De(sign) in patient space: User-creativity in hospital settings

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SUMMARY
- Building interiors are made first by design and then by use.
- There is growing focus on occupational health and safety (OHS) posters and warnings in hospital buildings.
- Design-by-use factors, such as excessive signage and visual pollution, impacts negatively on user experiences.
- Developing "user-creatives" for hospital buildings could assist in creating a better environment for the wellbeing of all users.

Key Words
hospital; signage; user-creative; auto-ethnography

ABSTRACT
Background
After a building is first designed and built, its primary inhabitants maintain power and control over the space, becoming "user-designers" of the occupied space. Evident in many older, yet still operational, hospitals across the world is a common medicalised, alienating design language that staff members, as "user-creatives", are often oblivious to.

Aims
This paper aims to highlight the effect that design-by-use factors can have on patients and their families within medical space.

Method

This paper uses an auto-ethnographic narrative approach to analyse hospital buildings, typical of the 1960–1980s period, against established evidenced-based design principles and suggests ways in which patient space can be improved to enhance wellbeing.

Conclusion
Visual and narrative analysis of medical spaces can inform a useful brief and essential rationale for encouraging better support and design education for new "user-creatives" that will occupy and control the next generation of medical spaces.

BACKGROUND
Architecture is made first by design and later by use. Therefore, as Jonathon Hill[1,2] tells us, the user can be as creative (or not) as the designer. He argues that "user creativity" should be a key concern of architectural design. Nowhere is this user-creativity less apparent than in the liminal landscapes of our older, but still operational, hospitals. In the context of Australia's quickly changing medical landscape, politically charged over costs and delays, this research essay reflects upon the common design-by-use layers of "medi-scapes". The premise, that architecture is made first by design and then by use, is underscored by the simple fact that the word "building" is both a noun and a verb. So while architects and designers respond to hospital board briefs and guidelines to execute the best building possible within the constraints, the building continues to be designed by use by the policy makers, managers, staff, organisers, and cleaners that occupy the building. The distribution of design-by-use power, however, tends to be held predominantly by the long-term users (staff), rather than the short-term or visitor users (patients and family). Despite best practice ideas of patient-centred care and patient space, the inequitable power distribution means that patient space is generally controlled and dominated by well-intentioned staff.

In *Buildings and Power*, Thomas Marcus[3] claims that building users can be classified as either inhabitants,

visitors, or strangers, and the purpose of the building is to interface the inhabitants and the visitors, while excluding strangers. In a hospital building the inhabitants (such as staff) are the primary controllers and most powerful within the space. Visitors, (such as patients, friends, and family) who might be either long or short-term visitors, generally lack any control or power over the space they temporarily inhabit. Strangers constitute everyone else, outside and excluded from the building. So while the hospital might be alien and disturbing to visitors, the inhabitants have a high level of familiarity, or spatial history, with such spaces. Hospital staff members generally have spent a high proportion of their ordinary lives within stereotypical global hospital space, often having trained within a variety of such buildings since their late teenage years. Everydayness and familiarity, as De Certeau[4] suggests, means that familiar things or places often go unnoticed and are overlooked, and so staff members, in control of their space, are less sensitive than patients and visitors to the negative effects of user-design and organisational quality. In many of the hospitals I visited, the staff I talked with did not notice, and seemed immune to, the compositional effect that these spaces, with the array of signs, symbols, well-meaning posters, and medical "stuff", might have on patients and their family.

Within the initial design phase of a hospital project, senior staff consultation often takes place in understanding the operational side of hospital spaces. In more recent times evidenced-based design (EBD) principles for both staff efficiency and patient wellbeing have been widely applied to this initial architectural design phase of hospital buildings. But the contribution of the design-by-use side of architecture and buildings needs to be tested and guided by the same principles to ensure continued best-practice spatial outcomes for patients, visitors, and staff working in the hospital buildings. In particular, evidence-based design research studies show that patient hospital experiences can be improved through reducing stressors, such as noise, and increasing positive distraction, such as view.[5] By doing this, it has been demonstrated that levels of pain, anxiety, and stress can be decreased.[5] Similarly, it is suggested that patient experiences of hospital interiors are improved through restful interior design that includes therapeutic landscape imagery.[6] It is also generally accepted that access to gardens and nature has

a restorative and calming effect upon people.[7,8] Not surprisingly, a window with a view of nature or sky, rather than views of built form, can contribute to an increase in satisfaction and sense of wellbeing overall.[9] The interest in these EBD principles by hospital administrations when planning new buildings has been significant and, in part, this interest can be attributed to being linked to a dollar value.[5]

In reality, however, the complexity of older hospital planning, often with many subsequent building extensions, has implications on the number and location of windows, particularly those overlooking gardens. Therefore, designers have employed interior design techniques to reflect those principles to that end. In practice, however, the use of therapeutic imagery or artwork is reported from personal experiences to be often only visible in foyers and major thoroughfare corridors of hospitals[10] where patients and visitors also negotiate complex way-finding signage. In contrast to these evidenced-based design principles, patient waiting rooms and arrival node points, where patients are particularly prone to high levels of stress and anxiety, are swamped in informational, organisational, or health-warning posters. Read collectively the mass random placement of posters and warnings interspersed with procedural reminders create visual pollution or "noise" rather than calming space. Where therapeutic art has been placed in patient space it is often swamped by notices and warnings such that it forms part of the noise rather than as positive distraction.

