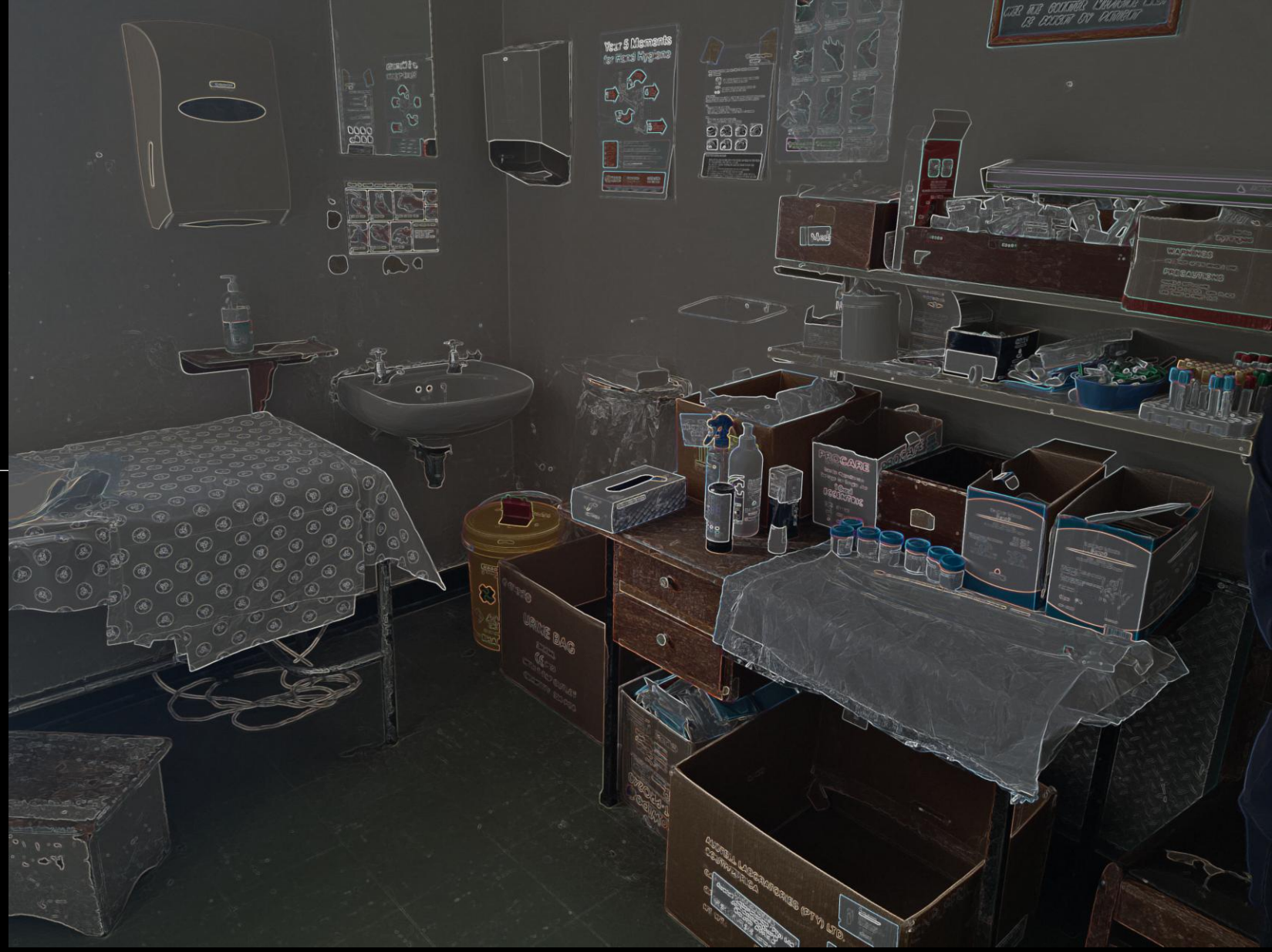
