Healthy Interiors - Healthy Hospitals, Australian Institute of Architects (AIA)

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Healthy Interiors – Healthy Hospitals

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Outline

1. How healthy are our hospitals? Some facts and figures.
2. What are the characteristics of health promoting hospitals?
3. Staff vs patient needs? Compatible or not?
4. How can architects make a difference? Case studies.

Facts and Figures

- Australian health expenditure in 2005 – 06 was $86.9billion or 9% of GDP, (AIHW 2008)
- This is similar to the UK, much of Western Europe and New Zealand
- US spends ~ 15% on health but does more poorly on many outcomes than Australia and other countries with similar health systems to ours.
- Capital expenditure was ~6% of this ($5.2 billion) spread across health buildings in public and private sector

Who is most likely to be a patient?

- More likely to be ‘elderly patients’ = ‘older Australians’ = ‘people aged 65 years or over’ (AIHW, Australia’s Health, 2006)
- 13% of the population – 2,604,900 people in 2004
- Much greater use of hospitals than younger people: in 2003-04, 2.38 million or 34% of all hospital separations (Table 4.7, AIHW, 2006, 216)









How healthy are our hospitals?

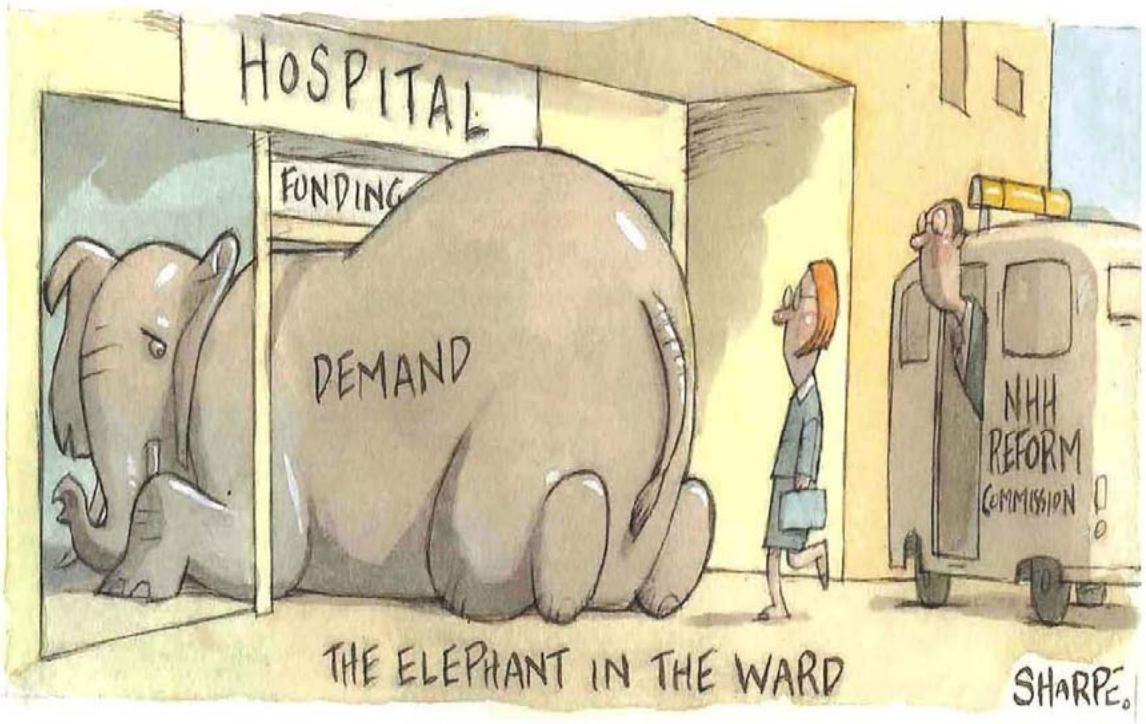
- Examples for the US system from (Lavizzo-Mourey, 2004):
- 44,000,000 Americans without health insurance coverage
- ~98,000 patients die each year from medical errors
- 62 percent of Americans believe the health care system will get worse
- 20-50 percent of surgeries that are unnecessary
- 30 percent of health care costs are attributable to poor patient care
- 55 percent of patients in Harvard survey were dissatisfied with the quality of health care.

How healthy are our hospitals?

Australian system?

- Difficult to get similar figures for medical errors, unnecessary surgeries, poor patient care, healthcare acquired infection
- In July 2008, it was agreed that infection rates would be published for Australian hospitals – but no date yet agreed.
- However, it makes sense to believe that similar problems exist in our system.
- SMH Feb 13, 2008 (Mark Metherell)
  PATIENTS in Sydney's intensive care units face the "almost inevitable" risk of catching a drug-resistant infection, says a senior surgeon who has appealed for the routine release of hospital infection rates.

