferences	Evidence-based guidelines embedded into practice Integrate specialist and primary care Share evidence base with patients to encourage participation
Clinical information systems	Organize data to facilitate efficient and effective care	Provide timely reminders to patients and facilitate individual patient care planning Monitor performance and share information with patients and providers Identify subpopulations for proactive care

Source: Wagner (1996)[350]

There are several reviews[352, 353] assessing the effects of the CCM model. In general, they suggest that CCM has effect on such variables as reduction of mortality as well as the risk of heart disease for diabetes patients and improved well-being across a range of chronic conditions. As would be expected, contextual factors are found to be of importance for the effect of implementing a CCM model, and further research would seem to be necessary to describe the 'optimal' setting for model implementation.[351] There is also limited effect on the cost-effectiveness of the CCM model.

Other assessments of models of integrated care are often more descriptive and performed with less rigorous scientific methods. However, as Goodwin et al. (2012, 2014)[354, 355] point out, there is no single approach that best supports integrated care. They provide case-studies from the UK and six other countries with the aim of extracting common features that can point to successful implementation of integrated care programmes. Their observations are summarized in Table 28. This table provides a systematic approach to integrated care, but also illustrates the vast number of possibilities that are open to those engaging in integrated care programmes.

Table 28 – Integrated care processes

Area	Typical models	Comments
Aims and objectives	Improve user experience Improve home-based independence Reduce nursing home use Reduce hospital utilization rates More cost-effective care	Note that aims vary from 'hard' measures such as reducing use of hospitals or more cost efficient care to 'softer' measures such as user experiences. Also note that pursuing multiple goals increases the probability of trade-offs.
Target populations	Diagnosis (i.e. dementia) Patient groups (i.e. mental health) Population management	From small(er) groups to large(er) populations. As the size of the groups increases, so does the complexity of care integration.
Funding	Capitated (risk-adjusted) funding Bundled payment across service providers Separate funding arrangements	Note that funding and payment models will depend on the organizational and institutional setting and structure.
Organizational type	Integrated delivery systems Care organizations Formal or informal alliances	Kaiser (US) is an example of an integrated delivery system, care organizations are found in e.g. the Netherlands.
Information management	Shared electronic patient records Partial data sharing	Kaiser (US) is an example of how integrated IT solutions has attributed to success, Torbay (UK) an example of a model that has been successful even without integrated IT.
Care providers	Core group of professionals/care teams More loosely organized network of providers	

Approach to care	Eligibility criteria Single point of referral Case management Care plans	
User engagement	Involving users Involving informal care givers	Models of user involvement is a whole separate research area.

Source: Goodwin et al. (2012 and 2014)[354, 355]

Three models that have attracted some international attention are the **Jönköping model from Sweden,**[356, 357] the **Torbay model in England**[358] and **Kaiser Permanente in the US**.[359] These all combine the integration of a delivery system (purchaser and provider) with a coordinated approach to care delivery, and they are all viewed as successful examples of how integrated care can simultaneously lead to better care and lower costs. The Kaiser model has served as an inspiration for models of integrated care in Europe since Feachem et al. (2002)[360] their comparative analysis of the NHS and Kaiser. Both the Torbay and the Jönköping models are clearly inspired by the Kaiser model, but there are also differences between the three approaches:

- First, the Swedish and UK models are both within a single payer, universal coverage, predominantly public healthcare system. Thus both professional and patient cultures may differ from the US context, as will the use of payment models and possible patient selection.
- Second, the mere scale of Kaiser Permanente (8 million members) separates it from the relatively small county council of Jönköping (330 000 inhabitants) and the small council of Torbay (130 000 inhabitants). This is clearly seen in the discussions of the merits of the Torbay/Jönköping models where much attention is paid to how success is (partly) determined by individual-specific factors such as the presence of a particularly dedicated leader, the merging of positions between two different organisations etc.

The lack of systematic conclusive evidence on the merits of integrated care reflects both the variety of models and the importance of contextual (sometimes individual) factors in determining whether or not a model provides desirable results. From the scattered evidence that does exist a common lesson nevertheless seems to be that successful macro-level models, such as the Kaiser model, are built upon a micro-level foundation of local leadership, care organisation and professional as well as user involvement. Without these factors neither the Jönköping nor Torbay initiatives would have succeeded. Thus, while the organisation of the delivery system is important to facilitate integrated care, it would seem that bottom-up initiatives are needed in order to obtain sustainable results.

13.4 Concluding comments

Healthcare systems differ with respect to regulation, payments and provision of services. They share, however, common challenges related to changing demographics, rapid technological innovations and concerns about financial sustainability. The role of professions is changing as is the knowledge and demands of patients. In this environment policy makers are trying to navigate the interests and expectations of multiple stakeholders. Some do this through direct public planning, others more indirectly through regulations and stewardship.

If this chapter offers any general insight it is that there is little general insight. Concepts such as ‘optimal hospital size’ and ‘optimal scope of services’ are elusive, and not informed by a substantial amount of empirical evidence. Rather they are most thoroughly discussed in a clinical setting where concerns are more related to their consequences for (perceived) patient safety and staff training and recruitment than to costs and outcome. There

is general agreement that there is a positive association between patient volume and outcome, but the translation from this general association to practical policy is difficult.

This notwithstanding, policy makers may find some comfort in that this leaves room for local solutions. As in other policy areas, context matters when it comes to healthcare. Acknowledging this, while at the same time avoiding the obvious mistakes (not too small, not too large, not too separate from the rest of the healthcare), might provide policy makers with the opportunity to adjust structure, governance and payments in a way that meets the needs of their particular stakeholders in a sufficiently efficient matter.

Key points

- **There is for several patient groups an established positive association between hospital volume and quality (measured as mortality rates). However, statistical heterogeneity is often high and results not always statistically significant.**
- **There seems to be some support for the hypothesis that volume rather than accumulated experience is the major determinant in a volume-outcome relationship.**
- **It is generally not possible from the medical literature to specify what are the lower or upper volume thresholds for a volume-outcome relationship.**
- **A general feature of the medical volume-outcome literature is the lack of discussion about the direction of causality. Thus whether the effect is due to selective referral or 'practice makes perfect' is not known. The practical value of the empirical volume-outcome literature in terms of guiding policy makers in (re)designing the hospital structure is limited.**
- **Any hospital level economies of scale seems to be exploited when hospitals reach size of roughly between 100 and 200 beds. Furthermore, when hospitals exceed a size of between 300 and 600 beds there seems to be diseconomies of scale.**
- **There is little empirical guidance relating economies of scope (between patient groups) in hospitals.**
- **The lack of systematic conclusive evidence on the merits of integrated care reflects both the variety of models and the importance of contextual (sometimes individual) factors in determining whether or not a model provides desirable results.**
- **A common lesson nevertheless seems to be that successful macro-level models are built upon a micro-level foundation of local leadership, care organisation and professional as well as user involvement. Thus, while the organisation of the delivery system is important to facilitate integrated care, it would seem that bottom-up initiatives are needed in order to obtain sustainable results.**

14 REMUNERATION OF MEDICAL SPECIALISTS IN SELECTED COUNTRIES

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14.1 Background, methodology and framework

Despite an extensive debate about changing professional roles,[361] and signs of declining professional dominance,[362, 363] there is no doubt that specialists remain highly influential in hospitals.[364] Their decisions, efforts and skills generally lead the clinical care processes in hospitals and determine to a large extent the success of treatment. In addition, specialists are often involved in organisational management and exert significant influence in hospitals also in areas going beyond their clinical work.[365, 366]

Because of the unique role of specialists in hospitals, incentives (financial and non-financial) influencing and motivating specialists to deliver effective, efficient, and high quality care are particularly important. Payment mechanisms for specialists are not only relevant because their incomes often account for an important share of total hospital expenditures, e.g. about 8% of all NHS secondary care spending in England is on consultant salaries.[367, 368] Even more important is that specialists control with their decisions the vast majority of resources used in hospitals, e.g. by ordering diagnostic tests, prescribing drugs, and ordering and performing procedures.[364, 369] Consequently, financial incentives inherent in different payment mechanisms can have far reaching consequences and may influence the effectiveness and efficiency of care provided by hospitals.

Specialist payment systems differ greatly across and usually also within countries. In addition, the income of an individual specialist is often composed of revenue from different sources and calculated based on different payment mechanisms. Furthermore, non-financial factors are increasingly important in motivating physicians,[370] and these may – again – vary across and within countries. Therefore, analysing specialist payment systems across countries is highly complex. The multitude of possible combinations and the interdependence with a variety of country health system specific factors complicate analyses. The aim of this chapter is to compare specialist payment systems in ten countries based on a predefined framework which helps to systematically describe different income components as well as non-financial benefits.

The next section of this chapter describes the methodology we have adopted in order to gather relevant information for the analysis of payment systems in different countries. We then provide an overview to the incentives of different payment mechanisms before introducing our framework for the cross-country analysis. Section 14.2 is the main part of this chapter. It presents information about specialist payment systems in the 10 included countries and summarizes other financial benefits used to motivate specialists in these countries. Section 14.3 explores other factors influencing and motivating specialists in hospitals, including such factors as non-financial incentives (section 14.3.1), income differences across specialties (section 14.3.2) and the impact of hospital payment systems on the relationship between the hospital management and medical specialists (section 14.3.3). Section 14.4 looks at the effects of reforms of specialist payment systems and at current trends in a selection of countries. Finally, section 14.5 concludes with a summary of our findings and conclusions for policy makers.

14.1.1 Methodology

We selected 10 high income countries in Europe, North America and East Asia with different health systems (e.g. centralised vs. decentralised; tax funded vs. social health insurance-based) for our study. The selection aimed to include countries with specialist payment systems that we expected to provide interesting examples for discussions about hospital payment reform in Belgium. Therefore, countries with different payment systems (mainly fee-for-service (FFS), mainly salary, and combinations of both), with particularly sophisticated systems or with recent reform initiatives that might be applicable to Belgium were identified. Table 29 shows the selected countries and some basic health system characteristics as well as the main specialist payment model in the country.

Table 29 – Selected countries, simplified health system characteristics and specialist payment models

Country	Health system characteristics	Specialist payment models
Canada	Decentralized, tax funded	Mainly FFS
England	Centralized, tax funded	Mainly salaries
France	Centralized, social health insurance	FFS and salaries
Germany	Centralized*, social health insurance	Mainly salaries
Korea	Centralized, social health insurance	FFS and salaries
Luxemburg	Centralized, social health insurance	Mainly FFS
Sweden	Decentralized, tax funded	Mainly salaries
Switzerland	Decentralized, social health insurance	Mainly salaries
the Netherlands	Centralized, social health insurance	FFS and salaries
US (Medicare)	Centralized, contribution/premium/tax funded**	Mainly FFS

*Notes: * at least regarding SHI; ** funding sources are pooled within two trust funds managed by the US Treasury; FFS=fee-for-service*
Source: authors' own compilation

Information on national payment systems for medical specialists is often fragmented and current mechanisms are rarely described in the available literature. Therefore we designed a survey (see annex A1 for the blank questionnaire) and approached national experts in order to obtain qualified, comprehensive and detailed information on national specialists payment systems.

The survey was structured in four sections. The first section asked for general background information on the hospital sector (e.g. number and share of hospital beds per ownership type) and specialists working in hospitals, including e.g. questions on career pathways, education and main changes, problems, and debates in the respective country. The second section aimed to identify the main national payment methods as well as contractual relationships between hospitals and specialists and to describe the different groups of specialists to which they apply. Section three examined in greater detail the different components that make up the total income of specialists and section four looked at non-financial incentives and other relevant factors that may incentivize specialists to deliver high quality care in an efficient and effective way.

Completed questionnaires were reviewed and country experts answered additional questions about points that had remained unclear in their original responses. Subsequently, information from questionnaires was summarized in brief country profiles (presented in section 14.2.1) and in more detailed overviews about interesting examples of different payment systems within each country (presented in sections 14.2.2 and 14.2.3).

In addition to the expert survey, we also conducted a literature search in MEDLINE (PubMed), the Cochrane Library and Google Scholar to identify relevant studies looking at payment systems for specialists in hospitals. The search focused on four distinct questions: (1) What are the effects of different financial incentives on selected objectives (e.g. productivity, expenditure control, quality)? (2) How do non-financial incentives contribute to the motivation of specialists working in hospitals? (3) What is the influence of different payment methods on the relationship between hospital management and specialists? and (4) Is there a trend concerning the willingness of specialists to work in hospitals as opposed to office-based ambulatory specialist care (private practice)?

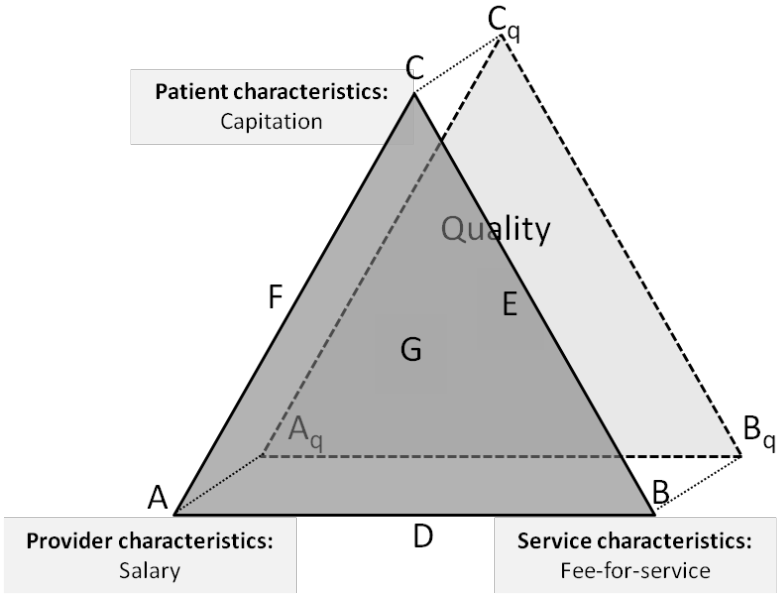
Because the available literature specifically focusing on specialists in hospital was often very limited, we usually had to include studies that looked at 'physicians' or 'medical doctors' in general. In order to improve coherence of the chapter, the results of the literature search are integrated into the chapter where appropriate, i.e. in section 14.1.2 'Incentives of different payment systems', section 14.3.1 'Non-financial incentives and job satisfaction', section 14.3.3 'Relationship of medical specialists and hospital management', and section 14.4 'Current developments and reforms'.

14.1.2 Incentives of different payment mechanisms

Ideally, a payment system should be designed to motivate hospital specialists to be productive in terms of number of treated patients and provided services.[371, 372] The system should avoid incentives for risk-selection, i.e. it should reward specialists for treating the patients who need care and not for selecting patients who are easier to treat; and payment should encourage specialists to achieve an optimal outcome of care. In addition, the system should be administratively easy and contribute to an overall efficient health system through expenditure control.

Specialist payment systems in a given country often include a variety of different payment mechanisms; and each payment mechanism has different incentives depending on the type of information that is used to determine payment. Figure 31 illustrates that payment mechanisms can, in theory, be based either on information about provider characteristic (A), service characteristics (B), or patient characteristics (C).[373] Furthermore, information about quality could be taken into account when determining payment (Aq through Cq) – although this still remains relatively rare.

Figure 31 – Information basis of different payment mechanisms



Source: based on Ellis and Miller (2009)[373] with modifications

In their pure form, salaries rely only on information about provider characteristics (A), such as the qualifications of physicians, or the level in the hierarchy for determining the level of payment. Consequently, salaries have only few incentives for activity – except for the incentive to move up the hierarchy. FFS payments only consider information about the services provided (B), such as their complexity or costs, and carry incentives to provide a high number of services. Capitation payments rely exclusively on information about patient characteristics such as diagnoses and age (C), and carry incentives to treat a high number of patients but to limit the services per case.

In practice, payment mechanisms often combine different types of information to determine payment. For example, FFS payments may be adjusted for the qualifications of specialists ($\overline{BA} = D$), or for the complexity of the treated patients ($\overline{BC} = E$). Salaries can be adjusted based on the

number of services provided ($\overline{AB} = D$). True capitation payments do not exist for hospital specialists, and are therefore not explored in detail in this chapter. However, sometimes fees for a broadly defined service (i.e. a basic consultation = B) provided by a particular type of specialist ($\overline{BA} = D$) exist and these are generally known as contact capitations.

Table 30 summarizes the desired (+) and undesired (–) consequences of these payment mechanisms in regard to the main objectives stated above. One may argue about the exact extent of these effects and, in fact, two Cochrane reviews[374, 375] recently found that the available evidence is surprisingly weak. Nevertheless, the bulk of the available theoretical and empirical literature – although most studies are not specific to specialists in hospitals – is in agreement about the broad direction of the effects of different payment mechanisms.[371, 372, 374, 376, 377]

FFS payments are thought to provide strong incentives for specialists to be productive by treating the maximum number of patients and by doing 'everything possible', i.e. providing a high number of services. However, FFS may also lead to inappropriate or even unnecessary levels of service (i.e. supplier induced demand); it is administratively complex and does not support expenditure control. Salaries do not provide direct incentives to be productive but they are administratively simple and facilitate expenditure control. Contact capitations provide strong incentives to treat a high number of patients but to limit the number of services provided; they incentivize providers to select cases that are easier to treat, which has the undesirable consequence that sicker patients might find it more difficult to get treatment. All three payment mechanisms have in common that they are usually not explicitly related to the quality of care – in terms of structure (Aq), process (Bq) or outcome (Cq) indicators (in Figure 31) – and thus do not incorporate rewards for higher quality of care.

Table 30 – Basic forms of payment mechanisms and their expected positive and negative effects with regard to selected objectives

Payment mechanism	Productivity		Avoidance of risk-selection	Quality of care	Expenditure control	Administrative simplicity
	Number of patients	Number of services/ patient				
Fee-for-service	+	+	+	0	-	-
Salary	0	0	0	0	+	+
Contact Capitation	+	-	-	0	0	+

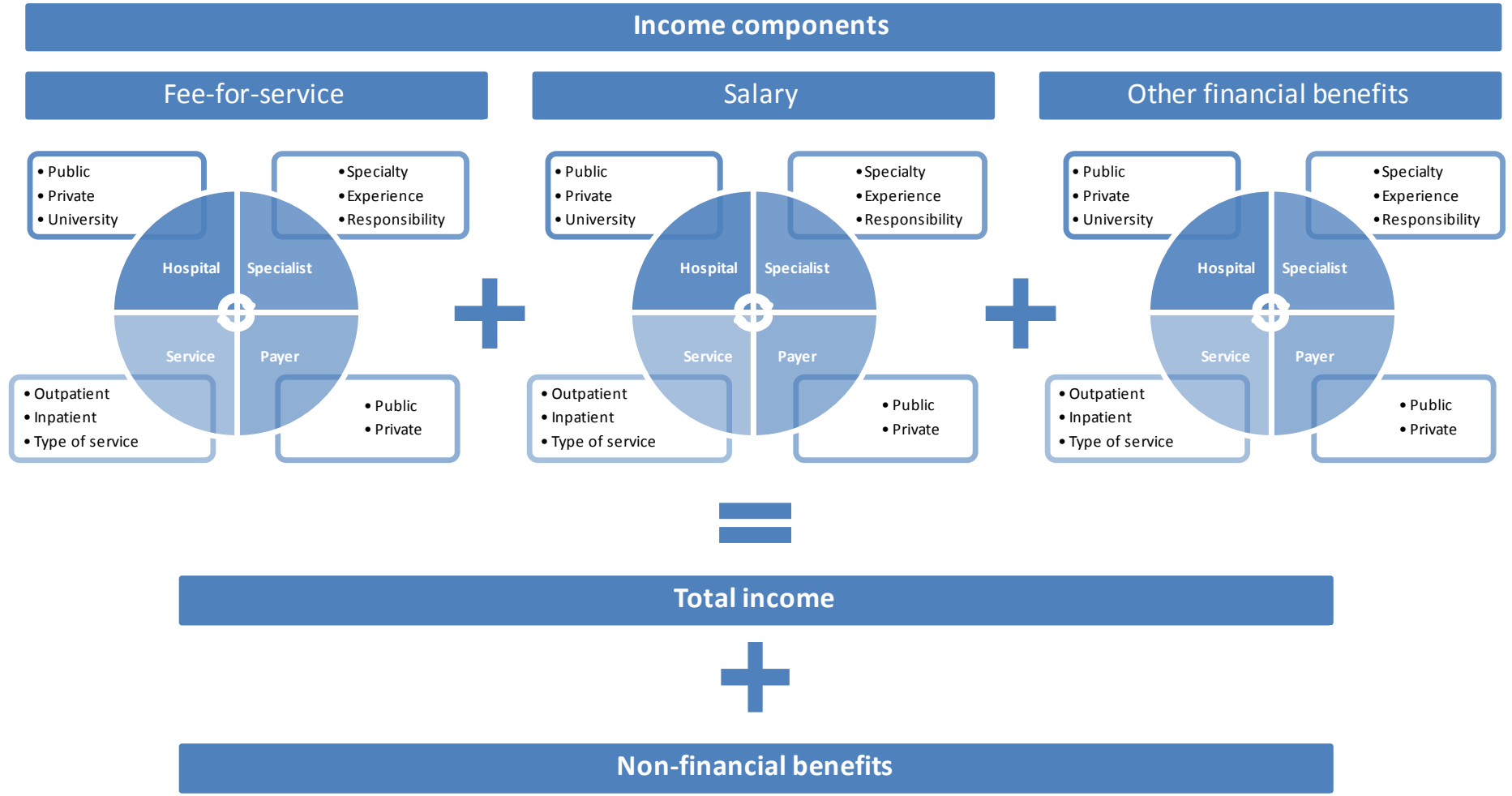
Source: authors' own compilation, based on [371, 377, 372, 376, 374]

There are only very few studies specifically investigating the effect of financial incentives on treatment patterns of specialists inside or outside hospitals. In general, their findings confirm the mentioned effects. For example, Shafrin (2010)[378] found that switching surgeons' remuneration from capitation to FFS increased surgery rates by 78%. Similarly, Shrank et al. (2005)[379] found that cataract surgery rates per 1000 patients decreased by 48%, when reimbursement of ophthalmologists was switched from FFS to contact capitation. In addition, effects of payment reforms in the Netherlands seem to suggest that changes in remuneration have strong effects on production and overall expenditures (see section 14.4).

14.1.3 Framework for analysing payment systems across countries

In order to analyse financial and non-financial incentives across countries and to facilitate comparisons, we have developed a framework to systematically describe different income components and non-financial benefits (Figure 32). The figure shows that the income of an individual specialist may consist of FFS payments and/or salary and/or other financial benefits (e.g. bonuses, pensions, professional insurance subsidies or profit sharing). In addition, non-financial benefits may play an important role in influencing specialists to work in a certain hospital environment or to be more productive at work.

Figure 32 – Framework to analyse financial and non-financial incentives for hospital specialists



The relative share of each component of total income depends on different factors, which can be grouped into four dimensions: the specialist, the payer, the service and the hospital. For example, it is possible that FFS payments exist only for certain types of specialists (e.g. those at higher levels in the hierarchy), or only for specialists treating certain patients (e.g. private patients), or for specialists providing certain services (e.g. outpatient services), or for specialists working in certain hospitals (e.g. private hospitals). The same might be true for salaries, which might be paid only to certain types of specialists, treating certain patients, providing certain services, or working in certain hospitals; and also for other financial benefits. Of course, individual specialists might fall into several of these categories and receive their overall income from different components.

Countries' health systems differ in relation to all four dimensions (i.e. specialists, payers, services and hospitals), and these are reflected in national specialist payment systems. For example, concerning the first point, important differences exist across countries with regard to hierarchies and the distribution of responsibilities amongst specialists in hospitals. In England and the US, fully qualified specialists in hospitals almost always work as consultants (England) or attending physicians (US), and they carry ultimate clinical responsibility for their patients. In Germany, France, Sweden and Switzerland, there are several hierarchical levels of specialists working in hospitals. Higher levels carry responsibility for medical decisions of other (subordinate) physicians and may have additional managerial tasks, on different levels such as units, departments or hospitals. In Germany, the strongly hierarchical structure means that ultimate responsibility for all clinical and managerial decisions ('Allzuständigkeit') within a certain department lies with the 'chief physician'.

Secondly, the availability of various public and private payers has an important influence on the design of payment systems. Private insurers often use specialist payment mechanisms, which tend to be financially more attractive than those of public payers. In the United States, a multitude of private insurance companies with different payment systems exists besides the two main public payer systems (Medicare and Medicaid). In Germany, 11% of the population are insured by private substitutive insurance,[380] and chief physicians are allowed to charge FFS for services provided to these patients (for e.g. private consultations, surgery performed by the chief physician) although hospitals also receive a full DRG-based payment. In Switzerland, about 10% of the population have private supplementary insurance,[381] and specialists can bill FFS for services which are not covered by DRGs. By contrast, in Sweden, the role of private supplementary insurance in paying specialists is rather negligible.

Thirdly, the services provided in hospitals differ considerably across countries, in particular with regard to the provision of outpatient care. In England, the Netherlands, and Sweden, specialised ambulatory services are provided almost exclusively in hospitals. By contrast, in Canada, France, Germany, Korea, Luxembourg, Switzerland, and the US ambulatory services are predominantly provided by specialists outside hospitals, i.e. in private practices or clinics. The provision of ambulatory specialist care outside hospitals has often led to a stricter division between inpatient care and ambulatory care, although less so in countries, such as Canada and the US, where specialists from outside hospitals have an important role in treating inpatients. As a result of these differences in services provided in hospitals, national specialist payment systems may or may not distinguish between services provided in in- and outpatient departments of hospitals.

Fourthly, ownership of hospitals varies greatly across countries. In Canada, England and Sweden, more than 90% of hospitals are owned by public entities. In the Netherlands, about 80% of hospitals are private non-profit institutions but university hospitals are in public ownership. By contrast, in Korea, almost 90% of hospitals are run on a private-for-profit basis. Nevertheless, in countries with a sizeable share of private-for-profit hospitals, such as France, Germany, Korea, and Switzerland (but not the US), private hospitals treat mostly (or almost exclusively) publicly insured patients. Depending on the relative share of public and private hospitals, different payment systems for specialists working in hospitals of different ownership types may or may not be important in a given country.

Finally, it is important to note that the variables suggested in Figure 2 for each dimension (e.g. public, private, university for the dimension hospital) are not exhaustive but rather suggestions to consider. For example, the geographical location of a hospital may be an additional variable and also influence the relative importance of the different income components in a given country. In addition, income security, low administrative hurdles, acceptable workload, fewer night shifts, or the availability of on-site childcare are gaining increasing importance (see section 14.3.1 on non-financial incentives).

14.2 Payment systems in selected countries

Section 14.2.1 gives a short and structured overview on the most important features of different payment models across Canada, England, France, Germany, Luxemburg, Korea, Sweden, Switzerland, the Netherlands, and the US. Details and interesting examples for FFS and salary systems are part of section 14.2.2 and 14.3 respectively. Other financial benefits are discussed in section 14.2.4.

14.2.1 Countries at a glance

Table 31 shows that in six out of the ten considered countries, the majority of hospital specialists are employed by the hospitals and paid a salary. For example, in England and Sweden, almost all specialists are employed by hospitals; and in several social health insurance (SHI) countries, such as France, Germany and Switzerland, specialists are mostly employed by hospitals. However, in other countries, such as the United States, Canada, and Luxembourg a vast majority of specialists are self-employed, and their relationships with hospitals are regulated through rather loose contractual arrangements specifying only their rights and obligations for the treatment of patients in hospitals. In the Netherlands, about half of specialists, i.e. those working in university hospitals and in certain specialties, are employed by hospitals, while the other half is self-employed and organised in so-called partnerships. In Korea, specialists working in clinics (small private institutions providing in- and outpatient care) are self-employed, while specialists working in hospitals (usually larger institutions) are mostly employed.

Table 31 – Share of employed versus self-employed hospital specialists across countries

	Employed		Self-employed	
	Share [%]	**Groups**	**Share [%]**	**Groups**
Canada	n/a (about 14% of expenditures)	Specialists in certain specialties, e.g. radiotherapy, pathology, microbiology etc.	n/a	Most
England	~100	Almost all	~0	None
France	72	All specialists in public hospitals; most specialists in non-profit hospitals	28	Specialists in private for-profit hospitals
Germany	94	All groups	4	Attending specialists
			2	Freelance specialists
Korea	54	Hospital specialists	46	Specialists based in clinics
Luxembourg	28	Specialists in one acute care hospital and in one institute for radiotherapy	72	All other groups
Sweden	100	All specialists	0	None

	Employed		Self-employed	
		(a small number of specialists is employed by staffing agencies)		
Switzerland	~ 90	Most specialists	~ 10	Attending and freelance specialists
The Netherlands*	48	All specialists in university hospitals; certain specialists (e.g. paediatricians) in general hospitals	52	Most specialists in general hospitals
USA	25-30	Specialists performing inpatient procedures, e.g. neurosurgery, cardiology, and cardiac surgery	70-75	Most

*Notes: * in % of full-time equivalents (FTE); n/a = not available*

14.2.1.1 Canada

Main payment methods: Traditionally, specialists are self-employed and paid on the basis of FFS. However, the proportion of FFS payments out of total expenditures has slowly reduced to about 58%, albeit with large variation across specialties and provinces. Increasingly important are so-called alternative payment programmes (APP), which now account for about 19% of expenditures. APPs often consist of a mix of different types of payments and usually require shadow FFS billing, i.e. provided services have to be registered and billed according to the FFS system, but payment might be based, for example, on sessional fees (an hourly rate) or block funding (a guaranteed minimum amount if FFS income, e.g. in a rural area, is insufficient), and additional payments can be available for administrative tasks, research and teaching. Although increasing in numbers, employed specialists remain relatively uncommon and are mostly found in supportive specialties, such as radiation oncology, pathology, medical microbiology and medical biochemistry.

Financial flows: Provincial medical care plans mostly pay specialists directly for services provided under the FFS model and under APPs. Only about 14% of total expenditures on physician services are channelled through hospitals for employed physicians.

Contractual relations: Self-employed physicians who provide clinical services in a hospital must have an appointment to the hospital's professional staff under public legislation and the hospital by-laws. Specialists have to apply for re-appointment usually after one year. In addition, there are alternative agreements, such as Group Practice Agreements and Alternative Funding Plans. Employed specialists have an employment contract with the hospital.

14.2.1.2 England

Main payment method: All NHS specialists in hospitals (consultants) are paid salaries which are the same across specialties, with a few additional allowances e.g. for on-call (paid for being available to come into the hospital and contactable by telephone), and some receive clinical excellence awards (bonus pay). There is a standard contract, which is collectively negotiated and agreed upon by the British Medical Association, the NHS confederation (representing NHS employers) and the Department of Health, i.e. the respective ministry. Salary levels are updated annually by the government after taking into consideration advice from the Review Body on Doctors' and Dentists' Remuneration (DDRB), which is an independent body that invites evidence from a range of stakeholders including the British Medical Association and the Government.

Financial flows: Hospitals receive funding via DRG-based payments and pay their specialists by salaries.

Contractual relations: All NHS consultants are employees. Some work in more than one hospital, some work in independent sector treatment centres (paid for by the NHS) and some work in private practice (in addition to their NHS work). Specialists can agree to work more than a standard full-time contract (40 hours). In this case, they are paid extra for every additional four hour session that they provide. Private practice (in addition to NHS work) is allowed only if specialists work at least 44 hours per week for the NHS.

14.2.1.3 France

Main payment methods: About 62% of all specialists work in public hospitals, where almost all specialists (99%) are salaried employees. About 11% work in non-profit hospitals, where the majority (77%) is salaried. Specialists in these hospitals with a full-time permanent contract ('statutaires') are authorized to provide ambulatory consultations for up to one day per week on a FFS basis. About 27% of specialists work in for-profit hospitals, and almost 90% of these are self-employed and paid FFS. In total, about 72% of specialists are salaried, while almost 28% are paid FFS.

Financial flows: Social health insurance funds pay hospitals on the basis of DRGs. In public hospitals, DRG tariffs are set to include the costs for salaried employees, which are then paid by the hospitals. In private non-profit hospitals, insurance funds also pay the full DRG tariff and most hospitals pay salaries, although some hospitals pay self-employed specialists on the basis of FFS. In private for-profit hospitals, DRG tariffs do not include the costs of services provided by specialists, and specialists can bill FFS directly to social insurance and/or patients.

Contractual relations: Specialists in university hospitals are mostly quasi-civil servants. In other public and non-profit hospitals, there are full- or part-time specialists with permanent or short-term contracts besides 'attachés', which are salaried external practitioners working in hospitals for between one and ten half-days a week. Self-employed specialists have contracts with hospitals that specify mostly the financial conditions under which they can use the hospital facilities and equipment. These contracts usually either define an hourly or monthly rent for specialists being allowed to use facilities of the hospital, or they include an agreement about a certain proportion of earnings that specialists have to pay back to the hospital.

14.2.1.4 Germany

Main payment method: Almost all hospital specialists (94%) are paid a salary, which is the same across specialties and almost always includes additional allowances for on-call-duties, night-shifts, taking part in emergency care etc. Furthermore, specialists may receive additional FFS income from privately insured patients, and this part is more important for specialists higher up in the hierarchy, in particular for chief physicians. Office-based specialists (in 'private practice' but mainly in contractual relationship to SHI) can work as attending physicians (4%) in hospitals and can charge FFS. There are two different FFS catalogues in Germany: (1) the EBMa for all services covered by social health insurance, and (2) the GOÄ for 'private' patients, i.e. in case of substitutional or supplementary private insurance or for services paid for by patients out-of-pocket. Finally, a small minority of specialists works as freelancer in hospitals (2%) and usually receive an hourly rate from the hospital they are deployed in.

Financial flows: Hospitals are paid through a DRG-based payment system. Salaries of employed specialists are paid by the hospitals. For privately insured patients, chief physicians (or hospitals on their behalf) may charge additional fees to private insurance based on the GOÄ if the patient agrees. This money is then redistributed between the hospitals, the chief physician and other specialists based on hospital specific rules. Attending physicians charge their fees – depending on the insurance status of their patients – either based on the EBMa to the Association of SHI Physicians (in case of outpatient services delivered to SHI patients) or based on the GOÄ to the patient (for inpatients and privately insured outpatients), who in turn may get reimbursed by his/her private health insurance company. Some attending physicians charge the hospital a predefined amount per DRG-based payment. If attending physicians charge a separate fee to SHI patients, the hospital receives a reduced DRG-based payment.

Contractual relations: The large majority of German hospital specialists are employed under the umbrella of collective labour agreements. Specialists working full time in 'private' practice (if contracted by SHI) are allowed to work in different hospitals up to 13 hours per week. Self-employed

(freelance) specialists are free to work in different hospitals based on individual agreements.

14.2.1.5 Korea

Main payment method: There are two types of institutions in Korea providing inpatient care: (1) Hospitals in the strict sense, which are larger institutions usually with multiple specialties, and (2) clinics, which are small institutions providing specialised in- and outpatient care in certain clinical areas. All specialists working in hospitals (54% of all specialists) are salaried employees. Salaries are paid by hospitals and mainly consist of a basic salary and a performance (i.e. volume) related bonus. Specialists in clinics are self-employed and paid FFS.

Financial flows: Hospitals and clinics are paid by the National Health Insurance (NHI) based on the same FFS system. For some selected treatments DRG-based payments were introduced accounting for about 8% of hospital revenues. Hospitals pay their specialists a salary. In clinics, specialists charge FFS directly to the NHI.

Contractual relations: Hospital specialists have an employment contract with the hospital. Basic salaries and possible bonuses are individually negotiated. Hospital employed specialists are not allowed to work in private practice. Clinic-based specialists are directly contracted by the NHI.

14.2.1.6 Luxembourg

Main payment method: Most hospital specialists (72%) are self-employed and are paid FFS. One acute care hospital and one radiotherapy in-patient facility employ salaried physicians. Salaries include a fixed part, variable supplements and eventually a complementary pension scheme.

Financial flows: Hospitals are financed by global budgets, which do not include fees for services provided by specialists. Self-employed specialists are paid directly by the SHI on the basis of a national FFS catalogue. In cases where hospitals employ specialists, all the fees are collected by the hospital, which in turn pays a salary to its specialists.

Contractual relations: Self-employed specialists contract freely with the hospital of their choice but usually work within associations of the same specialty. These associations collect fees and redistribute them between the specialists according to internal agreements. Employed specialists negotiate their contracts individually with hospitals. Specialists are allowed to and usually run private practices besides their hospital work. The payment system remains the same FFS system.

14.2.1.7 Sweden

Main payment method: All specialists (100%) are salaried employees. They are almost always employed by hospitals but some (an unknown small number) work for staffing agencies that rent out doctors to hospitals.

Financial flows: Counties may pay hospitals on the basis of different arrangements but payments for more than 65% of all discharges are somehow related to DRGs. Hospitals pay specialist a salary (or in rare cases the staffing agencies pay salaries).

Contractual relations: Specialists have an employment contract with the hospital, which conforms to the collectively negotiated labour agreement. However, the salary is negotiated individually between specialists and hospitals.

14.2.1.8 Switzerland

Main payment method: Specialists working in hospitals are mostly salaried employees (about 90%). Salaries are paid by the hospitals and include a fixed part, which is determined by individual experience and qualification, and a variable part, which may contain payments for overtime or on-call duties as well as substantial bonuses based on negotiation and hierarchal level. Bonuses are often activity related and calculated on the basis of the Swiss outpatient FFS catalogue TARMED (derived from 'tarif médical'). In addition, specialists are usually allowed to keep about 80% to 90% of the FFS payments that they generate when treating outpatients at the hospital, and 50% of the FFS payments that they generate when treating inpatients with supplementary private insurance. For specialists with management functions the FFS income usually amounts to more than 30% of their total income and for chief physicians it amounts to more than 40%. Finally, specialists based in private practice can work as attending physicians in hospitals. In this case, they negotiate with hospitals about a compensation for their services.

Financial flows: Hospitals are paid through a DRG-based payment system. Salaries of employed specialists are paid by the hospitals. In addition specialists may receive FFS based payments for inpatient services which

are not covered by DRG-based payments, and for services provided in the outpatient department of the hospital. However, hospitals usually collect these fees before channelling them to specialists. Attending physicians are also paid by the hospital.

Contractual relations: The majority of hospital specialists are employed by collective labour agreements which are negotiated for specific hospitals or groups of hospitals. The contractual working time is usually 50 hours. Attending specialists can have different contractual relationships with hospitals.

14.2.1.9 The Netherlands

Main payment method: All specialists working in University Medical Centres (UMCs) are salaried employees. In general hospitals, the vast majority (72%) are self-employed and paid through an earmarked portion of the DRG-based payment system (the specialists' fee part). However, in certain specialties, e.g. paediatrics and rehabilitation, specialists in general hospitals are usually salaried. Across all hospitals and specialties, about 47% of all specialists are salaried employees, while 53% are self-employed.

Financial flows: All hospitals are paid by health insurers on the basis of a DRG-like payment system. Salaries of employed specialists are paid by the hospitals. Self-employed specialists officially bill the health insurers independently from the hospitals. In practice, however, hospitals bill the health insurers and pass on the specialists' fee part of the DRG tariffs (called DBCs in the Netherlands) to the specialists, which are always organised in entrepreneurships (mostly partnerships). These partnerships then decide on the distribution of the revenue between the partners based on different locally agreed models. However, this system is scheduled to end in 2015 (see section 14.4).

Contractual relations: Salaried employees of hospitals have a labour contract, the conditions of which are negotiated separately for UMCs and general hospitals. Each self-employed specialist has a 'practice admission contract' ('toelatingsovereenkomst') with the hospital, where he/she works. This contract specifies amongst other things if specialists are allowed to work also in other hospitals or independent treatment centres (clinics). Partnerships usually have an agreement with the hospital board, which specifies the amount that the partnership has to pay to the hospital for services, e.g. secretarial assistance, administration, insurance etc.