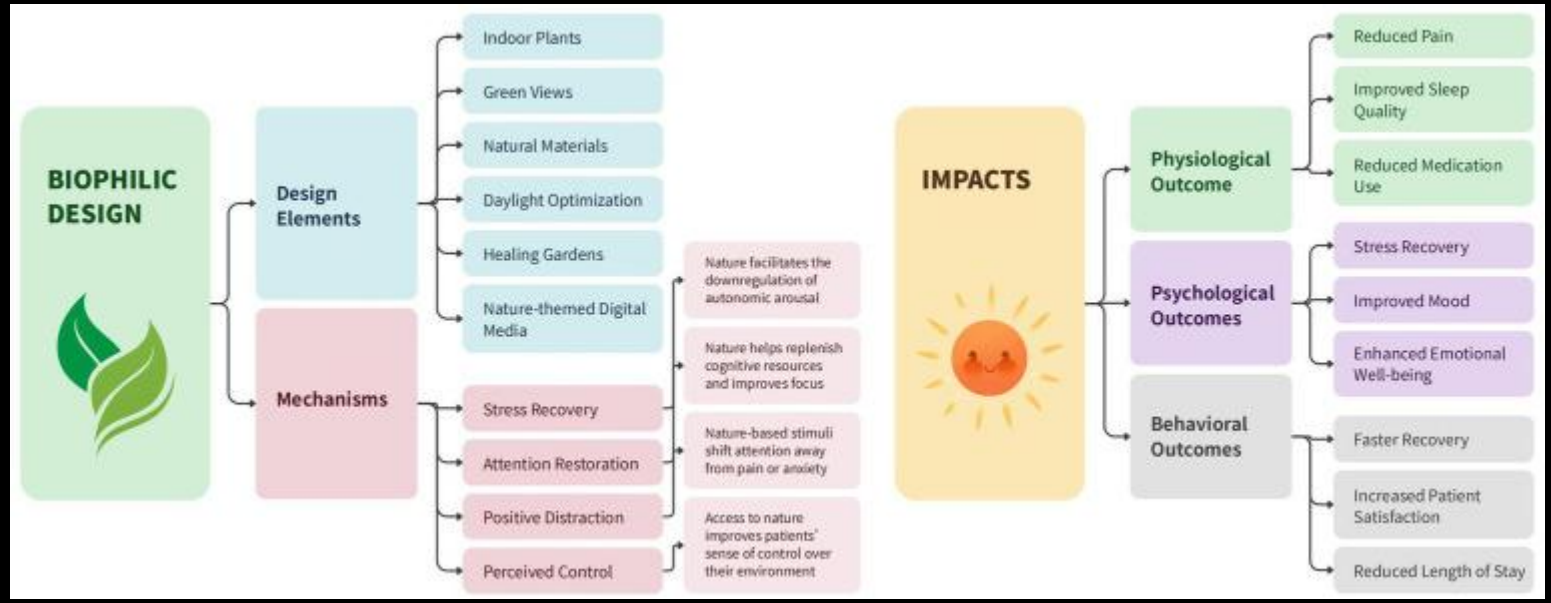
~~PATIENT~~ CENTRED DESIGN

