GUEST EDITORIAL

Rethinking hospital design: accommodating a growing diversity of patients

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Jack has just arrived in the hospital, he is checking his emails, complaining about the poor Internet connection, and making some ‘phone calls before the doctor arrives to inform him about the procedure for the day. Jack does not see the need to be in bed; for him today’s medical examination is just one item on his agenda. Yet, in an hour, he will have to lay down in bed and be wheeled downstairs to the operating theatre, wait a while in the pre-operative zone, and then be put to sleep. After a short stay in the recovery room he will return along the same route. Jack hopes to be back before lunch so he will not have to stay overnight for observation. If all goes well the doctor will discuss his test results in the afternoon. While Jack is away the only thing his wife can do in the room is try to make herself comfortable in a plastic folding chair or hospital armchair.

A few doors down the corridor, Mary has been staring at the same walls most of the day for the past three months. Three times a week she is being wheeled to dialysis, a distraction but hardly anything to look forward to. Outside her hospital window is a small courtyard, yet from her bed she only sees the windows of the building on the opposite side. She is confined to her bed; unless someone puts a pillow behind her back and under her feet even sitting up

straight is not an option. As a result, her world is largely reduced to the room and the sky, and only if the blinds are open. . Both her daughter and the nurses take her out to the courtyard whenever possible, yet weather conditions and circumstances do not always allow this. When she is able to go outside she “*swallows the fresh air.*”

Despite the very different circumstances under which Jack and Mary pass time in the hospital, both are assigned an almost identical room. The room is not ideal for either of them, yet it has the minimal dimensions, contains (often also minimal) technical equipment and, most importantly, fits within the (logistic) structure of the hospital. Architecture, however, holds the potential to do much more than supporting functional organisation. The mutual impact of the design of the built healthcare environment and the organisation of nursing practice, connects patients’ and nurses’ experience of health and care (Allen, 2018). Architecture has a direct influence on quality and safety of care (Norman, 2013) and well-being (Jencks, 2006; Sternberg, 2009). Its effects are experienced not only by patients, but also by hospital staff and visitors.

In 1948 the World Health Organisation (2006) defined health as “*a state of optimal physical, mental and social well-being, and not merely the absence of disease and infirmity.*”

Demographic changes and an evolution towards more chronic illnesses led Machteld Huber and her colleagues (2011) to suggest an update, defining health as “*the ability to adapt and to self-manage, in the face of social, physical and emotional challenge.*” What if we consider the hospital building from this perspective? Historically, the main function of hospitals was to improve patients’ well-being rather than cure them, as medical knowledge was limited. Halfway through the 19th century, Florence Nightingale (1969) put the built environment’s healing qualities on the map and related them to both staff’s productivity and patients’

comfort. In her *Notes on Nursing* she describes the importance of improving sanitary conditions in hospitals and pleads for a pavilion typology so wards, to which patients are assigned based on pathology, would be easily ventilated and patients could benefit from fresh air and natural light. Over the years, healthcare shifted its focus from the environmental to the medical, resulting in the utilitarian, highly technical, and complex buildings we still know today (Wagenaar, 2006).

Since Roger Ulrich's (1984) *Science* publication on the impact of green and window views on patients' health and well-being, the relationship between the built environment and clinical outcomes has been recognised and further elaborated. The concept of the healing environment, referring to environmental aspects that contribute to patients' recovery process, has become a hot topic for research and practice (e.g., Huisman et al., 2012; Ulrich et al., 2008). Studies on the benefits and disadvantages of single room accommodation for patients and staff (Maben et al., 2016) or the impact of sound (Brown et al., 2015; Iyendo, 2016) abound in both design and nursing oriented literature. More recently also the link between architecture and neuroscience is being explored (e.g., Maiocchi, 2015; Pallasmaa, 2014). These studies reflect a patient-centred vision focusing on someone's medical condition and clinical health outcomes. Attention for the well-being of nursing staff is limited, yet we know it has a proven impact on quality and safety of care and, as such, on patients' health and well-being (Allen, 2018).

A paradigm shift has taken place away from approaching patients mainly from a biomedical perspective towards addressing them as people with social, mental, emotional, and spiritual needs, as well as particular strengths, weaknesses, preferences, and values (Lines et al., 2015). Acknowledging patients as persons has consequences for the built healthcare environment.

For Jack a person-centred environment may hold different meanings than for Mary. Most patients, like Jack, stay in the hospital for a short, but intense period. Consequently, these patients are likely to spend a considerable amount of time while lying in a bed – either in their room, or being wheeled to an examination, or for an operation, or treatment. For this group of patients practicalities and efficiency are often cited as key elements in their experience (Annemans et al., 2016). In contrast a small group of patients, like Mary, is confined to the hospital for weeks or even months. These patients feel the need to inhabit their room. Appropriating the room adds to this feeling of residence, but truly inhabiting a space requires more. Mary felt a profound need to keep in contact with the outside world, visually, but also socially and physically (Annemans et al., 2018).

If hospitals want to be truly person-centred their buildings should meet people's expectations in these various situations. Recent definitions of patient-centred care in which the patient is addressed as a person focus on healthcare access, socio-cultural practice, and patient feedback, activation and empowerment (Aboumatar and Pronovost, 2013). Older definitions concentrate on needs, values, and preferences: focusing on the whole person, offering emotional support, alleviating physical discomfort, communicating adequately, sharing information, providing education, strengthening the patient-provider relationship, including family and friends, and coordinating care across settings (Aboumatar and Pronovost, 2013). None of these needs, values, or preferences directly address spatial aspects, which raises the question of what designing a person-centred hospital building could mean (Lawson, 2010). Regarding provision of care, the importance of a partnership between patients and caregivers is stressed. Nurses play a central role in maintaining quality and safety of care (Allen, 2018) and representing patients as unique persons, actively involved in their treatment and care (Bachnick et al., 2018). Regarding spatial issues the role of nursing staff is not so well

defined. A better understanding of space not as a given, but as a variable that plays a role in patients' well-being, would allow nurses to speak up for personalized and adapted space, considering it just as much part of providing good care as offering a fitting medical treatment.

The basis for a person-centred hospital is a thought-through care vision with a clear strategy to accommodate diverse patient profiles. When designers translate this person-centred vision in an actual building, it is important that the design communicates consistently with the healthcare organisation. Whereas studies on the ideal patient room abound (Maben et al., 2016), considerably less research is conducted on the ideal hallway to be wheeled through or the ideal space in which patients can maintain contact with the outside world. A truly person-centred hospital building requires that rooms, wards, hallways, waiting zones and all other technical and non-technical patient zones be analysed and designed with respect for the diversity among patients making use of them, when both stationary and in motion.

Rethinking hospital design in a person-centred way, demands a change in mind-set within the medical sector and the design sector. To overcome the current under-development of truly person-centred hospital buildings both the design process and its outcome should be reconsidered. Applying techniques like scenario based design or the use of persona's (Van der Linden, 2018), allows designers to gain nuanced and diversified insight into the experience of future users. This insight should allow them to maintain a person-centred approach throughout the design and building process. In the context of hospital design these techniques hold the potential to provide hospital board members, nursing staff and designers with better knowledge on how to take into account different patient perspectives and in so doing to shift the focus from a medical perspective "the patients" to a more nuanced and unique perspective on persons. Deconstructing the familiar hospital building and building it back up from a

person-centred perspective could mean taking a step back from traditional wards assigned to patients according to their pathology. When patients are grouped according to their spatial needs, the entire organisation of care would need to be rethought as well. Is nursing ready for this?

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