14.2.1.10 US (Medicare)

Main payment method: Most specialists are self-employed and paid FFS based on the Medicare physician fee schedule. However, an increasing proportion of about 25-30% of specialists in 2014 are employed by hospitals or by independent practices. This trend results mostly from hospitals purchasing physician practices outside hospitals. Specialists employed by hospitals are mostly found in specialties performing inpatient procedures, e.g. neurosurgery, cardiology, and cardiac surgery. Most employed specialists are paid a salary that is based on productivity metrics – mostly relative value units (RVUs of the Medicare fee schedule) generated. In addition, some hospitals pay a salary to predominantly self-employed physicians for being on-call in rural areas with physician shortages, or in trauma settings where overnight stay is required.

Financial flows: Medicare always pays FFS for specialist services. Payments are made either directly to the self-employed specialist or to the hospital (or the practice) employing the specialist. Employed specialists are paid by their employer. DRG-based payments to hospitals do not include costs of services provided by specialists.

Contractual relations: Contractual relationships between self-employed specialists and hospitals vary greatly across hospitals, specialists, Independent Practice Associations etc. Employed physicians have a labour contract, which is based on individual negotiations between specialists and hospitals.

14.2.2 Overview and examples for FFS systems

14.2.2.1 Overview

Table 32 summarizes information on FFS systems in the ten included countries. Primarily, FFS systems are almost always applied to office-based specialists. The relevance of FFS systems for hospital specialists varies greatly across countries. In Canada, Luxembourg, Korea, and in the US Medicare system, almost all *services* provided by specialists in hospitals are paid for on the basis of FFS – although *specialists* in Korea are mostly salaried. In the Netherlands, services of most specialists in general hospitals

are paid for on the basis of a FFS system, which is integrated into the Dutch version of a DRG-based hospital payment system. In France, almost all specialists working in private-for-profit hospitals are paid for on the basis of FFS. By contrast, in Germany and Switzerland, FFS payments are relevant only for certain services (i.e. outpatient services or supplementary services) or for certain patients (those with private insurance). In England and Sweden FFS payments are not important for the remuneration of specialists in hospitals.

FFS payments always cover the medical work of specialists and except for Canada, Luxembourg, and the Netherlands, they usually also include a certain share for practice costs. FFS systems are almost always expressed in terms of a relative value scale, which is developed in close collaboration between specialist medical associations and payers, and negotiations play an important role for transforming relative weights into monetary values. Relativities of the FFS systems are usually updated only at irregular intervals and only for specific services that are no longer considered to be adequately reflected in the FFS catalogues. By contrast, base values are often negotiated annually. There are only few countries that impose budgets in order to limit overall expenditures on FFS payments. Canada, France and the US Medicare system use macro-level control mechanisms, where – in theory – a national or regional budget plays an important role when determining the base values. The Netherlands is the only country, where budgets are broken down to individual hospitals and specialties, thus effectively limiting the volume of expenditures.

France, Switzerland, the Netherlands, and the US Medicare system provide particularly interesting examples of FFS systems: first, these countries illustrate different approaches for combining DRG-based hospital payment systems with FFS payments for specialists; and second, all four countries have attempted to define more objective criteria for the establishment of the relative value scale.

Table 32 – Characteristics of fee-for-service (FFS) systems

	Which specialists are FFS payments applied to?	What do FFS payments cover?	What is the FFS catalogue based on and who is responsible?	How often is the FFS catalogue updated?	Are FFS payments limited by budgets?
Canada	office-based specialists most hospital-based specialists	medical work for hospital specialists medical work and practice costs for office-based specialists	negotiations between provincial and territorial medical association and MoH negotiations may be based on any relevant factors and data	usually every 4 four years, in some cases agreements last for up to 12 years	overall physician remuneration is budgeted at the level of the province (not specifically FFS payments)
England	office-based independent specialists (private)	medical work and practice costs	n/a	n/a	no
France	office-based independent specialists	medical work and practice costs; in case of hospital treatment, a share of the	time, stress, required technical skills, mental effort, cost of practice	irregular, 6 ‘big rounds’ of renegotiation since 1971, 10 amendments between 2011 and the	yes, but national target budget is regularly exceeded

	Which specialists are FFS payments applied to?	What do FFS payments cover?	What is the FFS catalogue based on and who is responsible?	How often is the FFS catalogue updated?	Are FFS payments limited by budgets?
	specialists in most private hospitals specialists practising privately in hospitals	fees is transferred to the hospital	relative value scale is ultimately determined in negotiations between French National Health Insurance Fund and specialist representatives	beginning of 2014 since last 'big round' in 2011	
Germany	for SHI patients: mainly office-based specialists; hospital specialists only under specific circumstances (see text) for privately insured or self-paying patients: office-based and hospital based specialists	medical work and practice costs in case of hospital treatment of privately insured patients, a reduced fee applies because hospitals also receive a DRG-based payment and a share of the fees is transferred to the hospital	there are two FFS catalogues: (1) the EBMa for SHI services and (2) the GOÄ for other services (i.e. for privately insured, self-paying etc.) EBMa is issued by self-governing bodies (relevant stakeholders); base value is subject to negotiations GOÄ is issued by the Federal Government as a regulation	irregular, last major revision of EBMa (services within SHI system) in 2009 and multiple minor adjustments since then last complete revision of GOÄ (services outside SHI system) 1982, last major update 1996	no (for services provided in hospitals)
Korea*	specialists working in clinics (outpatient facilities with beds) hospitals are mostly financed by FFS	medical work and practice costs (different conversion rates apply to different provider types, e.g. tertiary hospitals, clinics etc.); additionally medical risk is explicitly included	medical fee schedule is based on time, effort, personnel, equipment and facilities, risks and maintained by the Health Insurance Review and Assessment Service base value is negotiated between the National Health Insurance service and representatives of different	base values are negotiated annually	no

	Which specialists are FFS payments applied to?	What do FFS payments cover?	What is the FFS catalogue based on and who is responsible?	How often is the FFS catalogue updated?	Are FFS payments limited by budgets?
			provider groups, MoH has overall responsibility		
Luxembourg	office-based specialists specialists in most hospitals	medical work of hospital specialists medical work and practice costs for office-based specialists (the same rates apply to both)	time, intellectual and technical effort base value is connected to the average national income negotiations between members from the sickness fund, the Administration of Medical Control, the MoH and medical professionals	base values are negotiated every two years; only positive adjustments	n/a
Sweden	no relevant FFS system				
Switzerland	office-based specialists outpatient services in hospitals patients with private supplementary insurance bonus calculation based on outpatient FFS system	medical work and practice costs	time, qualification of specialist, necessity of having assistance from a second specialist, cost of other staff and technical equipment required (e.g. operation theatre) negotiations between stakeholders (updates are performed by variable working groups, including physician as well as hospital representatives)	irregular; there have been 18 revisions since the introduction of the current FFS system in 2003 until the beginning of 2014 base values are negotiated annually	no

	Which specialists are FFS payments applied to?	What do FFS payments cover?	What is the FFS catalogue based on and who is responsible?	How often is the FFS catalogue updated?	Are FFS payments limited by budgets?
			base value is updated through negotiations between hospitals and insurers		
The Netherlands**	most specialists in general hospitals and independent treatment centres	medical work (FFS payments to specialists are an earmarked portion of the Dutch DRGs; the DRGs themselves also cover other cost)	time negotiations between stakeholders (Netherlands Healthcare Authority, Association of Medical Specialists, Ministry of Health, physician partnerships in hospitals)	irregular	national, specialty and hospital level budgets for specialist remuneration
USA	office-based specialists hospital-based specialists	medical work and practice costs (a higher FFS rate applies to hospitals)	time, stress, technical skills required, mental effort the AMA maintains the billing codes and incorporates recommendations by specialty societies; pricing decisions are made by the Centers for Medicare & Medicaid Services (CMS)	prices of the FFS catalogue are updated annually	theoretically, total annual national physician payment is budgeted, in practice the budget is regularly exceeded

*Notes: *Korean hospitals and physician owned clinics receive payments according to the same fee-for-service (FFS) system; hospitals then pay part of these payments as salaries to physicians whereas physicians in clinics are self-employed and receive FFS payments directly; ** Specialists receive an earmarked (pre-specified) portion of a given DRG, i.e. they receive bundled payments rather than classic FFS-payments*

14.2.2.2 France

Context: Private hospitals receive a DRG-based payment that does not include specialists' fees. These are billed separately by self-employed specialists to social health insurance funds and/or patients. There are two official fee schedules, which are used in conjunction by billing physicians. One is the nomenclature générale des actes professionnels (NGAP), which specifies the basic consultation fees. The other is the Classification Commune des Actes Medicaux (CCAM), which lists all billable procedures and relative weights for each procedure code. Long-term agreements (called 'conventions') – signed between social health insurance (SHI) and representatives of self-employed specialists – exist, which regulate the conditions under which specialists (but also GPs and other health professionals) provide services to patients. The majority of self-employed specialists agree to these conditions, which means that they are not allowed to exceed the tariffs specified in the fee schedules and – in exchange – receive certain other financial benefits (e.g. social insurance contributions). However, an increasing proportion of specialists (43% of all specialists in 2013 – not only in hospitals) exceed the official tariffs, and consequently, they are not eligible for these other financial benefits.

Factors determining fee levels: The basic consultation fees of the NGAP are determined through negotiations between specialists and SHI. Upon introduction of the procedure tariffs (CCAM) in 2005, the methodology of setting and updating relative weights for the procedures was inspired by the Medicare Resource-based Relative Value Scale (RBRVS) (see below within this section). Relative weights for each procedure are defined by a technical commission within the French National Health Insurance Fund called the 'Commission de Hiérarchisation des Actes Médicaux'. This commission includes 20 experts randomly selected from a list of 60 to 100 experts proposed by scientific societies of each specialty. The valuation methodology assumes that the fee for each service should cover (1) the medical work; and (2) the costs of the practice. In theory, i.e. according to the methods paper of the commission and in line a study by, [382] which was the origin of the RBRVS, the level of medical work is determined by (1) the time, (2) the stress, (3) the necessary technical skills, and (4) the mental effort. However, because time is the only objective measure, the other measures are valued by the 20 selected experts in relation to a 'reference procedure' for each specialty. Subsequently, the reference procedures are mapped across specialties and the relativities are recalculated. The cost of the practice is calculated on the basis of the professional costs (personnel costs, rents, medical consumable, use of medical equipment, etc.) declared to the fiscal administration by each specialty. This amount is then divided by the sum of total relative values 'produced' in the previous year. In spite of this seemingly objective methodology, the relative value scale is ultimately determined through a negotiation process between the Director General of the French National Health Insurance Fund and the professionals' representatives. The monetary conversion of relative weights into monetary values has not been updated since the introduction of the system in 2005 and remains at € 0.44 per point.

Budgets limiting expenditures: An annual public health care budget called 'Objectif National des Dépenses de l'Assurance Maladie' (ONDAM) is voted by Parliament. However, the budget is more of a spending target and it is regularly exceeded. It has only indirect influence on limiting total expenditures on physician fees. The budget is used by SHI during negotiations with physicians about tariff adjustments but it does not limit the amount of services to be provided. More important measures aimed at limiting expenditures have been the introduction of best-practice protocols developed by the 'Haute Autorité de Santé' and a system of pre-authorization for certain expensive procedures.

14.2.2.3 The Netherlands

Context: All hospitals are paid via a DRG-like payment system. The system was originally introduced in 2005 (see section 14.4). Since 2012, after a major reform, the system is called the DOT system, which stands for DBCs (the Dutch DRGs) on the way to transparency. The Dutch Healthcare Authority (NZA) is responsible for developing and updating the system but NZA has delegated the practical issues to an organisation called DBC-onderhoud (DBC-maintenance, http://www.dbconderhoud.nl). Each DBC defines a specific 'care product', i.e. a bundle of services provided by hospitals and their specialists. In 2014, national tariffs exist for about 25-30% of these products/DBCs (list A DBCs). National tariffs contain an honorarium component for specialists and a hospital component for hospital costs. Tariffs for about 70-75% of all DBCs (list B DBCs) are freely negotiable between hospitals and insurers. For these list B DBCs, hospitals negotiate with their specialists about the honorarium component in order to

be able to offer a competitive price to insurers. Self-employed specialists within hospitals were traditionally organised in entrepreneurships, mostly in the form of staff partnerships. More recently, the different partnerships of individual specialties within hospitals have formed so-called 'collectives' as this was a legal condition for keeping the status of 'free entrepreneurs', which has tax advantages. When hospitals bill insurers and are paid for provided services, they collect also the honorarium component of DBCs. Depending on the local agreement, the hospital may keep a certain share of this money for its services provided to specialists for, e.g. secretarial assistance, administration, insurance etc. Subsequently, the money is passed on to the account of the specialists' 'collective'. The final distribution of the money from the collectives to specialists varies across hospitals. However, the main goal of the distribution is a fair distribution of income across specialties and partners of each partnership.

Factors determining fee levels: Until 2011, the honorarium component of each DBC was calculated on the basis of two things: (1) a 'normative time' for performing the services that are included in a DBC, and (2) a negotiated hourly tariff. The normative times were originally estimated for the introduction of the DBC system in 2005 and were based on time studies performed by Capgemini Consulting as a predecessor of DBC-onderhoud. Time norms were determined for each DBC both for the treating specialists and for supportive specialists such as radiologists or clinical biologists. The time norms were then formally determined by the NZA in cooperation with the Association of Medical Specialists and the Ministry of Health. The hourly tariff was negotiated between the Ministry of Health and the Association of Medical Specialists. However, because of budget overruns and increasing income disparities across specialties, a new approach was introduced in 2012 with the ultimate aim of ensuring that total spending remains within a newly introduced national specialist budget. As a result of this reform, the idea of a normative time spent per DBC was formally abolished and responsibility for determining a relative weight for the honorarium component of each DBC was delegated to the Association of Medical Specialists. Nevertheless, the old norm times are usually still the basis for updates of the new system. In practice, the new approach consists of several steps:

- The national budget for services provided by self-employed specialists is divided between the 26 specialties based on the number of full-time equivalents of specialists per discipline with some minor corrections.
- The budget for each specialty is divided by the sum of the products of each DBC multiplied with a weight for (the honorarium component of) that DBC. In this calculation the old 'norm times' or the old fees are used as weights for each DBC (both can be used). The result of this calculation is a base rate per DBC weight.
- The specialists' committees can suggest altering the weights (i.e. normtime per DBC). Their suggestions can be based on their own time studies or, usually, on expert opinion, or a consensus that some DBCs are relatively over- or underrated compared to others.
- The calculation is then repeated with the altered weights per DBC.

Payment of an individual specialist depends on the distribution mechanism used by the "collective" of specialists in a given hospital. The majority of collectives use a model developed by a consultancy firm called Logex, which is based on a limited number of parameters related to productivity of the specialist. In addition, income of an individual specialist depends on his status within the partnership. Junior partners, i.e. younger medical specialists who have only recently ended their training, are usually not fully profit sharing partners. After several years, a partner can buy into a partnership and become a senior partner. In the end, the income distribution is no longer based on the DBC tariffs, but is based on local agreements.

Budgets limiting expenditures: A hospital level budget for specialist fees was introduced in 2012. The budget determines the maximum revenue that specialists of a given specialty working in a given hospital can earn by providing DBCs (both list A and list B) for all insurers. NZA calculates the budget based on a hospital's specialists' market share and the national budget for self-employed specialists (approx. € 2 billion in 2014) set by the Ministry of Health. The market share is determined by NZA through a survey of income earned by hospitals (i.e. the sum total of specialist fees billed to health insurers) in the previous year. Once the budget is determined, hospitals negotiate with insurers about the share of the budget that each insurer wants to contract. It is possible that a hospital is unable to conclude contracts for its entire budget, i.e. the hospital will not be able to expend its budget. The total national expenditures on specialists are evaluated at the

end of the year. If the total does not exceed the national budget, specialists in individual hospitals which have exceeded their budgets are allowed to keep the excess. If the national budget is exceeded, hospitals have to pay back all or part of their income above their individual budgets.

14.2.2.4 Switzerland

***Context*:** Hospital inpatient care is paid via a DRG-based payment system (SwissDRG). However, outpatient care provided by hospitals is paid for on the basis of a FFS system called TARMED. The same system is also used to bill for additional services (choice of doctor) or higher comfort provided to patients who have supplementary insurance (private or semi-private class). In addition, TARMED is used in most hospitals for registering all services provided by specialists, even if these services are not billable to insurance. The reason for this is that hospitals are mandated to have an activity based cost accounting system, and costs of physicians have to be allocated based on TARMED points or minutes spent with patients. Furthermore, TARMED is increasingly being used to calculate performance-related bonuses for employed specialists. TARMED has been developed and is updated by an institution called TARMED eG, which includes representatives of relevant providers (the Swiss Association of Hospitals (H+) and the Swiss Medical Association (FMH)) and payers (the association of compulsory insurers (santésuisse) and other insurers) as well as representatives of the cantonal ministries of health. Since its introduction in 2003, TARMED has undergone 18 revisions.

Factors determining fee levels: TARMED is a relative value scale, and weights for each service item (locally referred to as “tax points”) consist of two parts: (1) the medical part for medical staff, which may also include an assistant part if one or two additional physicians are needed to perform a procedure, and (2) the technical part for technical and nursing staff, equipment and overheads. The medical part for each of the about 4500 TARMED services was calculated based on time estimates and calculated staff costs per minute of service provision. Time estimates were obtained based on discussions with experts from associations of medical specialists, which were subsequently checked for plausibility by payers. For each service, time estimates include the time for performing the procedure, preparation and wrap-up time as well as documentation time, and if necessary the same time is included also for a second specialist assisting during the procedure. Staff costs per minute were calculated based on four factors: (1) a reference income of CHF 207 000 per year, (2) an adjustment factor depending on the necessary qualification for the service (e.g. specialty and additional qualifications), (3) the annual working time of 1920 hours (9.2 hours per day), and (4) the assumed productivity, which adjusts for non-billable activities such as practice management, breaks, waiting time, non-billable documentation. The relative weights for the technical part of each service item consist of time estimates for the use of infrastructure (including preparation and wrap-up time) and cost estimates for the use of infrastructure. Time estimates are again based on expert opinion, while costs per minute are estimated based on hypothetical configurations of different rooms, personnel, technical equipment etc.

TARMED includes rules for each service item specifying whether it can be billed only once per session, once per day or once per side of the body. In addition, TARMED specifies and restricts possible combinations of services. For example, anaesthesiology can be billed only together with surgical interventions that have a certain level of anaesthesia risk; or ‘laser tonsillectomy’ cannot be combined with ‘other tonsillectomy’. Finally, the actual monetary value per service is determined by the TARMED conversion factor, which varies across cantons and by type of provider. The conversion factor for hospital outpatient care is negotiated between providers and the association of compulsory health insurance companies. The value agreed for a single medical practice is usually higher than the value for university hospitals (economies of scale adjustment). In addition, the values agreed in the Italian part of Switzerland can be lower than the ones in Geneva (geographical adjustment to the cost of living).

Budgets limiting expenditures: Budgets do not play an important role in limiting FFS payments or DRG-based payments to hospitals. Cantons have the legal option (KVG Art. 54) to define global budgets for hospital care in order to limit exceptional increases in expenditures. However, only a small number of cantons make use of this option. The most important limitation to the number of services provided by specialists consists in the billing rules that are inherent in TARMED, i.e. limits to the number of billable services per session etc.

14.2.2.5 US (Medicare)

Context: Hospitals are paid by Medicare through a DRG-based payment system. However, hospital payment does not include specialists' fees. These are billed separately by specialists (or hospitals on behalf of their employed specialists) to Medicare based on the Medicare physician fee schedule. The fee schedule, which is also known as the Resource-based Relative Value Scale (RBRVS), consists of Relative Value Units (RVU) for each procedure code of the Current Procedural Terminology (CPT). The RBRVS is maintained by the Centers for Medicare & Medicaid Services (CMS), and since 2012 RVUs have been updated annually. The CPT system is maintained by the American Medical Association (AMA). RVUs for each procedure are adjusted for geographic factors (in order to account for differences in production costs), and for numerous other factors, e.g. for multiple procedures performed on the same day, for the provider type (e.g. non-physicians), or other policy adjusters (e.g. increased payment for physicians practicing in underserved areas). Final payment is calculated by multiplying the RVU with a nationally uniform conversion factor.

Factors determining fee level: RVUs for each procedure consist of three parts: physician work, practice expenses, and malpractice costs.

The physician work RVUs on average account for about 50.9% of total relative value in 2014.[383] Upon introduction of the RBRVS in 1992, the physician work RVUs were based on the results of a study,[382] which determined the value of physician work based on the time taken to perform a service; the technical skill and physical effort; the required mental effort and judgment; and stress due to the potential risk to the patient. CMS generally considers only the time needed for furnishing the service and an aggregate value for the intensity of work per unit of time. For updating physician work RVUs, AMA's RBRVS Update Committee (RUC) solicits advice from its specialists' societies concerning time and intensity of work. Specialist societies are required to conduct a survey of at least 30 participating physicians who are asked to evaluate the work involved in a new or revised code relative to a set of reference procedures. The results are evaluated by the specialty societies and submitted to the RUC. The RUC then uses this advice for its recommendations to CMS, which has historically accepted more than 90% of RUC recommendations. In certain cases CMS has made adjustments if certain values were believed to be inflated. There is concern that time estimates, which are a central component of work are inflated for certain high volume services, and CMS is evaluating the possibility of obtaining empirical time data rather than relying on estimates by specialists.

Practice expense RVUs exist in two variants: in-facility practice expense RVUs (e.g. for services performed in a hospital), and non-facility practice expense RVUs for services performed in physicians' offices. Practice expenses are supposed to cover costs of renting office space, buying supplies and equipment, and hiring non-physician clinical and administrative staff. Practice expense RVUs are determined based on occasional surveys of practices that itemize costs. The two most important sources of practice expense data are the Clinical Practice Expert Panel data and the AMA's Socioeconomic Monitoring System data. The in-facility practice expense RVU is often considerably higher than the non-facility RVU, which is supposed to cover higher costs of hospital stand-by capacity. However, there have been discussions that the resulting higher payments create market distortions.

Malpractice insurance RVUs are based on malpractice insurance premium data collected from commercial and physician-owned insurers from all states.

During actual billing, each of the three RVU parts is multiplied by a separate geographical adjustment factor (GAF) for differences in local costs, and the sum is multiplied with the nationally uniform conversion factor (see Box 1).

Box 1: Fee calculation under the Medicare Physician Payment system

General formula:

Payment = [(RVU_{work} × GAF_{work}) + ($RVU_{practice\ expense}$ × $GAF_{practice\ expense}$) + ($RVU_{malpractice}$ × $GAF_{malpractice}$)] × CF

where:

RVU=Total relative value units for each of the three parts

GAF=Geographic Adjustment Factor for each of the three parts

CF=Uniform national conversion factor

Example:

CPT Code 27090, Removal of Hip Prosthesis [Separate Procedure], in *San Antonio, Texas*:

	RVU GAF		
Physician Work:	11.69 × 0.985	=	11.5147
In-facility Practice Expense:	9.67 × 0.916	=	8.8577
Malpractice:	2.19 × 0.816	=	1.7870
Total			22.1594
Conversion Factor			× $ 27 2006
Fee Schedule Amount			$ 602.75
Medicare Payment Portion*			× 0.80
Medicare Physician Payment			$ 482.20

**Please note that Medicare pays only 80% of the total fee because 20% have to be covered by patients' out-of-pocket (co-insurance).*

Budgets limiting expenditures: In theory, total national expenditures on physician payments should be limited by the Sustainable Growth Rate (SGR) formula, which was introduced as part of the 1997 Balanced Budget Act. The SGR ties physician payment updates to a number of factors, including growth in input costs, growth in fee-for-service enrolment, and growth in the volume of physician services relative to growth in the national economy. While the formula has called for reductions in physician payments every year (cumulative amount about 24% today) the Congress has overridden the formula for most of the last ten years in order to avoid negative payment updates.[384] So, in fact, effective instruments to control spending growth do not exist.

14.2.3 Overview and examples for salary systems

14.2.3.1 Overview

Table 33 provides an overview to salary systems in the ten included countries. It shows that most specialists in hospitals of most countries receive salaries and that at least some specialists in all countries are paid by salaries. Interestingly, very different entities are responsible for determining salaries. In Korea, Sweden and the United States, salaries are mostly negotiated individually between specialists and hospitals. In Canada, France, Germany, Switzerland, and the Netherlands, collective negotiations between associations of physicians and associations of hospitals determine salary levels. In England, the salary level is fixed by the Department of Health based on recommendations by an independent review body, the DDRB.

In most countries, the most important factor influencing salary levels is the experience of specialists, which is usually defined in terms of years worked as a specialist. In countries with strong hierarchical organisation of specialists in hospitals, such as France, Germany, and Switzerland, the position in the hierarchy is another important factor determining salary levels. By contrast, hierarchy is not formally taken into account in England and the Netherlands. In the Netherlands, taking on certain management functions is associated with a higher income but this does not imply a hierarchical relationship. The specialty is not formally taken into account in countries with official salary scales. However, in countries, where salaries are based on individual negotiations, the specialty can have an important influence on specialist income, and other factors such as hospital location or popularity of a particular specialist will also play a role. Furthermore, in countries, where services of specialists are generally paid for on the basis of FFS, i.e. in Korea and the United States, employed specialists usually receive a salary that is closely related to their individual productivity.

Finally, there is a lot of variation across countries concerning the additional income that salaried specialists receive. In England, the most important

additional income component is made up of clinical excellence awards, which aim to reward consultants for exceptional achievements in relation to prevention, care, research, and/or teaching (see Box 3). In other countries, the most important additional income components very much depend on the specific hospital and individual negotiations. Usually, they consist of activity related bonuses and/or they are related to FFS payment for the treatment of private patients.

Table 33 – Characteristics of salary systems

	Which specialists are salaried?	How are salaries set? Responsible entities	Frequency of revision	Which criteria define different salary levels?	Do specialists receive additional income?
Canada	specialists in certain specialties, e.g. radiotherapy, pathology, microbiology etc.	collective negotiations at provincial level between MoH and specialists' associations (possibly with subsidiary agreements specific to certain specialties or rural programs etc.)	every four years	depends on province, specialty, hospital type	depends on specialty and province and may include continuing medical education expenses, pension contributions, etc.
England	all NHS specialists	contract: national level negotiations (BMA and NHS employers) salary: increase fixed by Department of Health (based on recommendations of the DDRB as independent review body)	contract renegotiated at irregular intervals (last time 2003) annual review of salary levels	experience (years)	clinical excellence awards FFS for private practice
France	almost all specialists in public hospitals most specialists in non-profit hospitals	collective negotiations at national level between specialists' unions and hospital federation under tight supervision of MoH	negotiations at irregular intervals (last time July 2010)	employment status, hierarchy, experience (years), place of work (university vs. other hospitals)	salary add-ons for, e.g. working at several hospitals, not working in private practice FFS for private practice teaching salary at university hospitals

	Which specialists are salaried?	How are salaries set? Responsible entities	Frequency of revision	Which criteria define different salary levels?	Do specialists receive additional income?
Germany	almost all specialists in almost all hospitals	collective negotiations between physicians' union and employers' associations (e.g. all municipal hospitals) or individual hospitals	depending on agreement	hierarchy, experience (years)	FFS based bonuses for treatment of private patients (distribution mechanism depends on hierarchy) performance measures (only for chief physicians, e.g. case-mix points generated)
Korea*	specialists in hospitals (but not in clinics – outpatient facilities with beds)	individual negotiations between specialists and hospitals	n/a	experience (years), medical skill, specialty, popularity	performance related bonuses with performance measured in terms of generated fees
Luxembourg	specialists in one acute care hospital and in the Institute for Radiotherapy	internal hospital rules	n/a	n/a	variable part (performance related)
Sweden	almost all specialists in almost all hospitals	contract: collective negotiations between employers and Swedish Academics' trade union salary: individual negotiations between specialists and hospitals	contract: irregular salary: n/a	experience (years), hierarchy (responsibility),medical skills, specialty, location (rural vs. urban)	FFS for private practice
Switzerland	almost all specialists in almost all hospitals	collective negotiations between the hospital medical commission and individual hospitals or between the association of hospital physicians and groups of hospitals (e.g. municipal or cantonal hospitals)	depending on agreement	hierarchy (responsibility), experience (years)	bonuses for treatment of private and ambulatory patients (distribution mechanism depends on hierarchy)

	Which specialists are salaried?	How are salaries set? Responsible entities	Frequency of revision	Which criteria define different salary levels?	Do specialists receive additional income?
		individual negotiations about place in salary scale, share of FFS income from private and ambulatory patients as well as for bonuses			bonuses based on different criteria (e.g. TARMED points, patients treated, case-mix points generated)
The Netherlands**	specialists in university hospitals specialists in certain specialties (e.g. pediatrics)	collective negotiations between the Association of Specialists and either the Hospital Federation (NVZ) or the Federation of University Medical Centres (NFU)	every two years	experience (years), responsibility (department or division manager), teaching	hospital specific bonuses (information unavailable)
USA	mostly specialties performing inpatient procedures, e.g. neurosurgery, cardio-logy, and cardiac surgery	individual negotiations	n/a	productivity (measured in RVU points), specialty, popularity, location (rural-urban)	n/a

*Notes: * Korean hospitals and physician owned clinics receive payments according to the same FFS system; hospitals then pay part of these payments as salaries to physicians whereas physicians in clinics are self-employed and receive FFS payments directly; ** Specialists receive an earmarked (pre-specified) portion of a given DRG, i.e. they receive bundled payments rather than classic FFS-payments*

14.2.3.2 Germany

Context: There are different collective salary agreements for different types of hospital ownership (e.g. for hospitals owned by municipalities, university hospitals, private hospitals, hospitals run by the church). Agreements are negotiated between employer associations (e.g. Vereinigung der kommunalen Arbeitgeberverbände VKA for public hospitals run by municipalities) and trade unions (Marburger Bund for hospital physicians). Some hospitals or private hospital chains have their own salary agreements (Haustarifvertrag). Negotiations take place between employers and trade unions according to German labour law. When a collective agreement has expired, they usually meet several times to negotiate. If there is no agreement, trade unions have the right to strike (except for in hospitals run by churches as they fall under special regulations).

Factors determining salary level: There are four main components of salaries: fixed monthly salary, overtime compensation (e.g. for on-call-duties), private liquidation (i.e. FFS income from private patients) and/or bonus and employer's payments for occupational/company pension. The percentages vary through hierarchical levels. For junior specialists, fixed salary is usually about 75%, overtime compensation for extra duties about 15%, participation in private liquidation 5%, and payments to company pension scheme 5%. For senior specialists and chief physicians, the parts of private liquidation and/or bonus payments are much more important.

Salary scales (in collective agreements) usually take into account: qualification, responsibility or hierarchy, and experience (usually referring to time). Box 2 shows an example of a salary scale for doctors (Tarifvertrag für Ärzte an kommunalen Krankenhäusern TV-Ärzte/VKA, valid for 2014). There is a trend towards individual negation of salaries, especially for senior specialists, but also increasingly for junior specialists due to staff shortage, which results in higher payments than the official salary scale of the collective agreement ('über-/außertarifliche Vergütung'). For chief physicians, salaries have always been individually negotiated.

Box 2: Example collectively negotiated salary system for hospital physicians in Germany

The table shows the basic monthly salary for physicians in public hospitals run by municipalities in 2014 which is collectively negotiated between public employer associations of hospitals and trade unions of physicians as part of a general labour agreement. In addition hospitals and groups of hospitals are also able to negotiate individual labour agreements. In general the salary is differentiated by the level of experience in terms of years, the qualification e.g. assistant physician vs. specialist and the grade of responsibility or hierarchy, thus reflecting the strong hierarchical organisation of physicians in German hospitals. Chief physicians who are the head of a hospital department or ward are not included in common salary negotiations as they negotiate their income directly with hospitals.

		level of experience*					
qualification, responsibility or hierarchy	assistant physicians	start	1	2	3	4	5
		€4023	€4251	€4414	€4696	€5033	€5171
	specialists	start	3	6	8	10	12
		€5310	€5755	€6146	€6374	€6597	€6819
	senior specialists	start	3	6			
		€6651	€7042	€7601			
	chief senior specialists^	start	3				
		€7824	€8383				

*Notes: *Number of years after which the next salary level can be obtained; ^senior chief specialists (deputy chief physicians) are able to negotiate their salaries above stated levels*

14.2.3.3 Sweden

Context: All specialists are covered by a collective labour agreement, which specifies the general terms and conditions of employment, e.g. work obligations, working hours, holidays, sickness and leave benefits, insurance and pension benefits and emergency standby and on-call compensation. However, as is the rule also in other sectors of the Swedish economy, the collective agreement does not regulate the salary levels of individual employees or, in this case, of different groups of specialists. Salaries are always based on individual negotiations between hospitals (i.e. the person in charge of salaries at the hospital) and specialists. The Swedish Medical Association is not involved in negotiations but it provides advisory support for their members in the form of salary statistics and practical advice.

Factors determining salary levels: The salary level is based on the employees' position, responsibilities, competence, background and the current market situation. The salary can be renegotiated on different occasions during the career, for example when a specialist improves his level of competence or areas of responsibility or during a local salary review. As salaries are based on individual negotiations, salaries differ considerably across specialties, hospitals, regions, and, in fact, from one person to another. What the collective framework contract does specify is that overtime on weekdays should be remunerated at 180% of normal salary and that unplanned overtime and overtime on weekends and holidays should be remunerated at 240% of normal salary.

14.2.3.4 The Netherlands

Context: There are two collective salary agreements, one for the University Medical Centres and one for general hospitals. Salary agreements determine the basic salaries of hospital specialists. However, hospitals are free to pay bonuses in addition to the salary. Collective salary negotiations for medical specialists take place every two years. Salaries are negotiated between the Hospital Federation (NVZ) and NFU (Federation of University Medical Centres) on the one side and the Association of Specialists (Orde van medisch specialisten) on the other. There have never been strikes although specialists have sometimes held manifestations. Conflicts between NFU/NVZ (employers) and specialists are settled in negotiations or, failing that, in court.

Factors determining salary level: The salary is based on experience and responsibility. There is one medical specialist salary scale for all salaried medical specialists. The scale consists of 7 levels (0-6), varying from € 6193 to € 10 821 per month in July 2013. A specialist starts at level zero and moves to a higher level every year until the maximum is reached. In addition to the seven levels, the salary scale defines three functions that are associated with higher salaries: the functions of Medical Specialist Manager I and II, and a teaching function. The Medical Specialist Manager I is found only in large hospitals and has the function of a division manager (a division is a larger unit in a hospital). A supplementary income of 25% is associated with this function. Medical Specialist Manger II is head of a department (several departments will form one division), with a supplementary income of 15%. In addition, specialists with educational responsibility receive 15% extra.

The basic (fixed part) of the salary is based on 40 hours per week, including up to nine shifts during nights/weekends. Medical specialists can make an agreement with the hospital to work on average up to 45 hours per week excluding nights/weekends and/or up to 52 hours including nights/weekends. If specialists work 10 or more shifts during nights/weekends, the salary has to be increased by 6%.

14.2.3.5 USA

Context: An increasing proportion of about 25-30% of specialists are employed by hospitals. Hospitals bill services provided by their employed specialists on the basis of the Medicare physician fee schedule (see section 14.2.2). Salaries of employed specialists are negotiated individually between specialists and hospitals. There is no system of collective bargaining. Consequently, salaries may differ greatly across institutions, specialties, and regions.

Factors determining salary levels: Most hospitals compensate their employed specialists based on productivity metrics. This is possible because all services provided by specialists are registered and paid for by Medicare (or other payers). Hospitals know exactly the number of relative value units (RVUs) generated by each individual specialist. Specialists know exactly how much Medicare would pay for each RVU generated, and they use this information for their negotiations with hospitals over compensation. Consequently, the salary of individual specialists is usually closely related to

their own production as measured in terms of RVUs. This is very different from salaries in most other countries, where they are much less dependent on individual production. Because specialties differ in their ability to generate RVUs, salary levels usually differ considerably across specialties. In addition, because salaries are based on individual negotiation, they reflect supply and demand. Salaries may be higher in areas that have difficulty to attract physicians and might be lower in cities and attractive neighbourhoods. Although hospitals are increasingly exploring the possibility of using performance on outcomes or other quality metrics as payment adjusters, the proportion of total income determined by quality usually still remains relatively small.[385]

14.2.4 Other financial benefits

Other financial benefits may constitute a substantial component of the overall income of specialists. One example for this is the system of Clinical Excellence Awards (CEA) in the English NHS, which is described in detail in Box 3. Other benefits could be, for example, pension contributions, professional insurance, housing benefits, profit sharing or subsidised childcare. As described in the introductory section of this chapter these additional income components depend on different factors that can be grouped into four dimensions as shown in Figure 32.

Box 3: Clinical Excellence Awards in England

As part of the 2003 consultant payment reform, the English NHS introduced the so-called Clinical Excellence Awards (CEA). The CEAs are specifically aimed at rewarding performance 'over and above' the standard expected of consultants, i.e. they do not necessarily reward reaching pre-defined targets but they are intended to stimulate outstanding personal accomplishments of NHS consultants who do not engage in private practice. There are 12 award levels ranging from under £3,000 per year to over £75,000 per year. Awards up to level 8 are appointed by a local committee (so called employer-based awards), whereas levels 10-12 are awarded by a national committee; level 9 is either awarded locally or nationally. The committees' assessments and decisions are based on standardized applications by individual consultants.

Consultants who want to apply for the awards have to provide evidence of many (but not all) of the following:[386]

- sustained commitment to patient care and wellbeing, or to improving public health;
- high standards of both technical and clinical aspects in patient care;
- an outstanding contribution to professional leadership;
- a sustained commitment to the values and goals of the NHS;
- a contribution to continuous improvement in service organisation and delivery;
- embracing the principles of evidence based practice;
- a contribution to the knowledge base through research;
- recognition as excellent teachers and/or trainers and/or managers;
- a contribution to policy making and planning in health and healthcare.

Eligibility criteria exist for all levels of the awards. Assessment criteria are outlined by the relevant appraisal committees. Yet due to the nature of the awards these are soft criteria. The average value of national awards (including also Distinction Awards) was £ 43 194 in 2010, the average value of local awards (including Discretionary Points and Commitment Awards) was £ 12 485. Almost 50% of all consultants in England held an award in 2010. More than £ 500 million were spent on awards to consultants and clinical academics in the fiscal year of 2011-12, accounting for about 9% of total NHS spending on consultants.

The Review Body on Doctors' and Dentists' Remuneration (DDRB) formulated a range of recommendations after a review of the scheme in 2012.[387] For example, it recommended to introduce ceilings of £ 40 000 nationally and of £35,000 locally. Furthermore, CEAs should be connected to current performance including patient feedback while continuing to reward academic and teaching achievements. The recommendations (which also included recommendations on other aspects of consultant remuneration) are currently under negotiations between the Government, the NHS employers and the British Medical Association.

Other financial benefits are often used strategically, for instance to incentivise medical activity in geographically remote areas. This is the case in Canada where rural and northern allowances for practicing in non-urban centres are paid as well as housing allowances and relocation expenses. In the US hospitals may also pay moving allowances and sign bonuses to attract physicians to move to their locality. In the US collection guarantee loans may be provided to physicians newly setting up a practice, reducing the financial risk for specialists when opening a practice. In return the specialist usually agrees to practice in a given locality for several years.

In several countries subsidies for family support have been reported. For example, in the US support of college tuition fees for family members is sometimes offered and can be financially attractive. In Germany, subsidised childcare is nowadays offered by many hospitals and may relieve a family of kindergarten fees of up to € 500 per child per month and also in the Netherland some larger hospitals offer in-house childcare. Such services are likely to be available in other countries as well.

Coverage or subsidy of medical liability insurance is used as an incentive in Canada and the US, and may disburden physicians of significant payments to insurance companies. In France, professional insurance is covered for employed specialists and may be subsidised for self-employed physicians.

Physicians' pension contributions are usually regulated nationally and for salaried employees a certain part is often paid by employers, as in Germany, the Netherlands, and France. In France, the National Health Insurance Fund also subsidises social security contributions for self-employed specialists – but only if they do not charge patients above the official tariff. The English NHS offers a pension scheme that is regarded as generous and a key benefit for salaried NHS physicians. In the FFS based physician payment systems of Canada and the US, pension contributions by hospitals are used explicitly as financial incentives.