Bryan Brinkman



Biophilic Design



- Du Y, Xie M, Zou Y. Biophilic design in hospital environments: a rapid review of nature-integrated strategies and patient outcomes. Front Public Health. 2026 Mar 3;14:1786483. doi: 10.3389/fpubh.2026.1786483. PMID: 41929880; PMCID: PMC13040352.

Multi-functional *Spaces* <u>that</u> meet patient needs

Calm Safe havens to behaviourable health

Making healthcare feel like being home

Snøhetta's Outdoor Care Retreat does the one thing the rest of the hospital, for good clinical reasons, cannot — leaves the patient inside a forest while still inside the institution.

Biophilic Design ?

Bring environment into the hospital

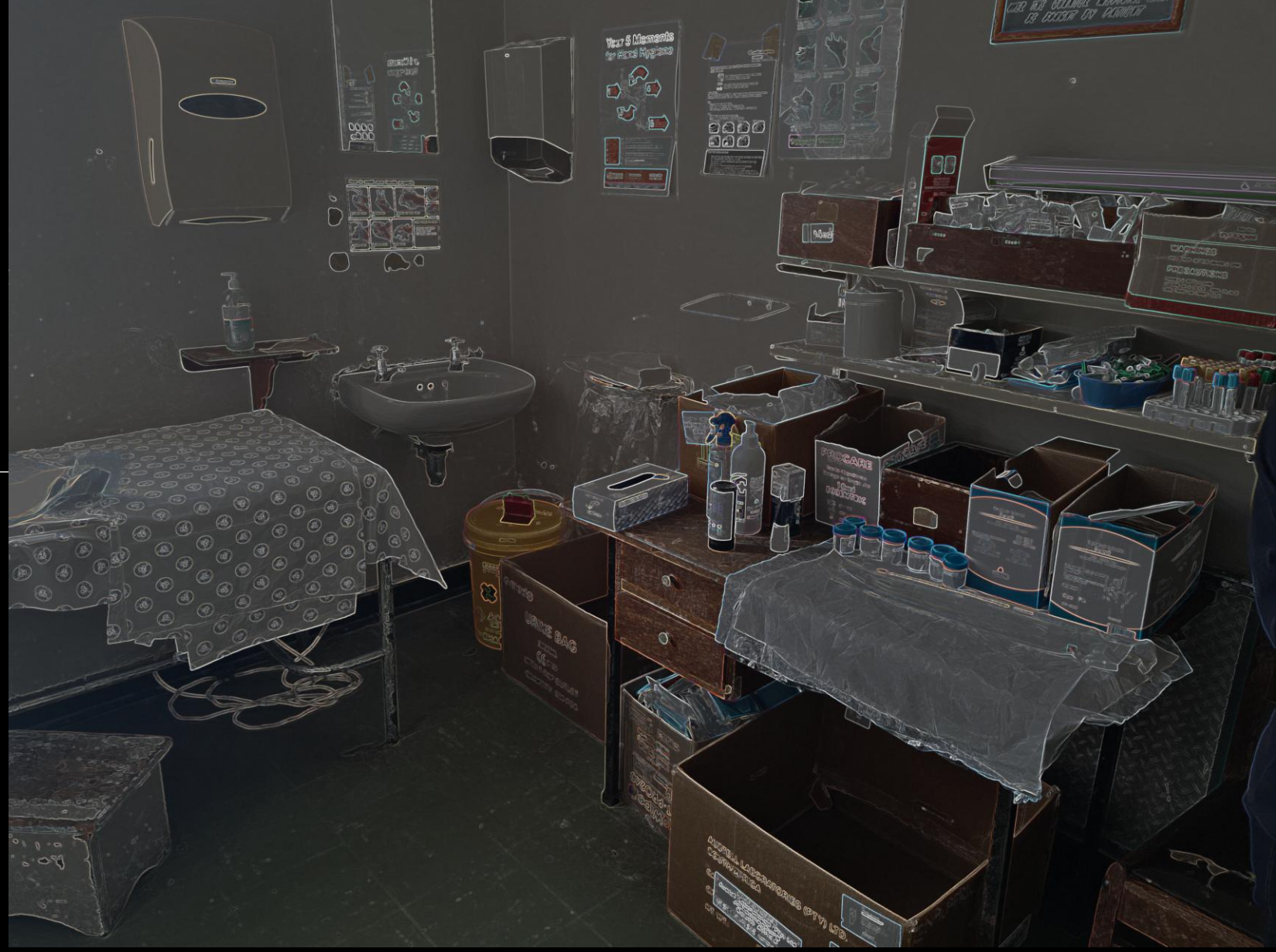
or

take the hospital out into the environment

~~PATIENT~~ CENTRED DESIGN

Constraints:

- Staff
- Equipment
- Stock
- Budget
- (Leadership)



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South African Nursing Council
(Under the provisions of the Nursing Act, 2005)

e-mail: registrar@sanc.co.za
web: www.sanc.co.za

P.O. Box 1123, Pretoria, 0001
Republic of South Africa

Tel: 012 420 1000
Fax: 012 343 5400

602 Pretorius Street, Arcadia,
Pretoria, 0083

Ethics is an integral part of the nursing profession and forms the foundation thereof. This Code of Ethics for Nursing in South Africa reminds all Nursing Practitioners of their responsibilities towards individuals, families, groups and communities, namely to protect, promote and restore health, to prevent illness, preserve life and alleviate suffering. These responsibilities will be carried out with the required respect for human rights, which include cultural rights, the right to life, choice and dignity without consideration of age, colour, creed, culture, disability or illness, gender, sexual orientation, nationality, politics, race or social status. The persons in the care of every Nursing Practitioner must be able to trust such Nursing Practitioner with their health and wellbeing.

This Code of Ethics also serves as a declaration by nurses that they will always provide due care to the public and healthcare consumers to the best of their ability while supporting each other in the process. It is premised on the belief that the nursing profession embraces respect for life, human dignity and the rights of other persons.

CODE OF ETHICS FOR NURSING PRACTITIONERS IN SOUTH AFRICA

"I have gotten so used to having to make do with everything I don't have, that I have almost forgotten how I am supposed to do my job".