How healthy are our hospitals?



Source: Australian Healthcare & Hospitals Association *Healthcare Brief* April 2008

How healthy are our hospitals?

Faults identified:

- Lack of natural light – deeply planned floor plates
- Reliance on vertical transportation – tall buildings
- Little connection with the outside world/nature
- Sometimes poor indoor air quality,
- Poor temperature control.
- Limited use of natural ventilation or opening windows
- Depressing environments,
- Noise,
- No outlook, views, etc

How healthy are our hospitals?

Many of these faults are also both the cause and result of lack of attention to environmental sustainability:

- Energy use
- Water use
- Use of manufactured materials that off-gas – VOC (and little use of natural materials due to cost, infection control and other considerations)
- Generation of waste
- Encourage use of cars and other private transportation

How healthy are our hospitals?

Patient satisfaction with their healthcare – how important is the built environment to this?

- How would we know? What questions should be asked?
- Is patient satisfaction linked to better health outcomes?
- NSW Patient Satisfaction Survey 2007 – facility related questions revolved around cleanliness, noise, wayfinding and parking. These were considered important to patients but not as important as the quality of care they receive, availability of care professionals ie doctors, nurses, etc.
- More research is needed into how the built environment does affect patients – much available from the US, little available from Australia.

What are the characteristics of health promoting hospitals?

What does the evidence show? To what extent is the built environment important?

'An **optimal healing environment** supports and stimulates patient healing by combining one or more of the following approaches:

- Developing Healing Intention
- Experiencing Personal Wholeness
- Cultivating Healing Relationships
- Practicing Health Lifestyles
- Applying Collaborative Medicine
- Creating Healing Organisations
- Building Healing Spaces

(Samueli Institute 'Optimal Healing Environments' Program Brochure, p.5, http://www.siib.org/news/news-home/publications.html, accessed 31 Jan 2008)

What is a 'healing environment'?

Google search for this term gave 294,000 results!!

A selection of tips/techniques for achieving a physical environment that heals:

- Supportive – psycho/socially
- Therapeutic
- Less stressful
- Natural light
- Fresh air
- Patient has control and privacy
- Family participation is encouraged
- A good place for staff to work
- Colour is important
- Reduced noise levels – help patients sleep/relax, etc
- View of nature
- Safe – fewer falls, etc
- Reduced levels of infection

What are the characteristics of health promoting hospitals?

- More than simply about clinical care and efficiency
- Must consider the 'whole person' and not just their illness
- Similarly for staff – must do more than support their clinical work practices – should also recognise that this is where they spend many hours and they suffer from stress and lack of support as well.
- The research shows "*happy staff = happy patients*"
- Everybody needs access to outlook, natural light, fresh air and places to de-stress
- We also need choice – to be alone or with other people, to socialise or withdraw
- Healthy environments are also sustainable environments.
- Hospitals should provide environments that are "humanising".

Innovations, Care Delivery and Facility Design – Key issues and developments

- Increasing impact of technology on clinical and non-clinical functions
- Re-direction of care away from the immediate hospital setting
- Integration of services for more holistic care
- New planning models impacting on design of facilities
- 'Healing environments' – 'evidence based healthcare design'
- Planning for whole of life cycle costing – sustainability, energy use, flexibility, adaptability, KPI, benchmarking
- Workforce issues – clinical and non-clinical
- Responding to threats to the community – terrorism, epidemics, natural disasters, climate change

Re-direction of care away from the immediate hospital setting – assisted by technology, telemedicine, remote diagnosis

- Robot doctors
- Robotic units are being used in the US and Canada to provide consultations or ward rounds in some US hospitals. The doctor can be located in any part of the world but can still see his patients and check on their progress. A simple joystick enables navigation of the room even with obstacles
- (http://www.nationalreviewofmedicine.com/issue/2007/06_15/4_advances_medicine01_11.html, 11 Oct 2007)

Dr Mendez, Dept of Neurosurgery, QEII, Halifax, Canada

Innovations, Care Delivery and Facility Design – Key issues and developments

- Development of the modern hospital has tended to the mechanistic (Verderber and Fine, 2000)

  The mega-hospital was conceived in strict opposition to nature...the triumph of minimalism and high technology was everywhere to be found in the modern hospital: the lack of natural ventilation, the shrinkage of the window aperture and a diminution of the total amount of glazed area, adoption of the hermetically sealed building envelope, dependence on artificial lighting over natural daylight, the rise of the block hospital and its rejection of courtyards and other green spaces for use by patients, and a de-emphasis on overall patient amenity were but a few technologically driven modern developments.