Access to treatment of self-paying or privately insured patients can also be financially rewarding. In Switzerland, senior consultants and chief physicians generated substantial additional income through treatment of such patients. In Germany, treatment of patients with private substitutive insurance is, in principle, under the responsibility of chief physicians who may delegate treatment to other specialists and determine a redistribution mechanism of their choice or depending on state-wide regulations. In Luxembourg specialists may charge a supplement of up to 66% for treatment of private patients.

Other financial benefits can be a very important part of total income for specialists. In Canada they may constitute as much as the base salary. In Germany and Switzerland the importance of such benefits usually increases with the hierarchy of physicians. In England, the highest level Clinical Excellence Award corresponds to about 75% of the highest possible base salary.

Finally, there seems to be an unlimited variety of further benefits awarded by individual hospitals, including such things as financial support of continuing medical education, transportation allowances, recruitment bonuses etc.

14.3 Other factors influencing and motivating specialists

14.3.1 Non-financial incentives and job satisfaction

A trend described in the literature and reported by several of our surveyed experts is that non-financial incentives are thought to be increasingly important for the recruitment, motivation and retention of specialists in hospitals – possibly even more important than financial factors.[388] Nevertheless, studies looking at the influence of non-financial incentives for the motivation of specialists are extremely rare.[389, 390] Much more frequent are studies of the determinants of physician work satisfaction or dissatisfaction.[388, 391-393]

A relatively recent review of studies from the US looked at different determinants of job satisfaction.[393] Surprisingly, the total number of hours worked was not found to be an important factor although a recent increase in the number of hours or more on call duty led to dissatisfaction. Physicians were unsatisfied if they felt to be under high pressure or stressed; and they were satisfied if they felt to be in control over different aspects of their work or if they felt to have greater autonomy. Furthermore, a positive relationship with colleagues was a strong factor leading to higher satisfaction.

Similar results were found also in a German study,[388] where the most important factors contributing to job satisfaction were having decision-making autonomy, participating in the organisation of care processes, and receiving recognition from senior colleagues. A study comparing German and Norwegian hospital doctors found that Norwegians were considerably more satisfied with their work than Germans;[394] and one important difference was the Norwegian doctors' higher satisfaction with their working hours. However, this does not necessarily contradict the results from the review mentioned above as there had been a recent increase in working time prior to the German survey.

A study comparing Norwegian, Canadian and US physicians also found that Norwegians were the most and US physicians the least satisfied,[395] although professional autonomy was perceived to be highest in the US. In England, the NHS regularly assesses the satisfaction of consultants with their working conditions and recently found that satisfaction has continuously increased since 2007.[396]

One of the most important reforms in Europe concerning working conditions in hospitals has been the gradual implementation of the European Working Time Directive,[397] which limits to 48 hours per week the maximum time that employed doctors are allowed to work. However, actual working time differs considerably across and often also within countries. In France, salaried specialists are expected to work 39 hours per week and get 20 days extra holidays to reach the legal working time of 35 hours. However, they may also work after-hours for up to a total of 48 hours. Self-employed specialists are thought to work a considerably higher number of hours.

In the Netherlands, the basic contract of employed specialists is based on 40 hours per week but specialists can agree with the hospital to work on average up to 45 hours per week excluding nights/weekends and/or up to 52 hours including nights/weekends. Again, self-employed specialists are thought to work more but reliable data is unavailable. In Switzerland, the standard contract is based on 50 hours per week but the number of hours worked is often considerably higher. In fact, according to an online survey conducted by the Swiss Association of Hospital Doctors (VSAO), more than 50% of employed specialists work more than 56 hours, with 27% working more than 70 hours.[398] In the US, working time varies widely by specialty and practice setting. Hospital-based specialties, such as emergency department physicians, and hospitalists (physicians employed by a hospital to care for inpatients) have total hours of 40 or less per week, while surgical specialties are at around 60-80 hours per week.

An important trend reported by most of our surveyed experts, and which has also been discussed in the literature,[399, 400] is that the proportion of female doctors is increasing, and this seems to have an influence on how specialists work. For example, in most countries, where specialists are both self-employed and employed, e.g. in the Netherlands, Canada, and the US, women are reported to prefer salaried employment, and this has also been found in a study of US surgeons,[401] although the opposite seems to be true in Switzerland.[402]

One reason for women's preferences for employment is likely to be that they value job security, income predictability, and part-time employment more highly than their male colleagues.[399, 401] In Switzerland, self-employment seems to provide more possibilities for flexible working times and part-time work,[402] while the opposite appears to be true in other countries.

The increasing proportion of female doctors, coupled with an increasing participation of men in family responsibilities and a tight labour market for specialists, means that hospitals are attempting to become more family-friendly in order to attract qualified staff.[400] For example, hospitals in Germany are starting to offer more flexible working times and child day care facilities.[403] In general, an increasing orientation of younger doctors towards a better work-life balance seems to be a trend that exists in several countries,[370, 400, 404] and hospitals and specialty programmes have to adapt to these changing requirements.

14.3.2 Income differences across specialties

Income differences across specialists working in different specialties are an important concern in several countries. In general, these differences are more important for FFS income of self-employed specialists – and consequently they are a more important issue in countries with a larger share of self-employed specialists. In fact, differences across specialties are substantial in several countries.

For example, in Luxembourg, radiologists had an average income of € 570 000 in 2012, while paediatricians earned about € 225 000. In the Netherlands, radiologists earned about € 296 000 in 2010, more than twice as much as psychiatrists who earned on average € 129 000.[405] Similarly large income differentials are found in many countries, including the US, Switzerland, and France – at least when considering only those specialists that are paid FFS.

One reason for large differences across specialties is that fees are often not adjusted fast enough when technological advances lead to lower costs for certain services. For example, in Canada, fees for cataract surgery have remained relatively stable over time although technological advances meant that the surgery could be performed faster and at lower costs. The same is true also for radiologists, who are often amongst the best paid specialists. Price reductions for the purchase of (no longer innovative) technological equipment are usually incorporated into recalculated fee levels only after several years.

In the Netherlands, when specialty-level budgets were introduced in 2012, one important motivation was to reduce income differences across specialties (besides the wish to limit expenditure increases). These specialty level budgets are now calculated mostly on the basis of the number of specialist full-time equivalents per specialty, which should contribute to substantially reducing income differences.

In most countries, where specialists are paid a salary, income does not differ by specialty. In the Netherlands, salaries of specialists employed by hospitals are determined by collectively negotiated agreements and are the same across different specialties, hospitals or payers. The only difference may result from bonuses, which hospitals are free to provide and which may differ by specialty. Similarly, in Germany, salary levels resulting from collective negotiations do not take into consideration different specialties. However, the position for individual negotiations above the agreed collective salary is better for specialists in fields with a greater staff shortage.

In countries, where salaries are based on individual negotiations between specialists and hospitals, such as Korea, Sweden and the US, salaries may differ considerably across specialties. In Sweden, clinical pathology is the highest-paid specialty, and specialists in neuroradiology, neurosurgery, and psychiatry are also very well paid. The lowest salaries are found in child and adolescent medicine and neurology. Also in Sweden, salaries are generally higher in specialties with a greater shortage of specialists. However, the shortage of paediatricians has not translated into higher salaries for them. There are no good explanations for this but it is striking that paediatricians are mostly women who – for one reason or another – end up with lower salaries.

14.3.3 The relationship of medical specialists and hospital management

Over the past decades organisational dynamics in health care systems, e.g. regarding promotion of market competition and patient choice, have led to an increasing demand of managerial techniques. This also changed structures in hospital governance and the relationship between managers and medical specialists in many countries. Because hospital costs are mainly driven by professional medical decisions but have to be controlled due to economic constraints, a greater interdependence between medicine and management resulted and has been discussed in several studies.[406-409] Managerial tools like cost accounting or quality reporting systems, which were introduced in order to govern professional practice, may have discontented and dissatisfied hospital specialists.[410] However, in particular junior specialists and some specialist groups (e.g. radiology, pathology and

psychiatry) are more sympathetic to a managerial culture and are keen to be more involved in managerial decisions.[362]

Internationally, the extent to which medical specialists and mangers are influencing the hospital governance differs, which was demonstrated in a comparative study across seven European countries.[365] Beside governance structures the regulatory framework of financial controls, hospital organisation and the context of the national health care system needs to be taken into account as this influences the hospital governance to a large extent (see Table 34). The comparison shows that physician influence is always important and considered in almost all levels of decision making.

Table 34 – Hospital governance in seven European countries

	Institutional contexts	Hospital organisation	Financial controls	Managerial governance	Medical self-governance
Denmark	decentralised, network-based governance embedded in hierarchy; little market & strong patient involvement	troika structure (medical, nursing, admin. directors) at top level indicative of all levels of management	mixed DRG system; centralised framework with some flexibility at all levels	strong bottom-up controls with integrated medical power on all levels; e.g. monitoring, quality reports, patient safety	important, but strongly integrated on all levels (see managerial governance)
Germany	decentralised corporatist-style governance; weak hierarchy & weak direct patient involvement; some market	troika structure at top level with some flexibility; little systematic implementation at department level & strong medical power	mixed DRG system, with some flexibility & strong involvement of doctor at all levels	mix of top-down & bottom-up controls with integrated medical power; high flexibility of doctors on department level	important on all levels, but strongest at department level; integrated with some flexibility of doctors, esp. quality & safety
Greece	hierarchy (some decentralisation) with market & corporatism; lack of patient involvement	appointed (Ministry) director with multi-prof. board, but lack of coordination with lower tiers; integration of doctors highly flexible	no DRG system;* budget strongly hierarchical with little flexibility at department level; limited involvement of doctors	strongly top-down at the macro-level but limited between levels; new emergent quality controls primarily controlled by doctors	important and strongest at the department level; medical power separated & strong in the area of quality
The Netherlands	mix of corporatism, hierarchy, market, with decentralisation & patient involvement; increasing market with strong insurers	partnership governance between administration & doctors with strong medical power on all levels	mixed DRG system; some diversity, increasingly moving	connected to benchmarks & public control with strong integrated medical	important in all areas; strongly integrated, e.g. education, new emergent specialty of medical management

	Institutional contexts	Hospital organisation	Financial controls	Managerial governance	Medical self-governance
			towards perfor-mance-based cost controls	power; increasingly demand-led	
Poland	centralised corporatism with some hierarchy & market; weak patient involvement	general director & co-directors (medicine, nursing, finance, logistics); some flexibility & diversity on the department level	DRG-based, some involvement of doctors but increasingly stronger hierarchy (centralised & hospital level)	top-down integration of doctors coexist with separation; connection to bottom-up controls is weak & highly diverse at department level	strong in clinical practice but weaker in cost controls; highly dependent on the level & subject; some voluntary efforts, e.g. guidelines
Portugal	hierarchy with corporatised public sector; some market, little patient involvement	troika structure at top level with some flexibility; little systematic implementation at department level; strong medical power	DRG system with strong involvement of doctors; some flexibility at all levels of the organisation	some top down controls but weak & poorly connected with bottom-up controls; lack of transparency; highly diverse	strong & decentralised; little compulsory performance management but voluntary efforts
Spain	strong (regional) hierarchy with incomplete integration of medical power; little patient involvement; increasing privatisation	troika structure relevant on all levels; but double structure of general & 'doctors only' boards assures flexibility & medical power	budget fixed by regional authority with some flexibility of hospitals; strong medical power at level of departments	top-down with some bottom-up controls; troika structure expan-ding, but quality mainly managed by doctors; weak coordination & flexibility	important, strongest in the area of quality & department level, e.g. CPD, guidelines; integration & separation are combined strategically

*Source: Kuhlmann et al. (2013)[365]; * a DRG-based hospital payment system is currently being introduced.[411]*

A recent study from the US suggests that participation of specialists in hospital boards may increase the hospital performance as they have a deep intuitive knowledge about the core business of a hospital which could enhance decision-making and strategy-building. In addition, the professional experiences of specialists may enhance the credibility which helps to attract talented medical personnel.[412]

In the countries reviewed for this study, specialists and national associations of physicians always play an important role in determining the specialist payment system. In countries where collective labour arrangements are predominant (e.g. France, Germany, Switzerland), representatives of physicians' associations have to agree to new salary levels or working time targets prior to effective application. In countries, where specialists are paid FFS, specialists often play an important role in developing and updating the

fee schedule and in negotiating the monetary value of fees. Furthermore, the surveyed country experts almost reported that specialists are amongst the most important stakeholder groups influencing health policy making at the national level.

Changes in payment methodologies are likely to affect the relationship of specialists and hospital management. However, evaluations of payment reforms have so far been limited to looking at the effect of reforms on changes in treatment patterns (see section 14.1.2 Incentives of different payment systems). By contrast, the effect of payment reforms on the relationship between specialists and hospital management has not been evaluated. One reason is that radical payment reforms are rare. Another reason is that it is difficult to measure a change in relationship and to attribute this change to a particular payment reform. Furthermore, the relationship between management and specialists is likely to be strongly affected by agreements which are hospital-specific, e.g. by the way how bonuses in addition to the basic salaries are negotiated and subdivided among specialists or by the percentage of FFS income that needs to be channelled to the hospital in order to cover overhead costs. One prominent study published by Shah et al. (2011),[413] which has looked at the influence that physician ownership of equipment for cardiac stress imaging has on their practice patterns, may illustrate at least one aspect of the relationship between management and specialist practice patterns. Shah et al. (2011)[413] found that physicians who have the equipment to provide cardiac stress imaging will do so also after coronary revascularization of their patients – although routine use of cardiac stress imaging after coronary revascularization is not recommended.

Given the weakness of the available evidence from the literature it is highly recommended to accompany a future reform in this field with a thorough longitudinal evaluation.

14.4 Current developments and reforms

14.4.1 Overview

This section outlines interesting developments and recent reforms in four countries. Large scale payment reforms for hospital specialists were implemented relatively recently in two countries: In England, a new consultant contract was introduced in 2003, which aimed to improve both working conditions for consultants and the ability of the NHS to manage its workforce. In The Netherlands, the introduction of DRG-like hospital payment in 2005 integrated the specialists' fees into the payments to the hospitals. Both reforms significantly influenced specialist incomes but also had other effects, e.g. on NHS consultants private practice work. The third case study is from Germany, where specialists were relatively unsatisfied until considerable salary increases and working time regulations alleviated some pressure. Finally, In the US, an increasing rate of employment amongst hospital specialists has been observed, and our last case study looks into the underlying reasons. This trend is interesting because it is mirrored also in other countries, e.g. The Netherlands and Canada, where physician employment is increasing.

14.4.2 England

The introduction of the new consultant contract in 2003 aimed at adequately rewarding consultants who make the biggest contribution to delivering services, improving consultant's professional development, and equipping hospital managers with adequate levers to plan consultants' activities. The outcome of the reform was recently evaluated by the National Audit Office [367].

One immediate outcome of the new consultant contract was that specialist payment was considerably increased: the bottom of the consultant pay band increased by 24 percent and the top by 28%. However, pay progression was slowed down and it now takes almost 19 years for consultants to achieve a 30% basic pay increase by moving up the salary scale. Almost all consultants now have a job plan, which is a requirement under the new contract, and this has helped NHS trusts to better manage consultants' activity. The new contract is also thought to have contributed to more time spent by consultants on NHS activity. However, according to the report, the

extent to which the objectives of the reform have been achieved varies considerably across different NHS trusts.

Another objective of introducing the new contract was to prevent increases in private practice work. The new contract introduced both a hurdle and an NHS based alternative to earn collateral income. Simultaneously, a new Code of Conduct for Private Practice was introduced with the aim of increasing transparency and establishing best practice rules.[414] Since then, the proportion of NHS consultants engaging in private practice has reduced considerably (from 67% in the year 2000 to 39% in 2012) although the absolute number of consultants engaged in private practice has remained relatively stable because of a strong increase in the total number of practicing consultants.[367]

Consultants may engage in private practice only if they have dedicated sufficient time (at least 44 hours per week) to NHS activities. Only very few specialists chose private practice as a full-time alternative to NHS work. Private practices in principle have no contractual relations with the NHS as a payer. Therefore, private practice in England is not comparable with office-based specialist care in many other countries such as Switzerland or Germany where office-based self-employed specialists function as part of the statutory health care system. Nevertheless private practice in England has been an economically attractive opportunity for (NHS) hospital specialists for many years, especially in times when NHS waiting times were long. NHS facilities can also generate income from treating private patients, and they generally do so in so-called private patient units.

In recent years decreases in private practice earnings have been reported, especially outside of London and the southeast of England.[415] Experts estimate that extra NHS work may be more lucrative than private work for consultants if revenues from private practice are below £20,000 per year. Another reason for decreasing private practice activities of NHS consultants might be that physicians increasingly search for a better work-life balance. Higher risk, possibly reduced demand and high costs (e.g. for medical liability insurance) may speak against full-time work in private settings whereas work autonomy and working environments outside of the NHS may speak in favour.[416] For some it is worrying that private practice is in general becoming less attractive as this means that there is no alternative system to help reduce NHS waiting lists.[416] At the same time aspects of private work settings of consultants are repeatedly cause of debate. For example, a 2011 survey found that more than half of the respondents from the general public think that private practice consultants should repay the NHS the cost of their training (an estimated £200,000).[417]

14.4.3 The Netherlands

Payment of self-employed specialists has undergone multiple reforms over the past two decades, fluctuating between the two extremes of FFS and fixed budgets. In the early 1990s, a macro-level (national) budget was implemented to control the strong annual increase of expenditures present under the old FFS system.[418, 419] When this led to reduced fee levels for specialists in subsequent years, a system of 'lump sum' payments was agreed between insurers and specialists in most hospitals in 1995. Under this system, hospital-level budgets for specialist services were introduced, which were further broken down to each specialty. However, specialists continued to be paid on the basis of FFS up to the limit when they reached the budgeted amount. When waiting lists increased around the turn of the century, budgets were somewhat relaxed and hospitals were given the possibility to negotiate additional reimbursement for their specialists in case of exceeding the budget.

With the introduction of the DBC system in 2005, specialist fees were integrated into the DBC-based payment to hospitals. For every DBC, an honorarium component was calculated covering the fees of all specialists involved in the treatment of a particular patient. Because a DBC defines a care bundle comprising all services delivered by specialists from a particular specialty during a period of time, which can be as long as an entire year, this does not constitute a full return to the old FFS system. In fact, upon first introduction of the system in 2005, the budget system for medical specialists still remained in place for list A DBCs (then the vast majority of DBCs). The budget was abolished only in 2008, and specialist payment was consequently based exclusively on the fee part of DBCs. However, once the volume constraint was removed, there was a strong incentive for specialists to treat more patients and to provide more services. In addition, specialists were able to work faster than the normative times, which were the basis for calculating the fee parts of DBCs.

The result was a strong increase in income in 2008 and 2009, in particular for supportive specialists (such as radiologists and anaesthesiologists). For example, average gross income of radiologists increased from about

€266,000 in 2007 to €421,000 in 2009.[405] Consequently, national expenditures on specialist care were much higher than budgeted. In subsequent years, the Ministry of Health attempted to control national expenditures on specialists by reducing the specialists' hourly fee, which was used together with the normative times to calculate the fee part of DBC tariffs (see section 14.2.2). However, tariff cuts did not curb the growth in expenditure of medical specialists as the number of DBCs provided by specialists continued to increase. Consequently, new fixed budgets were introduced for medical specialists in 2012.

This new system of budgets starts with a national budget for self-employed specialists, which is then subdivided to each specialty based on the number of specialist full-time equivalents. These specialty level budgets then form the basis for the calculation of the specialist fee parts of DBCs (see section 14.2.2). Subsequently, specialist budgets are broken down to each hospital and each specialty based on the hospitals' specialists' market share, which is determined by the Netherlands Health Care Authority through a survey of insurance claims made by hospitals in the previous year. The hospital-level specialist budgets then determine the maximum revenue that specialists can earn by providing DBCs (both list A and B) for all insurers. The last step is that hospitals have to conclude contracts with insurers about shares of this budget.

The last reform anticipated for 2015 is that the separation of a specialist fee part within DBCs will be abolished. Currently, specialists still have the formal right to bill health insurers independently, although in practice this is done by hospitals. As in other fields of the Dutch healthcare system, the idea is to strengthen market mechanisms, which are expected to resolve regulatory problems. Insurers are expected to negotiate with hospitals about the volume and prices of services that they want to contract, and hospitals are expected to negotiate with specialists over their payment. Whether insurers will be able to determine adequate volumes and prices for contracted services, and what negotiations between hospitals and specialists will mean for specialists' income remains to be seen.

14.4.4 Germany

Two surveys of German hospital physicians carried out in 2005 and 2006 found that job satisfaction of physicians was rather low when compared to other countries, in particular because of less acceptable working hours and low salaries.[394, 420-422] However the working conditions for employed hospital physicians changed considerably over the years 2005-2007 for two reasons. First, after massive disputes between physicians and representatives from public hospitals, including several strikes across the country, the association of employed hospital physicians (Marburger Bund) became an independent trade union in 2005 which released physicians from the collective labour agreement negotiations for civil servants. As part of the first physician specific salary agreement from 2008, junior specialists' salaries were estimated to have increased by more than 13% while senior specialists' salaries even increased by almost 25%. Today, the Marburger Bund is a powerful trade union,[423] which negotiates with almost all hospital groups collective labour agreements including salary and working time frameworks.

Secondly, in 2007 and after lengthy political discussions the German government incorporated the EU working time directive (2003/88/EC) into German law which among others, changed the way how on-call services have to be considered. This led to a decrease in the duration and the number of shifts physicians spend on call. Due to this reform more physicians had to be employed in order to cope with the same workload. A recent survey of physicians in hospitals found that work satisfaction under new working time models resulting from the introduction of the working time directive led to increased work satisfaction[424] but the sample of the survey was relatively small. Unfortunately, time series data for an evaluation of the development of work satisfaction amongst German hospital physicians is unavailable.

14.4.5 USA

The proportion of specialists employed by hospitals has seen an exceptionally strong increase since the year 2000. At the turn of the century, just above 5% of specialists were employed by hospitals but in 2012, this number was estimated to have grown to about 25%.[425] There are both supply and demand side factors underlying this trend.[426, 427] On the one hand, an increasing number of physicians is seeking employment rather than self-employment. According to a recent survey,[427] the main reasons for this are: Business Costs & Expenses (87%), Prevalence of Managed Care (61%), Maintaining / Managing Staff (53%), Electronic Medical Record (EMR) Requirements (53%), and Number of Patients Required to Break Even (39%). Other reasons are likely to include less administrative burden, a better work-life balance and institutional support in dealing with payment reforms.[428] On the other hand, hospitals are increasingly searching to recruit specialists as reported by Merritt Hawkins, a recruitment company.[429] Employed specialists in the US do not necessarily work within the hospital's walls but may continue to run an office-based practice. However, by employing a specialist, the hospital gains greater influence on practice patterns and referrals. There are two important reasons why hospitals seek to employ physicians. One is to increase market share and another is to prepare for anticipated payment reforms.[430] If the current fee-for-service system persists, hospitals with a larger market share have greater bargaining power when negotiating with insurers. In fact, hospitals do not only seek to employ more specialists but also more primary care physicians, which is seen as a means to strengthen in-house referrals to specialties that are particularly profitable.[430, 428] However, if the payment system moves towards population health management as part of the creation of Accountable Care Organisations, hospitals with employed physicians have greater potential to gain from shared savings. This is because hospitals with employed physicians will find it easier to coordinate care, while integration of management and IT systems might help to improve quality and reduce costs.

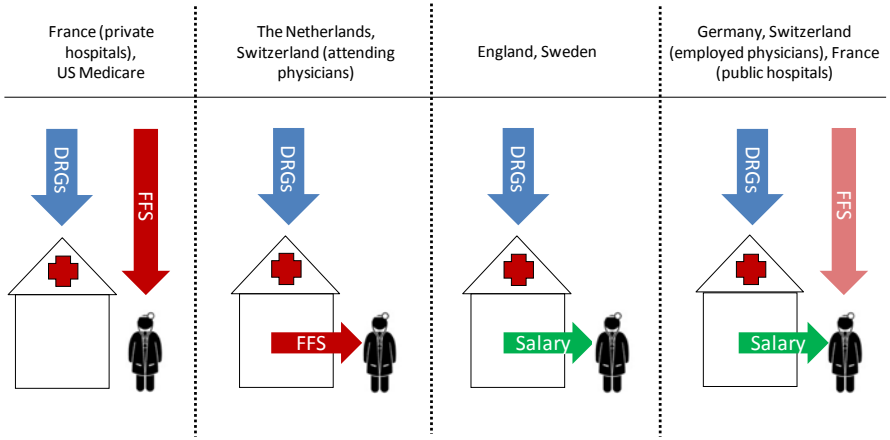
14.5 Trends and conclusions

14.5.1 Options for specialist remuneration under DRG-based hospital payment

Different options exist for paying specialists and for combining specialist remuneration with DRG-based payment to hospitals. Figure 33 shows that there are four main options used for specialist remuneration under DRG-based hospital payment:

1. The first option is separate payment of specialists and hospitals, where specialists are paid FFS either by payers or by patients, while hospitals are paid on the basis of DRGs. This is how specialists are paid in private hospitals in France and under the US Medicare system.
2. The second option is that hospitals are paid by the payers on the basis of DRGs, and specialists are subsequently paid by hospitals on the basis of FFS. This is the case in the Netherlands, where the fees of specialists are predetermined as a fixed portion of each DRG received by the hospitals. In Switzerland, fees of attending specialists in hospitals are negotiated between hospitals and specialists.
3. The third option is similar to the second option but instead of FFS payments, specialists receive a salary from the hospital. In England, the salary is determined by a nationwide salary scale but it may include substantial bonuses awarded either by employers or by a national committee. In Sweden, salaries are always negotiated individually between specialists and hospitals.
4. Under the fourth option, specialists also receive a salary from the hospital but they have the possibility to supplement their income through FFS payments from other sources. In Germany, they may receive FFS payment for treating patients with private substitutive insurance. In Switzerland, they may receive FFS payments for treatment of outpatients in hospitals or for providing services to patients with supplementary private insurance. Similarly, in France, specialists in public hospitals are allowed to treat outpatients on the basis of FFS during one day per week.

Figure 33 – Options for specialist remuneration under DRG-based hospital payment and country examples



Note: In theory, specialists could also receive a salary that is paid by another institution than the hospital. However, because this case does not exist in the considered countries, it is not shown in the Figure.

Canada, Korea and Luxembourg are not included in the figure because hospitals in these countries are not primarily paid on the basis of DRGs but on the basis of either FFS or budgets. Finally, in theory, yet another option for the payment of specialists is conceivable: specialists could receive a salary independently from the hospital, while hospitals are paid on the basis of DRGs. However, this option does not exist in practice in any of the surveyed countries.

14.5.2 Weighing the options in view of trends across countries

Different options for specialist payment have different advantages and disadvantages. The main advantages and disadvantages related to the incentives of FFS or salaries have already been summarized in section 14.1.2 and Table 30. In summary, FFS has the advantage of rewarding activity of specialists, although possibly also beyond medically necessary levels, while the main disadvantage is that FFS may lead to high expenditures on services. Salaries do not provide direct financial incentives for activity of specialists but are administratively simple and facilitate expenditure control.

In addition, there are advantages and disadvantages related to the flow of money to specialists, which can be either through the hospitals or independent from hospitals. On the one hand, specialists who are paid separately from hospitals – no matter whether this is through salary or FFS – are more independent from hospital management, thus possibly increasing professional autonomy (i.e. unless payers impose restrictions on professional autonomy). In a context of strong professional ethics and little self-interest of specialists, strong professional autonomy is desirable. However, for practical reasons, such as time management, coordination of work, efficient use of resources, it might be preferable to provide hospital management with sufficient control to manage the work of its specialists.

The relative importance of providing hospitals with levers to influence its specialists likely depends on a multitude of diverse factors, ranging from the exact type of service that is to be provided (e.g. simple procedures vs. complex inpatient treatment), over the size of hospitals, to the extent of professional ethics. However, in the majority of countries, hospital management is usually given a certain level of control as the money for specialists is mostly channelled through hospitals (see section 14.2). Nevertheless, even when the money is channelled through hospitals the level of control that hospital management has over that money can differ considerably.

When The Netherlands included specialists' fees within DRG-based hospital payment, a specific amount was calculated for each DRG, which would correspond to the fees of specialists. Consequently, although the money was now channelled through hospitals, specialists retained control over their income and a considerable degree of independence from the hospital. Also salaried specialists might work relatively independently from hospital management if their position is secure and their income is determined by a national salary scale. Furthermore, if specialists can top up their base salaries with FFS payments earned through a quasi private practice within or outside hospitals as in Switzerland, France, or England, specialists' control over their income – and consequently independence from the hospital – is increased.

However, in general, there seems to be a trend across countries of hospital management gaining increasing influence over the money that is channelled to specialists. In Switzerland, where DRG-based hospital payment was introduced in 2012, attending physicians continue to treat patients in hospitals but they now have to negotiate with the hospitals about the fee that they receive for their services. In the Netherlands, a similar system of negotiations about fee levels is scheduled to be introduced for self-employed specialists in 2015. In England, one important purpose of introducing the new consultant contract in 2003, which makes a substantial share of income dependent on bonuses awarded by employers, was to provide employers with sufficient levers to effectively manage consultants.

Also in countries with a largely FFS based system and many self-employed specialists, hospitals appear to be acquiring more influence over their specialists: In Canada, The Netherlands, and the US, specialists are increasingly working as employees of hospitals. Interestingly, this is not only due to managerial considerations and strategic aims of hospitals but also due to changing needs of specialists – possibly related to an increasing share of female specialists – who seem to value income security and a better work-life-balance more highly than in the past.

Besides the incentives of different payment systems and the control of hospital management over specialists, another issue of high political relevance when considering the advantages of different payment systems, is income inequality across specialists. In countries with FFS systems, income is often considerably higher for procedure- and technology-driven specialties (e.g. neurosurgery or radiology) than for medical specialties. These differences are usually not related to intentional decisions: Specialists who receive the highest income are not necessarily working in those specialties requiring the most extensive training, having the most difficult working conditions or the greatest difficulty of recruiting staff.

The most important reason for income differences across specialties is that developing and updating FFS catalogues comprising several thousands of fees is extremely difficult. Reliable data for the calculation of fees for individual services are usually unavailable. Instead, fees are mostly based on input from a small number of representatives of specialist societies, who provide information about the relative complexity and costs of service provision. Fees are then expressed in terms of relative weights, which are usually kept intact over long periods of time, even when updates are made to the monetary conversion factor.

Long intervals between updates mean that services, which can be performed more efficiently over time, will be relatively overpaid. Because procedures can often be performed quicker after several years of practice and equipment will usually become cheaper, procedure and technology driven specialties are usually better paid. In addition, fee schedules with inappropriate relativities will lead to certain services being more profitable than others, and this may provide incentives for specialists to focus on profitable services – possibly distorting the provision of care.

Also in countries with salaried specialists, income differences may exist across specialties. However, these differences are usually the result of negotiations between hospitals and specialists and, therefore, reflect supply and demand. Consequently, salaries are higher for specialists who have particular skills or who agree to work in geographical areas, where hospitals have difficulties to attract qualified staff.

Finally, it is important to note that non-financial incentives are important. An increasing proportion of female doctors and growing participation of men in family responsibilities coupled with an increasing orientation of younger doctors towards a better work-life balance – all in a context of tight labour markets for specialists – means that hospitals have to improve working conditions in order to attract qualified staff.

14.5.3 Fair and transparent specialist payment

The objectives of specialist payment from a societal perspective are clear (see section 14.1.2): to obtain productivity of specialists and high quality of services, while avoiding risk-selection, maintaining expenditure control and keeping the system administratively simple. From the perspective of specialists, two additional points are particularly important: the payment system should be fair and transparent.

Fairness means that specialists have to be adequately rewarded for their efforts. If specialists feel that the system is unfair, they will not be motivated to provide services. In addition, tensions might arise if income discrepancies across specialists are considered to be unfair. However, because fairness is an elusive concept and it is impossible to objectively determine an adequate level of remuneration, negotiations will always play an important

role. These negotiations ensure that the payment system is ultimately considered to be fair (or at least acceptable) for both payers and specialists.

Transparency is important because specialists have to be able to understand the criteria on the basis of which their income is determined. Unless these criteria are transparent and acceptable, payment will not be considered as fair and specialists might engage in adverse behaviour in an attempt to game the system.

Our review of specialist payment across ten countries has demonstrated an impressive degree of variation across countries. While every country and every system is unique, experiences from these countries as well as findings from the literature allow drawing some general conclusions about the design of specialist payment systems:

(1) Neither FFS nor salary alone provide an optimal set of incentives for specialists: Figure 31 in section 14.1.3 shows that payments can be based on provider, service or patient characteristics. In order to balance the intended and unintended incentives of different payment mechanisms, payments should be based on several characteristics, e.g. combining a base salary with bonuses related to productivity, and measuring productivity by taking into consideration the complexity of patients. Ultimately, specialist payment might attempt to also reward quality of care if quality can be reliable measured either in terms of structures, processes or outcome indicators.

(2) Optimizing FFS systems: Different options exist for optimizing FFS systems or – in other words – minimizing their unintended consequences. Several of these options have been incorporated into policies developed in the Netherlands:

- A *broader scope of payment*. FFS systems have the unintended incentive to provide a high number of individual services. In the Netherlands, this incentive is reduced because fees for specialists include all services necessary to provide a bundle of services that is defined by the Dutch DBCs (e.g. a particular type of inpatient treatment or a particular type of patient). Consequently, specialists still have an incentive to treat a high number of patients – and they receive higher reimbursement for more complex patients or treatments - but there is no incentive to provide a high number of services per patient.
- *Appropriate and regularly updated fee levels:* Relative value weights of fee schedules should be regularly updated on the basis of reliable data. Otherwise, certain services will be unjustifiably profitable and technological change will not be adequately reflected in the fee catalogue. However, this is difficult to achieve if fee schedules comprise several thousands of services. Therefore, a broader scope or bundling of payment may also contribute to facilitating the calculation of adequate weights. If responsibility for determining relative weights is simply delegated to specialists, payers might consider the option of first determining specialty level budgets. This allows payers to define overall priorities based on, for example, burden of disease or effectiveness of treatment, while allowing specialists within a specialty to determine the relativities for different services.
- *Limit expenditures:* In order to overcome the incentive for overprovision inherent in FFS systems, the easiest option is to introduce a budget. A budget can limit expenditures at different levels ranging from the individual specialist, over hospital departments, and hospitals to the national level. These budgets can be implemented in different ways: A budget can directly limit activity of individual specialists (departments or hospitals), if activity beyond a certain level of activity is either not reimbursed or reimbursed only at a reduced rate. This is a relatively transparent approach. Alternatively, budgets can be implemented in a way such that higher than anticipated provision leads to a reduction of fee levels for all specialists (within a department, hospital or country) in order to ensure that overall expenditures remain within the predetermined budget – but this makes individual income much less predictable. Finally, a much more difficult option for limiting expenditures is to introduce a system for routinely assessing the quality of the indication for therapy. For example, for elective surgery, a system of mandatory second opinion could be implemented. However, for non-elective care, the quality of the indication (appropriateness of care) can be assessed only ex-post.

(3) Optimizing salary systems: The most important disadvantage of a salary system is that salaries do not provide direct financial incentives for specialists to work hard or to provide a high number of services. However, countries, where specialists are paid a salary have developed different mechanisms for overcoming this problem:

- *Strengthen other mechanisms of motivation and control:* In countries with salary systems, there is often a more hierarchical structure of specialists in hospitals. Recognition of efforts by more senior colleagues can be an important mechanism to motivate more junior colleagues. In addition, because specialists belonging to higher levels in the hierarchy receive higher salaries, there is a strong incentive for specialists to move up the hierarchy. Because promotion to a higher level is dependent on a multitude of factors and will take several years, the incentive to move up the hierarchy can provide long-term motivation for greater effort.
- *Combining salaries with bonuses:* In order to adequately reward specialists for their efforts, bonuses can be awarded on the basis of different criteria. In the US, and Korea, all services provided by specialists are registered using the FFS system and specialists receive a substantial amount of their salary in relation to their generated FFS income. This effectively counters the problem of inadequate activity but can be problematic because the incentives of such as system mimic those of FFS systems. Therefore, activity related bonuses should not account for a large proportion of individual income. England is the only country that has attempted to develop a more comprehensive bonus system, including a range of dimensions on which specialists have to be particularly good. However, criteria for awarding Clinical Excellence Awards are often considered to inadequately reflect current performance of specialists and recommendations have recently been made to modify the system.[387]
- *Clearly defined expectations:* In England, one important change that was introduced in 2003 is that all specialists are now required to agree on a work plan, which allows to clearly specify the respective expectations of hospitals and specialists. These are defined on the basis of programmed activities (four-hour intervals), which can be allocated flexibly to inpatient care, outpatient care, administration or research, thus providing the opportunity to define a flexible and attractive activity mix for specialists.
- *Individual negotiations:* If hospitals have problems acquiring sufficiently qualified and motivated specialists, a system based on individual negotiations may help to align income expectations of specialists with hospitals' ability to pay. Higher salaries can be negotiated in geographical areas that are less attractive for specialists or for specialists with particular skills. However, if hospitals have to individually negotiate salaries, it might be necessary for payers to adjust payments to hospitals in order to account for higher salary costs.

The impact of specialist payment reforms has rarely been comprehensively evaluated: specialist work satisfaction, patterns of service provision, health outcomes and satisfaction of patients, as well as the relationship between managers and specialists will all be affected by a reform. It is important to carefully monitor these effects in order to be able to react to any unintended consequences in a timely manner. Ideally, a payment reform should be accompanied by an independent evaluation following robust scientific standards of evaluation.

Key points

- Because of the unique role of specialists in hospitals, incentives (financial and non-financial) influencing and motivating specialists to deliver effective, efficient, and high quality care are particularly important.
- In England, Germany, Sweden, and Switzerland, almost all specialists (≥90%) are employed by hospitals and receive a salary, while specialists in the United States, Canada, and Luxembourg are mostly (≥70%) self-employed.
- In countries with FFS systems, income is often considerably higher for procedure- and technology-driven specialties (e.g. neurosurgery or radiology) than for medical specialties.
- FFS based income differences are usually unintended, and arise mostly because developing and updating fair FFS catalogues is extremely difficult.
- France, Switzerland, the Netherlands, and the US Medicare system provide particularly interesting examples for a Belgian payment reform, because they all combine DRG-based hospital payment with FFS payments for specialists and because they have attempted to define more objective criteria for the establishment of the fee scale (i.e. the relative value scale).
- The share of employed specialists in hospitals is increasing in several countries (i.e. in Canada, the Netherlands, the US) due to changing needs of specialists – possibly related to an increasing share of female specialists – who seem to value income security and a better work-life-balance more highly than in the past.
- Neither a pure FFS system nor a simple salary system provides an optimal set of incentives for specialists.
- FFS has the main advantage of rewarding activity of specialists (although possibly even beyond medically necessary levels), while the main disadvantage is that FFS may lead to high expenditures on services.
- Salaries are administratively simple and facilitate expenditure control but do not provide direct financial incentives for activity of specialists.
- In order to balance the intended and unintended incentives, different payment mechanisms should be combined, e.g. by combining a base salary with bonuses related to productivity.
- FFS systems can be optimized by broadening the scope of payment (i.e. by bundling different services into large bundles), which should, however, adequately reflect the complexity of treating different patients (similar as DBCs in the Netherlands).
- Expenditure can be controlled by combining FFS with budgets (hard or soft) at different levels (specialists within a hospital, within a specialty, or within the entire country).
- Fee schedules should be regularly revised on the basis of reliable data because otherwise, certain services will be unjustifiably profitable and technological change will not be adequately reflected in the fee catalogue.
- A trend described in the literature (although poorly documented by evidence) is that non-financial incentives are becoming increasingly important for the recruitment, motivation and retention of specialists in hospitals.
- The effects of payment reform on, e.g. specialist work satisfaction, patterns of service provision, health outcomes and satisfaction of patients, as well as on the relationship between managers and specialists etc., should be carefully monitored in order to be able to react to any unintended consequences in a timely manner.