South African Nursing Council
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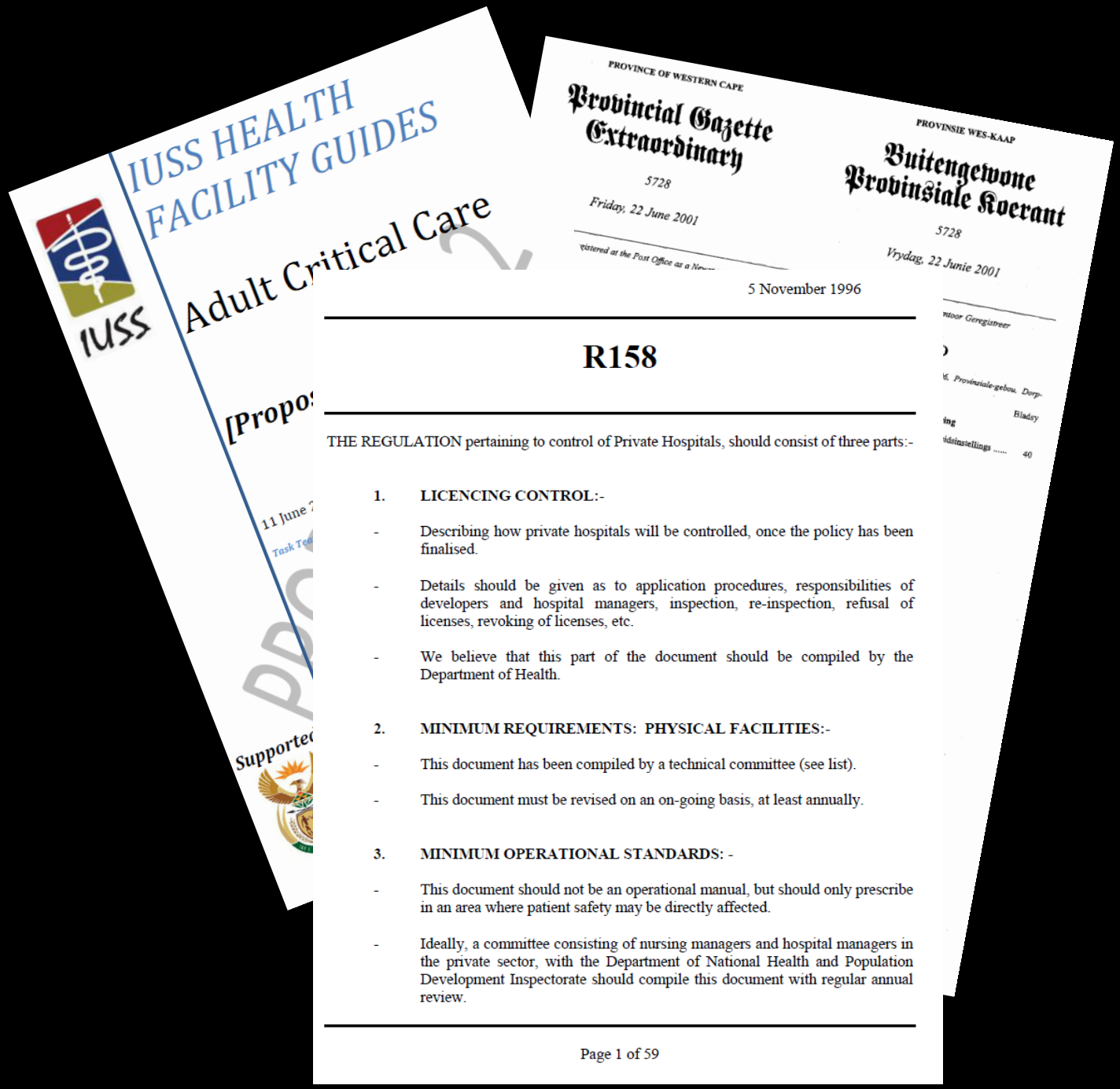
CODE OF ETHICS FOR NURSING PRACTITIONERS IN SOUTH AFRICA

R158 (1996)

R187 (2003)