METHOD

This paper uses an auto-ethnographic narrative and visual approach to analyse typical operational hospitals of the 1960–1980s era against established evidenced-based design principles. The use of narrative is a key turning point in this analysis and is useful here to change perspective from architect/institution to user/individual. It follows from Maggie Keswick Jencks and her conceptualisation of her now famous Maggie Centres, where she suggested that the design of hospital spaces should be more personal and show how people are valued.[11] Ethnographic and auto-ethnographic methods are well established within the field of anthropology. This method relies on field observations taken within a particular moment of time or over a particular period of time. What is seen and experienced

is recorded as evidence of that moment. The researchers perspective and experience is important and, as sociologist Howard Becker[12] argues, the researcher dictates the research and so the quest for objectivity is virtually impossible. To deal with the concern for bias, Becker suggests that the position of the researcher is acknowledged within the research itself. This acknowledgement and use of the personal position in ethnographic methods is important here as "a way of seeing."[13]

In this study field observations and recordings act as a personal post-occupancy "experience", rather than post-occupancy evaluation (POE) based on the notion that personal experience is recorded as a key part of the discussion and evaluation comes later. Photography was also used as a method to visually document patient experiences and accompany the narrative. The images were taken systematically throughout to record the visits at angles and views experienced by the patient or visitor and contrasted against the equivalent views of the staff— for instance, patients sit in waiting rooms for periods of time while staff stand at the entry points to call patients, thus presenting different readings of the same space. Additionally, important and potentially stressful moments were recorded, such as standing after exiting the lift or stairwell while deciding which direction to walk in, sitting in waiting rooms, and sitting in chemotherapy chairs.

NARRATIVE RESULTS

I arrive at the hospital after an overnight flight landing just an hour before my tour and, without sleep, I feel quite at odds with my surroundings. We walk into the busy hospital on a Sunday afternoon. The main entry is a large double-height space with plenty of natural light. There is a dramatic change in scale from the high entry to the long tunnel-like green corridor that takes us to the medical oncology area. The green colour, best described as "hospital-green" and probably selected because of some ancient research on its therapeutic properties, feels very alien. But this could also be my lack of sleep.

As we leave the entry and go deep into the hospital's core, the surroundings become much more familiar. This could easily be any hospital of its era anywhere in the world. The corridors' extreme length, scale, smell, and colour are all too familiar frames to my own remembered life events of visiting sick relatives, giving birth, sitting in emergency rooms, and

witnessing the dying process. After going up one flight of stairs, we arrive at a three-way junction. Left to the waiting room, straight on to the oncology ward, and right to another corridor of extraordinary length. The junction itself is chaotic and contains a large wall-hung sink and rubbish bin surrounded by an array of directions to other parts of the hospital, various instructions on hand-washing procedures and the use of gel, mobile phone policies, flower policies, coughing policies, security procedures, CCTV usage, and fire equipment.

The medical oncology area is not open on weekends, thankfully, so we enter an empty waiting room and I sit down, somewhat overwhelmed. The blue vinyl seats are set in a square arrangement with backs to the wall and facing each other as if laid out for a group therapy session. There is a random pile of multicolour knitting on a side table. Apparently this communal knitting is very popular with the regulars. I imagine everyone in the room wearing this giant woolly communal scarf that eventually fills the room. In contrast to the woolly pile, the peach-coloured walls are covered in A4 photocopy notices that I cannot read from my chair. The large window, overlooking the landscape, is obscured behind the staff counter in the adjoining room.

Moving on, we enter the empty chemical treatment area. I ask which chair is most used for treatment and sit in it. I am told that patients would sit here for between four and six hours while being treated. From here my view is directly into the open door of the sluice room. Next to the door is a randomly abandoned plastic commode that I cannot imagine anyone ever using. The chemical trolleys are also kept there and their yellow and black nuclear-style signage dominates my outlook. It feels very frightening. There is a terrible picture of a landscape hung crookedly behind my head, semi-obscured by the drip stand. I move to a chair in the main space and sit there for a while. The main room is a large square shape with numerous squeaky pink vinyl recliner chairs and beds arranged around the outside facing the empty middle space. There are obscured windows behind some of the chairs. In one corner is the nurse station held within a glass soundproof box. My view from this chair is to the foot of the bed opposite. The wall behind the bed is full of mobile phone and hand-washing notices arranged in-between stainless steel switch pads, drip hangers, plastic bags, and an angle lamp. The outlook is visually chaotic and after a few minutes I have an overwhelming urge to leave. I am told that patients often request sedation while sitting here for up to six hours. This doesn't surprise me.