15 PAYING FOR HOSPITAL INVESTMENTS IN INFRASTRUCTURE, EQUIPMENT AND ICT

15.1 Introduction

15.1.1 Investment domains in hospitals

The capital stock of the healthcare system, evidently including the main capital-intensive location of the system, the hospital, is of importance as it determines to a large degree how ongoing healthcare resources are currently spent. The change of that capital stock – the flow of investment into it – equally determines future operational and medical expenditure as the shape and size of hospital buildings and the pieces of equipment installed control the services which the hospital can deliver.[320] As investments play a role in accessibility, efficiency, quality and costs of hospital care, investment payment policies have an important influence on all of these critical dimensions of hospital care.[431] Running a hospital involves a broad range of investments. The investments can be broadly classified into buildings, medical equipment and non-medical equipment. **Building investments** can take the form of construction of new buildings but can also occur as expansion, restructuring or renovation of existing buildings. Building investments also entail costs linked to owning the building such as utilities (heating and ventilation etc.) and insurance. Investments in **medical equipment** typically comprise imaging, diagnostic and radiotherapy equipment and diverse other devices installed in operating rooms, emergency services and other hospital areas. When considering **non-medical equipment**, we think about information and communication technology (ICT) systems, vehicles and furniture. In this chapter, we consider investments in all of these domains but mostly focus on buildings and ICT, and to a lesser extent on medical equipment as this is (partially) covered by the chapter on innovation (Chapter 16).

Amongst non-medical equipment, investments in ICT are considered of particular importance. Making the right investments in ICT will not only foster more efficient administration (e.g. by reducing administrative cost of billing, patient scheduling), they can also improve care coordination and lead to more efficient use of healthcare resources (e.g. by minimising duplication of medical tests). They also make contributions towards improving aspects of patient safety (e.g. by reducing the risk of prescription error and negative drug interactions) and towards performance measurement and monitoring. ICT enables a transfer of information and coordination of the care delivery process, which is especially of importance for elderly people and patients with chronic conditions, as they often have several physicians, and may be shuttled between multiple care settings.[432, 433, 434]

The 2011 eHealth benchmarking study[435] commissioned by the European Commission provides an overview of how Europe's acute hospitals use eHealth, both within their own walls and in relation to their external users and service providers. The breadth of indicators used in this benchmark study illustrates the broadness of possible ICT applications in hospitals having a link to health provision and the issues to be addressed.[435] The indicators of this benchmark include the availability of ICT infrastructure and connectivity in hospitals as a platform and a wide range of eHealth applications to be used on it (electronic patient records, picture archiving and communication system, adverse health events reporting system, electronic transmission of clinical tests results, computerised physician order entry, eBooking, telemonitoring, online chronic disease management capabilities and electronic patient data exchanges). Other indicators point to the issues of integration of eHealth within and outside the hospital and, finally, to the issues of data protection and security of the systems in use.

Although there is a shared conviction that ICT systems are essential to improve the provision of healthcare, there are significant barriers to their adoption and use: their substantial cost, the perceived lack of financial return from investing in them, the technical and logistic challenges involved in installing, maintaining, and updating them, and patients' and physicians' concerns about the privacy and security of electronic health information.[436] These investment barriers call for action from public authorities.

15.1.2 Regulatory instruments for public authorities

In this chapter we look at three ways public authorities can intervene to enable or regulate hospital investments: through investment payments, investment planning and regulation on privatisation.

Investment payments

Through their investment payment policy, public authorities set the conditions and payment levels for investment expenditures by hospitals and thereby create financial incentives for hospitals to invest or not. There are multiple ways public authorities can pay for investments and there is hardly any conclusive empirical evidence regarding which way is best. The payment methods, however, can be considered theoretically along the lines of the incentives they create. On one hand, the incentive structure should ensure that hospitals invest sufficiently to guarantee the quality of care that is accessible for the whole population, also in under-populated areas. On the other hand, the incentives should ensure investments are made efficiently and avoid that capital-intensive services are needlessly duplicated, as such duplication brings with it excessive costs due to overcapacity or may also induce overutilisation of services (this phenomenon is known as 'supplier-induced demand' – if hospital capacity exists, it will invariably be used). Ideally, an investment payment policy reconciles these sometimes diverging goals. It should also consider the limitations of usual planning approaches, as it is for instance difficult to estimate future hospital care demands in an ageing society.

Besides the incentives it creates, an investment payment policy can further be evaluated on its feasibility: the extent to which the system is practically workable and politically acceptable. Ideally, the payment policy involves low administrative costs, minimises problems of transition in case of a reform and accommodates the inherent cyclic nature of hospital investments, without advantaging hospitals with newer buildings over hospitals with old buildings merely because of the payment structure itself.[437]

Finally, though not the least important, an investment payment policy should be evaluated on its affordability for public authorities and on its impact on public deficit and debt. This applies both in national accounting and fundamental economic terms; that is, 'Maastricht-type' rules prevent excessive state indebtedness, but merely getting an expenditure off the state's balance sheet does not necessarily remove the resource cost to the public exchequer.[438] In order to limit the weight on public finances, an investment payment policy of a European country should take consideration of the principles of the European System of Accounts (ESA) rules which determine how public authority payments are classified.

In this chapter we aim to examine the different investment payment mechanisms used in France, Germany, England and the Netherlands, the transitions made – if any – and the rationale behind those transitions.

Planning

Closely related to the policy question on how to pay for hospital investments are the questions for the public authority on whether or not and how to plan investments. Can government payments be used for any investment project, or should the project only be financed when it is part of a central, be it national or regional, plan? To support the right long-term investment decisions, public authorities may choose to establish some form of planning for hospitals. However, there is a diversity of possible approaches to the extent and nature of such planning. Planning can take place at local, regional or national level. Public authorities may also opt to quit planning and leave hospitals the freedom to decide on their own investments, but then use counterbalancing measures on the level of provider competition and regulation. Besides finding a balance between planning or not, public authorities are also facing the challenge to attune their planning approach to their payment policy and policy on hospital ownership possibilities, as the different policy fields may have an impact on one another.[320]

Public-private partnerships and privatisation

Finally, public authorities can also intervene in the regulations on ownership of hospitals and financing models. Whether hospitals are governed publicly or through a private non-profit or for-profit route has its implications on the financing possibilities for hospital investments. European public authorities are increasingly partnering with the private sector to construct, maintain and in some cases deliver medical services from hospitals. The way and the extent to which public authorities monitor, regulate and support public-private partnerships or the polar case of privatisation can be of importance to get the best out of these payment models, as there is currently both support for and substantial criticism on the use of public-private collaborations in hospital settings.[439]

15.1.3 Chapter outline

The chapter first introduces some terminology and theoretical considerations on investment payments, planning and privatisation policies (section 15.2). A second part (sections 15.3 to 15.6) gives an overview of the policies taken by public authorities in four countries. The chapter ends with a cross-country comparison and a discussion on the lessons learned from abroad (section 15.7).

15.1.4 Methodology

The countries selected for this chapter are France, Germany, England and the Netherlands. We chose the Netherlands and Germany as they recently underwent a transition in how investments are paid for. France and England were considered of particular interest as these countries have experimented with public-private partnerships. The country sections follow a similar structure. We first describe the hospital payment policy for buildings, medical equipment and ICT. We then zoom in on the hospital investment planning policy. Subsequently, we look at the evolutions towards public-private partnerships and privatisation. Finally, we look at how each country's policy set has been evaluated in previously published grey or scientific literature. The description of policies in each of these countries is based on a grey literature search and a selection of peer-reviewed articles. Each country section has been validated by an expert of the respective country. The contributions of Ettelt e.a.[440], Dewulf & Wright [441] and Maarse & Normand [442] in the book 'Investing in Hospitals of the Future'of 2009 from the European Observatory on Health Systems and Policies provided considerable inspiration in the drafting of this chapter.

15.2 Investment payments, planning and privatisation

15.2.1 Investment payments

Financing sources for hospital investments

Hospitals can finance investments in several ways. In accordance with the traditional balance sheet structure, financing instruments can be sub-divided into two categories: equity and debt. The main equity and debt instruments are listed in Figure 34. As the governance and ownership of hospitals determines the possible financing tools, a distinction is made here for non-profit and for-profit hospitals. The instruments are listed according to their appearance on the balance sheet.

- In case of a non-profit hospital, equity comes from initial and subsequent capital injections by founders (e.g. a congregation, university or a public partner), and other funders such as charities. In contrast to for-profit hospitals, a non-profit hospital does not issue shares and does not have shareholders sensu stricto as it is not allowed to pay out dividends.[443] Shares issued by for-profit hospitals can be either privately tradable or publicly tradable on a stock exchange.
- A second source of equity comes from within the hospital, through the retention of profits (if any) from the previous years. While non-profit hospitals are not forbidden to make profit, it is expected that their profits serve the hospital in its future services. Non-profit hospitals therefore must retain profits within the organisation; for-profit organisations have the choice to retain them or to pay them out to shareholders. The basic source of retained earnings is income from operations. If operating revenues (hospital payments) also cover investment payments, and if these investment payments are not immediately consumed, the surpluses can be accumulated until the point in time when they are reinvested.
- The third equity source consists of subsidies from national, regional or supranational governments. In contrast to debt and for-profit equity, subsidies are 'free' capital from the hospital viewpoint as this capital does not normally need to be paid back to the government in that neither interest nor dividends need to be paid out. The term 'free' might, however, be misleading because often the subsidies are directly linked to proposed projects and hospitals are not 'free' to use the grants for

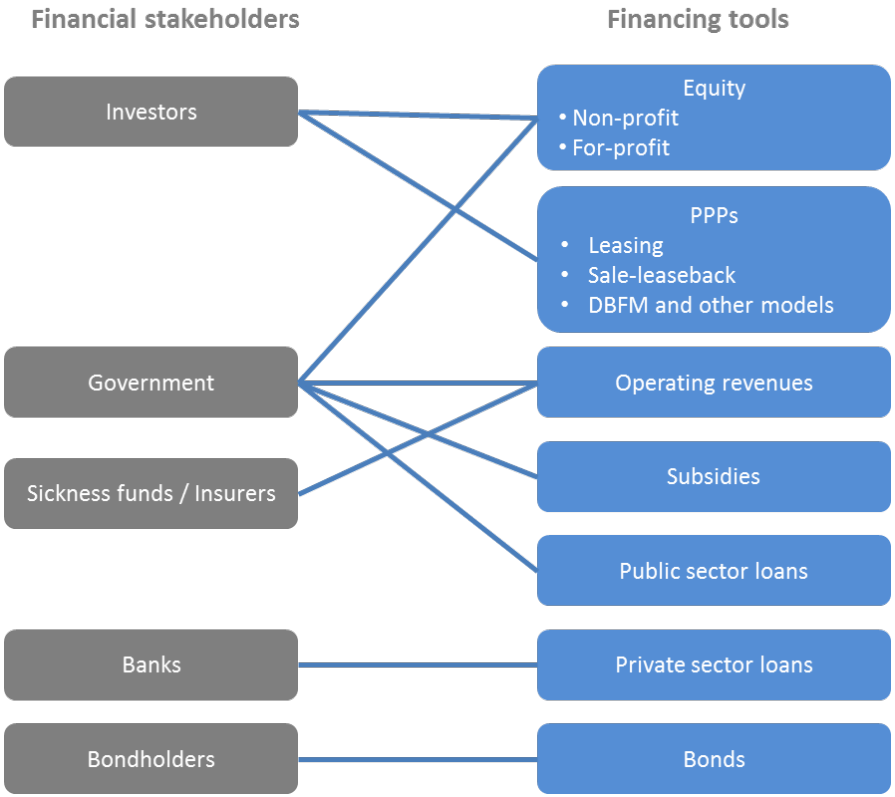
other purposes. Of note are the structural European Union grants which are of significance in the European hospital sector of some countries.[441]

- The debt category of financing instruments comprises public sector loans, private sector (commercial bank) loans or bonds (which are effectively tradeable debt). Debt as a whole is not free of charge from the hospital viewpoint, as capital needs to be paid back and interest is charged. Governments can finance hospital investments by issuing loans to hospitals and can facilitate financing by providing government guarantees on private sector loans or bonds. The recently introduced thematic 'people's loans' in Belgium are another variant of long-term debt financing for the hospital sector. In this debt instrument, commercial banks issue bonds with a low minimum entry amount – so that they are accessible to the broad population – and act as an intermediator by using the raised money for long-term debt financing of, amongst other, the hospital sector.

Besides the traditional financing models, different forms of public-private partnerships (PPP) exist, such as leasing and sale-leaseback transactions, in which the owner, in this case the hospital, sells property and then leases it back from the private buyer. There is a variety of other possibilities, including Design, Build, Finance and Maintain (DBFM) schemes, or Design, Build and Operate (DBO) schemes.[441] In section 15.2.3 we will look more closely at these PPP possibilities.

Figure 34 gives an overview of possible financing channels and financial stakeholders for hospital investments. The financial stakeholders consist of the investors (which can be public or private), the national, regional or supranational public authorities, sickness funds or health insurers (which may be assigned different functions depending on the country) and finally banks and bondholders. In this chapter, we mainly focus on payments made by public authorities, sickness funds or insurers to cover investments. Public-private partnerships and privatisation bring alternative ownership structures which are of growing importance internationally. Therefore, we will further also consider the ownership of equity, and reflect on government policies with regard to this.

Figure 34 – Overview of financing channels and financial stakeholders



PPP: Public-private partnerships; DBFM: Design-Build-Finance-Maintenance

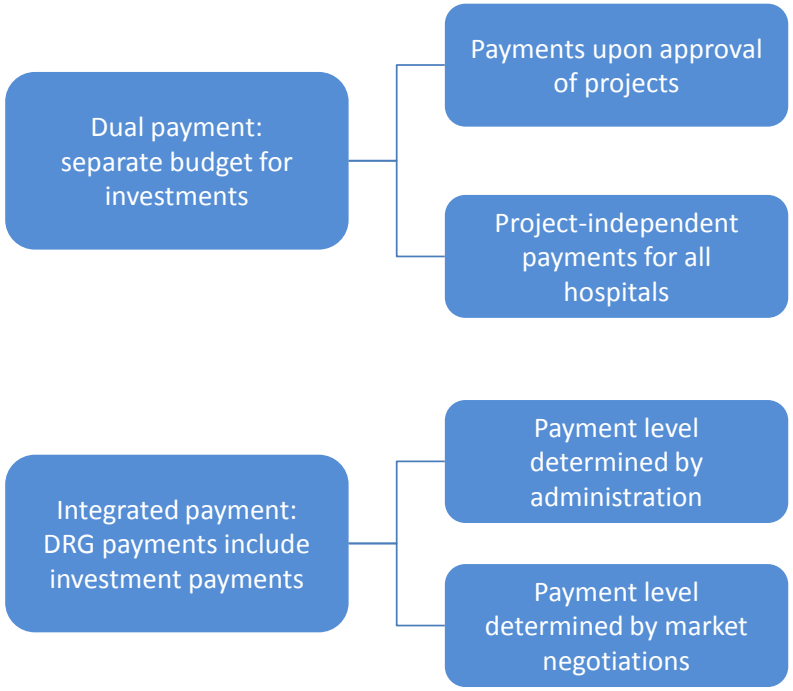
Investment payments: general classification

In contrast to operational costs, investment costs are fixed, one-time expenses. Investment costs are theoretically classified as fixed costs as they do not vary in function of the actual number of health services provided with it, at least not within certain time and output ranges. Investment costs determine the capacity and the possible activity level and activity range in the medium or long term. Operational costs are more flexible, they are more variable in nature as they are more dependent on the actual number of health services delivered. Given that payments in a fee-for-service or Diagnosis Related Groups (DRGs) based payment system are also variable in nature (as they are paid out per service or per patient), they are well fitted to cover operational costs. This may be less the case for investment costs as they consist of lump sum financial outlays, though these can be converted by amortisation schedules into periodic payments. In line with this, some countries, such as Germany, have a dual payment system, i.e. split into two parts, with one part covering operational costs and another part covering investment costs.[444]

Figure 35 shows a general classification of traditional payment schemes for hospital investments. Investment payments can either be integrated within the operational payments, or paid out through separate funds. When they are paid through separate funds, they can be allocated case-by-case upon approval of projects or alternatively, be allocated project-independently to all hospitals. In both cases, payment levels can be determined on the basis of infrastructure (e.g. number and type of beds, hospital type) or on the basis of activity (number and type of patients). The payments can be one-off or recurrent. When investment payments are integrated with operational payments, the payment level can be fixed by the administration, based on average or standard costs, or determined by negotiations between insurers and hospitals. The payment level can be a simple percentage of operational payments. This percentage can be differentiated or not according to patient mix and hospital type.[444] In the country sections below, we will look at how the four selected countries concretely give form to their investment payment policy.

The classification in Figure 35 is mostly tailored to building and medical equipment investments. In the next section, we will also look at a classification for payments for ICT investments.

Figure 35 – Classification of hospital investment payments



Payments for ICT investments can be part of the general investment payments. However, given that there are a number of barriers to investing in ICT, countries may also choose a specific financial incentive programme to support the adoption of ICT. According to an OECD health policy study on the role of ICT in the health sector,[432] most of the observed financial incentive programmes rely on some combination of the following types:

- direct subsidies through grant programmes;
- payment differentials: bonuses or add-on-payments that reward providers for adopting and diffusing ICT or for improved quality, where ICT is a requirement;

- payment for electronically-delivered care (e.g. consultations by e-mail) which offers direct payment for new categories of care or services related to the use of ICT (e.g. use of e-mails or telemedicine);
- withholding payments from providers, i.e. financial penalties following poor compliance.

Besides the direct financial incentives, indirect incentives can be used by setting or changing the overall framework or by reducing market inefficiencies and distortions, such as a lack of standards for electronic medical records.[432]

15.2.2 Planning

A first question that comes up with regard to planning is whether it is anyway necessary. Most European countries actually do develop plans. However, there are theoretical arguments both in favour of and against planning. We base our arguments on Ettelt e.a. (2009).[440] The main criticism of planning is based on a belief that planners, who may be remote from the delivery of care, are unable to detect and respond to the signals emerging from the healthcare market. As a consequence, their plans, that may cover many years, may be insufficiently adaptable to emerging needs.

The arguments supporting planning rely on four main considerations. The first is that healthcare is characterised by asymmetry of information. The information in the hands of patients differs from that of the providers; the information of one provider may differ from that of another type of provider; and in turn this information may differ from the information in hands of government. Healthcare planning nowadays requires complex responses and, given the information asymmetry, involvement of many actors. Leaving investment decisions entirely to hospitals in the absence of a planning mechanism will most unlikely yield optimal results.[320, 440] The planning authority may have the best available data on which to build plans. In particular, data of different sectors (ambulatory versus inpatient care) can be considered by the authority in charge, in order to allow an integrated planning approach transcending the boundaries of the hospital.

A second consideration is that, in the absence of planning, there is the risk of cream skimming. Individual providers may seek to maximize revenue and minimize uncertainty by choosing to treat the least complex (or at least the most profitable) conditions and by investing only in the necessary assets to provide these treatments.[440]

A third consideration is the presence of supplier-induced demand. In the absence of planning intervention, investment in facilities and technology may be driven by the scope for maximizing financial return on investment, regardless of the appropriateness of care. Overprovision of facilities and equipment may create a powerful incentive for inappropriate usage.[320, 440]

Finally, the provision of healthcare involves long lag periods. It may take a decade or more from the decision to build a new hospital to actually opening it. Waiting for signals from the market to become apparent may be too late whilst market changes may be anticipated earlier on in the case of planning intervention.[440]

These factors explain why all industrialized countries have established some form of planning for healthcare facilities, although its extent and nature vary considerably. According to Ettelt e.a. (2009)[440], there is no empirical research on whether one approach is better than the other, nor on which level of planning is best. In the absence of evidence on these questions, we describe in each of the country sections the different approaches taken by the respective country.

15.2.3 Public-private partnerships and privatisation

Within the health systems of Europe, investment financing has traditionally been dominated by the public sector and most of the immediate financial resources for investments have been supplied by public authorities. European public authorities, however, have been increasingly relying on private sector equity, through various forms of public-private partnerships or, at the limit, privatisation. Public-private partnerships are commonly used in countries with a National Health Services-like system, where the health services are provided by the public sector. However, also in countries with a social health insurance system, where health services are already provided by hospitals with an independent private status, the trend towards PPPs sets in.[320]

The term hospital privatisation can be associated with different processes depending on the starting position of hospitals. Privatisation may refer to a movement on a continuum between two poles which could be defined as ‘completely public’ and ‘completely private’. In between these poles, hospitals have a division of responsibilities between the public and private

sectors. The responsibilities to which privatisation of hospitals can refer include the ownership, management and financing of hospitals. Privatisation does not necessarily involve a switch from non-profit to for-profit. As we analyse aspects of hospital privatisation in four different countries, each with a different starting position, the term privatisation may mean different processes for each of these countries.[445, 446]

Similarly, there is no broad international consensus on the definition of a public-private partnership (PPP). PPP is an umbrella term covering a variety of arrangements, typically medium to long term, between the public and private sectors whereby some of the services that fall under the responsibilities of the public sector are provided by the private sector, with agreements on shared objectives for delivery of public infrastructure or services. PPPs cover the spectrum in between traditional public procurement projects, at one end, such as service contracts or turnkey[uuu] construction contracts, and the full privatisation of services, at the other end, where the role of the public sector is limited to that of an enabler and regulator (see Figure 36).[447, 448] While under traditional procurement, management, risks and funding are the responsibility of the public actor, these responsibilities are largely for the private actor in case of privatisation. In between these pure public and pure private schemes, varying forms of PPPs are possible with different roles and contributions of the public and private actors.[441]

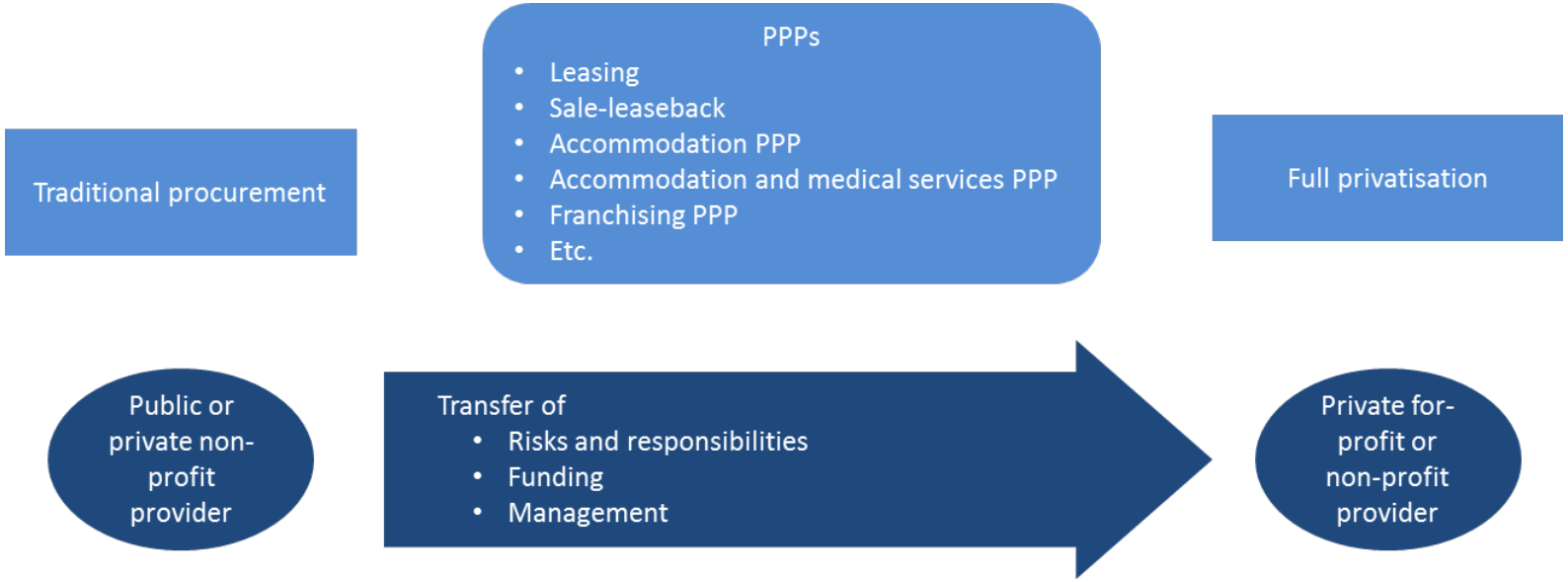
Analysis of PPPs in hospitals shows that there are mainly three models for large-scale collaboration, besides the widely used leasing and sale-leaseback models. The three models are determined by the degree to which services and facilities are bundled within the contract:[439]

- At one end, ‘accommodation’ PPPs supply only the building and building-related services such as hard facilities management (building maintenance) and sometimes soft facilities management (such as cleaning, catering, security), sometimes along with various types of equipment, including medical equipment. The contract typically lasts around 30 years, after which the hospital becomes owner of the building.[439]
- A more extended model includes accommodation and medical services PPPs. In this case, typically two private sector partners enter the PPP as joint-venture partners: one for the buildings and the other for clinical services.[439]
- Finally, there are franchising models, where a private for-profit entity runs a complete hospital. Although the margin has become rather thin, there are still several differences with full privatisation. Franchisees work under strict regulatory control and have the duty to accept any patient of a defined geographic area to avoid cream skimming. Under a franchise scheme, the private partner runs the hospital 'as if it were the public partner'. This means that public employees continue to work along a contract of public employee. Furthermore, franchising is limited in time, whereas full privatisation has a permanent character. Franchising also implies limitation of supply as the private partner has to receive a license to operate the hospital, whereas privatisation is typically characterised by free market entry.[320, 439] Finally, in a franchise the private entity typically is reimbursed on the same grounds (using the same tariff) as public hospitals in the same jurisdiction.

[uuu] A turnkey contract refers to an arrangement in which a building is delivered to the owner in a completed state. The building or developing company finishes the entire building project and 'turns the key' over to the owner.

Although PPPs involve the contracting out of construction, maintenance or operations, these characteristics do not completely define them. In PPPs, the private sector partner typically is also responsible for arranging financing. The financing of PPPs usually involves around 10% equity investment by the private partner and 90% debt or debt-like instruments (note that the current difficult economic circumstances entail higher equity proportions as funding banks attempt to reduce their risk exposure). The public sector thereby ceases to own assets (equity), but contracts for services instead. Given this financing structure, PPPs are often described as just another form of raising funds. Through PPPs, public sector partners hope to avoid up-front capital expenditure and to gain from private-sector efficiencies. Private sector partners in turn aim for a return on investment.[320, 439] Besides in healthcare, PPPs are used in various sectors amongst which transportation, education, general public services, public order and safety, telecoms and environment.[449] Within healthcare, PPPs may be formed to develop or distribute a product, to educate the public, to improve product quality or regulation or to provide health services in hospitals, the latter being examined in this chapter, and going occasionally beyond the hospital into primary and community care.[450]

Figure 36 – Spectrum of public-private partnerships (PPPs) in hospital care



15.3 The Netherlands

15.3.1 Investment payments

15.3.1.1 Payments for buildings

Since January 2005, Dutch hospitals have been paid through Diagnosis Treatment Combinations ('Diagnose Behandeling Combinaties', DBCs, the Dutch version of DRGs). The aim of the DBC system is to have price and quality negotiations between insurers and hospitals during the contracting process. Free negotiations were introduced gradually to prevent hospitals experiencing large deviations from their former budget, and to let insurers and hospitals get used to their role of negotiation partners. The DBC segment for which prices are negotiated is called the B-segment. The segment for which maximum prices are still set at national level by the Dutch Health Care Authority ('Nederlandse Zorgautoriteit', NZa) is called the A-segment. Until 2012, DBC financing in the A segment was also subject to a system of hospital budgeting, limiting total payments to any individual hospital and to some guaranteeing annual revenues. The budgeting system was abolished in 2012. Note that capital costs in the Dutch hospital payment system refer to depreciation on buildings and interest costs on fixed assets, including buildings, grounds, equipment and working capital.

A new method of payment for capital costs was introduced over the last years in a stepwise manner.[451] As of 2008, the budgeting system was lifted for capital costs attributable to the B-segment, with several transitory measures. For the DBCs in the A-segment, the new building payment was phased in over a longer period of time. The old payment method was maintained for the years 2008-2012. Only from 2012 onwards, building payments for the A-segment have been entirely based on the DBC tariffs. The country thereby moved from a system with central planning and guaranteed reimbursement of capital costs to a system without central planning. The original budgeting system effectively guaranteed reimbursement, since depreciation and interest were calculated per individual hospital and added to the budget.

- **Old system: 'nacalculatie'**

In the old system of 'nacalculatie', the investment costs were calculated at the end of every financial year and on this basis the budget was determined for the past financial year. Depreciation was calculated on a period of 50 years, on the basis of a fixed yearly amount. Even when the hospital buildings were not in use or even demolished (after approval), hospitals were entitled to payment of the depreciation over this 50-year period.[452]

- **New payment system: integrated in DBC tariffs**

In the new payment method, capital costs are part of the DBC tariffs. Hospitals must now recoup costs for buildings via the payments for DBCs made by the insurers. The underlying intention of this change was to make hospitals responsible for their investment decisions and to provide an economic incentive to hospitals to align their investments with care demand. With the new payment method, investing in buildings holds a risk for hospitals as the payments depend on the activity level of the hospital. Whereas the old payment was building-related, the new payment is activity-related.[453]

Capital costs are currently part of the negotiations between insurers and hospitals for both the A- and B-segment.[454]

- **Transition measures**

As the transition from the old to the new system in the A-segment created considerable uncertainty for hospitals, transition measures were deemed necessary to reduce this uncertainty and to avoid serious disruptive effects. A first transition measure took the form of one-off payments compensating for part of the financial consequences of the change in 2012.[455] A second transition measure took the form of a transitional guarantee scheme covering a period of six years (2012-2018). In this transition period, individual hospitals are guaranteed a minimum level of compensation. At the end of the transition period, building costs will integrally be part of the DBC tariff.[453]

Within the guarantee scheme, hospitals are given a guarantee on a yearly decreasing proportion of the payments they would have received under the old payment scheme. If a hospital's revenues are below the guaranteed payment, then the difference is paid on top. The proportion of the old payments that is guaranteed decreased gradually from 95% in 2011 to 90% in 2012 and will further decrease to 70% in 2016. From 2017, hospitals fully

bear the risk of their investments. Only costs for building projects previously approved by the 'Bouwcollege' (College Bouw Zorginstellingen, see section 15.3.2) fall under the guarantee scheme.[455]

15.3.1.2 Payments for medical equipment

In the Netherlands, costs of medical equipment are covered by the DBC tariffs. The planning, funding and purchasing of medical devices and aids are the responsibility of each individual healthcare institution.[451]

15.3.1.3 Payments for ICT

Payments for ICT are integrated in the DBC tariffs, as part of the overhead.[451] This also holds for the 'Keten-DBCs' (the bundled payment for specific diseases involving multiple providers, providing an annual payment for the complete package of care required by patients). In this case, the price for each bundle of services, which results from negotiations between insurers and care groups, covers both costs of healthcare professionals and organisation costs, including ICT.[456]

Several reports indicate that the Dutch hospital sector has suffered from underinvestment in ICT. Standards and norms for ICT applications are to a large extent still non-existent. This has led to a fragmentation of ICT systems between and within hospitals, and between hospitals and other care actors.[457] Results of an IT-monitor used in Dutch hospitals in 2011 show that IT has been introduced for various activities in several departments of the hospitals. Examples are the Electronic Health Record (EHR), electronic medical correspondence and diagnostic tests such as radiology. On the other hand, IT use for medical guidelines, clinical pathways and clinical reminders have not been introduced as often. Five reasons are named as barriers for the introduction: lack of financial support, shortage of staff, inadequate supplier capacity, lack of support by doctors, and difficulties in showing the return on investment.[458]

15.3.1.4 Payments for interest costs

With the transition to the integrated payment system, the Netherlands also abolished its system of normative interest for long-term loans.

- Previous system: normative compensation for interest paid

From 2001, NZa fixed a normative interest for every new long-term loan (with a fixed period of more than two years). This was also the case for running loans when a new interest percentage was agreed for a consecutive fixed-interest period. The normative interest percentage was a basis rent plus a risk premium of 0.75%. Until January 2009, the basis interest was the Interest Rate Swap (IRS). From January 2009 onwards, the IRS has temporarily been increased by a premium in line with market conditions. The basis interest from then on has been formed by the average interest of the loans guaranteed by the state-supported Guarantee Fund for the Health Care Sector ('Waarborgfonds voor de zorg', WFZ) which provides guarantees to lenders granting loans to healthcare institutions.[459] For any short-term loan an average compensation was calculated after each financial year, following short-term lending rates on the money market.

- Current system: part of the DBC tariff

Since the transition to DBC tariffs, compensation for costs of interest on short-term and long-term loans is included in the tariffs. This means that hospitals bear an interest risk and are incentivised to negotiate the most favourable interests for their bank loans.[460]

15.3.2 Planning

Previous system: 'Bouwregime'

Before 2008, hospitals needed to request authorisation for building initiatives at the Bouwcollege. Building decisions were approved with regard to quality (match with governmental functional standards) and investment costs (match with a cost per m²-norm).[461] If authorised, payment for approved projects was guaranteed, regardless of the volume of delivered care. The government gave a 100% guarantee to investors in buildings and a guarantee on the payment from insurers for the building-related costs. As such, investing in building was more or less riskless for both hospitals and banks.[462, 463]

Abolishment of central planning

As central planning was not deemed compatible with the competitive market of hospitals and insurers nor with the new payment method, the 'Bouwregime' was abolished for hospitals (in 2008) and long-term care institutions (in 2009). Since then, no external approval of building plans applies. The quality of premises is externally assessed for compliance with safety and other rules every five years.[451] The new regulation makes hospitals financially and otherwise responsible for their own capital investments. However, the government retains some planning power in a few specialist areas including the university hospitals ('Wet op de bijzondere medische verrichtingen', WBMV), and also remains authorised to intervene when access to hospital care is considered at risk.[320] Its power to intervene is now restricted to functions rather than buildings or organisations.[464] Government intervention in case of hospitals near bankruptcy is limited to acute care functions. Under the Exceptional Medical Expenses Act ('Algemene Wet Bijzondere Ziektekosten', AWBZ), however, intervention is possible in all functions of intramural care.

15.3.3 Public-private partnerships and privatisation

- Dutch hospitals are private organisations; most university hospitals are public organisations.[2] Although a new bill is expected to come into effect as of 2015, Dutch hospitals are currently still covered by a ban on distributing profits to shareholders.[451] Although targeting profit is currently tolerated, paying out profits is not. Therefore, attracting private equity has so far been limited.
- In 2008, the NZa advised to start an experiment allowing a few pilots paying out profit to shareholders. However, due to lack of support, plans were suspended. At the end of 2013, the media reported on a new bill proposal allowing hospitals to pay out profits, under a number of conditions. Amongst the proposed conditions are that profits may only be distributed three years after the time when the first investment is made. Another condition is that a one-time extra evaluation by the Dutch Healthcare Inspectorate is required. Profits may furthermore only be distributed if the equity to total assets ratio remains at least 20%.
- In the course of 2013 the proposed bill was withdrawn by the Minister. In early 2014, it was resubmitted and subsequently approved by parliament. However, it still has to be approvd by the Senate to come into effect as of 2015.[465] There was significant political and public reluctance to accept the bill proposal. The reluctance is mainly caused by the fear that public interests would be endangered, particularly the quality, affordability and accessibility of care. As the price, necessity and quality of care cannot always be easily appraised, there is a risk that hospitals increase their profits by providing more expensive or lower quality care. This could – in theory – lead to patient selection, unnecessary care, price increases, higher remunerations for managers or medical specialists, DBC upcoding or irresponsible savings on quality and supply of care. If, for instance, GPs, insurers or pharmaceutical companies would invest in hospitals, conflicts of interest may arise.

Advocates of the bill raise the argument that lifting the ban on profit distribution would make the sector more attractive to private investors. Given the larger financial risks for hospitals, banks currently pose higher solvency demands. As many hospitals currently have a rather weak solvency, private capital could contribute to the financial stability by increasing the equity of hospitals. In the long run, private investments would, according to advocates, also enforce competition and market dynamics and contribute to innovation.[466]

15.3.4 Impact

Increased responsibility for hospitals

The new investment regime was expected to have important implications, and some of the expectations have already been proven correct. Firstly, policymakers believed that hospitals would be more aware of the costs of capital investments. Effectively, multiple hospitals have reported re-evaluating their investment plans following the investment payment policy.[467] Case law furthermore provides evidence of three hospitals re-evaluating specifically their plans for new buildings. After having been refused extra payments from NZa, these three hospitals went to court, as they argued that the costs of their old buildings were insufficiently covered, and this hampered their plans for new buildings. The court, however, judged the requests unfounded, as there was no plausible evidence that the hospitals took the investment decisions at a time before they could take into account the changes in payment system. Furthermore, according to the court, there was no plausible evidence that the situation would have led to

disproportionate financial consequences or that the quality of hospital care would have been threatened.[468]

Financial distress and even bankruptcies

Despite the transition measures, the new investment regime was also expected to lead to financial difficulties and even bankruptcies for some hospitals. Over the last few years, a number of Dutch hospitals have indeed found themselves in financial distress. The switch to integrated funding for investments is frequently mentioned as one but not the sole external factor causing financial problems of Dutch hospitals. It is rather the combination of this policy change with the previous changes in the hospital sector at large, notably the introduction of the DBC payment system, the health insurance reform aiming at more competition among insurers, the possibility of selective contracting, and more recently the abstention from government intervention in case of financial distress, that are considered as external factors leading to increased financial risk for hospitals.[469]

- The first cases of hospitals in financial problems have already been reported before the change to integrated funding for capital investments. Financial problems of a number of hospitals were reported to be caused by overcapacity, competition, quality problems, bad management, conflicts with medical specialists and expensive buildings, too optimistic investments or insufficient utilization. In all of the cases, informal reorganization was the remedy to the financial problems; this means that the hospital was reorganised outside the legal frameworks, in cooperation with its direct interested parties. All of these hospitals received financial support from central or local public authorities, either indirectly by guaranteeing creditors' claims or directly through financial government support. In some cases, the government also intervened indirectly by providing a relatively low sales value of previously publicly owned real estate contributed to the institution. In addition to government support, the hospitals received financial support through extra bank loans or private investments. In all the cases, government intervention made informal workouts possible, so that operations could be continued and that filing for bankruptcy could be prevented.[469]
- Then in 2011, the government expressed in a letter to the Dutch Parliament its intention to abstain from further intervening directly in case of financial distress and before a formal bankruptcy procedure had been filed. The government intended from then on only to guarantee the continuity of essential care, such as emergency rooms and acute obstetrics. The idea behind the policy change is that primarily private parties, such as creditors and insurers, should prevent hospitals from getting into financial problems. Similarly, private parties should decide on the continuation, reorganisation, or liquidation of a hospital, and not anticipate and exploit the option of a public bailout.[469] The policy change was reflected in a bankruptcy in 2013 of the Stichting Ruwaard van Putten hospital. Mentioned causes were the overcapacity in the region, increasing demands by insurers, the credit crisis, financing pressure, personnel shortage in care and increasing costs.[470] In 2014, the media reported on another possible hospital bankruptcy.[471]

Increased credit risk

The switch to integrated investment payments and the long uncertainty on the transition scheme further increased the credit risk for hospitals. Under the old system, banks considered the credit risk for hospital buildings relatively low as the government guaranteed the investments (e.g. via the WFZ). Under the new system, however, banks appraise the risk to be considerably higher. The result is that obtaining bank loans is no longer certain and that interest rates for granted loans include a higher risk premium. This has already led to problems financing hospital building projects. [472, 461, 473]

Attraction of private partners

- Another expected implication of the new investment regime was that it may attract private partners that are searching for investment opportunities and partnerships in health care.[320] The deregulation of building investment that accompanies the new healthcare delivery system offers healthcare organisations new opportunities, but also more responsibility and greater risk in the return on investment. Consequently, hospitals must find new methods of financing, and private investment is one of the options.[461] However, private partners are not expected to flood to the hospital sector irrespective of the

circumstances, as they will weigh the risk-return trade-off of the hospital sector in comparison with that of other sectors.[473]

Inequality of hospital payments

The new payment system created an inequality between hospitals with new buildings and those with old buildings. The hospitals with old buildings may be in need of new buildings or refurbishment but could not yet accumulate the financial resources for it. This created an unequal competitive position for hospitals with old buildings.[466]

Deferral of investments

It is furthermore expected that price competition or other financial priorities could tempt hospitals to defer building investments under the new investment payment scheme. The consequences are not expected to be visible in the short run, but all the more in the long run.[473]

15.4 Germany

15.4.1 Investment payments

15.4.1.1 Payments for buildings and medical equipment

As the German payment system pays for buildings and medical equipment via a single investment payment scheme, these two subcategories are described jointly here in one section.