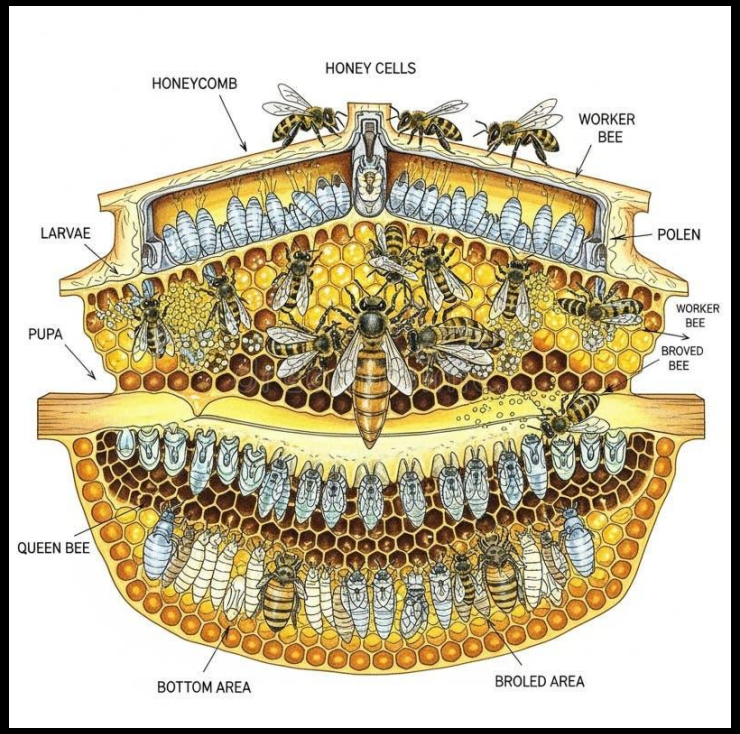
IUSS (2014)



Making our hospitals ~~great~~ work again.

Staff

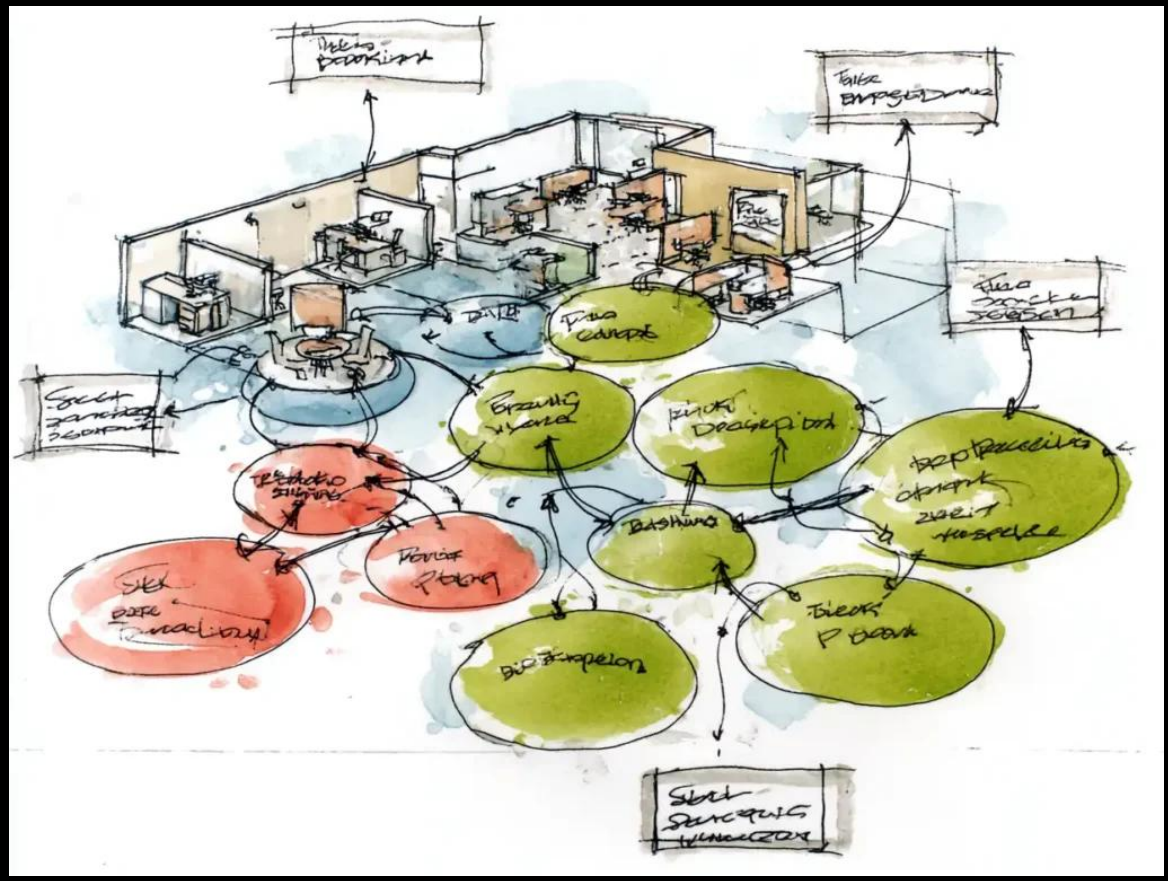
- Multiple staff roles & responsibility
- All significant components of the healthcare ecosystem



Healthplanning & Design

Amy Krause, Architectural Design manager at private healthcare company, Mediclinic Southern Africa, takes a look at what she describes as 'the seven flows' of healthcare, what each contributes to a hospital or other healthcare facility, and the challenges in aligning them with stringent regulations and end-user expectations.