Later in my visit, in a failed attempt to find real coffee unaccompanied, while lost I come across the gastroenterology area. The waiting area is an appropriated dead end corridor. All the chairs are arranged in a single file line on one side facing the opposite wall. I sit down and join the gastro queue for a while. On the opposite wall there is a large plastic dado grab rail and above it is a huge array of posters and notices arranged in a random linear pattern. In case I wasn't stressed enough, the visible texts warn me to never get sunburnt; quit smoking; remember to pay for my parking; behave appropriately; get treated for hepatitis; and visit the chaplains. Notices also tell me about the bus routes, coeliac awareness week (three years ago), a costume exhibition, rights and responsibilities policy, fire instructions, and security advice. Ironically, the distance between the posters and the seats make everything but the headlines illegible. I find the space with its visual pollution claustrophobic. The posters feel noisy and intrusive in my mind, similar to the way loud television adverts interrupt the quiet mood of a film, or a radio station that hasn't been tuned properly. I have an overwhelming urge to leave.

DISCUSSION

The collaged images in Figure 1 depict the signs and symbols, surfaces, stuff, and space from working hospitals across Australia, New Zealand, and the United Kingdom.

The interior images are indecipherably interwoven and reflect a common language—a medicalised language where the obvious organisational, power-driven layers overlay the designed environment. Despite the best attempts of any original designers, the images of the design-by-use are read collectively as dehumanising and stress-producing space. Much of the "helpful" organisational and informational signage, often lacking currency, purpose, or any visual curating, is evident throughout the buildings regardless of which country they are located in. The yellow occupational health and safety (OHS) language is universally "noisy" in polluting the space with powerful warnings and rules, interfaced with shiny modular surfaces and an incredible array of displaced stuff.

Clearly evident throughout my visit to the hospital building described in the narrative, and evidenced in the collaged image of multiple hospital spaces, was a vast quantity of randomly placed notices, posters,

instructions, advertisements, and warnings. The overall effect of this application is that of "visual noise", which contributed negatively to my occupant experience. For patients and visitors this can be a source of negative rather than positive distraction and, following EBD principles, potentially lead to increased levels of anxiety and unnecessary stress. This is demonstrated, for instance, by the random placement of warnings about sunburn and skin cancer opposite the waiting chairs in the gastroenterology waiting area. Similarly, notices aimed at staff training reminders are placed facing the seating within patient-focused waiting areas. Warning and danger signage is spread throughout hospital space and ranges from posters pointing out the dangers of mobile phone usage, chemicals, radiation, and toxin signage, to flower policies. There are also multiple versions of hand-washing posters in each location. All posters are equally negative and aggressive in their visual language and instructional text.

Throughout hospital buildings mass signage is used to orientate staff, patients, and visitors to their various destinations. The volume of signage needed and continually added to over time is reflective of spatial disorganisation. During the course of one of my visits and during subsequent follow-up discussions with senior staff there were many suggestions made for practical "quick wins" for implementation in the interim period between long-term development plans. Removing unnecessary posters, warnings, and random information from haphazard placement on wall areas of corridors, waiting rooms and ancillary space would potentially allow for more calming spaces and clarity of way-finding. All posters pertaining to staff training should, naturally, be located solely in back-of-house staff work areas, rather than be used as constant reminders to staff throughout shared patient areas. This placement seems to add to negative patient distraction and raises questions about the professionalism of staff by assuming that without multiple repetitive posters (which staff appear oblivious to) they would forget how to wash their hands correctly.

To increase way-finding, routes should be obvious, logical, easily understood, and iconic. In particular, arrival from stairs or lifts and node points at direction changes should be welcoming and differentiated from corridors so that the distance is visually shorter and all journeys are not the same. Arrival points, such as lift

lobby areas should be reassuring that you are in the right place and feel welcoming. Orientating markers, such as sculptures, artworks, rest areas, or external outlooks could assist way-finding and, if combined with distinctive area-based colour and furniture schemes, this would help delineate one patient waiting and lounge space from another. This would could potentially break down come of the alienating and disorientating experiences felt by patients and visitors and may contribute to reduced stress and anxiety.

CONCLUSION

The use of auto-ethnographic methods in this paper is useful to highlight problems and suggest solutions, but further evidenced-based research needs to be carried out to understand to what quantifiable extent poor design-by-use factors effects patient wellbeing. In this paper I have argued that despite the best efforts of architects, designers, hospital staff, and artists to improve patient experiences through evidenced-based design principles, the design-by-use interventions into the building, such as the ad hoc placement of information, warnings, instructions, and advice is creating visual noise and, potentially, contributing to more stressful patient space. This problem has the potential to escalate with the growing focus on avoiding litigious actions contained in occupational health and safety procedures and action plans that require physical warnings (generally in the form of ugly signage) to demonstrate duty-of-care and protect organisations against claims, malpractice, and operational failures.

There is no doubt that the modern hospital is a difficult, often dualistic landscape with many competing themes such as efficient/soulful, inhospitable/hospitable, and alien/familiar. There is, I propose, a unique opportunity to acknowledge that the design of a building does not finish at practical completion. Sharing design knowledge and education with user-creatives in hospital buildings, armed with up-to-date design research, would result in greater mediation and sharing of spatial power and ultimately a better environment for the wellbeing of all users.

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CONFLICTS OF INTEREST

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Figure 1: Signs, symbols, surfaces, stuff and space