Germany has considerable hospital overcapacity, and the future task will be to change the nature of acute capacity (e.g. to geriatric care or day-care facilities) and to modernise facilities instead of building new hospitals. Payments for investments by the state authorities significantly decreased over the past twenty years. The payments for buildings and medical equipment are currently in transition. Previously, the law outlined a dual payment system, in which payments for investments were split from those for operational costs. New legislation of 2009 now provides state authorities the possibility to switch to inclusion of investment payments in the G–DRG (the German DRG system) payments or to use a mixture of both payment methods. To our knowledge, however, no state yet uses this option.

Previous legislation

Under the previous legislation, investments were paid by budgets from state authorities ('Bundesländer'), whereas operational costs were covered mainly by the G-DRG payments through sickness funds, private health insurers and patients' co-payments. The G-DRG payments were the subject of negotiations between the individual hospitals and the state associations of the sickness funds.[474] As long as state authorities do not switch to inclusion of investment payments in the G-DRG payments, this dual payment system remains in place.

Investment payments in Germany cover buildings, beds and large scale medical and non-medical equipment with an average economic life of more than three years. Building maintenance and repair are not part of investment payments as they have been included under operational costs since the late 1990s.[474] The investment payments are made independently of hospital ownership (public such as municipal, non-profit such as churches, for-profit private) and according to the priorities of each state government. They cover capital depreciation as well as interest costs for capital debt.[475]

Each state's capital payments are split into a part payable on approval for investments in long-term assets and a part based on annual flat-rate payments for medium-term assets (3 to15 years economic life).

Payments for large investment projects are granted following a case-by-case approval process. Any request for investment payment has to undergo an approval process, which includes:[320]

- submission of evidence on patient needs;
- existing capacity;
- development of a detailed functional and architectural plan;
- consideration of the project within the urban fabric of the region.

State authorities decide which projects will be funded. In practice, investment plans made by the states are mainly determined by the budgetary situation of the states and by political considerations.

When approved, the projects are included in the investment plan (see section 15.4.2). Inclusion in the investment plan first of all means that hospitals are allowed to charge the sickness funds for treating their patients. It also means that hospitals can apply for investments grants and flat-rate payments for medium-term assets.

Flat-rate payments for medium-term assets are determined annually by state authorities and are based on the number of beds in a hospital and its level of care. State rules differ as to how the amounts are determined. Because the payment per hospital bed provides disincentives for hospitals to reduce the number of beds, the Health Sector Act introduced the possibility of using other factors for determining flat-rate payments. Hospitals are free to choose the assets on which they spend the flat-rate payments.[474]

Regulation	Actors
Hospital payments (Investment costs)	Authorities of Federal States in consultation and negotiations with hospitals
Hospital payments (Operating costs)	Sickness funds in negotiation with hospitals
Hospital planning	Trilateral committee: authorities of Federal States with participation of sickness funds and hospitals

Based on Schulten (2006) [476]

In principle, state authorities pay for investments. An exception to the rule of state government payment for investments is made for investment projects that are partially funded via private funds on the condition that they are included in the investment plan. Hospitals are then allowed to include the respective capital depreciation in the calculation of their operating costs for the G-DRG payments.[477]

Criticism of the old legislation

The dual hospital payment structure has for a long time been criticized, as it splits the responsibility between those who determine the capacity and those who are responsible for its operation and operational payments. The dual payment system relieves the planners – the states – from the necessity of taking the future costs of investments into account, which may lead to overprovision of building and equipment capacity.[474]

Due to the implementation of the G-DRG payment system, planning by the federal states is under pressure, as hospitals must now try to close departments that run deficits –- something that is frequently in conflict with the goals of hospital planning. Therefore, there have been calls for greater participation in the planning process by those paying the operating costs and for full or partial transferral of investment payments from the states to the G-DRG structure.[474]

Furthermore, since most federal states have not invested much in the hospital sector because of their own growing budget problems, an investment backlog arose. This backlog was identified as one of the main drivers for the privatisation of public hospitals in Germany.[476]

Barriers for reform

Policy proposals to replace the dual payment model with an integrated payment model were for a long time contested politically. Most states were reluctant to support such a reform, as it would deprive them of the power to influence healthcare within their territory. Another problem is the uneven distribution of the need for capital investment, creating an unequal starting point. Whereas some states have intensified their investments since the 1990s (particularly in the eastern part of Germany), investments in other states lagged behind.[320]

Initiatives for reform

After long debate, the 2009 Hospital Payment Reform Act ('Krankenhausfinanzierungsreform Gesetz', KHRG) eventually addressed these problems and gave the state authorities the possibility to include investment costs in the cost calculation of the DRGs, by using investment cost weights. The 2009 reform Act stipulates that investments in hospitals included in the hospital requirement plans can be paid from 2012 by performance-based flat-rate grants rather than the mix of case-by-case and (non-performance-based) flat rates described above. If a state chooses to remain with the current case-by-case system, however, it may do so. States can also use a mixture of both systems.[478] In 2014 the catalogue of investment weights was published by the InEK for the first time.

15.4.1.2 Payments for ICT investments

ICT investments in German hospitals are in some cases supposedly covered by capital payments,[478] in other cases they are not covered.[479] In 2011, Germany introduced the new eGK cards ('Elektronische Gesundheitskarte'). Initially, the cards carry the same basic data as the old ones (name, date of birth, address, insurance status, sex and additional benefits details), but in the future the data range will be expanded to contain detailed patient histories (hospital records, information on allergies and chronic diseases, test results and past correspondence). To protect their privacy, cardholders will be able to choose which information they make available. Hospitals are gradually being equipped with new card-reading machines as part of the scheme. The scheme is costing public authorities and insurance companies the equivalent of 1.9 billion euros and has faced years of delays and objections. The problems included concerns about safety, security and personal privacy due to the sensitive nature of some of the data stored, despite the promised safeguards. Physicians and hospitals on the other hand have been frustrated with the cost of having to equip themselves with the new reading machines.[479]

15.4.1.3 Payments for interest

Interest payable related to capital loans is excluded from the operational payment and included in the investment payment.[480]

15.4.2 Planning

Before the reform

The general legal framework for hospital planning and investment payment is determined at the federal level whilst implementation is left to state authorities. Each of the sixteen state authorities is responsible for guaranteeing, planning and accrediting hospital services in its state. After having received input by the respective hospital federation and sickness funds, state authorities draft a new hospital investment plan every 5 to 7 years. The plans specify the location of each hospital, its specialties, the number of hospital beds that will be paid, and the level of care provided by the hospitals (e.g. general care, specialty care only, or top-level care). Some states issue more detailed plans, by for example, determining the number of paid beds for each hospital specialty and the occupancy rates. These plans serve as reference point for investment payments. The inclusion in the hospital requirement plan means, on the one hand, that there is a claim to flat-rate investment payments, and that the sickness funds have to finance the hospital care provided by the hospital on the other hand.[474] For-profit hospitals can, but do not always, also apply for state payments.[442]

After the reform

Since the 2009 reform law, state authorities still draw up hospital plans, but are now required to pay closer attention to the effects on costs imposed on health insurers and to the effects at national level, to ensure that plans can be implemented within existing constraints.[481] Many states are planning more narrowly now in order to improve structural and process quality.

15.4.3 Public-private partnerships and privatisation

There is an ongoing trend towards privatisation of German hospitals. Private companies such as Rhön Klinikum and Helios Kliniken are buying financially stressed hospitals and run them under a franchise from the regional states within the German public healthcare system. Some of them are quoted on the stock exchange. Rhön Klinikum and Helios Kliniken partly or fully own and manage each more than fifty hospitals spread across Germany; other franchisees are smaller.[439]

Several reasons have been put forward for this trend towards privatisation in Germany. As public investment subsidies decreased due to budget constraints, many hospitals are in need of capital. For these hospitals, private investment is seen as an attractive solution. Furthermore, agreements between trade unions and employers are often less flexible and more expensive than collective agreements in the private sector. Complementary retirement insurance for many employees in public hospitals – as in the rest of the public sector – are also becoming increasingly expensive as a result of the demographic shift. This puts public hospitals at a disadvantage compared to their private-sector counterparts.[474]

15.4.4 Impact

Based on the experience in England, where integrated payment based on national average costs per DRG led to considerable underpayment of hospitals with new assets, health policy commentators warn about a similar problem in Germany, and recommend to take the individual situation of each hospital into consideration during the first years of the implementation of integrated payments. If not, hospitals with new and old assets (e.g. in the operating room) would receive the same reimbursement if they treat similar patients, although hospitals with new assets have generally higher depreciation costs, as old assets have often already been fully depreciated in the past. However, basing the payment on individual costs also creates inequality in the sense that if a hospital with new assets gets higher payments, it can maintain high standards, whilst if a hospital with old assets receives lower payments, it will not be able to close its payment gap to reinvest.[478]

In addition, there is a fear that when investment payment is based on average costs per G-DRG, it will limit investments. It may well help to reduce overcapacity but may also create financial difficulties for those hospitals in economically underdeveloped regions with few specialisation abilities and low capacity utilisation. An infrastructure fund that partially reallocates reimbursement has been put forward as a possible solution to ensure access to care in all regions.[478]

15.5 France

15.5.1 Investment payments

15.5.1.1 Payments for buildings and medical equipment

Investment payments for the French acute sector, contrary to long–term care and psychiatry, are in part integrated with operational payments and in part done through separate national or regional investment programmes. Two nationwide investment programmes for public hospitals were launched in the last decade: Hospital Plan 2007 and Hospital Plan 2012. These plans are described below.

Combination of integrated and dual payment scheme

Tariffs for the Groupes Homogènes de Malades (GHM or the French DRGs) for both public, private non-profit and private for-profit hospitals include payments for buildings and medical equipment. As some part of the investment costs are paid through specific investment programs, the part of the investment costs covered by GHM tariffs is not completely transparent.[482]

Hospital Plan 2007 and 2012

Between 1983 and 2003, the public and private non-profit hospital sectors suffered from a lack of investment, because of the tight financial constraints imposed by the global budget payment system. As part of an ambitious reform of the hospital sector, the first investment plan 'Hospital Plan 2007' was launched in 2003. Six billion euros was to be invested over five years for selected projects that were submitted by public and private, both non-profit and for-profit, hospitals. The plan was to be entirely funded by Statutory Health Insurance, partly by direct funding of the investments (€ 1.5 billion), and partly by 20-year loans contracted by the hospitals (€ 4.5 billion). Eligible investments concerned buildings, medical equipment and ICT.[101, 483]

The second investment plan 'Hospital Plan 2012' was introduced in 2007 in order to extend the previous investment cycle. This new plan involved an initial endowment of € 7 billion, financed again by Statutory Health Insurance, partly through direct funding and partly through access to public lending at preferential interest rates. The new plan has three major priorities: hospital IT systems, restructuring of hospital facilities at the regional level (for example, collaborations and mergers between hospitals) and improvement of compliance with safety standards (for example, seismic compliance and asbestos removal).

Apart from these two major investment projects, national or regional healthcare reform plans may include specific budgets for investment. For instance, the mental health plan launched in 2006 included a budget for investment that was allocated mainly to public and private non-profit hospitals.[101]

15.5.1.2 Payments for ICT

In 2004, a Parliamentary Office for the Evaluation of Scientific and Technological Choices report laid out a set of recommendations for French hospitals in terms of links with primary and secondary care providers, eHealth funding, eHealth training and other issues.[435] Subsequently French policy on e-Health has been active, especially with regard to improving the IT infrastructure in hospitals, the use of telemedicine and the challenge of semantic interoperability.[484]

eHealth in France is financed mostly through governmental sources, for example as part of larger healthcare reform agendas such as the Hospital Plan 2007 and 2012 or the law 'Hôpital, Patients, Santé et Territoire' (HPST).

One of the five objectives set out in the Hospital Plan 2012 focused on developing hospital information systems. The first stage of the Hospital Plan 2012 led to the validation of almost 500 operations on health information systems for investments valued at € 692 million (within which € 350 million of state aid). Besides the payments as part of the Hospital Plans 2007 and 2012, plans for the law on financing of social security of the year 2010 foresaw a budget of € 209 million, which also covered investments in the modernisation of hospital infrastructure, including IT systems.[484]

For the further development of the French Dossier Medical Personnel, the HPST law assigned the payment role to the newly created institute, the Agence des systèmes d'information de santé partagés (ASIP Santé). The ASIP Santé can distribute funds to local, regional and national level projects with public and private beneficiaries which have to sign a project contract. In its annual report for 2009, ASIP Santé summarised the financial support provided to such projects over the preceding three years. In the period 2007-2009, a total of € 24.2 million was paid.[484]

Despite the initiatives taken, various reports have pointed to the need for clear payment models for eHealth activities so that they can become part of routine healthcare acts.[484]

15.5.2 Investment planning

The Regional Health Authorities (‘Agences Régionales de Santé’, ARS) are responsible for planning healthcare services in general and for the authorisation of hospitals. They also oversee any change to the existing hospital infrastructure, including restructuring and mergers. The only exception is the construction of (new) hospitals (private and public) and comprehensive emergency centres, which have to be authorised centrally by the Ministry of Health. The ARSs also deliver authorisations for the implementation of major medical technologies.

The overall strategy for capacity and investment planning is mainly implemented through regional health organisation plans and related target contracts (‘*contrats d'objectifs et de moyens*’). Target contracts form a regulatory framework explicitly designed to implement changes. The framework applies equally to all hospitals.

ARS develop regional health organisation plans in consultation with the Ministry of Health and with other regional actors, such as the regional representation of health professions, the public and private hospital federations, patient representatives and politicians. The regional health plans are the key instrument for hospital planning. They specify the number of facilities in each region and subregion per sector of care, such as in general medicine, surgery, maternity care, intensive and emergency care and many others. They also define the amount of expensive technical equipment such as MRI and other scanners. For certain types of services, the plans also define volumes of activities to be provided within a region. These volumes can refer to a variety of units, including the number of patients to be treated, the number of sites, days (length of stay), performed procedures and admissions. France has changed its approach from planning bed capacity to planning volumes in order to address overcapacity of hospital services in some regions.[440]

Furthermore, a governmental institution, the National Mission for Hospital Investment ('Mission Nationale d’Appui à l’Investissement Hospitalier', MAINH*)* was created to:

- assess investment projects;
- approve those that are consistent with the national health care strategy and

- monitor their implementation.

To achieve those goals, the MAINH developed a network of regional offices that assist hospitals in the development and implementation of their projects. Since October 2009, the activities of the MAINH have been taken over by a new agency, the National Agency to Support the Performance of Health and Social Care Organisation (ANAP). This organisation was created by the 2009 '*Hôpital, Patients, Santé et Territoire'* law and supports and audits hospital investments and reorganisations in the health and social care sectors; it also provides expertise to the central administration and to the ARS.[101]

As to specialisation, public and private non-profit hospitals by definition have to provide a large scope of activities, as defined by the hospital plans and regulation. This leaves them little possibility to convert capacity from one to another medical activity. Private for-profit hospitals, although subject to authorisation, have more flexibility in their (dis)investment decisions. These differences have resulted in different trends towards specialisation in private for-profit hospitals which are increasingly specialised in a number of specific elective-care areas.[483]

15.5.3 Public-private partnerships and privatisation

The Hospital Plan 2007 reform also introduced two new types of legal contracts for investment in hospitals. The first was a new form of public tender that called for projects that included both the design and the realisation of new facilities (and, optionally, the maintenance of the building) in order to reduce the construction time and unplanned costs. Importantly, the reform also introduced long-term leases ('bail emphytéotique hospitalier', BEH) as a type of PPP for new hospital facilities. In a typical BEH, the public owner leases a hospital facility for a guaranteed period to a private partner, who will be responsible for building or restoring the facility during the lease. As a result, the contract effectively transfers the financial risks of construction and maintenance to the private partner.[101] The BEH amounts to a structure which is not dissimilar to the UK's 'Private Finance Initiative', which is an accommodation-only PPP.

15.5.4 Impact

The Ministry of Health considered Hospital Plan 2007 a success as it effectively induced around € 16 billion of investments on top of what could be expected from previous trends.[101] The PPPs initiated by the plan, however, cannot be hailed as unequivocal successes. In 2014, French journals reported on a large PPP failure in France. The hospital Sud-Francilien ended its long lease PPP contract with its private partner following a series of problems, amongst which the main ones being an exploding maintenance cost, inefficient maintenance and designing problems. After eight months of delay, the hospital opened in January 2012. The private partner was to remain owner of the hospital until the end of the lease period in 2041. During this period, the hospital was to pay annual fees for the construction of the building (about $ 35 million per year) and maintenance fees (which were expected to increase from current payments of 24 million euros to future payments of 40 million euros). Maintenance costs increased drastically as each modification of hospital rooms made increase the yearly maintenance bill. By ending the contract, the hospital now becomes the owner of the hospital much earlier than expected and takes charge of its own maintenance. To end the contract, the French state paid a penalty of 80 million euros to the private partner.[485, 486]

Previously, the Court of Auditors (Cour des Comptes) had already formulated a number of criticisms on Hospital Plan 2007 and more specifically on the PPPs initiated by it:[487]

- Firstly, the court criticized that the deployment of the procedure for PPPs had been rushed and that the legal tools to guide the piloting hospitals were not sufficiently available. The publications of the supporting legal texts happened too late relative to the negotiations and the selection of projects. The court argued that the lack of sufficient preparation for this new procedure, the inexperience of the negotiators and the fact that the assistance was largely oriented in favour of PPP as a solution, were combined factors that have led to the selection of disparate operations and to the signing of contracts embodying financial uncertainties.
- On the choice of PPPs, the court criticized that no single study had been effectively demanded on the financial implications or on any comparison

of the PPP with traditional public contracting. The court judged that the PPP programme failed to select the most efficient investments.

- Furthermore, the court argued that the advantages of PPPs had not been well exploited. Besides the financial lever, expected advantages of PPP included the simplicity of a bilateral dialogue, the sharing of risks between the public and private partner and the realisation of efficiency gains. According to the court, these advantages had been exploited in an unequal way. On the other hand, the delivery deadlines, however, had been respected.
- Precaution clauses to ensure continuity of public service had been integrated in many of the contracts, with a series of financial sanctions levied in case of unavailability for each of the essential functions of the hospital. However, some contracts were insufficient, according to the court. The examined contracts did not sufficiently cover the diversity of possible conflicts in a period of 18 to 30 years. Some of them were ambiguous and open to interpretation. Equilibrium had to be found between stability of the contract, which provides financial security, and the necessary modifications to respond to the evolution in medical practices. This is one of the sources of complexity inherent in hospital PPPs.
- The court, furthermore, also mentioned that the instability of hospital management teams contributed to non-adherence to applicable rules.
- Finally, the financial risks had not sufficiently been accounted for and the extra costs were degrading the financial accounts of the participating hospitals.

The Court recommended better guidance and support for hospitals in the elaboration of the functional programme and in the negotiation of the contract with the private partner. A framework and methodological guidance for the good usage of PPPs is required, favouring better selection of projects in light of the rapid change in the hospital sector. Concretely, the Court advised the following:[487]

- improve the capacity of the ANAP to produce methodological guides based on a best practice analysis and to elaborate independent comparative analyses and to provide assistance to hospitals in situ during the negotiations;
- reinforce the technical, legal and financial competences of the ARS to evaluate better the pertinence of the PPP projects and the follow-up of their realisation;
- incentivise hospitals engaging in a PPP to create a stable project structure in order to prepare the functional programme, to negotiate the contract and to implement its realisation.

15.6 England

15.6.1 Investment payments

The Health and Social Care Act of 2012 introduced large structural changes to the NHS. With the act, Strategic Health Authorities (SHAs) and Primary Care Trusts (PCTs) ceased to exist. PCTs have been replaced - to a certain extent – by Clinical Commissioning Groups (CCG), though some of the staff and responsibilities moved to the council Public Health teams. CCGs currently operate by commissioning – i.e. buying – healthcare services including elective hospital care, rehabilitation care, urgent and emergency care, most community health services and mental health and learning disability services.

The 2012 act has implications for the entire NHS, but according to commentators, none so more than on estates. Around 3600 facilities of community and primary care estate, previously owned by PCTs and SHAs, transferred to NHS Property Services, a limited company owned by the Department of Health. While the estates expertise from PCTs was subsumed into NHS Property Services, the responsibility for commissioning new developments has not followed it. Furthermore, following the abolition of PCTs, Community Health Partnerships (CHP) a ‘sister’ company to NHS Property Services took over responsibilities for Local Improvement Finance Trust (LIFT) estate.

While many service areas have started to come to terms with the reform and have found ways of making them work, the estates area landed in what has been described as a vacuum.[488, 489] The following sections aim to describe the actual situation. While many aspects remained unchanged, there is still large uncertainty on how the reform will effectively land and who will take over the responsibilities of the PCTs.

15.6.1.1 Payments for buildings

Past allocation of government funds

Traditionally, hospital investments were paid by state grants. Central government funds for capital investment in the NHS were allocated by the Department of Health on a regional basis with the aim to deliver an equitable distribution of healthcare facilities. All NHS trusts, Strategic Health Authorities (SHAs) and Primary Care Trusts (PCTs) received capital allocations for each year consisting of:

- operational capital for direct investment in facilities to cover depreciation;
- strategic capital allocated to SHAs for distribution to trusts and PCTs for large-scale investments, prioritized according to the assessment of the strategic body;
- central programme capital allocations aimed at particular investment objectives such as developing IT systems.[490]

Change to integrated payment

With the introduction of NHS Foundation Trusts (FTs) in 2004, which introduced more autonomous management of NHS hospitals, a fundamental change occurred to the treatment of NHS capital. For the largest part, building costs are currently paid for by operational payments in the HRG payment, although still some separate grants from centrally held government sources are made. Capital investment by FTs is now predominantly financed locally, either through the reinvestment of cash generated by each FT from income for activity, or alternatively through interest-bearing loans.

Both Private Financing Initiative (PFI – see further in section 15.6.3) hospitals and hospitals that are not part of a PFI are paid for capital costs through the HRG payments. For non-PFI hospitals, capital costs are the sum of depreciation of fixed assets and the dividend on public dividend capital, which can be considered as a 'rent' to the NHS for the hospital building and infrastructure. For PFI hospitals, they are the capital charge element of the annual payment to the PFI provider, which consists of depreciation and the cost of private finance.

The market forces factor

A single HRG tariff applies to all hospitals regardless of geographical location. However, it is argued that there are some costs outside the control of hospitals which means that they face higher-than-average overall costs, irrespective of how efficient they are. Thus, to reflect unavoidable cost variations in factor prices, the Department of Health makes a payment directly to providers based on a single index known as the market forces factor (MFF). This single MFF index is based on three sub-indices: labour, land and buildings. The land index is calculated for each hospital in the NHS using data from the Valuation Office on the NHS estate in 2004, the building index is based on a rolling average of tender prices for all public and private contracts, and the labour index reflects the variation in wages for both non-medical and medical staff.[491] The MFF is adjusted periodically by the Department of Health in order to ensure it relates to current, unavoidable cost variations.

15.6.1.2 Payments for large medical equipment

Medical equipment costs are part of the HRG tariff.[491] Equipment, together with consumables, drugs are assumed not to vary across England and are therefore not adjusted with the market forces factor. Payments for purchases of equipment are provided through central government funding similar to payments for buildings. Decisions on the purchase of equipment are made locally by NHS trusts and Clinical Commissioning Groups (CCG) (previously PCTs) and must follow the same financial governance framework as any investment decision.[490]

15.6.1.3 Payments for ICT investments

Previously, IT investments were paid by state grants (as described above). With the introduction of the HRG payment, IT investment costs are currently for the largest part paid as part of the HRG payments. According to a report from the Audit Commission (2008), the introduction of the HRG payment system encouraged commissioners and providers to strengthen their information systems along their financial, planning, performance and contract management.[492]

In 2013, the influential Public Accounts Committee (PAC) published a negative report on a large government NHS IT project which had attempted to upgrade the NHS computer systems throughout England by paving the

way for electronic records, digital scanning and integrated IT systems across hospitals and community care. The project, launched in 2002, was suspended a decade later, with many of its goals still to be realised. The final bill for abandoning the plan was estimated from £ 9.8 to £ 12 billion.[493]

15.6.1.4 Payments for interest

Public dividend capital

When NHS trusts – a less autonomous status than the FTs set up later – were introduced in 1991, they were required to make a capital-related payment (capital charges) each year to the Treasury based on the value of their existing capital assets – known as public dividend capital. These payments were introduced to encourage trusts to make economic choices about the best use of their capital. Originally, trusts were required to pay an annual return to government of 6% of the estimated value of their net capital assets in addition to an annual depreciation charge on these assets. However, in 2003, this charge was reduced to 3.5% in line with the Treasury's decision to reduce the public discount rate from 6% to 3.5%. FTs also pay for their use of capital through interest on any loans which they take out or PFI payments. In addition, they are expected to pay interest on their public dividend capital in the same way as other NHS trusts.[490]

Prudential Borrowing Code

The loans may come from the private sector (commercial banks) or from government through the Foundation Trust Financing Facility. Monitor, an independent regulator, previously allocated a "prudential borrowing limit" to each FT, basing its decision on the trust's ability to pay back the money it borrows. Under the borrowing limit, the amount of debt and other liabilities FTs could incur was capped at an upper limit. Currently, the borrowing limit has been replaced by the Prudential Borrowing Code (PBC). The PBC has been drafted with regard to, amongst other things, generally accepted principles used by financial institutions to determine the amounts of loans to non-profit making bodies.[494]

Loans drawn down from the Department of Health's loan facility are on commercial terms.[490]

15.6.2 Planning

There is currently no formal national plan for the NHS in England (there have in the past been NHS and National Bed Plans); however, the Department of Health provides the framework within which individual health care organisations operate, and it also specifies the key targets that all organisations must strive to attain. Within this overall approach, the individual provider and purchaser (or commissioner) organisations must produce their own plans, which used to be scrutinized by the regional health tier of government (the SHAs) and the Department of Health. SHAs were a key link between the Department of Health and the operational NHS, responsible for developing plans for improving health services in their local area.[490]

There is no longer a formal central prioritization process for large capital schemes. Instead, local providers are responsible for initiating local investments, with their decisions subject to a regulatory framework specified by HM Treasury and developed further by the Department of Health. This indicates when NHS bodies may initiate capital investment without reference to higher authorities, and provides rules for ensuring good business practice. However, there are different rules for FTs, which are not subject to delegated limits; rather, they can invest within their prudential borrowing limits, as described above. Most capital investments used to be initiated by NHS trusts or PCTs, although some investment was carried out by SHAs.[490]

Following the Health and Social Care Act of 2012, there are no over-arching planning and decision-making bodies, either at English NHS or regional levels, though the Department of Health Treasury and the regulator Monitor still have to approve major expenditures.[495] Individual hospitals put forward their redevelopment proposals. In fact, the massive hospital PFI construction programme which was underway from the early 2000s, while still being completed today, ground to an almost complete halt when the economic crisis induced a combination of austerity in government expenditure and a reluctance of commercial banks to fund PFIs anywhere near as extensively as before the crisis.

Strategic outline and business case

For small investments, up to limits of between £ 3 million and £ 12 million depending on their turnover and recent performance ratings, trusts and PCTs were allowed to approve their own business cases. For investments of up to £ 35 million, SHAs were responsible for approval of business cases in their areas. For higher levels of investments, but less than £ 100 million, the Department of Health had to approve business cases; above that, Treasury approval was required. For large schemes that were referred to the Department of Health, trusts and PCTs were expected to produce a strategic outline case (SOC), an outline business case (OBC) and a full business case (FBC). Most elements of this SOC-OBC-FBC decision-making structure currently still exist, though few new projects are proceeding.

The SOC is the first stage, setting out the case for a new investment in terms of resulting improvements in health services and presenting the strategic options for capital development. Following successful approval of its SOC, the trust carries out an options appraisal in which options are reviewed against non-financial criteria. Government guidance requires that all options are compared with a 'do minimum' option. The process of reducing options to a single preferred choice is presented in the OBC.

Once the OBC is approved, the planning of the facility enters a phase of detailed programming, focusing on elaborating the chosen option. This plan is put forward for approval in the form of the FBC and includes details of architectural design, the precise distribution of capacity within the hospital and the range of services to be provided. If private finance is requested, there are guidelines at the OBC and FBC stages for appraising the value for money and the viability, desirability and achievability of procurement through the PFI compared with conventional procurement.

In addition, the Office for Government Commerce gateway project review process is applied to all Department of Health projects as well as those of its associated arm's-length bodies and high-risk and some medium-risk projects within the NHS; most hospital reconfiguration proposals are included. This is a check on the quality of the business planning processes and comprises short reviews by independent experts at six key stages: strategic assessment, business justification, procurement strategy, investment decision and readiness for service and benefits evaluation. These gateway reviews are intended to highlight risks and issues that, if not addressed, would threaten successful delivery of the programme or project.[490]

Capital plans

An NHS trust's capital plan used to be agreed with its responsible SHA. NHS trusts can also apply for working capital loans from the Department of Health, provided that these are affordable over a reasonable time-period and that principal repayments are made from operating surpluses and improvements in working capital. In addition, PCTs developed their own capital plans for their (minor) estate, which were agreed with their SHAs, and these informed their capital allocations.[490]

15.6.3 Public-private partnerships and privatisation

Since 1992, a part of capital investment for NHS hospitals has come from an alternative model for capital investments, known as the Private Finance Initiative (PFI). PFIs were introduced in England in response to a large backlog of maintenance and repairs of NHS buildings, though the mechanism had been used across a variety of sectors (often so-called "economic" infrastructure where there is some kind of a revenue stream available to service operating and capital repayments and debt interest, before hospitals were included. The government opted for PFI as it preferred to limit the size of the public sector borrowing requirement, while keeping tax-rises to a minimum; this, on the working assumption, achievable in the early years, that the investments were off the public sector balance sheet.[496] Over recent years, as a result of European Union (Eurostat), other international rule-making bodies and UK domestic decisions, the rules defining 'off-balance sheet' have become very much tighter, and it is no longer a predominant concern – see below. The PFI version of public-private partnerships is an accommodation-only model. Private partners provide the buildings, in some cases some medical equipment, and the long-term, 'life-cycle' or 'hard Facilities Maintenance (FM)'.[439] Services such as cleaning, catering and portering – so-called 'soft FM' - may also be part of the contract. The hospital trust or FT maintains sole responsibility for all clinical services.[461]

Contracts typically last for 30 years, during which time the building is effectively leased by the NHS Trust. Annual payments are made by Trusts

over the lifetime of the scheme, like a mortgage. Very many new hospital projects in England have been financed through the PFI.[441] In 2013, there were 121 PFI schemes in existence under the Department of Health in the UK.[497] As mentioned above, PFI has been used in various other sectors in the UK, including roads, bridges and tunnels, defence, justice, air traffic control, public administration and education – many of these, like health, 'social' infrastructure.[441] For such projects, the payment scheme is not at all based on market or pseudo-market revenues but on a system of availability and performance fees for making the asset available for use.

15.6.4 Impact

Evaluation of integrated payments

A discussion paper of King's Fund in 2006 looking at the causes for the NHS deficit in 2005-2006 raised concerns on the payment method for capital costs.[498] Tariffs are based on the average costs of trusts. However, the share of capital costs in total costs varied from 4 to 15 per cent across trusts in England, with an average of about 8 per cent. The inclusion of capital costs in the tariffs thereby systematically favours trusts with old assets, and underpays those with new assets because hospitals with new assets (however funded) are much more likely to have higher-than-average capital costs than hospitals with old assets for which historic capital costs tend to be largely written off. As most new hospitals are PFI schemes, especially PFI schemes tend to be underpaid, even when there have been "level playing field" extra payments made by the commissioners of care to subsidise PFIs. Some efficient trusts that incur deficits come under pressure to reduce costs below the efficient level with potential adverse consequences for their patients. Other less efficient trusts may achieve balance and avoid pressures to become more efficient simply because they are in relative terms overfunded.[498]

A further concern raised in the paper was the fact that the MFF is not cost-reflective and, although it is supposed to adjust the uniform national tariff to take account of non-controllable regional cost variations, it takes almost no account of the most obvious non-controllable cost variations, which are differential capital costs. Under the heading 'learning from international experience', the discussion paper mentions the Australian approach where capital costs were separately funded, to avoid the problems of over- and underpayment when tariffs are based on average capital costs. However, it is difficult to see how this could be done under PFI, where the private partner receives an explicit 'Monthly Unitary Charge' to account for recurrent/operating, capital repayments and debt interest.

Evaluation of PFI

The government has, plausibly, argued that the PFI structure enabled many more investments in the NHS than would have happened with public funding only. Under PFI, a large number of new hospital investments have come to fruition.[490] However, overall, the PFI has not been without controversy. Numerous criticisms have been raised about this financing mechanism.

- The testing requirement

Since 1997, all large capital investment schemes in the NHS have been required to test the Value for Money of a PFI option against the use of public sector capital. In most cases, the comparison between the PFI and public option indicated that the PFI option would provide best value for money once the transfer of risk from the public to the private sector is taken into account. It has been criticized, however, that the estimated difference was often relatively small, relied fundamentally on the valuation of the risk transfer, and was rarely calculated transparently anyway (because PFI was 'the only game in town' so the analysis was expected to favour this route).[490]

- Cost reduction

Critics argue that it is unclear whether PFI offers any clear advantage in terms of lower costs. PFI financing costs are higher than would be the case with public funding, and often there is no clear reduction in building and operating costs.[490] There is mounting evidence that PFI brings only temporary budgetary relief (costs are shifted to the future) and that it appears to be a rather expensive tool for capital investments over a longer period of time.[442]

The tendering process has been criticised as long, expensive and time consuming, adding an additional cost for the NHS. Moreover, there is evidence of a cost-creep, a build-up in costs, after the preferred bidder has been selected and when the real competition has gone.[490] PFI contracts often provide various ways to increase the costs under certain conditions while the trusts are stuck with a quasi-monopolistic supplier.[461]

In 2011, the government reported that 22 NHS trusts were facing difficulties because of the cost creep of PFI projects. The group represents nearly a fifth of the more than 100 PFI schemes in the NHS.[499]

A year later, the media report that seven trusts have been provided access to a government bailout fund of £ 1.5 billion. According to the Department of Health, the services at the hospitals would be at risk without the funding. The subsidy is being made available over the course of 25-year contracts. In order to access the fund, the trusts will have to demonstrate improved efficiency and provision of good care.[500]

- 'Off balance sheet'

One of the initial concerns of the Treasury was to keep government spending within the fiscal framework established to meet the 1997 Stability and Growth Pact criteria for management of the Eurozone. It was argued that the use of PFI was 'off balance sheet' and hence did not affect government borrowing requirements. However, with the introduction of the International Financial Reporting Standards (IFRS) in the production of government accounts, this is no longer the case. If IFRS principles are applied to PFI projects then, in fact, the majority will be 'on balance sheet' and this is certainly true for future projects.[490]

- Long-term fit of the buildings, and the missing link between infrastructure provision and care delivery

Furthermore, the question has been raised whether the buildings that have been built will be fit for purpose in the medium term, partly because of the poor quality of some of the buildings and partly because the way health care is delivered is likely to change over time.[490] As the private PFI partner bears the risk of the building investment, whereas the NHS trust bears the risk for the production of clinical services, there is an imbalance in risk allocation. Changes in buildings for greater efficiency in health care delivery benefit the NHS trust, but the PFI partner bears the cost of the investment. This imbalance in risk allocation impedes efficient solutions to accommodate future healthcare needs through adaptable hospital infrastructure.[461]

- Not suitable for ICT projects

Research by the European Services Strategy Unit showed that of 105 outsourced public sector ICT contracts in the United Kingdom, 57% had cost overruns, 33% were delayed and 30% were terminated. In 2004, the National Audit Office reported on such failures and noted several reasons, amongst which a lack of a clear link between the project and the organisations' strategic priorities, including measures of agreed success, a lack of stakeholder engagement, and absence or failure of senior management and ministerial ownership and leadership.[501] The United Kingdom Treasure announced that the financing instrument PFI would no longer be used for ICT projects, because:

- it is difficult to codify long-term IT requirements into an effective contract, due to rapid technological changes and the fact that IT is closely linked to business operation needs;
- as IT is highly integrated into other business systems, it is hard to define areas of responsibility between the client and the supplier, and so transfer risk effectively;
- the costs of delivering IT projects are dominated by annual running costs rather than costs upfront.[501]

15.7 Cross-country overview

15.7.1 Investment payments for buildings and medical equipment

Figure 37 shows an overview of the investment payment approach in Belgium and the four countries analysed, as well as the recent or current transitions. The Netherlands moved from a dual payment system to an integrated payment system where investment costs are included in the DBC tariffs. Accordingly, the country switched from a central planning policy to free investment choice for hospitals. Germany, still having a dual payment system in place, now also gives its states the possibility to switch to an integrated or mixed payment system. German states, however, appear not to be eager for a change and instead are rather intensifying their planning. France and England combine separate with integrated payments.

For each of the different payment methods, there are arguments pro and contra, depending on the dimension they are evaluated on. In the country descriptions, we incorporated country-specific evaluations where available. In this section, we look cross-country for recurring elements and include theoretical arguments where applicable. Besides the four countries analysed, we also put the Belgian landscape into the foreground. For a brief overview of the investment payment methods in Belgium, we refer the reader to the text box.

Payments for hospital investments in Belgium

Belgian hospitals are currently paid for by both federated authorities, via subsidies, and federal authorities, via the hospital budget subparts A1, A3 and C1 for the balance of non-subsidized investments. With the 6th Belgian State reform, federal payments for hospital investments (the parts A1, A3 and C1) will be transferred to the level of the federated authorities. The Belgian investment payment scheme is rather fragmented and differs according to type of investment:

- ***New buildings and hospital extensions*** are subsidised to 60% or 10% (for priority investments). The remainder 40% or 90% is paid through the subpart A1 of the hospital budget. Subsidies are conditional to inclusion in the federal construction calendar. This calendar determines the maximum budget at the federal level, the division of the budget at the regional level and the investments which will be subsidized per year and per hospital. For each hospital project, the subsidy level is capped by a maximum cost, which is set on the basis of a global construction cost ceiling and a global ceiling for construction surface. Each of the federated subsidising bodies is allowed to enact their own subsidy rules, within the federal subsidy regulation.
- ***Medical and non-medical equipment, including information technology investments, and vehicles***, are only eligible for subsidies for the following services: emergency departments, operating rooms, delivery rooms, maternal intensive care, intensive neonatology, intensive care and sterilisation services. Investments in other services are paid by prospective payments part of the A1.
- ***Immovable assets for MRI, radiotherapy and PET scan*** are paid by the subpart A3 through lump sums (for MRI and PET scan) or through lump sums as a function of activity (for radiotherapy), as far as they are not covered yet by subsidies.
- ***Reconditioning works of buildings*** are not eligible for subsidies, except for priority projects. They are paid by the subpart A1 based on real costs. Plans to shift to a lump sum payment were abandoned.
- ***Large maintenance works and costs for first installation*** are not eligible for subsidies. They are paid via the subpart A1 for a 100% on the basis of the real (but justified) cost.
- ***Investments in sustainable development projects*** are not eligible for subsidies. They are paid via A1 for a 100% on the basis of real costs.
- Other ***building investments not eligible for subsidies*** (e.g. replacement of elevators) are equally covered through A1 for 100% on the basis of real costs.
- ***Long-term interest costs*** are paid by A1 on the basis of real cost. Short-term interest costs are paid by A2.
- ***Pre-exploitation costs*** are paid for a 100% on the basis of real costs through C1.[265]

The subsidizing bodies are:

- Flemish Infrastructure Fund ('Vlaams Infrastructuurfonds voor Persoonsgebonden Aangelegenheden'; VIPA) for hospitals in Flanders and for the Flemish (monolingual) institutes in the Brussels region
- division of Health and Infrastructures at the Ministry of the Walloon region for hospital in the Walloon region
- COCOM ('Commission communautaire commune'/'Gemeenschappelijke Gemeenschapscomissie') for the bilingual institutes in the Brussels region
- COCOF ("Commission communautaire française") for monolingual French institutes in the Brussels region
- French community for university hospitals in the French community
- Baubegleitausschuss for hospitals in the German community[10]

In 2011, hospital investments increased to 1.2 billion euros. These investments were made not only for general maintenance needs, but also for larger building projects, many of which came into use in 2012. In 2012, the investments continued. 1.3 billion euros was invested in new and replacement projects. The investments are primarily financed by long term bank loans. A large part (+/- 280 million euros) was financed through free cash flow accumulated by the hospitals. Finally, subsidies from the federated authorities accounted for 63 million euros.[24]

Compatibility of payment method with central planning

Across all countries, the way investments are paid impacts the possibility for central (be it national or regional) planning. If the government pays for investments separately, it can directly control planning as well, as it can align the payments to its planning. Payments are usually made on the condition that the investments are part of the planning. If the government, however, does not control payments for investments (as is the case when hospitals receive investment payments integrated with their operational payments or when hospitals receive project independent flat-rate payments), it becomes more difficult to control planning. In this case, the investment payments are not necessarily in line with the imposed planning and this may lead to financial imbalances for the hospitals in the event that the investment payments are too low. Although central planning can be combined with integrated payment (e.g. as in Germany), the extent of planning will necessarily be reduced. The interdependence of payment and planning policies is also illustrated by the transitions made in the Netherlands.