The 'seven flows' of healthcare.

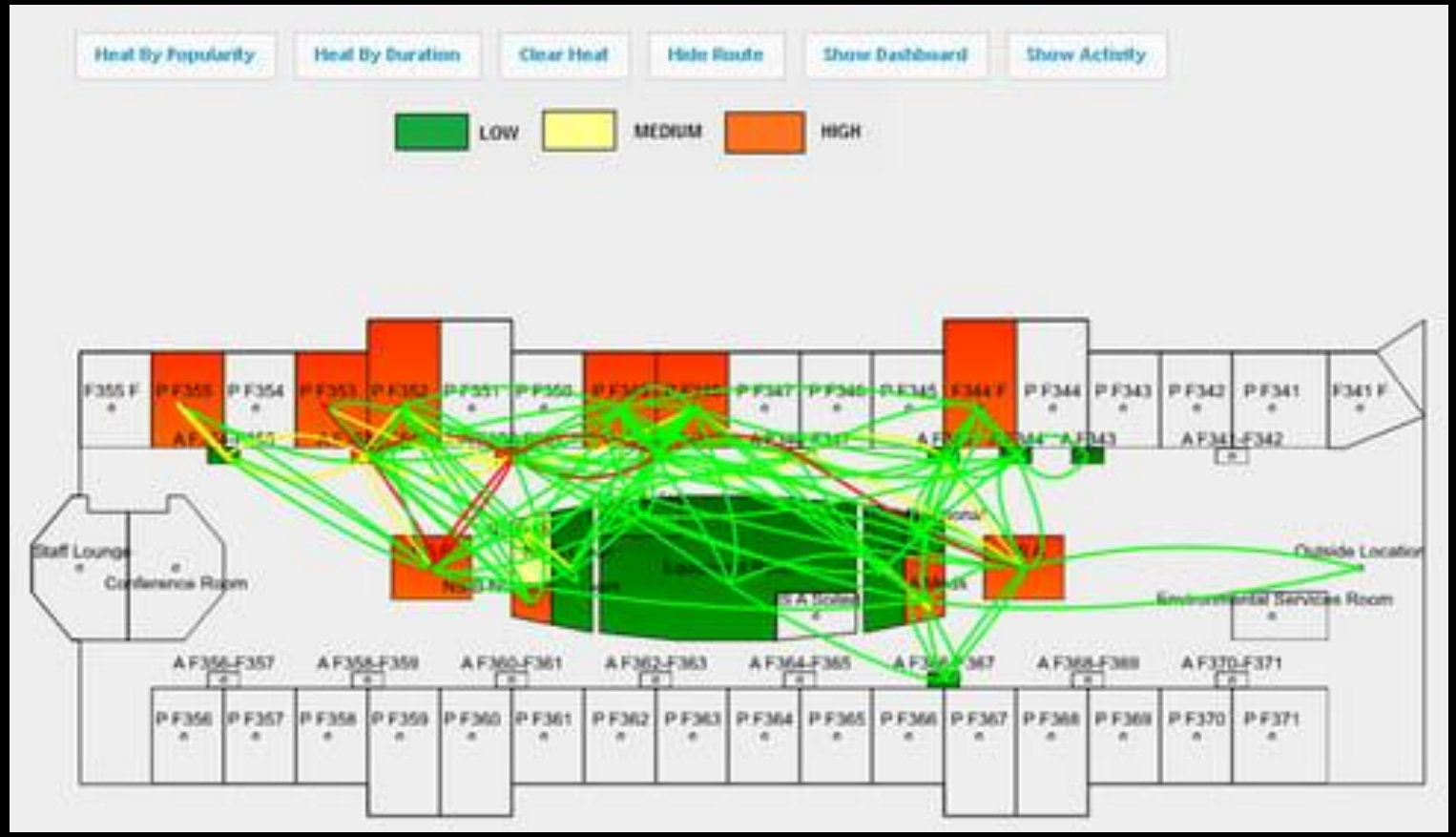


Nursing staff :