Innovations, Care Delivery and Facility Design – Key issues and developments

Reasons for the mechanistic approach include:

- Urbanisation/suburbanisation, medical care delivery, medical and construction technologies
- Understanding of bacteria reduced the need to use natural ventilation for asepsis – further diminished by use of artificial ventilation and air conditioning systems – reduced need for openable windows - trend away from these)
- Medical technology led to creation of large D and T facilities and need to move patients to these – long travel distances, large and deep floor plates and vertical arrangements.
- Block hospitals, relying on vertical transportation such as lifts, with little connection to the outside or natural environment.
- Declining air and water quality, increasing concerns re respiratory illnesses linked to pollen, dust and other pollutants led to separation of the natural world with insects, dust, etc, from the hospital – clean and aseptic. (Guenther and Vittori, 2007, Sustainable Healthcare Architecture)

Staff versus Patient Needs?

Are they Compatible?

- **The built environment is a facilitator of good work practices that:**
- contribute to patient safety e.g. communication within clinical teams, handovers, management of patient records, etc
- assist in the management and prevention of healthcare acquired infections (HAI)
- **Staff spend more time in facilities than patients**
- It is their workplace
- Patients stays are often very short these days
- **Therefore wherever possible we should consider how to improve the workplace for staff as well as patients.**

How can architects make a difference and create 'healthy hospitals'?

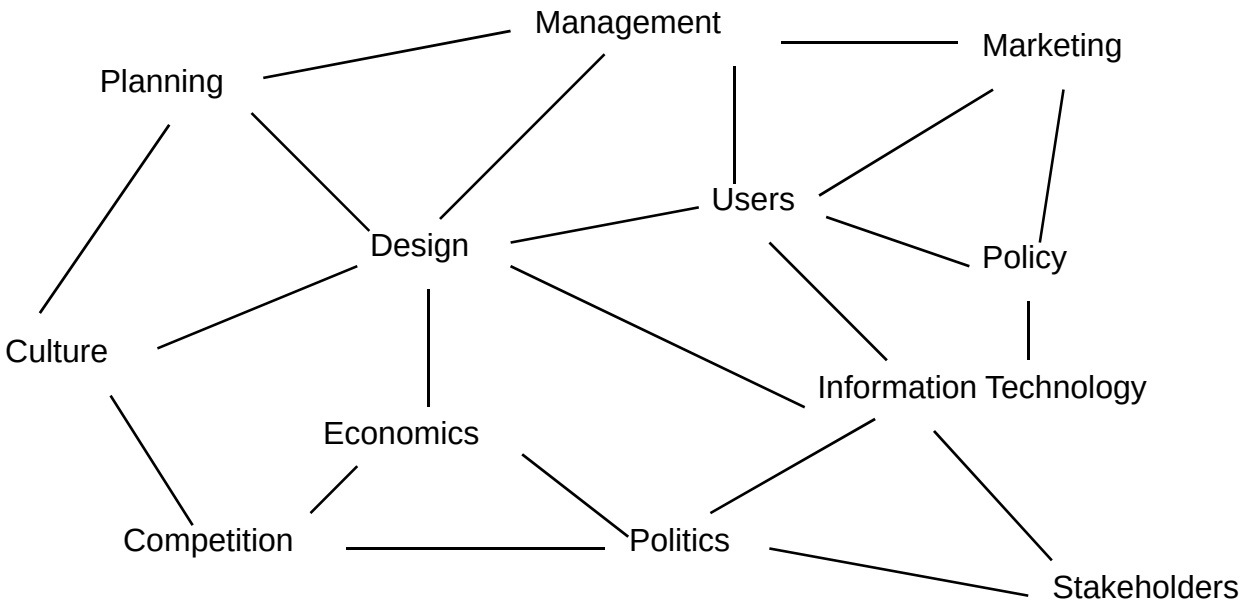
You might not think our health care system needs to be reminded to center its efforts on the patient. But as the system has grown more complex and fragmented, and as providers feel more pressure to see more patients in less time, care has become centered not on the needs of patients, but around the needs of the system itself. (Institute for Healthcare Improvement, 2007)

No single solution but physical design of healthcare facilities and hospitals offers a point to break into the system and make a difference.

How can architects make a difference and create 'healthy hospitals'?

Figure 1: The Organizational Ecology of Healthcare Environments

It is a SYSTEM: A tangled web of interdependencies



Becker and Carthey, 2007

Integration of services for more holistic care

- Networking of facilities
- Specialist facilities
- Community based facilities
- Home based care
- Patient hotels
- Step down facilities closer to the patient's home

Maggie's Centre, Edinburgh, Scotland

Specialist Facilities
Evelina Children's Hospital, London, UK

- First new children's hospital in London for 100 years

http://www.guysandstthomas.nhs.uk/services/managednetworks/childrens/evelina/about/gallery.aspx

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Evelina Children's Hospital

http://www.guysandstthomas.nhs.uk/services/managednetworks/childrens/evelina/about/gallery.aspx