Responsibility for investments

The investment payment mechanism impacts who carries the responsibility and risks of the investment decisions. The extent to which payment authorities transfer the risks to the hospitals also determines whether payments will be classified as public debt or not. If the payments are project-independent, the hospital is responsible for making its own decisions on how to spend the grant received. In this case, it has the freedom to choose its investments within the pre-determined budget. It is the responsibility of the hospital not to overrun this budget and to align its capacity with projected care needs. If a hospital overinvests, or invests inefficiently, it may get into financial problems. In turn, public authorities of countries with hospitals in financial distress have to decide whether to intervene or not to bail out these hospitals. The Netherlands provides an example where the responsibilities and risks of investments have been shifted largely towards the hospitals. Since the transition, a number of Dutch hospitals have found themselves in financial distress; however, the transition in investment payment policy has only been mentioned as one amongst other causes for financial difficulties. The full impact of the shift of responsibility from government to hospitals remains to be evaluated in the longer run.

Conversely, if the payments are based on case-by-case approval of projects, the responsibility of the investment decisions is primarily carried by government. It is the government that needs to ensure that investment decisions match future care needs and it may do so by drafting a national or regional plan and by validating individual strategic hospital plans, care demand projections and service plans from applying hospitals. If the plans are approved and the planned investments are paid back unconditionally and on the basis of real costs, hospitals are guaranteed payment and do not run a risk of getting into financial problems for their investment decisions. The risk of overinvestment or inefficient investment is then primarily shifted to the government, as it may pay for unused or expensive capacity, unless it takes protective measures.

By making future payments dependent on utilisation rates, for instance, public authorities can share some of the volume risk with the hospitals. Full payment of the investments is then not guaranteed anymore, as payments are made conditional to the actual use of the invested capacity. An example of risk apportionment can be found in many German investment plans. A Belgian illustration is the VIPAs alternative finance system (see text box). This alternative system implies that subsidies, spread over 20 years, are conditional to the fulfilment of certain utilisation standards. By doing so, hospitals are encouraged to draft realistic plans as full recouping of their investments is not guaranteed any more but depends on the actual use of their capacity.

Besides volume risk, there is also price risk. When hospitals are paid on the basis of real costs, they are not incentivised to search for the lowest price in the market. By setting payment ceilings, a government can shift the price risk towards the hospitals.

'Fair' allocation of payments

Payment mechanisms that allocate project-independent payments can guarantee more fairness in payments in that they are determined on equal bases for all hospitals. However, upon introduction they may be considered 'unfair' as they do not take into account the state of the buildings for each hospital individually, thereby advantaging those hospitals with newer buildings. When, on the other hand, public authorities select investment projects, the payments can only be considered fair if the selection process is based on an objective and transparent analysis of care needs. The selection process, however, should not be prone to political influence, institutional prestige or other factors apart from the care needs, especially in times of budgetary constraints when only limited projects can be approved.

Matching the cost structure

In a dual payment consisting of a payment per patient equal to the marginal cost of provision and a separate payment for the partial reimbursement of investment costs, the first part of the payment depends on the number of patients treated whilst the second part is independent of the number of patients treated. Departures from this dual scheme lead to a situation where payments do not mirror the actual cost structure and may lead to under- or overprovision and thus inappropriate use, depending on the payment level. Hospitals that are not sure of sufficient patient load to recoup investment costs may choose not to invest, whereas hospitals that did invest are incentivised to maximise their patient load.[502] Taking that viewpoint, incorporating investment costs into DRG or fee-for-service operational payments may be particularly suboptimal for very targeted services that can be provided to patients at roughly constant marginal incremental costs.[502] Planning measures can then be taken, such as direct regulation of the technology diffusion or of buildings by means of e.g. Certificates of Need, like those employed in several US states, to prevent overbuying of expensive equipment and building.[503] Certificate of Need programs are state programmes that are supposed to regulate the availability of selected health care services by law. By limiting “unnecessary” health facility construction, somehow defined, and checking the acquisition of major medical equipment, states aim to ensure access to health care services, maintain or improve quality, and control excessive or gold-plated investment expenditures on health care services and facilities.[504] Critics of the CON program however argue that the calculations are rarely sensitive to changing needs and that the program has been highly bureaucratised.

A dual payment, on the other hand, is not per se sufficient to achieve appropriate use either. Failure to set the two levels correctly, may equally lead to under- or overprovision of investments and treatments, given that the system embeds a separation rather than an integration between the infrastructure and operational factors of production. The decisions on whether and how to pay for buildings and equipment, to whom and by whom treatments should be provided should therefore be studied together.[502]

Alignment of investments with operational efficiency

As investments impact operational efficiency, there are theoretical arguments for integrating their payments. When payments are made upon approval of projects, hospitals will not necessarily prefer investments that minimise total costs (operating and investment costs), but rather will favour investments that minimise operational costs, regardless of the investment cost. As a result, under a separate investment payment scheme, split from the operational payment scheme, hospitals may become more capital intensive than efficiency would dictate.[437]

Alignment of payments with future care needs

A project-independent approach, in which the payment level is determined by the government, requires determining a payment level that matches not only the current but also future needs for all hospitals. The payment level may be based on average historical costs across hospitals, or on a cost considered as a current (or, in principle, even a future expected) best practice cost. Setting the payment level in such way that it treats all hospitals in a 'fair' way whilst matching the long term future needs as close as possible is an extremely difficult exercise.

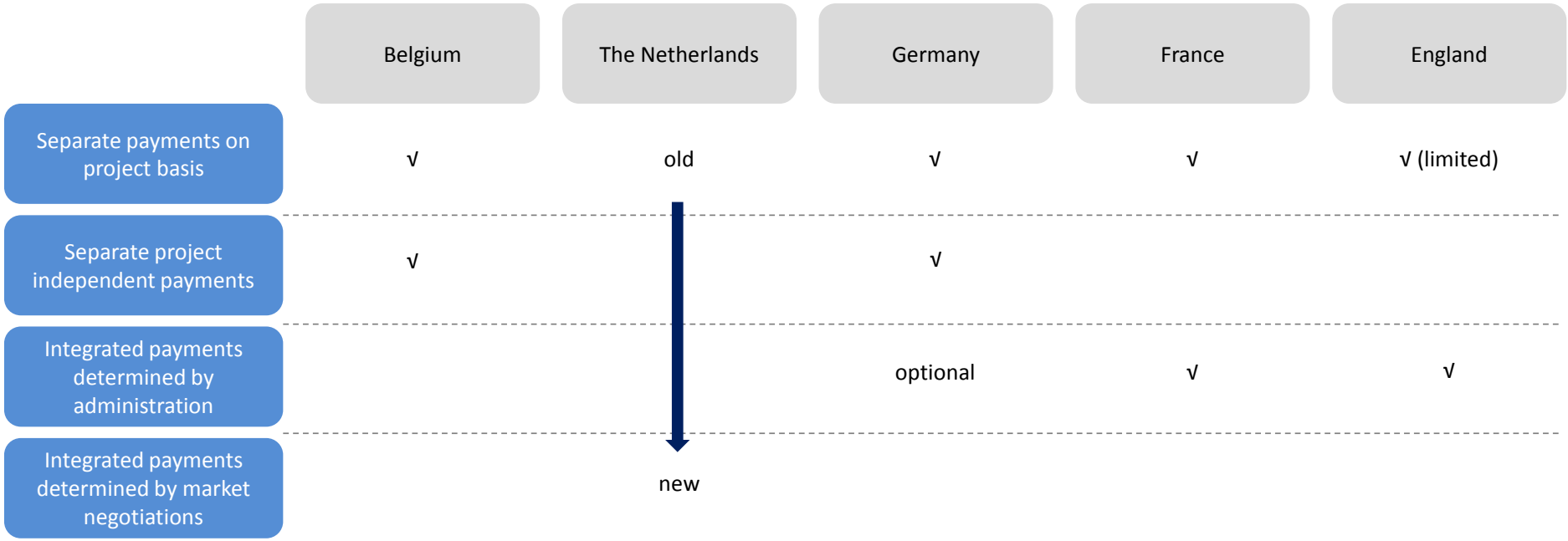
Administrative load

A payment scheme based on approval of projects is administration-intensive for both public authorities and hospitals, as it involves drafting and reviewing of detailed application files. However, introducing an integrated payment system equally involves significant administration and cost data collection, especially to set the payment level.

Encouragement of investments

Payments upon approval of projects may encourage investment expenditures, as long as budget restrictions are not too tight.[444] Conversely, integrated investment payments may discourage investment expenditure as the operator attempts to maximise profits, although hospitals may consider investments anyway to attract patients and bring in profitable admissions. Another side of the coin is that integrated investment payments may encourage concentration of investments in fewer institutions.

Figure 37 – Investment payment method by country



15.7.2 Investment payments for ICT

Taking into account the breadth of ICT applications in hospitals, this chapter does not provide a detailed nor comprehensive overview of government initiatives and according payment schemes to support the use of ICT in hospitals. Based on a grey literature search, some information was gathered; however, the information presented may be selective and incomplete.

Divergent payment modalities for ICT

Analysis of four countries shows various approaches to ICT payments. In the Netherlands, ICT payments are part of the operational DRG ('DBC') payments. The fact that ICT projects consist not only of initial investment costs but also, and in some cases predominantly, of subsequent recurring operational costs, is in support of this payment approach. It remains to be evaluated in the longer run, however, whether this approach provides sufficient incentives to hospitals to invest in ICT.

Another approach is taken by the public authorities in France and England, where considerable structural funds have been allocated to hospitals to strengthen their ICT systems. Experience in England, however, shows that not all of the ICT investments necessarily turn out to be a success. International literature also shows contradicting evidence regarding the ability of ICT to effectively improve productivity, quality of care or healthcare system efficiency. Some studies conclude health IT is an effective mean to greater productivity and efficiency. Other studies remain inconclusive. Some studies even show that health IT can be counter-productive. The existence of an IT productivity paradox may support the statement that "How one uses IT would seem to be far more important than simply how much one spends" on IT.[505] This calls public authorities to embed their payment policy within a larger strategic planning of eHealth in hospitals, in order to ensure that the invested money is spent well.

Other countries have no clear payment mode for ICT investments. In Germany for instance, ICT investments are in some cases covered by investment payments, in other cases they are not covered.

Legal and regulatory issues

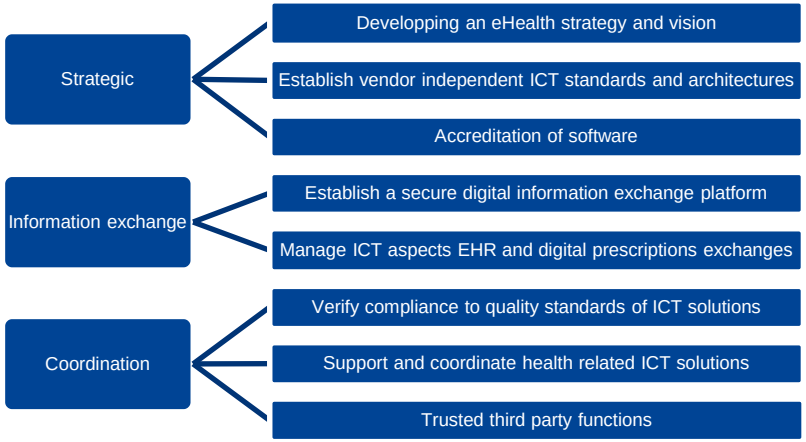
Besides the payment issues, legal and regulatory issues are other challenging aspects for the introduction of eHealth. Privacy and confidentiality, liability and data-protection need to be addressed in order to make eHealth applications possible.[484] The importance of these issues is illustrated by the case in Germany where the introduction of the new eHealth cards in hospitals was objected and delayed for many years. The introduction was far more difficult than expected, because data protection experts were concerned that patients' privacy was at risk. Furthermore, doctors and other healthcare providers were opposed to buying special technical equipment – as these were not paid for - and said that the health card was impractical.[479, 506]

Structural and indirect payments for ICT in Belgian hospitals

In Belgium, hospital ICT is paid for by a lump sum in the hospital budget (part A1 of the Budget of Financial Means (BFM)). Although the A1 part of the BFM is transferred to the federated authorities as a consequence of the 6th State reform, the ICT lump sum remains a federal matter. Additionally, BFM part B1 covers ICT in the administrative services, while BFM part B4 covers ICT costs for the Belgian virtual tumour bank. An eHealth roadmap 2013-2018, detailing healthcare-related ICT initiatives for the coming five years by Belgian governmental organisations, emphasizes the strategy of funding ICT in a project independent way. There is a clear choice to financially stimulate the use of ICT solutions in healthcare by a closed budget.[507]

Aside from the structural payments provided by the BFM, hospital ICT is indirectly financed and supported by governmental infrastructure and ICT projects. To facilitate ICT solutions in healthcare, Belgian authorities founded the eHealth-platform.[507] The eHealth-platform is set up as an organisation-in-the-middle and has missions in the domain of ICT strategy, information exchange and coordination (see Figure 38). Although the use of eHealth-platform services is compulsory for access to a number of legally required registrations (see below), the majority of the eHealth-platform services are facultative in use.

Figure 38 – eHealth-platform missions in Belgium



At present, most healthcare ICT projects paid for by public authorities can be categorised as either related to compulsory registers, information exchange between government organisations and healthcare partners, or information exchange between healthcare partners.

Compulsory registers

Hospitals are legally required to feed multiple databases related to e.g. public health and reimbursement. Technically, this requirement breaks down in three parts: collection and preparation, communication, and reception and use of the data. Hospitals are responsible for the collection and preparation of the data according to legal guidelines provided by public authorities. There usually is no separate funding outside of the BFM for the resources needed to accomplish this part. Currently, hospitals organise the collection and preparation as part of their in-house ICT solutions, except for a final data format as required by the collecting governmental organisation.

The actual channel of communication of the data from the hospital to the collecting governmental organisation currently depends on the register. The setting up of communication requires a secure channel with the following components:

- authentication: establishing that the sender of the data is who he or she claims to be;
- authorisation: verifying that the authenticated sender is permitted to send the data;
- secure connection: an endpoint to endpoint secured connection prohibiting access to transferred information except at the endpoints.

All these components are vital to a secure communication, electronically or otherwise. Almost all governmental registers currently use web-based information exchange platforms. The eHealth roadmap 2013-2018 aims to replace proprietary solutions from the past in part by the eHealth-platfom. In particular the authentication and authorisation components are destined to be provided by the eHealth-platform. One of the main services of the eHealth-platform is the authentication by means of two-factor authentication[vvv]. Each Belgian resident is issued an electronic identity card (eID) containing several electronic certificates protected by a pin. This allows eHealth (among other organisations) to use the eID to provide a nationwide authentication and authorisation service. Combined with an authorisation system, it provides a generic solution for setting up communication. The reception and use of the data is the responsibility of the collecting governmental organisation.

Currently, a large number of registers use the eHealth-platform for setting up the communication (see Table 35).

[vvv] In two-factor authentication, identification based on two out of three possible factors: something he or she has (e.g. a token), something he or she knows (e.g. a password), or something he or she is (e.g. biometric information like fingerprint).

Table 35 – Examples of registers currently using the eHealth-platform solution for authentication-authorisation

Register	Description
BelRAI	Registration of the results of Resident Assessment Instrument (an assessment tool for the health and welfare situation of the elderly in institutions)
eCare ORTHOpride	Orthopaedic prosthesis identification data (administrative and medical data on orthopaedic prosthesis)
eCare SAFE	Shared arthritis file for electronic use (administrative and medical data on rheumatoid arthritis)
Belgian Cancer Registry	Registration of cancer related data (including PROCARE and PROCARE RX specific registrations on rectal cancer)
MUGREG	Details of intervention and patient related to Medical urgency group (MUG-SMUR)
Qermid	Several registers on implants
MKG-RCM	Register of medical data on hospital stays

Information exchange between government organisations and healthcare partners

More in general, healthcare related communication between governmental organisations and healthcare partners becomes more and more electronical and has to use the eHealth-platform. ICT solutions range from providing information (authentic sources, e.g. CIVICS on drugs described in chapter IV of the legislation on drugs) to facilitating administration (e.g. eShop for ordering certificates of the use of healthcare[www]). MyCareNet for example, provides healthcare professionals and hospitals with a platform to exchange information on insurance status of a patient and electronic invoicing.

Information exchange between healthcare partners

A third form of indirectly financing ICT solutions in healthcare by the Belgian government is supporting information exchange between healthcare partners. There are three possible levels of involvement: defining standards and guidelines, providing sample implementations and Application Programming Interfaces (APIs), and hosting actual implementations. As an example of standards, SUMEHR (summarized electronic health record) was defined as a standard minimal electronic health record using KMEHR (kind messages for electronic healthcare record; another standard defined for exchange of information in XML format).

Aside from standards, several actual ICT implementations are provided (or will be provided in the future). Some facilitate information exchange between patients and healthcare professionals. For example eHealthConsent allows a patient to authorise which healthcare professionals have access to certain electronic healthcare information. EuthaConsult allows physicians to check the existence of a declaration of intent on euthanasia.

However, most actual ICT implementations concern communication between healthcare professionals. Secure messages can be sent through eHealthBox, a sort of secured email. Much larger is the development of the 'hub & metahub' project: connecting the existing local and regional healthcare information exchange platforms ('hubs'). Currently, there are five hubs: Réseau Santé Wallon, Collaborative Zorgplatform, Vlaams Ziekenhuisnetwerk KU Leuven, Abrumet, and Antwerpse Regionale Hub. These provide access to healthcare professionals to healthcare information in participating organisations. Connecting these hubs will allow to retrieve

[www] ‚Medische getuigschriften'/'Attestations de soins donnés'

healthcare information nationwide. A similar initiative exists from the Flemish government (Vitalink).

All these projects and ICT initiatives aim to support the uptake of ICT solutions in healthcare, but still require, sometimes substantial investment and resources from the healthcare partners. In particular, the action point from the eHealth roadmap 2013-2018 on a standardised electronic health record in the hospital could require non-trivial adaptation of hospital ICT infrastructure. The envisioned hospital EHR should be able to feed all required registers and allow standardised communication between different health care stakeholders.

15.7.3 Planning

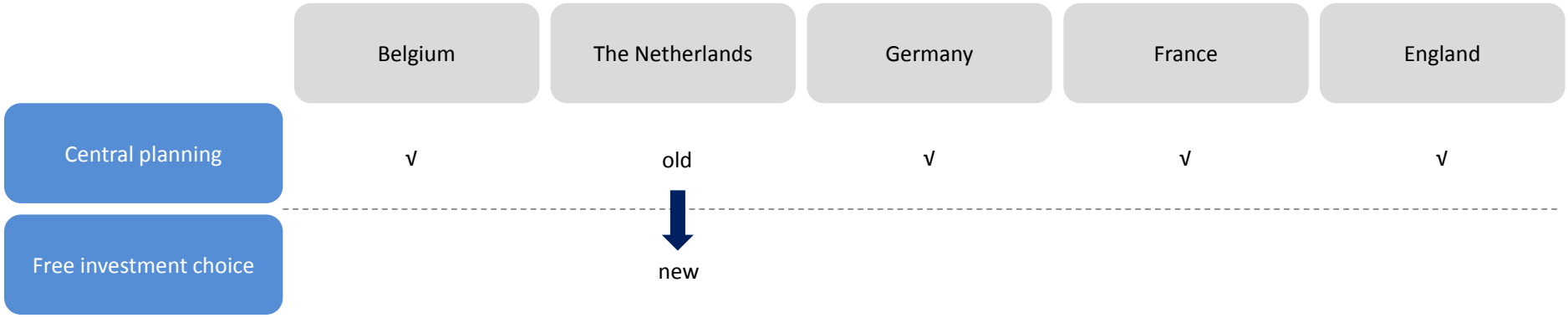
In the face of the growing complexity of care, there are strong theoretical arguments to establish planning of health care.[440] The advantages of planning may explain why many European countries resolutely stick to planning. Other countries however, such as the Netherlands, have reduced the extent of planning. The less stringent planning in this country can be seen as a subsequent step following developments in the country's health care institutional, regulatory and payment framework. Nevertheless, even in the Netherlands, which has largely liberalised hospital investments, the government maintains its planning power in a few specialist areas and in case of underprovision putting access to hospital care at risk. This illustrates the inevitability of planning to a certain degree.

Figure 39 shows an overview of planning approaches in Belgium and the four countries analysed. A distinction is made between central planning and free investment choice, although further differentiation could be made within these two categories. Whereas England centrally approves investment plans submitted by hospitals, the situation in France is different as in this country central (regional) plans are made independent from hospital submissions.

Planning furthermore can be done at different levels, some countries planning at national level, other at regional level – as is the case in Germany where plans are made by states, and in France where plans are made by Regional Health Authorities. Even when planning takes place at regional level, it may still be necessary for regional bodies to work together to plan the most specialised services, that require only one or a few facilities nationally.[440]

Plans in European countries furthermore vary in scope, some cover public and private health care provision, some cover hospital and ambulatory services, other are far more limited. Most of the countries analysed restrict planning to hospital services, however, there are arguments for taking a whole system planning approach. Attuning secondary to primary care planning and vice versa becomes increasingly important, given the changing role of the hospital, with many traditionally hospital-based services now provided in ambulatory care facilities.[440]

Figure 39 – Planning by country



15.7.4 Public-private partnerships and privatisation

Analysis of the four countries shows that European public authorities have been increasingly partnering with the private sector to finance, build and operate hospitals, though with some pause because of the economic crisis. Barlow e.a. 2013[439] provide an overview of the generally recognised advantages and disadvantages of PPPs. On the one hand, PPPs may provide a solution for public-sector capital shortage, they may create private-sector efficiencies and help health care providers to concentrate on clinical services. On the other hand, PPPs may entail higher transaction, monitoring and set-up costs, a lack of integration between clinical models and infrastructure design and a difficult relationship management over extended periods of time. Depending on the situation, PPPs may reduce or increase the net outturn cost of capital. They may either stimulate or stifle innovation. In terms of risk allocation, they may theoretically allocate risks to the party best able to manage them; however, in practice the ultimate risk lies with the public sector and there is an increased commercial risk due to the long-term horizon and high value of the contracts.[439]

Until now, PPPs have been most successfully realised in utility sectors in which service quality can be clearly specified, measured and guaranteed. PPPs in health care appear much more challenging, as outcomes and particularly quality are more difficult to observe or measure, and cost-saving objectives may be in contradiction to public-interest objectives. In arranging PPPs, one should ensure that the risks arising from the development and operation of infrastructure are optimally allocated between the public and private partners. Bundling activities and using the payment system to create incentives for high performance by the contractual parties have been brought forward as one possibility for better achieving this result. [439]

Key points

Planning

- **In the face of growing complexity of care, there are strong theoretical arguments to establish planning of healthcare. Even in the Netherlands, which largely liberalised hospital investments, the government maintains its planning power in a few specialist areas and in case underprovision in certain areas puts access to hospital care at risk.**
- **Planning can be done at different levels; some countries plan at the national level, other at the regional level. Even when planning takes place at the regional level, it may still be necessary for regional bodies to work together to plan the most specialised services that require only one or a few facilities nationally.**
- **An example of regional planning can be found in France, where the overall strategy for investment planning is mainly implemented through regional health organisation plans and related target contracts ('*contrats d'objectifs et de moyens*'). France furthermore changed its approach from planning bed capacity to planning service volumes in order to limit oversupply in certain regions.**

Payment for investments

- **There are theoretical arguments both in favour of and against separating investment payments from operational payments. Arguments in favour of keeping separate investment payments are that:**
  - **it is more compatible with central planning, allowing to better control the spread of services, also in specialist care or underpopulated areas;**
  - **no transition problems occur linked to the different start position of hospitals (hospitals with older versus newer buildings);**
  - **it may encourage hospitals to invest more than when payments are integrated – as long as budget restrictions are not too tight – although integrated payments may also indirectly incentivize hospitals to invest as a way to attract patients and bring in profitable admissions.**
- **Arguments against keeping separate investment payments are that:**
  - **less responsibility and risk is transferred to hospitals than with integrated payments, although measures can be taken to apportion the risk between authorities and hospitals;**
  - **an investment payment scheme based on approval of projects is administration-intensive for both public authorities and hospitals. However, introducing an integrated payment system equally involves significant administration and cost data collection, especially to set the payment level.**
- **Payment authorities should take due account of ESA 2010 rules to ensure neutrality of their investments on public debt.**

PPPs and privatisation

- **Analysis of the four countries shows that European public authorities are increasingly partnering with the private sector to finance, build and operate hospitals. Experience, however, shows mixed results of such public-private partnerships and privatisation initiatives. They appear particularly challenging in the hospital sector, as outcomes are difficult to measure and cost-saving objectives may be in contradiction to public-interest objectives.**

16 HOSPITAL PAYMENT SYSTEMS AND THE UPTAKE AND DIFFUSION OF MEDICAL INNOVATION

16.1 Introduction

16.1.1 Innovation domains in hospitals

Innovations in hospitals can take many forms. In this chapter we focus on all types of innovations relating to medical care. They include technological innovations in medicines, devices, tests and surgical procedures as well as innovations not relying on technology, such as the use of a new diagnostic questionnaire.[192, 508, 509] Innovations not directly related to medical care, such as new organisational and managerial systems or alternative ways in service delivery, are not part of our focus.

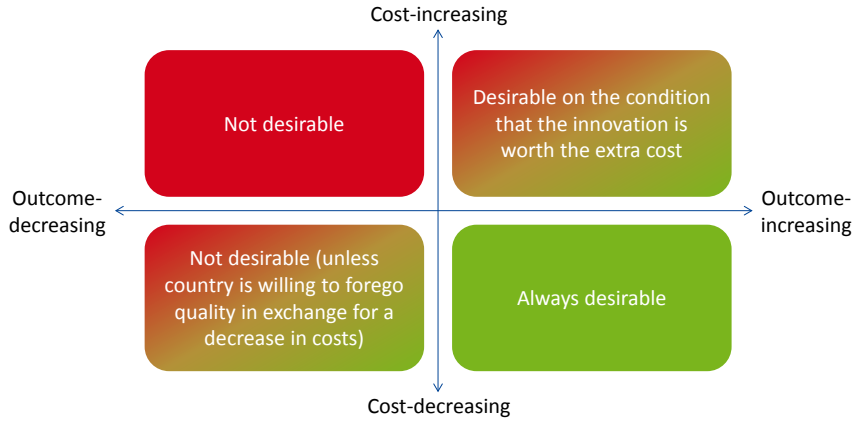
16.1.2 Societal desirability of innovations

Technological innovations are in general highly valued by patients, physicians and politicians.[192] Moreover, they are often regarded as uniformly positive.[510] Still, in the past a variety of technologies have been found ineffective or unsafe after wide implementation and withdrawal of such interventions from routine care, when evidence against their value emerges, has been proved challenging.[511] Furthermore, the high volume of innovations and in many cases their high cost, have been found to be a main driver of increasing healthcare expenditures.[512, 513] This suggests that innovation diffusion management should be selective in nature.[509]

Whether innovations are socially beneficial and should be implemented depends on the combination of their effects, positive and negative, and their costs (see Figure 40). Innovations that are both outcome-increasing and cost-decreasing are always desirable from a societal perspective. Outcome-decreasing innovations are not desirable, unless countries are willing to forego quality in exchange for a decrease in costs. Finally, innovations that are outcome-increasing but also cost-increasing can be desirable if they are worth the extra cost. This depends on the country's willingness and ability to pay for an increase in outcome.[514] Innovations should not be judged in silos for budget setting. Total costs should be considered, both within and across sectors.

Appropriate selection of innovations may sound easy in theory, in practice however it is often hampered by the limited or lack of evidence available at the time when innovations come into the market.[197] Looking beyond the conceptual framework of cost-effectiveness analyses, other factors may in reality also be of importance to payment authorities, including a range of equity considerations and the need to encourage innovation amongst technology manufacturers.[515]

Figure 40 – Societal desirability of innovations



Source: Adapted from Black (1990)[516]

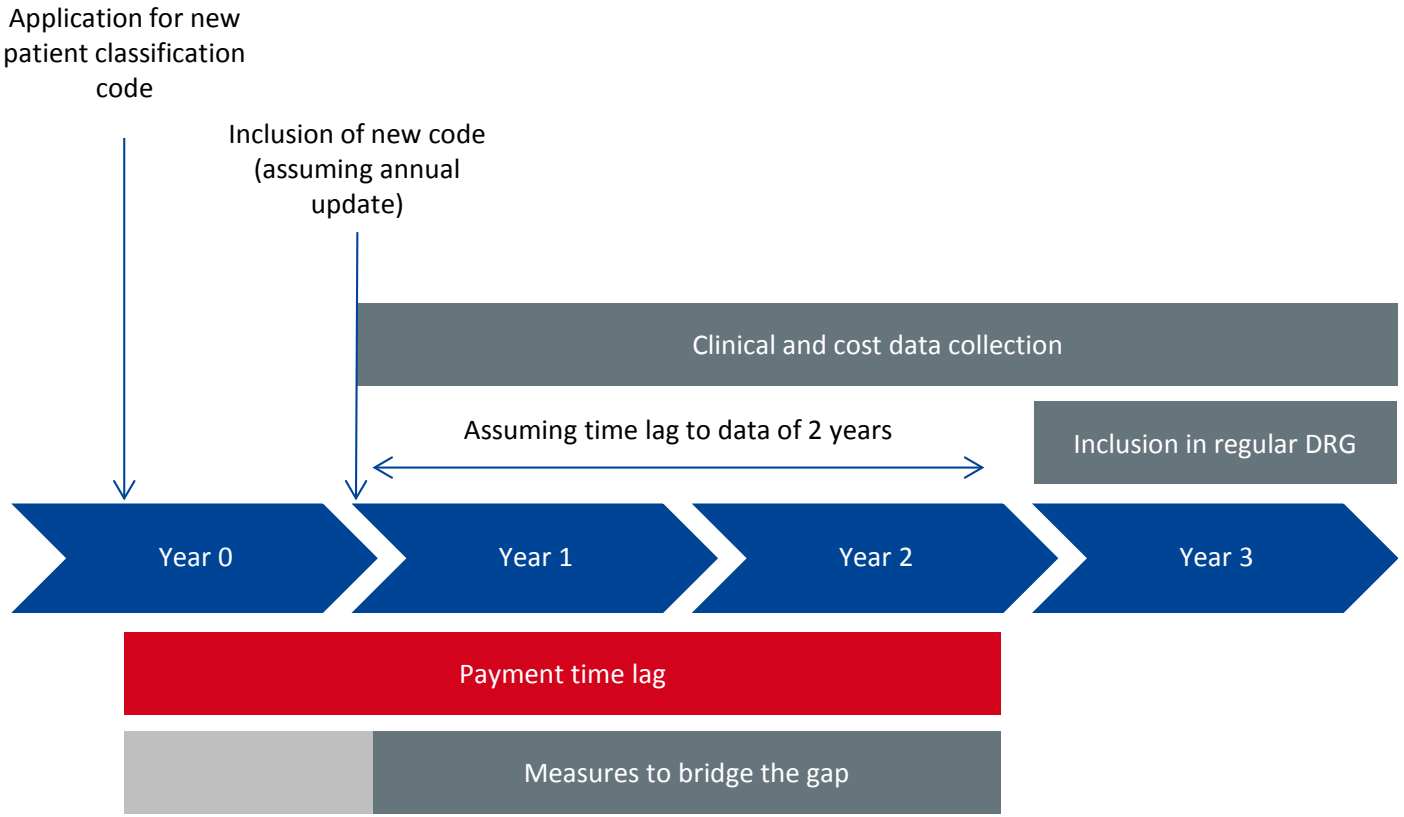
16.1.3 Payment gap for cost-increasing innovations

The basic principles of hospital payment systems generally enable incorporation of innovations in several ways. If the payment system is based on fee-for-service, a new fee code can be introduced or fee levels can be adjusted to account for the cost increase due to the innovation – if cost-increasing. Equally, if the payment system is based on Diagnosis Related Groups (DRGs) payments, different options are possible. If the innovation creates heterogeneity within an existing DRG (this is the case when the innovation is limited to a subset of centres or a subset of patients not equally distributed amongst centres) either a new DRG can be introduced, an existing DRG can be split or patients can be assigned to a different DRG (e.g. when an existing procedure is used in a new indication). If the innovation impacts a DRG in a homogeneous way, tariffs of an existing DRG can be adjusted.[5] So, both fee-for-service and DRG payment systems allow uptake of innovation. A potential problem, however, is that it often takes considerable time before innovations are effectively integrated in the payment system. As a consequence, a payment gap may occur, and this might hamper the uptake of costly innovations in an early stage.

Under DRG-based hospital payments, it is possible that costs of an innovation can be offset by reduced length of stay. So, in contrast to a fee-for-service system, a more expensive service itself is not a problem, it is only a problem if it is much more expensive and if it does not lead to cost savings in the care process for the DRG.

Figure 41 illustrates the payment gap when a new procedure follows the traditional path for inclusion into the base payment system. Tariffs and patient classification are generally based on retrospective data. Assume that in year 0 the procedure is introduced in some hospitals and that a new procedure code is requested. At the start of year 1, the new code can be assigned and included in the registration. At this point, data collection on the utilisation and costs can start. Considering a time-lag to data of two years, and assuming a positive decision on the inclusion of the procedure after those two years, payment eventually only starts from year 3 onwards.

Figure 41 – Illustration of the reimbursement time-lag for innovations



Adapted from Henschke et al. (2011) [517]

16.1.4 The use of short-term payment mechanisms

Under any basic backward–looking payment system incentivizing cost-efficiency, hospitals are financially not supported to invest in cost-increasing innovations, even if they provide good value for money. Whether or not this poses a real barrier for innovation depends on several factors. Under competitive pressure, for instance, hospitals may decide to invest in cost-increasing innovations, if they help to attract patients. When the payment system is not yet adjusted to account for the extra cost of an innovation, several possibilities exist for hospitals. Either they wait to adopt the innovation, they temporarily bear the cost themselves or shift the cost to their patients. The patient in turn may carry the final cost, or alternatively seek reimbursement by a private insurer (if there is any that covers the innovation), or explore other money-raising options such as crowdfunding.

Although there is no strong evidence that hospitals effectively hold back from adopting desirable innovations simply because of a payment gap – often there may be other reasons why hospitals delay adopting innovations such as doubts about their efficacy – the payment gap may pose a problem as it may create inequalities in access to the innovation for patients and providers. In order to lift this payment gap in the early stages of introduction, many countries use short-term payment mechanisms in addition to the base payment system.

Base payment system

The term ‘base payment system’ refers to the dominant payment system in a country, representing the largest part of hospital revenue. Depending on the country, base payments can be based on (a combination of) fee-for-service, per diem prices, global budgets or DRG payments.

Extra payment mechanisms

Extra payment mechanisms are the payment channels used outside or on top of the base payment system. An example of such extra payment mechanism is a payment granted to a hospital for use of an innovation based on a contract between the hospital and the payment authority.

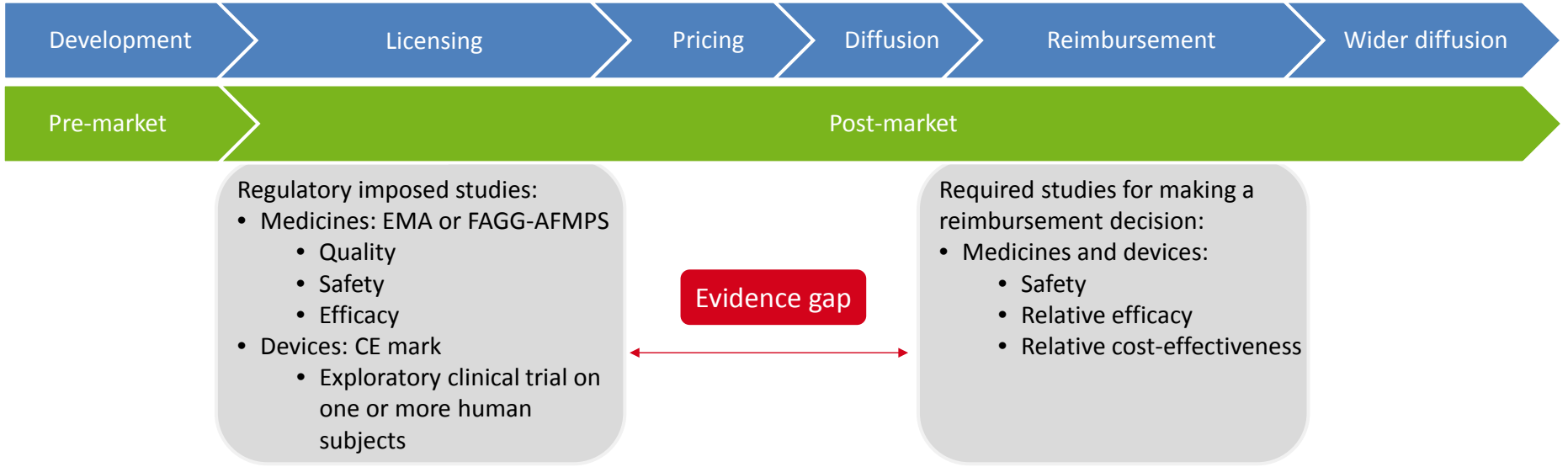
16.1.5 Innovation timeline

Figure 42 shows the pathway for a technological innovation from development to wide diffusion. The first regulatory step is the approval for market authorisation or licensing. We take the example of the Belgian market. Medicines must receive approval from the European Medicines Agency (EMA) or the Federal Agency for Medicines and Health Products (FAGG-AFMPS). Devices on the other hand must receive a Conformité Européenne (CE) mark. As soon as market authorisation is granted, the technology can be legally used in the hospitals and the company can submit a pricing file at the Ministry of Economic Affairs and/or a reimbursement request at the National Institute for Health and Disability Insurance (RIZIV-INAMI).

In making the reimbursement decision to cover an innovation, data on its comparative safety and effectiveness in routine use against existing interventions are required as well as data on its cost-effectiveness. The licensing regulations, however, do not require as much evidence. For medicines, licensing requires evidence of its quality, safety and efficacy; these are the so–called three hurdles. However, typically no evidence on comparative effectiveness in routine use is requested, let alone evidence on the fourth hurdle of cost-effectiveness.[518] Similar to medicines, licensing of medical devices does not impose this fourth hurdle and when it comes to safety and efficacy, licensing of devices in Europe is even much less stringent than for medicines.[197] The EU Directives on medical devices for pre-marketing trial requirements are particularly vague and do not match the study data required by reimbursement authorities. Figure 42 illustrates the evidence gap between what is required for market authorisation versus reimbursement decision-making.

Because of the relatively limited study requirements for market authorisation, hospitals, physicians, patients and reimbursement authorities still face considerable uncertainty at the time when innovations enter the market. Despite this uncertainty on the added value, Belgian hospitals and physicians are often eager to introduce innovations quickly after market authorisation as they compete for patients with other hospitals. As a result, a technology is often widely diffused before formal reimbursement has been agreed and this makes the management of innovation diffusion particularly complex

Figure 42 – Pathway for innovations from development to payment in Europe and illustration of the evidence gap



EMA: European Medicines Agency; FAGG-AFMPS: Federal Agency for Medicines and Health Products; CE: Conformité Européenne

16.1.6 Challenges for policymakers

There are several policy tools to manage diffusion of innovations in healthcare and payment mechanisms are one of them. Challenges posed to payment authorities are manifold. How can promising innovations be fuelled whilst avoiding the diffusion of undesirable innovations? How can the execution of studies required for sound reimbursement decision making be encouraged? How can appropriate utilization and diffusion of these innovations be ensured in terms of patient population and provider setting? And at what price level should innovations be reimbursed? Inevitably competing policy goals have to be balanced: maximising health benefits for the population, financially rewarding innovation and yet containing costs.[519]

In this chapter we primarily focus on tools employed by healthcare payment authorities and ministries of health. We do not deal with government tools used to support innovative entrepreneurship (e.g. by ensuring access to capital for drug or medical device companies) or fundamental research and science (e.g. by supporting research centres), as these tools generally fall under the responsibilities of the ministries of economic affairs and research/science respectively and are therefore considered outside the scope of this report. We will see further on, however, that as research often takes place in the setting of hospitals, there is a considerable overlapping zone between the different responsibilities.

16.1.7 Overview of this chapter

In this chapter we look at how payment authorities in other countries deal with the introduction of innovation in hospitals. Seven countries were selected. First, the countries that were selected in a previous report on hospital payments were included, i.e. France, the Netherlands, Germany, England and US Medicare.[2] These five countries were complemented with Sweden and Ontario (Canada). Ontario was included as this province

recently introduced an innovative initiative in which the execution of necessary studies for reimbursement decisions is supported in a pre-market phase. Sweden was included as this country is characterised by decentralisation of responsibilities, not only from central to local county councils but also within each county council towards the providers. We will further on see that this decentralisation led to regional differences in uptake of new medicines.

Broadly, there are two ways to pay for innovations. One way is to integrate the innovation in the base payment mechanism. This possibility, however, generally takes considerable time. Therefore, many countries also use extra payment mechanisms, outside or on top of the base payment system, to support innovations in an earlier stage. These extra payments are often temporary, whilst integration in the base payment mechanism has a more permanent character.

The structure of this chapter is as follows. Section 16.2 focuses on the integration of innovation into the base payment system and illustrates for each of the countries the reimbursement time lag caused by the standard reimbursement process. In section 16.3 we zoom in on the extra payment mechanisms that are fully or in part dedicated to innovations, in addition to the base payment system. We present the mechanisms country by country and then conclude with a cross-country analysis, categorising the types of initiatives taken and reflecting on their consequences and the trade-offs to be made.

16.1.8 Methods

This chapter does not claim to be comprehensive but provides a broad description of the approaches taken to pay for innovations in the selected countries. The description of the innovation payment mechanisms is based on a grey literature search on the websites of government institutes, on a selection of peer-reviewed articles, on the chapter on innovations in the Euro-DRG report[5] and on a previous KCE Report on hospital payment systems.[2] Each country report was validated by a national expert.

16.2 Integration of innovation into the base payment system

Update frequency and time-lag to data of the base payment system

Table 36 shows the frequency of updates and the time-lag to data for the adaptation of the base payment system in each of the countries. For countries with a DRG payment system (England, France, Germany, the Netherlands, US Medicare and Sweden), the table shows the terms for both the patient classification system and the tariffs. For Ontario (Canada), the table shows the frequency of the inter-provincial authorised rates for in-patient services for public hospitals.

In most countries, both the patient classification system and cost data are updated annually. However, there is a time-lag to data for the clinical data of minimum 1 year and for cost data 2 years.[5] Once the data delay is completed, the base payment system only integrates the cost of the innovation to the extent that it has diffused. Depending on the take-up rate and the extent to which major investment is necessary, it may take 5 or more years before the cost of the innovation is fully reflected in the base payment rates. In the Netherlands, DRG tariffs can be based on expert opinion or negotiations between hospitals and insurers in case data for innovations are not yet available.

Frequent updates of codes and cost data may facilitate more rapid integration of innovations into the base payment system and thereby the actual uptake of innovations in hospitals. By basing initial tariffs on expert opinion or negotiations, instead of on DRG-cost data, incorporation of innovations into the base payment system can also be considerably sped up. However, there is also a downside to this way of setting the initial tariffs as it does not ensure a fair payment of healthcare services and is against the principles of basing tariffs on actual cost accounting data from a representative sample of hospitals.

Table 36 – Frequency of updates and time-lag to data for updating patient classification and tariffs in selected countries

		England	France	Germany	the Netherlands	US Medicare	Sweden	Ontario (Canada)
Classification	**Update frequency**	Annually	Annually	Annually	twice a year	Annually	Annually	Annually
	Time-lag to data	Minor revisions annually	1 year	2 years	Irregular	2 years	1-2 years	
Cost data	**Update frequency**	Annually	Annually	Annually	Annually or when considered necessary	Annually	Annually	Annually
	Time-lag to data	3 years (but every year adjusted for inflation)	2 years	2 years	2 years, or based on negotiations	3 years	2 years	2 years

Source for France, England, Germany, the Netherlands and Sweden: Busse et al.[5]; for US Medicare: US Department of Health and Human Services, Federal Register; for Ontario: Ontario Ministry of Health and Long-Term Care

16.3 Extra payment mechanisms for innovation in seven selected countries

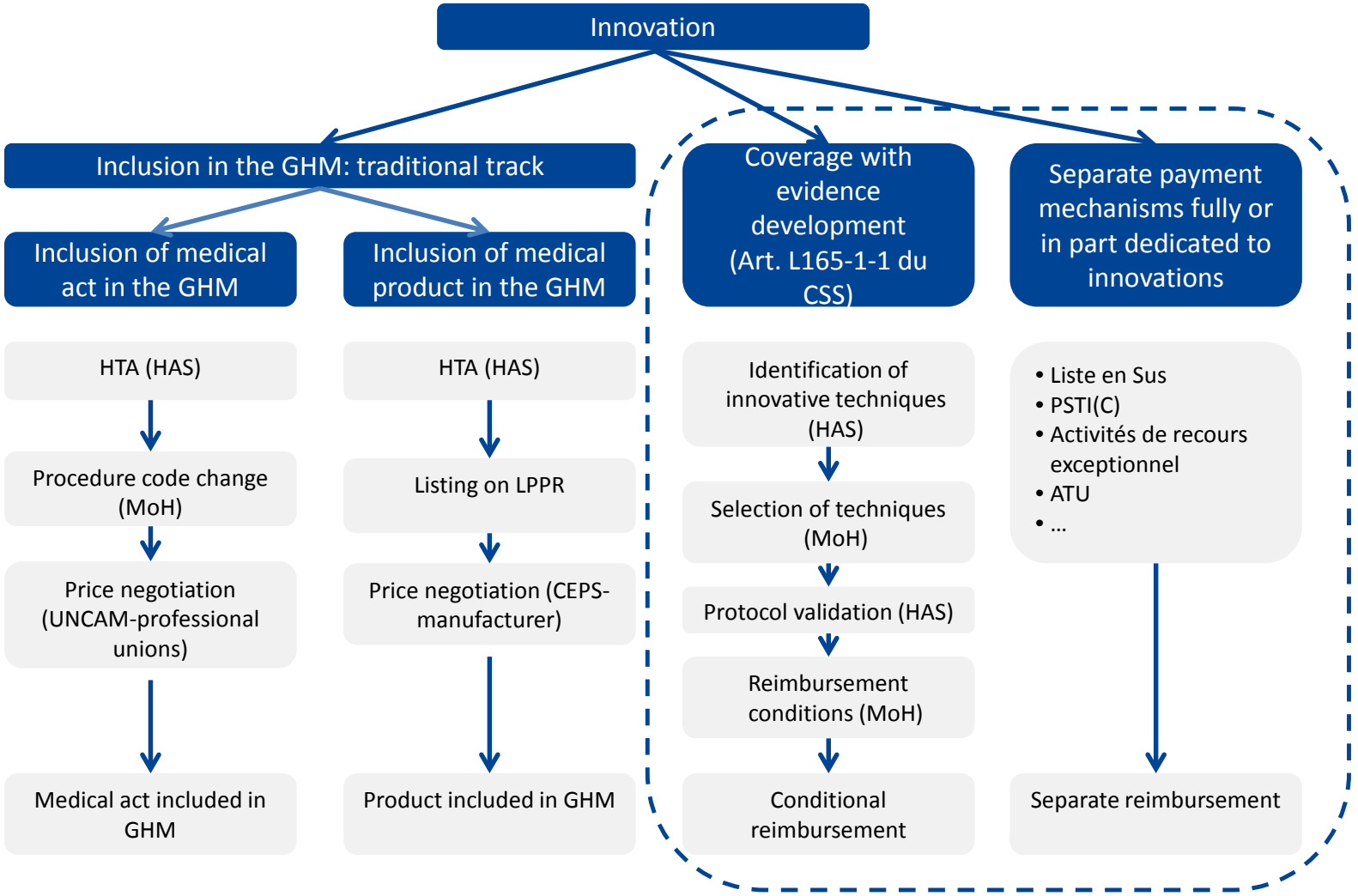
For each country covered in this chapter we look at the payment mechanisms outside the base payment system to bridge the initial payment gap. For each payment mechanism used, we consider a number of distinguishing factors:

- who can introduce candidate innovations: the payment authority, the hospitals or the industry;
- the criteria used for the selection of the innovations and the hospitals eligible for payment;
- whether any conditions are linked to the payment;
- which costs the payment intends to cover and how the payment level is determined;
- whether and how transition from the extra payment mechanism to the base payment system is enabled;
- the length of the payment period;
- the size of national expenditures spent on it.

16.3.1 France

Figure 43 shows the possible pathways for payment of innovations in France. Besides the traditional track for inclusion in the French DRG-system called ‘Groupe Homogène de Malades’ (GHM), several parallel pathways exist, amongst which the conditional reimbursement scheme and a variety of separate payment mechanisms that are either fully or in part dedicated to innovations.

Figure 43 – Possible pathways for payment of innovations in France



Adapted from: ISPOR (2011)[520]; ATU: Autorisation Temporaire d'utilisation; CEPS: Comité Economique des Produits de Santé; CSS: Code de la Sécurité Sociale; GHM: Groupe Homogène de Malades (DRG); HAS: Haute Authorité de Santé; LPPR: Liste des Produits et Prestations Remboursables; MoH: Ministry of Health; PSTI(C): Programmes de soutien aux techniques innovantes (en cancérologie); UNCAM: Union nationale des caisses d'assurance maladie

Coverage with evidence development scheme

France developed a scheme for coverage with evidence development (CED). The scheme, for which the rules are set out by Article L. 165-1-1 of the French Social Security Code, is applicable since March 2010. It provides total or partial coverage for innovations on a temporary basis and conditional on the execution of a study. The scheme targets innovations for which clinical potential previously has been demonstrated, but for which data are still insufficient to be considered for reimbursement in the base payment scheme. The French CED scheme only concerns one manufacturer at a time. The CNEDiMTS (Commission nationale d'évaluation des dispositifs médicaux et des technologies de santé; National Committee of Medical Devices and Health Technologies) within the HAS (Haute Authorité de Santé) identifies the relevant technologies, either inspired by rejected reimbursement submissions or through its own horizon scanning. The final decision is made by the Ministry of Health.

The scheme provides payment during two years via a lump sum covering the procedure, the product and sometimes the associated hospitalisation costs, in a specified target population and in a specified set of hospitals. The requested study outcomes are clinical and sometimes cost-effectiveness. In December 2011, the Ministry of Health selected the first three technologies: two medical devices and one therapeutic procedure, amongst which are the first insulin pump with low glucose suspend (LGS) and internal irradiation therapy for liver cancer.[521, 522, 523] For medicines, the CED approach has been introduced earlier than for devices and procedures. In 2007, for instance, an agreement was reported to cover risperidone at list price for patients with schizophrenia whilst the manufacturer performed a study to evaluate whether the treatment helped patients stay on their medication. If the study showed this was not the case, the manufacturer had to refund part of the money spent on the treatment.[524, 525] Based on the positive study results showing that the use of risperidone led to lower hospitalisation rates than with standard care because of better adherence, risperidone for schizophrenia was priced higher.[526, 527]

Liste en sus

The 'Liste en sus' or add-on list is a list of medicines and implants entitled to separate payments, on top of the GHM payments. Substantial funds are spent on this list. In 2010 it accounted for 6% of total hospital revenue (1700 million euros in 2008).[528] The list includes a large proportion of anticancer drugs (accounting for nearly 80% of all expenditures of the list).[529] Since its creation, the list has continuously been reviewed to better meet its objectives. During the first year in which the list was implemented (the year 2004), innovations were transferred to the list based on a single criterion: high cost. After the start-up period, the criteria were broadened to (1) high cost, (2) substantial effect on the homogeneity of the DRG system and (3) innovative character. The criterion of innovativeness, however, was only vaguely defined and did not allow rule-based deduction of reimbursement decisions. The fact that this criterion was easy to manipulate led to a strong increase in expenditures. Subsequently, in an attempt to control expenditures, volume targets and budget growth caps were imposed at the level of individual hospitals.[530] Hospitals exceeding the growth cap rate must implement the improvements required by the Agence Régional de Santé (ARS), for instance on the adherence to the Repository of Good Use ('Référentiel de Bon Usage', RBU) which covers the approved indications, the temporary therapeutic protocols and inacceptable situations.[531] In a consecutive step (at the end of 2010), the criterion of innovativeness was redefined and further specified. From then on, innovativeness is assessed by the added clinical benefit, notably by the ASMR ('amélioration du service medical rendu'). Currently, only drugs with an ASMR score I to III (major, important and moderate benefit) are candidates for the list.[529]

Missions d'enseignements, de recherche, de référence et d'innovation (MERRI)

The MERRI (Missions d'enseignements, de recherche, de référence et d'innovation) is a lump sum envelope distributed amongst a pool of hospitals with research, teaching, reference and innovation missions. It is part of the envelope for public interest missions ('missions d'intérêt général', MIG). The MERRI budget mostly finances university hospitals or hospitals associated to universities. It consists of three main subparts. The 'fixed' and 'adjustable' parts intend to cover activities and structures related to the mentioned missions in general. The 'variable' part finances missions more on a project and case-by-case basis:

- A fixed part (accounting for 24% of the MERRI in 2011)[532] which is gradually extinguishing and will be fully replaced by the 'adjustable' and 'variable' part by 2016.
- An adjustable part (accounting for 37%) which is distributed amongst all eligible hospitals based on four indicators relating to scientific publications, teaching, clinical research and valorisation.
- A variable part (accounting for 38%) which finances costs linked to individual projects. It includes payments for research and innovation projects launched by the General Directorate of Health Care Supply ('Direction Générale de l'Offre de Soins', DGOS), support structures for clinical research, highly specialised activities ensured by structures assuming a reference role, experimental care activities or provision of care not covered by the nomenclature or tariffs. The variable part comprises the PHRC, PRME, PSTI(C) programmes, as well as the payment programmes for specialised and complex activities and ATU drugs ('Autorisation Temporaire d'Utilisation'), each of which are described in more detail hereafter.
- **Le programme hospitalier de recherche clinique (PHRC)**

The programme for hospital clinical research (PHRC), provides grants for research in hospitals. After annual national and regional calls for proposals, research teams in university hospitals submit candidate projects for health technologies in pre-marketing stage to demonstrate their safety and efficacy in clinical trials. Independent experts review and select the projects in accordance with French priorities for public health. In 2012, 112 PHRC projects were financed nationally. A total budget of € 43 million was spent.[533]

- **Le programme de recherche médico-économique (PRME)**

Unlike the PHRC, the programme for medical economic research (PRME) targets technologies in post-market stage. PRME projects do not focus on the safety or efficacy but on the cost-effectiveness of an innovation. In 2013, 5 projects were running for a budget of € 12 million.[534]

- **Les programmes de soutien aux techniques innovantes couteuses (en cancérologie) (PSTI and PSTIC)**

The support programmes for costly innovating techniques (in cancerology) (PSTI and PSTIC) support the execution of comparative studies to demonstrate the clinical and cost-effectiveness of innovations for which the clinical efficacy has already been validated before. The results of the PSTI and PSTIC programmes are used to define the place of the innovation in a French healthcare context. The programmes facilitate and accelerate the evaluation by the Haute Autorité de Santé (HAS). Funds are granted to hospitals following national bi-annual calls for projects. The selection criteria include innovativeness, potential impact on care, previous clinical validation, multicentric character of the proposed study, methodological relevance and robustness of the clinical and cost-effectiveness protocol and experience of the teams. The criteria are evaluated by a multidisciplinary jury without conflicts of interest. € 22 million was dedicated to these payment channels in 2010. In total 49 hospitals benefited from funds through these programmes.[535]

- **Payments for specialised and complex activities**

The payments for specialised and complex activities ('Financement des activités de recours exceptionnel') provide financing for highly specialised and technically complex activities (other than drugs) on the condition that it can be shown that basic financing is not sufficient and that its use is restricted to a limited number of hospitals (maximum 50). This payment channel accounted for € 24 million in 2010, distributed across 95 hospitals.[536] Although innovativeness is not explicitly a criterion, this channel is de facto also in part used for innovations.[535]

- **Drugs with authorisation for temporary use (ATU)**

Before a new drug can be diffused on the French market, it requires a marketing authorization and price and reimbursement agreements. As these hurdles could delay access to new and promising drugs, French law authorises since 1992 the use of unlicensed drugs on an exceptional and

temporary basis through a programme, known as Temporary Authorization for Use (ATU). These drugs are permitted for use in patients suffering from rare or serious diseases for which there are no alternative treatments.[537] A study showed that the ATU programme fastened market access by a combined total of 36 months. Although in many instances, the ATU programme responds to a public health need by speeding up the availability of new drugs, this study also suggested the programme to be inflationary as on average, a 12% premium was paid to pharmaceutical companies for drugs under this status.[538]

Medical aids awaiting listing as reimbursable product

Within the envelope for public interest missions (MIG), payment is possible for certain medical aids awaiting to be listed on the LPPR (Liste des produits et prestations remboursables), such as cochlear implants and artificial hearts.[539]

16.3.2 Germany

German hospitals can use any new technology unless it is explicitly prohibited. Figure 44 shows the possible pathways created in the German payment system to support, steer and monitor the introduction and diffusion of innovation. The Neue Untersucherungs- und Behandlungsmethoden (NUB) payments serve as main entry point for inpatient use of innovations. Subsequently, they can be gradually or directly integrated into the more permanent payment methods D2, C1 or the G-DRG payment. For ambulatory care, a new CED scheme was recently created, however, it is only of limited use to hospitals as they do not provide a lot of ambulatory care. In addition, there is a separate budget for teaching and research at German university hospitals. The teaching and research budget is paid by the states, where the university hospitals are located. The rules for the distribution of funds for research and teaching differ across Länder.

Neue Untersucherungs- und Behandlungs-methoden (NUB) payments (E1)

The NUB payments, launched in 2005, are separate payments for diagnostic and treatment procedures that have just been introduced in Germany and that did not obtain a G-DRG code yet. Each hospital must first individually apply at the Institute for the Hospital Payment System (‘Institut für das Entgeltsystem im Krankenhaus’, InEK) which is in charge of maintaining the G-DRG codes and associated payment rates. The InEK subsequently selects the procedures based on:

- the novelty of the procedure,
- small number of patients and
- a need for extra funding.

Applicants must also provide data on patient benefit but this data appears not to be actually used in the selection process.[517, 540] If the application is selected by InEK, the successful applicant then negotiates with the sickness funds and has to conclude a contract in order to be reimbursed for making use of the innovation. The amount may differ between hospitals.[541] The agreements are valid for one year, but may be renewed, unless the activity has become part of other payment mechanisms.

The number of accepted technologies grew significantly over the years. For 2005, 26 technologies had been accepted.[517] For 2014, 98 different methods had been accepted, corresponding to 11 999 accepted requests from hospitals.[542] The financial weight of the NUB payments remains albeit relatively limited. In 2008, NUB payments accounted for 0.3 percent of total hospital revenue for those hospitals receiving NUB payments. They are mainly used by university hospitals.[480, 543]

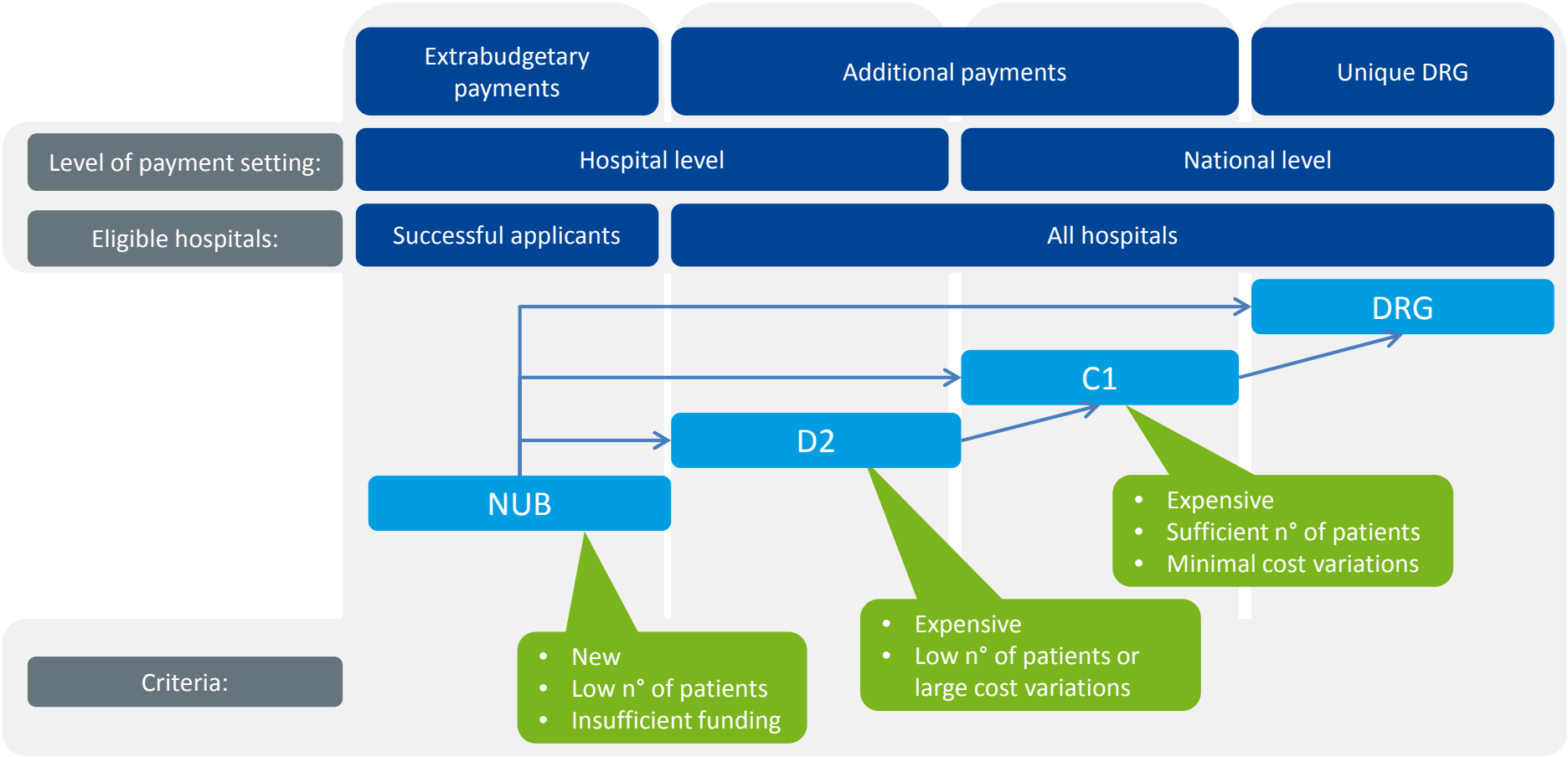
Approved applications are subsequently monitored by InEK to integrate the technology the next year either within the supplementary fees (‘Zusatzentgelte’), which can take the form of a locally determined supplementary fee (D2) or a nationally determined supplementary fee (C1), or within the G-DRG classification. Should this not be the case, hospitals can send a new NUB-application for the next year.[517]

Testing clause – CED scheme

In 2012, a law of the German Social Code (Section 137e SGB V), the so called 'Erprobungsregelung' or the testing clause, introduced an extra payment channel to further support the introduction of new medical technologies. As it is applicable for ambulatory care only, not for inpatient care or day cases, it is only of limited relevance for hospitals. Hospitals do provide some specialised ambulatory care, but they are allowed to do so only if the ambulatory physicians agree and if there is a need for specialised services in the area. Technologies tested under the CED scheme in inpatient care will be reimbursed either through the normal DRG or through a NUB payment.

This testing channel targets innovations with a clear potential for benefit but for which sufficient proof of benefit has not yet been documented. It focuses on new diagnostic and therapeutic treatment methods rather than on the device itself. Manufacturers or providers must apply to the reimbursement authority G-BA (Gemeinsamer Bundesausschuss). The G-BA selects the applications. Health authorities offer a partial financial support, up to 50% and for devices only, to the manufacturer(s) for evaluations. The German scheme makes it possible for more than one manufacturer with similar devices to participate in the trial. Once the device is reimbursed in the base payment scheme, the manufacturer is obliged to refund the G-BA for its payments made during the testing phase. The G-BA and the government coalition advocated to dedicate 50 to 80 million euros to the research fund for this new process.[544-546]

Figure 44 – Prototypical pathways for introducing new technologies into the regular G-DRG payment



Adapted from Henschke et al. (2011)[517]; NUB: Neue Untersucherungs- und Behandlungs-methoden

Local valuated supplementary fee (D2) for expensive drugs, medical devices and procedures

The D2 category is the lowest stage of integration within the regular G-DRG system. In this category, all hospitals may negotiate with sickness funds, while under the NUB regulation, only a selection of hospitals are allowed to proceed.[517] The supplementary fees are not only for innovations but for expensive drugs, medical devices, procedures and e.g. blood products.

National valuated supplementary fee for expensive drugs, medical devices and procedures (C1)

In a next step, once a sufficient number of patients is reached and variation in costs is minimal, the technology can move to the C1 category, where a national valuated supplementary fee is determined (C1).[517]

16.3.3 England

In 2011, the National Health Service's (NHS) chief executive officer published the paper "Innovation Health and Wealth, accelerating adoption and diffusion in the NHS" which stated that innovation must become core business for the NHS. Following the paper, a number of new initiatives supporting innovation were introduced.[547] Currently, England has a blend of additional payment mechanisms on top of the Healthcare Resource Group (HRG) payments, some of which are completely or partly dedicated to innovations.

CED scheme

In 2003 the National Institute for Health and Care Excellence (NICE) developed the capacity to promote additional research through an Only-In-Research (OIR) or Approval-With-Research (AWR) programme to gather primary evidence and inform guidance development. Since then, NICE has recommended many treatments only to be used in the context of randomised trials or studies. The use of laparoscopic surgery for colorectal cancer is an example. The technique was initially rejected by NICE and recommended only in the context of an ongoing clinical trial. When the treatment was reconsidered at a later date, it received positive guidance on the basis of evidence provided by the clinical trial.[525]

The OIR programme is meant solely for patients participating in a research programme for a certain technology. Under an AWR programme, the technology can be used routinely but further research is requested. In contrast to the German and French CED policies, the payment level setting and payment source is not formally described by NICE. The research can be paid by the manufacturer or the public sector, for instance the National Institute for Health Research (NIHR) or by the National Health Service (NHS). Like the French and German health authorities, NICE specifies the nature of the evidence required, but not clearly how studies should be designed.[523]

Commissioning through Evaluation programme

The Commissioning through Evaluation (CtE) programme, launched in 2013 by NHS, aims at improving access to services that have shown promise in terms of improving patient outcomes but that are currently not routinely paid by the NHS as there is still a lack of sufficient clinical and cost-effectiveness evidence. The CtE programme is particularly relevant to specialised services, and to other services and treatments with a small patient population, as there is typically less evidence available in these areas to support uptake in routine reimbursement.[548] Candidate treatments for the CtE programme have all been identified by clinicians and patient representatives. The selected treatments are funded for 1 to 2 years whilst new evidence must be gathered.

The first new treatment selected under the programme is Selective Internal Radiation Therapy (SIRT) to eligible patients with metastatic colorectal cancer and intrahepatic cholangiocarcinoma. Ten specialist centres have been selected to provide this treatment. As this particular treatment had been removed from the Cancer Drugs Fund in April 2013, NHS patients were not able anymore to receive SIRT. The only way patients could still be treated was if SIRT was paid for privately or if an application was made for its use under exceptional circumstances. With the new CtE policy, access to SIRT is restored and expectedly 220 patients will benefit treatment. The outcomes of SIRT's use under the CtE policy will be evaluated over a two-year period.[548]

In 2014, the NHS announced to expand its £ 16.9 million CtE programme. Specialist hospitals have been invited to submit expressions of interest to take part in four new schemes which will focus on the following service

areas: selective dorsal rhizotomy, left atrial appendage occlusion, patient foramen ovale occlusion and mitraclip. For each service area, provider selection criteria are imposed. Entry of cases into a national registry is mandatory and participation in clinical studies is considered particularly appropriate. To secure patient access, the selection of the centres – which have expressed an interest in taking part in the programme – also takes into account the geographical distribution of the centres.[549]

Single technology appraisal

Since 2006, NICE has opened a faster process which makes it possible to issue guidance closer to the time of marketing authorisation. This process, called the 'single technology appraisal' (STA) process, was designed to appraise a single technology with a single indication. OIR/AWR recommendations can be used within the STA process.[523]

Bilateral agreements on innovation payments

Local commissioners have been given freedom to make bilateral agreements with hospitals on innovation payments, provided that the following criteria are met:

- payment should be for a fixed period, with a maximum of three years;
- relevant cost-effectiveness information should be reviewed;
- the price should be agreed in advance;
- there should be appropriate procurement arrangements.

These should only be used for care that provides a step change from the standard care covered by the national tariff. In exceptional circumstances, commissioner and provider may agree to extend the arrangements for more than three years.[8]

List with technologies excluded from the HRG based payment

A number of drugs, devices and procedures are excluded from the HRG-based payment. All three of the following criteria need to be met in order for a device to be considered an exclusion from the HRG payment:

- high cost and representing a disproportionate cost relative to the relevant HRG;
- used in a subset of cases within an HRG and/or used in a subset of providers delivering services under a specific HRG;
- relatively high cost in terms of volume and cost.

Use of any drugs or devices must also be in line with relevant clinical guidance and guidelines, for example those issued by NICE. A significant proportion of HRG excluded drugs have been reviewed by NICE.[550]

The exclusion of high-cost drugs, devices and treatments is in support of innovation, and although technologies added to the list are likely to be new, exclusions are not limited to new ones. Some technologies may need to be excluded for a period of time until they can be appropriately funded through a national tariff. The reference to new devices has been removed from the criteria to reflect this.[551]

For all excluded items, commissioners and providers agree on a local price and an arrangement for monitoring activity. This local price forms a supplementary payment to the relevant HRG. In most cases, the payment should only cover the cost of the excluded drug, product or device and associated consumables.

In all cases, commissioners and providers need to determine whether they wish to agree volumes and prices for HRG exclusions as part of service-level agreements or on a case-by-case basis. Case-by-case payment is often limited to exceptional treatments.

Pass-through payments

Pass-through payments are supplementary payments made to providers over and above the relevant tariff reimbursement for use of a particular drug, device, treatment and technology or new application of existing technology (that is not part of the HRG excluded list) which could not have been expected when the price of the HRG was established. Primarily this applies to new technologies but could also apply to technologies that are not new but are of disproportionate cost relative to the HRG tariff.

Department of Health criteria for pass-through payments are:

- delivered in a limited number of centres;
- of disproportionate cost relative to the HRG tariff;

- and for new use for existing drugs, also coded to a relatively high volume HRG where the activity within the HRG is heterogeneous in nature.

Each hospital must apply separately to the local commissioner for pass-through payments. Pass-through payments are agreed through contracting.[552]

Regional Innovation Funds

The Department of Health introduced a legal duty for the strategic health authorities (SHAs) to promote innovation. Supporting this legal duty, SHAs hold Regional Innovation Funds worth £ 220 million over five years.[553]

The categories to which Regional Innovation Funds application fall under are two-fold. It can be

- supporting the spread and adoption of current innovations promoted within NHS England, or
- supporting the development or adoption of new ideas.[554]

The iTAPP programme

In November of 2010, the Innovative Technology Adoption Procurement Programme (iTAPP) was launched. This programme has been established to allow the NHS and industry to work together to identify high impact technologies and devices and to get them more quickly into everyday use across the NHS.[553]

Medical technology manufacturers or suppliers can submit innovative technologies to iTAPP. NICE analyses and prioritizes submitted technologies according to

- their potential to increase the quality of care provided to patients,
- whilst reducing the overall cost of care for the NHS.

Consequently the NHS Technology Adoption Centre (NTAC) supports NHS regional Innovation Leads to facilitate the selection of high impact technologies for wide adoption across their regions. Working with key regional influencers, NTAC helps individual hospitals to deploy the selected technologies.

Furthermore, although less specifically targeted to innovations, the following payments also cover innovations in part.

CQUIN (Commissioning for Quality and Innovation) rewarding scheme

The CQUIN payment framework (introduced in 2009) is a scheme rewarding quality and innovation. It enables commissioners to reward excellence, by linking a proportion of healthcare providers' payments to the achievement of local quality improvement and innovation goals in specified areas of care. As a pre-qualifier for CQUIN payments, providers must take action to introduce six high-impact innovations. An example of a high impact innovation is intra-operative fluid management. The NHS supports hospitals to improve their fluid management by providing guidance for alternative and new options in this domain.

Funding for specialised services

Additional payments, in form of a percentage of the relevant HRG tariff, are made to some specialised services where there is an additional cost of specialised activity compared to non-specialised activity within the same HRG. Specialised services are those with low patient numbers but which need critical mass of patients to make the treatment cost-effective. Particular challenges for these services include training staff, supporting high-quality research programmes and making the best use of scarce resources like expertise, high tech equipment and donated organs. Some procedure and diagnosis codes are determined as indicators of specialised activity.[551]

Unbundled HRGs

Under the latest version of HRG, some (high-cost) elements of treatment are separated from the base-HRG, generating unbundled HRGs that can be reimbursed as additions to base-HRGs. Therefore, one patient can have several HRGs. There are unbundled HRGs for high-cost devices and drugs, intensive care, etc. There are also unbundled HRGs to support shifting care from hospital to primary care or home setting.[8]

Flexibilities

Usually, if a drug does not appear on the high-cost drug exclusion list, then it is within the scope of HRG, unless it is part of an excluded service. Occasionally, a rarely used medicine, which has not been formally excluded on the basis of this criteria, may be of a cost that is disproportionately high relative to the expected costs within the HRG. In this circumstance, commissioners and providers can make use of the flexibilities to reach local agreement. These flexibilities may also apply to new drugs or technologies introduced into the market, particularly after tariff and its exclusions have been published for a given year.[551]

16.3.4 US Medicare

The Medicare program of the federal government in the United States covers hospital inpatient, ambulatory, and post-acute care for 50 million people who are age 65 or older, disabled, or have end-stage renal disease. On top of the hospital inpatient base payment system that is based on Medicare Severity Diagnosis Related Groups (MS-DRGs), several initiatives have been taken to encourage uptake of innovations. The New Technology Add-on Payments (NTAP) program makes extra (above DRG) payments to hospitals on a per case basis when they use approved new, high cost technologies that are already Medicare-covered items or services. The CED scheme imposes research as a condition for coverage and payment when a new technology looks promising but available information is insufficient to establish its clinical benefits. Finally, the Innovation Center is works to develop and provides payment for a broad range of innovation domains, including innovative delivery of care.

New Technology Add-on Payments (NTAP)

Since 2001, uptake of new high-cost technologies in the US Medicare program has been encouraged through the NTAPs. The NTAP program covers inpatient operating costs in the hospital inpatient prospective payment system (IPPS) and thus targets innovative drugs, implants, devices, and procedures but not large equipment. In order to be eligible for the NTAPs in the IPPS, a technology must meet three conditions:

- The technology must be new. This is generally defined as within two to three years following Food and Drug Administration (FDA) approval or market introduction, if later.
- The existing MS-DRG payment for the care service involving the technology must be insufficient to cover the higher costs for cases that use the technology. To meet this criterion, hospitals' average standardised charges for cases involving the technology – often collected during controlled trials prior to FDA approval – must exceed MS-DRG-specific charge thresholds published annually by Centers for Medicare and Medicaid Services (CMS).
- The technology must have a substantial clinical benefit over existing alternative technologies, or offer options for diagnosis or treatment of previously untreatable conditions.[555, 556]

CMS defined this third criterion as follows:

- "The technology offers a treatment option for a patient population unresponsive to, or ineligible for, currently available treatments.
- The technology offers the ability to diagnose a medical condition in a patient population where that medical condition is currently undetectable or offers the ability to diagnose a medical condition earlier in a patient population than allowed by currently available methods. There must also be evidence that use of the device to make a diagnosis affects the management of the patient.
- Use of the technology significantly improves clinical outcomes for a patient population as compared to currently available treatments."

The evaluation of this criterion, however, was criticized for lacking clarity. Despite the critics, the criterion has remained unchanged.[555]

If a technology is accepted to the NTAP list, all hospitals are entitled to payments for use of the technology. As the programme aims to share the financial risk of costly new technologies it only finances part of the cost. The NTAP amount equals 50 percent of the amount by which the total covered costs of the patient exceed the DRG payment, capped at 50 percent of the costs of the new technology.[555]

The NTAPs are to be provided until the CMS have inpatient claims data for DRG rate setting that reflect the added costs of the new technology, generally no more than 3 years.

Initially, the NTAP programme was required by law to be budget-neutral. However, the budget-neutrality requirement was a cause of concern among hospitals since additional payments for new technology would be financed

by reductions in all other DRG payments to hospitals. Consequently the budget-neutrality requirement was eliminated and since then hospitals have advocated for more expansive application of the NTAP programme.[555]

A similar program of temporary add-on payments for new technologies applies when approved new technologies are used in the hospital outpatient setting. For hospitals to receive new technology payments for outpatient services under the hospital outpatient prospective payment system (OPPS), a new technology must meet criteria similar to those in the inpatient NTAP program. Complete new procedures that are not part of a more comprehensive service may be assigned to a new technology Ambulatory Payment Classification (APC). In this case, the predetermined payment is based on CMS' best estimate of the cost of the new procedure. For new devices or drugs and biologicals that are part of a more comprehensive service, CMS may make temporary transitional pass-through payments in addition to the normal payment for the APC for the more comprehensive service. The transitional payments are intended to reflect the hospital's additional costs of using the new device, drug, or biological in place of the previous technology. While the approval criteria are similar to those in the inpatient NTAP program, a new device, drug or biological may receive pass-through payments without demonstrating substantial clinical improvement compared with other existing technologies. As in the inpatient NTAP program, new technology payments generally continue for 2 to 3 years; then the new technologies and their added costs are folded into the relative weights for the relevant clinical APCs.

CED scheme

In 2006, CMS instituted a coverage with evidence development (CED) scheme which offers an option for payment of promising drugs, biologics, devices, diagnostics, and procedures that would not otherwise meet Medicare's evidentiary standards for being 'reasonable and necessary'.[557] It provides an option to fund an innovation to collect primary data that informs decision making when uncertainty exists regarding efficacy or effectiveness. Two separate CED schemes exist:

- 'only in research', which restricts coverage to patients receiving the intervention as part of a clinical study or registry, and
- 'only with research', which does not necessarily limit coverage to those patients participating in a study or registry, respectively.