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Evelina Children's Hospital

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Community-base Facilities
Leith Community Centre, Edinburgh Scotland

- http://www.nhslothian.scot.nhs.uk/news/publications/Leith_CTC.pdf

Front door

Paed consult room

Public waiting area

Community-base Facilities
Leith Community Centre, Edinburgh Scotland

- http://www.nhslothian.scot.nhs.uk/news/publications/Leith_CTC.pdf

Corridor

Rehab gym

Planning models for general hospitals that promote a 'healing environment'

Case studies – overseas hospitals

- Rikshospitalet, Oslo, Norway
- St Olavs Hospital, Trondheim, Norway
- University Medical Centre, Groningen, The Netherlands

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Case study - Rikshospitalet, Oslo, Norway

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Case study - St Olavs Hospital Trondheim, Norway






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Case study - St Olavs Hospital Trondheim, Norway

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Case study - St Olavs Hospital Trondheim, Norway







Case study – University Medical Centre, Groningen, The Netherlands

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Emerging Issues: 'Healing environments' – 'evidence based healthcare design'

- Lighting levels – natural and controllable
- Control of noise – acoustic privacy and impact on sleep
- Air quality – natural ventilation, opening windows, need for airconditioning in every space?
- Privacy – sense of control
- Pleasant distractions
- Space for families to be with patient and to obtain respite
- Access to nature – views and physical access
- Rooms – size, layout and décor including materials, colours, furniture and equipment
- Case study – Maggie's Cancer Support Centre

Case study –
Maggie's Centre, Edinburgh, Scotland

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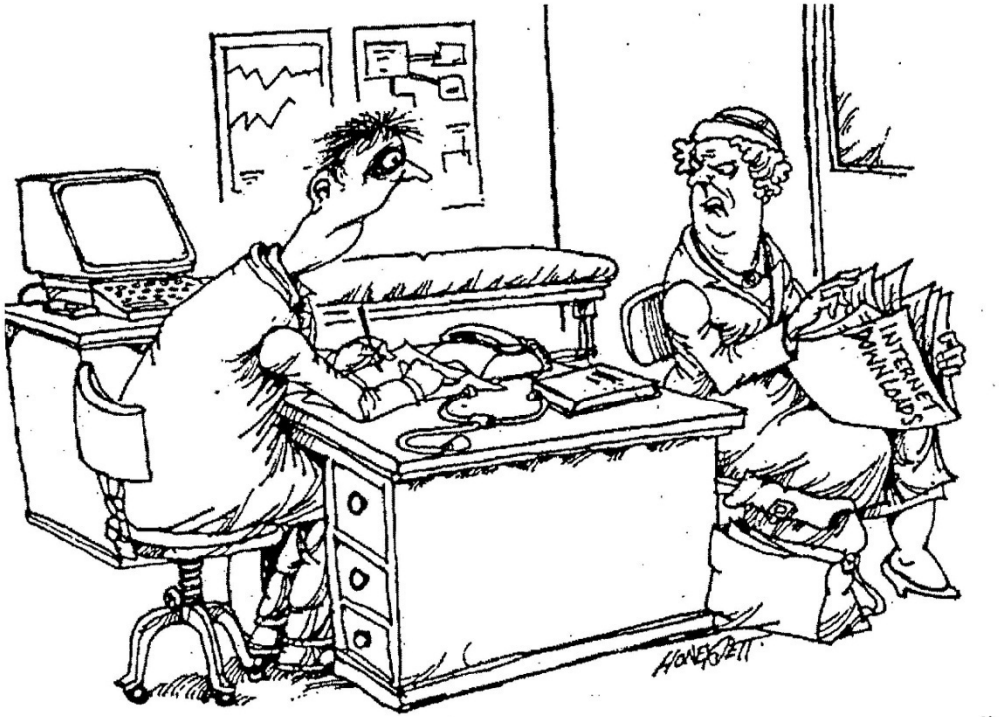
Case study – Maggie's Centre, Edinburgh, Scotland

Thank you!


INTERNET DOWNLOADS
"I'M SORRY DOCTOR, BUT AGAIN I HAVE TO DISAGREE."

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CHAA.net subscriber network – benefits of joining?

Regular newsletter (4 per year); information re upcoming events, resources, research, AusHFG releases and calls for reviewers. Register at CHAA website.

ACHSE-CHAA Conference 2009 – call for papers ~~open to 28 November~~ 2008; to be held on Gold Coast – August 2009

~~Extended to 12 December 2008 ! !~~

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Major research programs include:

1. Australasian Health Facility Guidelines - www.healthfacilityguidelines.com.au
2. Australasian Post Occupancy Evaluation and Benchmarking projects
3. Industry capacity building programs including bi-annual conference, regular seminars and other activities
4. Residential and community enabling and supportive environments