The distinction between the two schemes is primarily the degree of coverage that the payer confers during the period of evidence generation.[525] Following CED, Medicare's coverage decisions can be reviewed. If the data support a change in the coverage decision, Medicare will change its decision. An example CED scheme is that for Positron Emission Tomography for Solid Tumors and Myeloma.[558]

Medicare and Medicaid Innovation Center

More recently, in 2011, a Medicare and Medicaid Innovation Center was set up. This center is charged with identifying, developing, testing, and disseminating alternative models of paying for, organising, and delivering care. The Innovation Center aims at helping produce reforms by working in partnership with providers, payers and patients. It does so by providing block funds for pilot projects and helping to encourage broader adoption of the best initiatives.[559]

Registration of innovations

Registration (or coding) by CMS is distinct from coverage of a new technology. Assignment of a new code does not automatically imply coverage by any payer. However, for items and services newly covered by Medicare, CMS may assign either an existing code that describes a similar item or service, a miscellaneous code (e.g., a not elsewhere classified code or a not otherwise specified code), or a new code for payment purposes. Payment for many technological advances can be made under one of Medicare's payment methodologies without being preceded by an explicit coding change.[558]

16.3.5 The Netherlands

Currently, mainly three payment related initiatives exist in the Netherlands to support the uptake of innovations: a CED scheme, a list for expensive drugs and registration of innovation Diagnosis Treatment Combinations (DBCs), the Dutch DRGs. Before 2012, Dutch healthcare insurers and hospitals had the possibility to agree on an extra 2 to 5% on the hospital budget that could be spent on innovation in care.[560]

List for expensive drugs

Since 2002, the Dutch Healthcare Authority ('Nederlandse Zorgautoriteit', NZa) maintains a list with expensive and orphan drugs and related indications for entitlement to supplementary payment, on top of the regular hospital budget for drugs. Requests can be submitted by representatives of hospitals, medical specialists and insurers. Drug companies are not allowed to submit a request.[561]

The list follows a Coverage with Evidence Development approach. Selection of the drugs is based on three conditions:

- costs of the drug (as of 2012 the threshold is over 10 thousand euros per patient per year; in the past other thresholds were used, e.g. over 2.5 million euros for all Dutch hospitals and over 0.5% (expensive drug category) or 5% (orphan drugs) of the annual hospital drug budget);
- added therapeutic value;
- a plan for the assessment of cost-effectiveness in daily clinical practice approved by the pharmaceutical advisory committee.

As there were many requests for the list in 2011, the Health Care Insurance Board ('College voor Zorgverzekeringen', CVZ)[xxx] had a processing delay and the minister decided to temporarily loosen the criteria in order to be able to open the list for new submissions in 2012. The criteria were restricted to the cost criterion only.[562]

After three years, data generated in the context of the assessment plan are used to inform decisions on further funding.

From 2002 to 2004, the expensive drugs were paid maximum 75% of the net purchase cost. From 2004 onwards, they were paid 80%. From 2012, the add on to the DBC payment is based on 100% of the purchase cost (i.e. maximum price minus discounts).[563]

In 2013 the NZa announced to delete a number of drugs and indications from the list as they cost on average less than 10 thousand euros per patient per year. Following a court case, however, the NZa maintained these drugs on the list as the judge decided that the hospitals and insurers could not timely prepare this change for their negotiations for the year 2014.

This policy for supplementary payments is expected to be changed in 2015. Insurers and hospitals will from then on be able to propose which drugs in inpatient setting they want to charge separately. If they submit a proposal, the NZa will ask advice from other hospitals and insurers. On the basis of this advice, the NZa will take a decision.[564]

Conditional reimbursement of promising innovations

More recently, since January 2012, the Minister of Health introduced the instrument of 'conditional access to the base package. The instrument can be used for innovative care, but also for care that is already covered in the base package but that has come subject to doubt as to its effectiveness or cost-effectiveness. The CVZ introduces proposals for conditional reimbursement and the Minister makes the final selection. In the period of conditional access, care providers collect effectiveness and or cost-effectiveness data. After the research period, definite decision can be made to include or stop the coverage.

DBC-Maintenance ('DBC-Onderhoud', DBC-O) together with CVZ, NZa, the Dutch Organisation for Health Research and Development ('Nederlandse organisatie voor gezondheidsonderzoek en zorginnovatie', ZonMw), the Healthcare Insurers Association ('Zorgverzekeraars Nederland', ZN) and the Federation of Patients and Consumer Organisations ('Nederlandse Patiënten Consumenten Federatie', NPCF) compose a work group that guides the conditional reimbursement trajectory, defines the procedure and the criteria for conditional reimbursement and eventually evaluates the gathered data.[565]

Innovation DBCs

Innovation DBCs are DBCs temporarily added to the DBC system. Amongst the hospitals allowed to participate, a uniform research design and research period is agreed. The temporary DBC allows physicians to correctly register the utilisation of the innovation and gives the innovation a 'legal' status. Innovation DBCs, however, are not automatically covered by the Health

[xxx] The name of CVZ changed in 2014 to Healthcare Institute the Netherlands ("Zorginstituut Nederland", ZiN).

Insurance Act ('Zorgverzekeringswet', Zvw). They can be candidate for conditional payment from the Zvw. After the agreed period, innovation DBCs are subject to the evaluation by CVZ for incorporation in the regular DBC system.[566]

16.3.6 Sweden

Methods for hospital payments in Sweden vary between county councils. The county councils are responsible for both the financing and organisation of healthcare services, and most hospitals are owned and operated by the county councils. Depending on the county council, the base payment system can be supplemented with additional payments for innovations or additional payments for high-cost outliers.[5] Besides these additional payments, Sweden also has a CED scheme. Furthermore, two national initiatives promoting innovations in healthcare are briefly presented here, although they are paid by the Ministry of Enterprise.

The decentralisation of responsibilities in Sweden enabled regional differences in the governance and provision of healthcare between county councils. Local self-government in Sweden is partly intended to create customised solutions to service delivery rather than similar services in all county councils and regions. The strong tradition of local self-government has however also led to unintended regional differences, for example with respect to the uptake of new medicines. Regional differences with regard to treatment practices and treatment results as well as difficulties in coordination of care between county councils and municipalities have been debated during the 2000s.[567]

CED scheme

An example of a coverage with evidence development scheme in Sweden is the agreement on the use of rosuvastatin for high cholesterol, whereby the manufacturer agreed to provide additional data on the use of the drug in clinical practice and the long-term effects of the drug on morbidity and mortality.[525]

Funding for testbeds (innovation hubs) for new technology

The Swedish Agency for Innovation Systems (Vinnova - organised under the Ministry of Enterprise, Energy and Communications) is providing funds to support planning and development of dedicated testbeds in the healthcare sector. The aim of the initiative is to strengthen the capacity for innovation in healthcare and elderly care. The funded testbeds create open test and demonstration environments for businesses and healthcare providers who want to test, validate and demonstrate the benefits of their innovations. The total budget for the testbed initiative is about 70 million SEK (around 7.7 million euros) during the period 2011–2016.[568] An example testbed is the one for innovative radiotherapy. This testbed is meant to create a gateway to clinical multicenter studies at all Swedish university hospitals.[569] All seven Swedish university hospitals take part in this initiative. They collaborate with the industry and are coordinated by Karolinska University hospital. The testbed has been described as a triple helix interaction between healthcare, academy and industry cooperating throughout the different stages for bringing innovations to the patient.

Funding of challenge driven innovation related to healthcare

The Vinnova provides funds through the programme 'utmaningsdriven innovation' cross-sector research to promote innovation within healthcare. The aim has been to enable innovation of new end user centric health processes and services by a better integration of the different areas of research within academia, together with private and public stakeholders. Focus areas have been improved quality of life for elderly, smart IT for healthcare and innovative treatments methods.

16.3.7 Ontario – Canada

In order to be approved for reimbursement and after licensing has been obtained, all new health technologies must undergo health technology assessment by the Ontario Health Technology Advisory Committee (OHTAC). As often there are insufficient data to make a recommendation, two programmes were developed to deal with this uncertainty. For non-drug technologies in post-market phase, the Medical Advisory Secretariat (MAS) developed in collaboration with several academic partners a field evaluation programme. For technologies in pre-market phase, a new model of market entry was created, combining research required for both licensing and reimbursement decisions: the EXCITE process.

Field evaluation programme

Since 2003, the field evaluation programme has included a diverse range of non-drug health technologies. A study of 2011 reports that nineteen field evaluation studies had been completed and that an additional nineteen were under way. Of the nineteen completed studies, ten met the definition of CED. In each case, the CED addressed the residual uncertainty and led to a decision based on the systematic review and CED result. The CEDs led to adoption of the technology in six instances, modified adoption in three instances and withdrawal in four instances.[570]

Technologies are selected based on the quality of evidence of effectiveness assessed following the Grading of Recommendations Assessment, Development and Evaluation (GRADE) process. Using GRADE criteria, further research is deemed less likely to affect the confidence in the estimate when the quality of evidence is moderate to high. Therefore, low to very low quality evidence often triggers consideration for a field evaluation if the technology is deemed to have potentially important effects. The assessment of cost-effectiveness, social values, feasibility of implementation and concerns regarding generalizability are additional components of the OHTAC decision-making process that may also trigger a field evaluation.[570]

Field evaluations are conducted by institutions such as the Ontario Clinical Oncology Group (OCOG) or the Programs for Assessment of Technology in Health (PATH). The Ministry of Health and Long-Term Care (MOHLTC) provides core support to these institutions and incremental allocations for each field evaluation. The total cost of each field evaluation was estimated at CAN $ 600 000 (roughly 400 000 euros) which includes protocol development and implementation and costs attributed to data collection, analysis and reporting. This estimate does not yet include costs absorbed by institutions or of the technology being tested.[570]

Excellence in Clinical Innovation and Technology Evaluation (EXCITE) process

EXCITE evaluations generate the data needed to support both Health Canada and OHTAC on licensing and reimbursement recommendations. Through the EXCITE process, the health system involves technology companies earlier on than traditionally.

The EXCITE process involves three phases: application, consultation and evaluation.

- Application (3 to 4 weeks)

Companies can apply to the EXCITE program upon a biyearly call for innovative technologies. An OHTAC-subcommittee conducts the first-level review, providing insight into the appropriateness of the health technology for the Ontario health system.[571] The EXCITE Management Board, which includes representatives from the full spectrum of health technology stakeholders, government, academia and the broader health system, reviews and selects technologies for prioritization and escalation to the next step in the process.

- Consultation and protocol development (roughly 8 to 12 weeks)

Companies work together with a methodological centre and EXCITE for developing an investigational testing protocol. The protocol is developed in an iterative way.[572]

Proposals are designed to address:

  - regulators' needs (safety and efficacy) in Canada and elsewhere, if requested;
  - additional health system requirements (clinical utility, comparable effectiveness through systematic review and economic analysis);
  - matters relevant to the expedited adoption of the technology following licensing.

A fee is levied to partially defray the costs of the consultation phase. As part of the consultation phase, a detailed budget is made for the evaluation phase. The entire evaluation fee is transferred directly to the methodological centre assigned to the technology.

- Evaluation (18 to 36 months)

Once the company accepts the proposal, budget and timeline, the preparation of the evaluation phase begins:

  - The methodological centre expands the proposal into a protocol for submission to institutional research ethics boards (REB).
  - The EXCITE Quality Assurance (QA) committee provides feedback on possible safety considerations.

- The methodological centre begins to establish the practices required for regulatory compliance.
- The manufacturer obtains an Investigational Testing Authorization from Health Canada, which is required for the clinical investigation to occur.

Once these tasks are completed, the methodological centre and the participating sites can begin recruiting patients.

The methodological centre prepares the final report, which includes a statistical analysis of the data and related conclusions, and submits it to the company. As facilitated by EXCITE, OHTAC will use the final report to review the technology and, if the data is supportive, make a decision regarding recommendations to the Ministry of Health and Long-Term Care for adoption. The decision will be communicated to the Ministry only after the technology has obtained licensing approval from Health Canada, which is the responsibility of the health technology company (as per regulations).[573]

16.4 Extra payment mechanisms for innovation: cross-country analysis

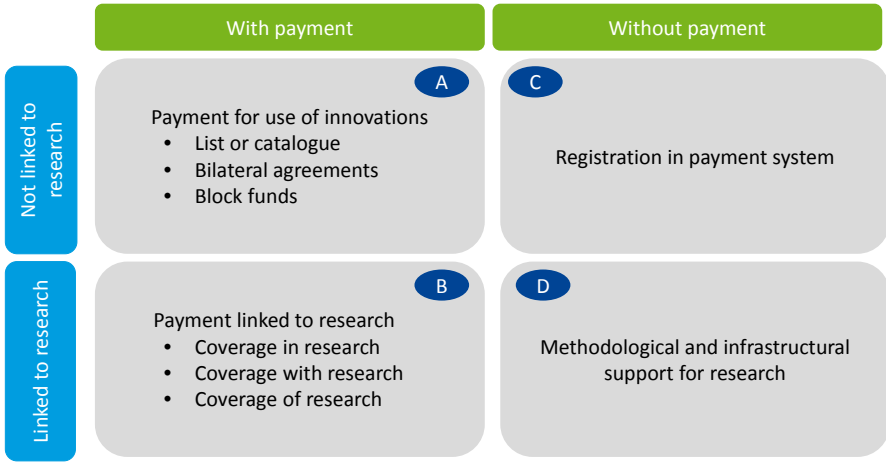
16.4.1 Overview of instruments specifically targeting innovations

The country descriptions show that payment authorities use a variety of mechanisms to encourage, steer or monitor the uptake and diffusion of innovations. The mechanisms can be broadly categorised into four types (see Figure 45) based on (1) whether the instrument relates to the use of the innovation only or also encourages doing research on it and (2) whether the instrument provides financial payment or is limited to non-financial types of support. The four types distinguished are:

- Payments for the use of an innovation (A)
- Payments encouraging research on an innovation (B)
- Registration of the introduction of an innovation (C)
- Methodological and infrastructural support for research on an innovation (D)

Each of the types are further described below.

Figure 45 – Innovation instruments used by payment authorities



16.4.1.1 Payments for the introduction of an innovation (A)

A first category of payment instruments consists of payments on top of the base payment system dedicated to innovations. As they are not subject to the lengthy process for inclusion in the base payment system, they may considerably shorten the time to reimbursement for innovations. Several types of payments can be observed: payments based on a list of innovations, payments based on bilateral agreements and block funds covering wider innovation projects. An essential feature of this category of payments is that they are not conditional on or linked to research.

List or catalogue

Several countries have created a list for innovative or expensive technologies that are financed through supplementary or stand-alone payments. Examples of such lists are the 'Liste en Sus' in France and the 'C1' and 'D2' lists as part of the DRG-catalogue ('Fallpauschalen-Katalog') in Germany. The list may be restricted to drugs and implants (as is the case in France), or may also cover devices and procedures (as is the case in England and Germany).

Once a technology is on the list, all or a selection of hospitals are entitled to payments for use of these innovations. A list can be positive (which means

that all technologies listed are automatically entitled to payments) or negative (all technologies listed are excluded from the base payment system but they are not automatically entitled to separate payments). In England, for instance, a negative list is made for all drugs and devices that are excluded from the HRG-payment. Exclusion from the list allows local commissioners to negotiate with hospitals on eligibility for reimbursement and price-setting for these technologies.

Given that not every hospital needs to submit an application separately, a list or catalogue allows relatively easy access to a broad user base for a broad range of care products.

Budget control measures for such lists can be taken either at global budget level by e.g. putting a growth cap on the envelope or at the level of the individual technologies through pricing and volume conditions, conditions regarding proper use, or alternatively by making payment conditional to outcomes. Two types of outcome based agreements can be distinguished:

- money back guarantees and
- conditional treatment continuation.[525]

Money back guarantee schemes involve the health service being refunded if a patient does not achieve a specified target. An example of such a scheme is the agreement in the NHS between Park Davis and North Staffordshire Health Authority for the use of atorvastatin in patients with high cholesterol. The manufacturer agreed to rebate the health authority if patients did not achieve a low density lipoprotein cholesterol concentration target of less than 3 mmol/l after treatment with atorvastatin.[525] Conditional treatment continuation, on the other hand, involves payment for the continued use of a technology only in patients who have achieved a target clinical effect. An example of such an agreement is that between Johnson and Johnson and the UK's NHS for the use of bortezomib for multiple myeloma. Johnson and Johnson agreed to repay the NHS in either cash or product for patients who fail to respond after 4 cycles of treatment with bortezomib. Those who respond would receive an additional 4 cycles of the treatment.[525]

Bilateral agreements

Examples of bilateral agreements are the NUB agreements in Germany, the Innovation payments in England and the ATU drug payments in France. Unlike a list which sets up payments on many-to-many basis (multiple innovations, multiple providers), bilateral agreements are made on one-to-one basis. In other words, the agreement determines payments for use of a single technology in a single hospital. Pricing, volumes and other agreed conditions may vary from contract to contract. Agreements can be made as service-level agreements for a given technology or on a case-by-case basis for a given patient. The case-by-case approach is likely appropriate for exceptional treatments only.

Budget control measures can be taken at individual contract level or at the global – national or regiona – envelope level. Since every hospital needs to submit an application separately for a given technology, this payment method involves a higher administration load than a list.

Block funds for innovation projects

Several countries (England, France) manage general funds for which all hospitals can apply with an innovation proposal. Like bilateral agreements, agreements for block funds are also typically made on one-to-one basis (covering one innovation project at one hospital), but their payment consists of a lump sum payment, in contrast to fee-for-service payments. This type of payment is more appropriate for innovation projects covering a wider range of resources than only drugs, devices or procedures.

16.4.1.2 Payments encouraging post-market research on innovation (B)

A second type of payments consists of payments encouraging post-market research. Payment authorities have been increasingly interested to explore this second category of payments in order to address the uncertainty regarding the societal desirability of innovations, as illustrated earlier by the evidence gap. The options include 'coverage with research', 'coverage in research' and 'coverage of research'.

Coverage in research and coverage with research

The coverage with research and coverage in research schemes are often referred to as coverage with evidence development (CED) schemes. Coverage in research schemes restrict coverage to patients receiving the intervention as part of a clinical study or registry, whilst coverage with research schemes do not necessarily limit coverage to those patients participating in a study or registry.[515]

The list for expensive drugs in the Netherlands is an example of the coverage with research approach. Drugs can be included on the list for up to four years on the condition that hospitals have an approved plan for cost-effectiveness assessment in daily practice. Costs of the drugs are reimbursed, but the study costs are borne by the hospital, the drug company or both.

The German testing clause is an example of coverage in research. Evidence generation in this payment scheme is passed on to independent scientific institutes or methodological centres. Sickness funds reimburse the innovation, whilst companies contribute to the overhead costs of the study.

By linking temporary payment to research activities, CED schemes allow healthcare providers to give patients earlier access to promising technologies whilst reducing the risk for payment authorities to make a wrong decision and giving manufacturers more time to make returns before patent expiration. Although often seen as promising, the implementation of CED schemes is not guaranteed to be successful. Based on practical experiences with CED in a number of countries, it was found that many informants consider the current processes 'unpredictable', 'case-by-case', and 'reactive'. Furthermore, CED schemes struggle with difficulties to get commitment from physicians and manufacturers to execute the studies according to the plan, leading to insufficient evidence generation to support reimbursement decision-making.[574]

Coverage of research

Whilst CED schemes generally cover the cost of the innovation only, not the study costs, other programmes exist that cover both the cost of the innovation and the study costs. The PSTI and PSTIC programmes in France are an example of such payments for supporting research on comparative effectiveness. Only technologies for which the clinical benefit has been previously validated are eligible for these payments.

16.4.1.3 Registration of innovations (C)

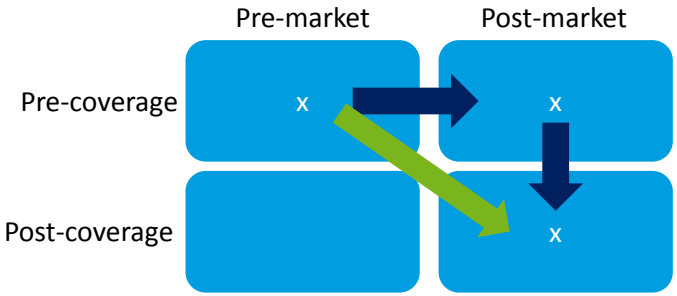
A third category of instruments used by payment authorities, although they do not necessarily involve payment, consists of registering innovations as part of the payment registration. The creation of a new code can be considered a very first step of a possible integration into an extra payment mechanism or the base payment system. Registering innovations prevents healthcare providers to bill another intervention as if it where the innovation and enables payment authorities to start gathering volume and cost data on it. The creation of a new code however is not always necessary as often innovations will (and are allowed to) be coded under an existing code.

16.4.1.4 Methodological and infrastructural support for research (D)

A fourth category of instruments used by payment authorities consists of methodological and infrastructural support for research on innovations. Depending on the authority of the payment institute, the support may be oriented towards research in the post-market or pre-market phase.

In Ontario (Canada), for instance, a new programme has been created, in which the payment authority starts the dialogue with manufacturing companies earlier on than typically at the point of reimbursement request. The programme, called EXCITE, can be seen as a hybrid policy tool, sharing the goals of efficiently managing the post-market introduction of promising innovations in hospitals on the one hand, and helping companies succeed in the pre-market phase on the other hand. If the technology is selected, companies receive methodological and infrastructural support for the execution of studies required for both licensing and reimbursement authorities. The costs of the research and the innovation are left to the companies. The required studies are performed at methodological centres. These are usually academic hospitals that have experience in multi-centric clinical trials methodology and health technology assessment. By streamlining pre-market studies with the requirements of not only licensing but also reimbursement authorities, the programme offers manufacturers the advantage of eliminating the need for post-market evidence generation (see Figure 46 where the green arrow represents the streamlined way from a pre-market pre-coverage to a post-market post-coverage situation; the blue arrows represent the traditional two-step pathway).[575]

Figure 46 – Streamlining evidence generation for licensing and reimbursement decisions in the EXCITE programme in Ontario



16.4.1.5 Overview of instruments used in the countries

Table 37 provides an overview of the extra payment mechanisms used for innovations in the analysed countries. Most of the countries combine multiple payment schemes. A CED scheme has been developed in all analysed countries. Five countries use a list for drugs, implants or devices. Four countries award block funds for innovation projects. Bilateral agreements are only used in three countries. Registration of innovations and methodological and infrastructural support for research are only used by a single country.

Table 37 – Overview of extra innovation payment mechanisms used by payment authorities

		France	England (UK)	Germany	the Netherlands	US Medicare	Sweden	Ontario (Canada)
A	List of innovative or expensive drugs, implants or devices	√	√	√	√	√		
	Bilateral agreements with individual hospitals on individual technologies	√	√	√				
	Block funds for innovation projects	√	√	√		√	√	
B	Coverage in or with research	√	√	√	√	√	√	√
	Coverage of research	√						
C	Registration of innovations	√	√	√	√	√	√	√
D	Methodological and infrastructural support for research		√					√

16.4.2 Broader instruments covering innovations

Although they may not be specifically targeted to innovations, other payment mechanisms exist for which innovations are often candidate. In many countries, innovative treatments can also be eligible for cost-outlier or specialised treatment payment or any other payment aimed at handling heterogeneity within the base payment system or covering a payment gap. As there is a considerable overlap between innovative, expensive and specialised treatments, the design of payment mechanisms for innovation requires alignment with that for expensive and specialised care. Indeed, introduction of innovations mostly pose a problem when they are expensive. Expensive care on the other hand may require special payment mechanisms, regardless of whether they are (still) innovative. Furthermore, it may be desirable to limit the diffusion of expensive innovations to specialised centres.

Payments for specialised activities

In France for instance, payments exists for activities ‘de recours exceptionnel’. It is part of the variable part of the MERRI and finances highly specialised and technically complex activities. A number of conditions need to be met. It must be shown that base payment is not sufficient and the activities must be restricted to a limited number of hospitals. In England for instance, some specialised services that have an additional cost of specialised activity compared to non-specialised activity within the same HRG are eligible for additional payments.

Payments for expensive treatments

Payments for expensive treatments like the supplementary fee D2 and C1 categories in Germany do provide a possible payment option for high-cost innovations, though these payments are not restricted to innovations only.

High-cost outlier funding

In US Medicare and some county councils in Sweden, expensive innovations can be paid via additional payments for high-cost outliers.

Quality and innovation rewarding schemes

In case of innovation rewarding schemes, hospitals are granted a financial reward on the condition they meet predefined goals. The bonus can for instance be a percentage of total revenue. In England, for instance, hospitals are financially rewarded for meeting predefined goals in terms of quality and innovation. Hospitals can earn an additional 2.5 per cent of income if they meet specified standards in a number of quality and innovation domains (e.g. intra-operative fluid management). Innovation rewarding schemes are not intended to fund technologies in specialised centres but rather to stimulate innovations that can be rolled out in all hospitals.

For more examples and detail we refer to the country descriptions.

16.4.3 Criteria for eligible innovations

The selection processes vary considerably from country to country and from one payment instrument to another. A very first differentiating element is in who is allowed to submit candidate innovations. In some cases, submitting candidate innovations is restricted to the payment authority itself, or to hospitals; in other cases, submissions are open to manufacturers.

Furthermore, also the criteria to select the innovations differ considerably. Observed criteria are listed here, in no particular order:

- innovative or new;
- high cost or cost above the base payment;
- creating heterogeneity within the base payment system;
- added therapeutic value or cost-effectiveness;
- low number of patients;
- low number of hospitals.

Definitions used vary between countries and vary in degree of precision. The criterion 'innovativeness' or 'novelty' for instance has been defined in several ways. In the NTAPs in the US Medicare scheme, novelty is translated as 'within two to three years after FDA approval or market introduction'. For the Innovation payments in England, innovativeness is defined as providing a step change from standard care. The "Liste en sus" in France currently immediately links innovativeness to the criterion of added clinical benefit. Only products with a major to moderate added clinical benefit are considered as truly innovative.[529]

High cost, or a cost above the base payment system, is one of the most widely used criteria. In some countries it even appears to be the most prevailing one.[5] The question arises whether applying the high-cost criterion creates perverse incentives on price-setting by manufacturers. Most payment mechanisms do include the requirement of clinical benefit but the extent to which this criterion is detailed and effectively influences the decisions varies. For most extra payment instruments, cost-effectiveness evidence is no requirement. Furthermore, many evaluators seem to prefer to keep some flexibility and discretion in their evaluation process.[555]

Setting criteria right appears not always an easy task. Some countries adapted their criteria over the years. In France, the 'Liste en sus' was initially based on the criterion of high cost only. Later on, "innovativeness" and 'creating heterogeneity in the DRG' were added. However, since the criteria were not well defined, expenditures kept on growing. Eventually, and after a number of budget measures, the 'innovativeness' criterion was detailed. In the Netherlands, criteria for separate high-cost drug payments were temporarily restricted to the high-cost criterion in order to catch up with an administrative backlog.

16.4.4 Measures to manage the utilisation, diffusion and expenditures

Introducing payment for innovations (either by separate payment mechanisms or uptake in the base payment system) may create strong incentives to make use of that specific technology, thereby leading to an increase in expenditures. Once the most promising innovations have been selected, various measures can be used, often in combination, to manage their utilisation and diffusion, thereby keeping expenditures under control and limiting the risks of inappropriate diffusion.

The patient population eligible for payment may be restricted by issuing clinical practice guidelines and monitoring activity. In France, for instance, agreements for proper use are established between hospitals and regional health agencies regarding the use of drugs and implants on the "Liste en sus". Hospitals which fail to meet the agreement for proper use may be penalized by a lower reimbursement rate. The agreements concern the

quality of the drug delivery process, as well as recommended prescription guidelines set at national level.

Besides defining and limiting the eligible patient population, a limit can be set on the eligible hospitals, if considered appropriate. Furthermore, payment authorities may keep expenditures down by bargaining on the price of the innovation, setting up price-volume agreements or making central procurement arrangements. For the innovation payments in England, for instance, commissioners are required to consider the procurement arrangements for the devices involved.

Another possible course of action for authorities is to set budget restrictions. These can be set either at the collective level or at the individual hospital level. We take the example of the 'Liste en sus' in France again, which has been limited by an annual growth cap. As there is a global cap on the resources allocated to French hospitals, any increase in funds allotted to the list needs to be compensated by a reduction in resources allocated to the GHM-based payment system. To mitigate this effect, an annual growth cap has been imposed. All hospitals are monitored for compliance with the annual growth cap.[531]

Furthermore, risk-sharing agreements can be made with the hospitals or the manufacturers. In US Medicare, the NTAP payments only partially cover the costs for the new technologies incurred by hospitals. By doing so, Medicare avoids bearing the financial risk of providing costly new technologies on its own. We also refer to the outcome based agreements with manufacturers on money back guarantees and conditional treatment continuation as tested in England (see section 16.4.1.1).[525]

The greater the payment institute's range of authority, the greater its scope to optimize decisions. In case different decision makers are involved in the set of possible measures, they should act together in order to achieve the most efficient decisions.[525]

16.4.5 Who bears the costs of evidence development?

There are different views on the question as to who should bear the costs of evidence development. Under the German CED scheme, manufacturers are requested to refund the payments made during the research period, once the innovation has been included in the payment system. Under the French CED scheme, there is no such refund. In the UK CED scheme, manufacturers or a national institute for health research carry the cost of study. Providing payments to manufacturers in the research period may be particularly important to support small companies that do not necessarily have sufficient resources to conduct long-term trials. On the other hand, however, payment authorities already facing tight budget constraints may prefer not to take up the costs of studies. German authorities seem to have found a middle road between these two policy objectives, meeting the financial needs of companies in the research phase, whilst limiting their own financial contribution to research by requesting a refund in case of positive reimbursement decision.

16.4.6 Trade-off between the effectiveness and administrative burden of innovation payment mechanisms

Since innovations are often paid through different mechanisms not only targeting innovations, comparison of national expenditures on extra payment mechanisms for innovations is hampered. The financial reach of a payment mechanism, however, appears to correlate with the type of mechanism used. Not surprisingly, budgets spent on bilateral agreement schemes are generally smaller than budgets spent on national lists. The national list for drugs in France, for instance, accounted for 6% of total hospital payments in 2010. By contrast, the NUB payments in Germany only reached a small portion of hospitals, and for those who did receive NUB payments, they accounted for only 0.3% of total hospital revenues. As NUB negotiations require significant effort from administrators, sickness funds as well as applying hospitals, transaction costs are relatively high and limit the reach of the payment instrument. The same holds for CED schemes. Inevitably trade-offs have to be made between the effectiveness of controlling the cost impact of high-cost innovations and the high administrative burden of some of the mechanisms that might be used to exert control in the most rational way.

16.4.7 Reasons favoring adoption of innovation in the absence of specific funding

The extent to which the different types of payments effectively impact the innovation uptake in each of the countries has, to our knowledge, not been studied on large basis. The payment mechanism may be an important factor, however, Belgian experience confirms that it is not the sole determinant of technology uptake. Other factors are equally of importance such as the purchasing power of the hospitals (how much extra revenue is available at the time and the expectations about the likely future profitability of the innovation), physicians demand (depending on their believe in the efficacy of the innovation and on how much slack exists in current service production, i.e. the room to improve efficiency and to free extra resources), the objectives of hospital management (e.g. competitive position in the market or maximising short-run profit) and patient needs and expectations.[576]

Key points

- **Whether innovations are socially beneficial and should be implemented depends on the combination of their effects, positive and negative, and their costs. Reimbursement of innovations should be based on cost-effectiveness evidence and should be judged across silos for budget setting.**
- **Because of the relatively limited study requirements for market authorisation, there is still considerable uncertainty on the added value of the innovations at the time they enter the market. Despite this uncertainty, Belgian hospitals and physicians are often eager to introduce innovations quickly after market authorisation as they compete for patients with other hospitals. This results in large and widespread investments of still poorly proven technologies and a cost shift towards the patients. This, in turn, puts the payers under pressure from the united lobbying of industry, hospitals and doctors.**
- **As it often takes considerable time before an innovation is incorporated in the base payment system, many countries use extra payment mechanisms to introduce innovations in an often staged and restricted way.**
- **By linking temporary payment to research activities, CED schemes allow healthcare providers to give patients earlier access to promising technologies whilst reducing the risk for payment authorities to make a wrong decision and giving manufacturers more time to make returns before patent expiration. Coverage with evidence development (CED) schemes have been introduced under various formats in many countries. Experiences have not unanimously been positive, but a number of critical success factors could be identified:**
  - **a clear framework for initiating, overseeing, and stopping CED studies;**
  - **appropriate study methods, ensuring sufficient data gathering to support valid reimbursement decisions;**
  - **sufficient incentives for physicians and manufacturers to engage in studies;**
  - **effective use of the new evidence to inform coverage decisions.**
- **For innovative high-risk devices, the future EU Device Directive should move away from requiring safety and 'performance' data only, and should also require pre-market data that demonstrate 'clinical efficacy or effectiveness', as is the case in the US.**
- **Awaiting a reworked Medical Device Directive, patient risk should be minimised by improving transparency with regard to the available clinical data and by limiting the market introduction of novel high-risk devices with minimal clinical data to centres with the necessary expertise. Preferably, this should be done in an appropriate research setting with (partial) reimbursement in CED scheme.**

DISCUSSION AND CONCLUSION

The discussion and conclusion can be found in the Synthesis of this study, which is published as a separate document on our website. It can be accessed from the same referral page as the current document.

APPENDIX 1.

Appendix to Chapter 14

Appendix 1.1. Questionnaire

Section I. Background information on the hospital sector and on specialists working in hospitals

1. How are the main categories of (somatic) acute care hospitals (e.g. public, private for profit, private non-profit) defined in your country and what is their share of the total hospital sector? Please state if private for-profit hospitals treat public patients. If available please specify the share in terms of beds and/or cases and/or total hospital expenditure.

Year:	*% of beds*	*% of hospital cases*	*% of total hospital expenditure*
Public			
• Budgetary unit*			
• Autonomous**			
*Private non-profit****			
Private for-profit			
• Contracted by public payer			
• Non-contracted (out-of-pocket/private insurance)			

** Typical characteristics: staff not employed by hospital but by health authority/city council etc.*
*** e.g. called trust, public enterprise, hospitals employ (and pay) staff*
**** e.g. independent foundations or owned by charitable organisations, churches, Red Cross etc.*

2. Career pathways and duration of education:

- How long does it take to become a specialist? Please highlight if training duration differs by specialty.
- How many different hierarchical levels exist for specialists in hospitals? Please describe different levels (e.g. associate specialist vs. consultant vs. chief physician) and the formal responsibilities (medical and administrative) associated with each level. If possible please give percentages for different hierarchical levels.

3. What are the main changes, problems, and debates in your country? This might include for example:

- Have there been recent reforms of specialist payment models in the last decade, for example to reduce income differences among specialties?
- What are the trends in contractual relationships between specialists and hospitals?
- Are hospital specialists an important stakeholder in health policy making? Do they have impact?
- Are there concerns that specialists earn too much (e.g. when compared with GPs, or across different specialties)?
- Is there a waiting list problem?
- Is there a shortage of specialists (e.g. for certain disciplines), and what are the perceived reasons (e.g. inadequate training, lack of planning, increased mobility, income)?
- Are there regional differences in access to hospital care (e.g. maybe due to different payment models or differences in specialist income)? If yes, please describe and explain these differences.

Section II: Main payment models and contractual relationships between hospitals and specialists

Total income of an individual specialist can be determined by his salary, by FFS payments and/or other financial benefits (e.g. pensions, professional insurance subsidies) or different combinations of both. Usually, different groups of specialists can be distinguished in relation to one of the following: the specialists' characteristics, the payer, the provided service, or the hospital. For example, specialists working in public hospitals may receive a salary and their professional indemnity insurance is covered while specialists in private hospitals charge FFS and do not receive other benefits (hospital dimension). Another example might be that specialists treating private patients may charge FFS while they receive a salary for treatment of

public patients (payer dimension). Or depending on their experience and responsibilities physicians may receive either salary or FFS (physician dimension).

1. What are the main categories of contractual relationships between specialists and hospitals? Please describe the main groups and give the percentages.

	% of all specialists in hospitals
Specialists employed by hospitals	
Self-employed specialists	
Other possible arrangements	

2. What are the most important payment models for different groups of specialists (by hospital type, specialties, service, or payer → Figure 1) in hospitals?
3. What is the percentage of specialists paid according to each of the payment models described under II.a? If specialists receive a combination of salary and FFS please also give the percentage of each component (e.g. 70% salary + 30% FFS)
4. Please describe how the money is channelled to specialists.

- Are specialists paid by the hospital or another payer?
- If they receive money from the hospital does the payment the hospital receives contain an earmarked portion for specialist payment? If hospitals receive the payment how is it redistributed among the specialists? Does this result in frictions?
- Is there a governance structure in which physicians are represented?
- If specialists are paid by another payer, is there another intermediary between the payer and the specialists?

5. Can specialists run private practices besides their hospital work?

- If yes, please describe regulations that apply (e.g. income thresholds, working times).
- How does the payment system differ? Is it more profitable than hospital work?
- Does this result in recruitment and retention problems in hospitals?
- What are the motives of specialists to run private practices?
- Are there specific regulation or remuneration mechanisms to prevent a shift from hospital specialists towards private practices?

Section III: Details of specialist payment systems

Please describe in detail the FFS system, the salary system and other financial benefits that are in place in your country.

1. FFS payments are usually based on a fee catalogue and a system for converting the catalogue components into a payment amount (monetary conversion). When answering the following questions, please consider both, catalogue composition and monetary conversion:

- Do different FFS systems exist? Please elaborate.
- Who is formally responsible for developing/updating/modifying (each of) the FFS system(s)?
- What factors are taken into account when developing/calculating the FFS system(s)? For example, is the fee catalogue based on historical cost studies, time measures, or psychological stress related to the performance of an intervention, risk, coordination activities, out-of-office working hours? How is each of these factors quantified?
- If negotiations between stakeholders take place, please give details on frequency, participants, and influence of different groups. How are conflicts resolved and by whom?
- Have payers introduced any measures that limit the total amount of money spent on FFS? For example, is there a hospital level budget on total FFS payments that can be made to specialists?
- Are certain fees (e.g. in certain specialties) more profitable than others? Please elaborate. If so, what are the consequences (e.g. shortages in certain disciplines?)

2. **Salaries** usually consist of a fixed part (basic salary) and a variable part (e.g. depending on the number of night shifts, or performance related

bonuses). Please consider both components when explaining different salary systems.

- Do different collective salary agreements exist? How are conflicts resolved and by whom? Please consider that they may differ by hospital type, specialties, service, or payer (Figure 1).
- Which components constitute the total salary (fixed and variable parts)?
- What factors are taken into account when negotiating/setting the salary scale? For example, is the salary based on experience, responsibility, a previously existing FFS income? How is each of these factors quantified?
- If negotiations between stakeholders take place, please give details on frequency, participants, and influence of different groups. How are conflicts resolved and by whom?
- Are salaries negotiated individually? Or are individual negotiations for salaries above the collectively agreed level possible and common practice?
- Are salary levels higher for certain specialties, at certain hospitals, for certain payers, or for certain services? If so, what are the consequences (e.g. shortages in certain disciplines?)

3. **Other financial benefits** may consist of pension contributions, professional insurance, housing benefits, profit sharing or subsidised childcare.

- What are the main categories of other financial benefits available under the different payment models?
- Are other financial benefits regulated nationally and by whom?
- What is the relative importance of other financial benefits in relation to total income?
- Are certain benefits more appreciated than others for non-financial reasons? Is there any evidence from surveys or other studies?

Section IV: Non-financial incentives and other relevant factors

When answering the following questions, please keep in mind that these may differ across specialists paid according to different payment models.

- What is the workload of specialists measured in hours (or time per patient)?
- Are there other relevant non-financial factors influencing the attractiveness of different payment models, e.g. professional independence, administrative workload, income security, on-site child care?
- Is the gender distribution across specialties a relevant factor for the relative importance of certain payment models?
- If there are other relevant factors, please elaborate.

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