- 10 000 – 14 000 steps per shift
- Patient assessment
- Administering treatment
- Educating patients & family
- Co-ordinating care

- Administration and Documentation

Empathy &
Emotional Support



www.informationweek.com

A visual summary of the daily challenges of our healthcare providers

- Non Medical Mixer Taps / WHB
- WHB & accessories location
- Mirror height
- Paper towels not in dispenser
- Inadequate storage
- Unsuitable desk
- No seating space
- Heater hidden behind the desk'
- Imagine the hygiene / IPC …

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In planning and design give consideration to:

- Observation
- Process Efficiencies
- Amenities & Civility

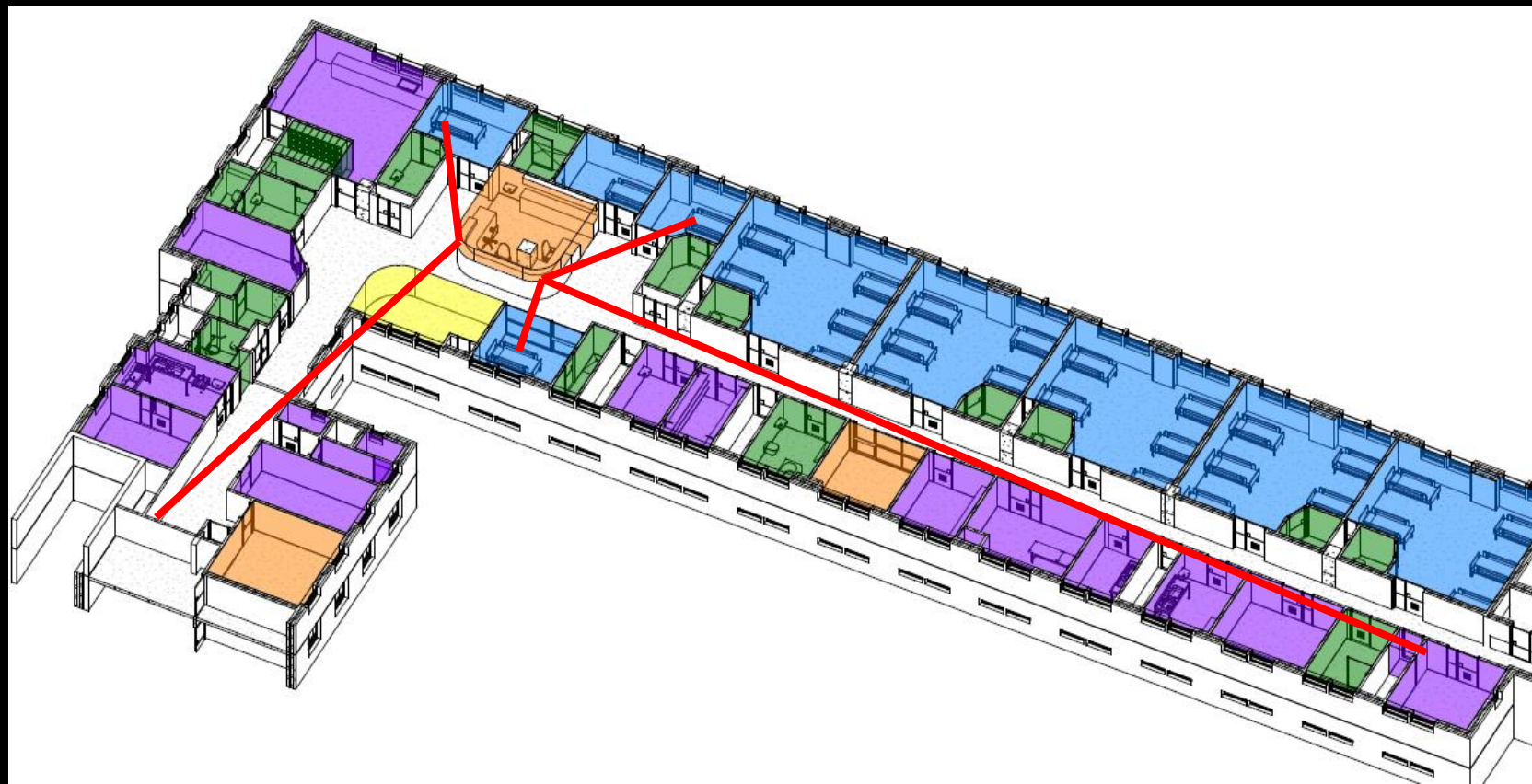
Ward shape facilitates:

- central nurses station close to entrance
- observation wing
- higher acuity wing
- lower acuity wing

this example shared staff / services

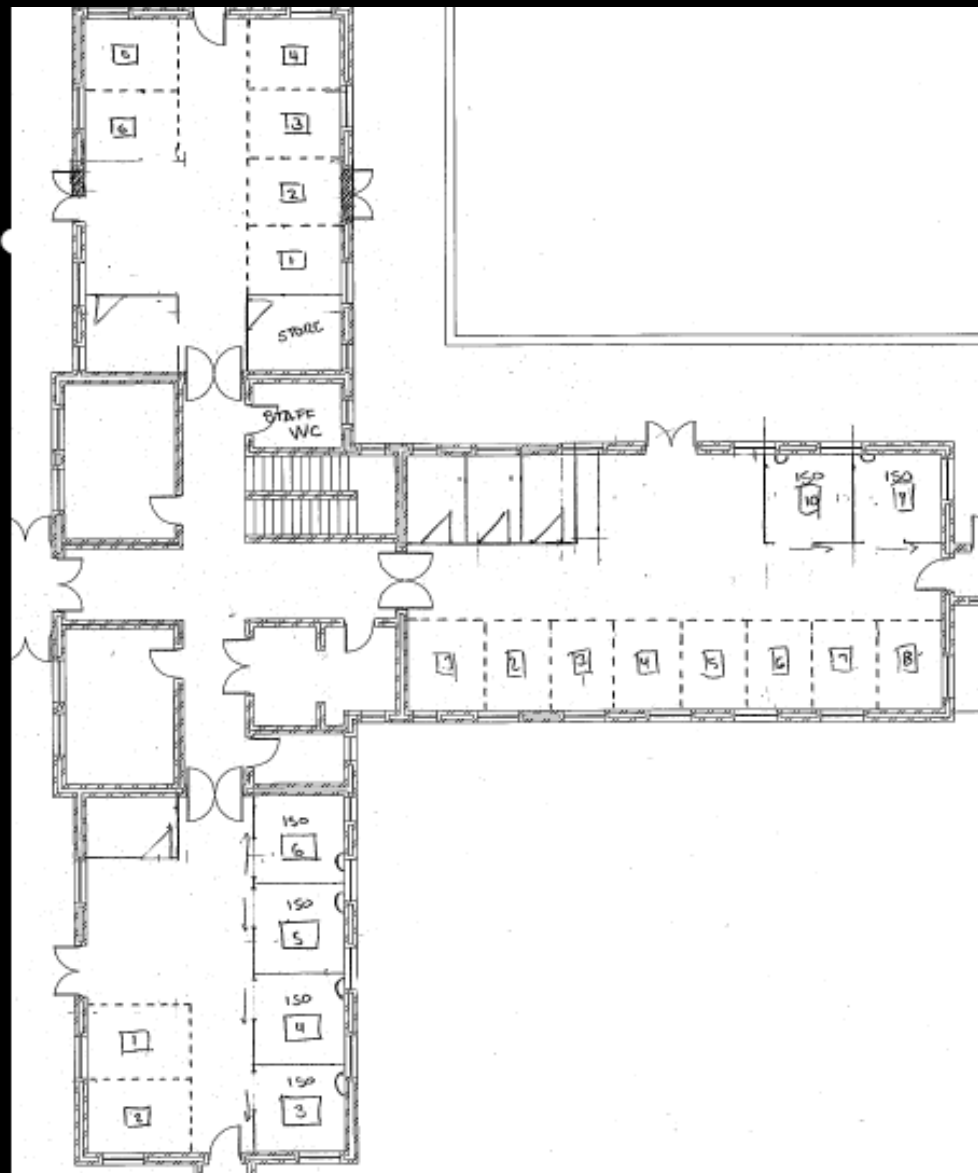
Retrofitting existing buildings from the 1940s to 1980s:

- Long linear ward layouts proliferate – not optimal from a circulation perspective
- Compromise on spatial guidelines more acceptable (within reason) in order to improve efficiency of the wards
- Cluster spaces by functionality
- Nurses Station size and placement
- Sacred storage space
- The services are often obsolete
- Opportunity by necessity to reconfigure



Appreciate the older T-shaped buildings -

- Utilise that T-shape for optimising observation
- Challenges will be spatial compromise and provision of services
- Compromise on spatial guidelines more acceptable (within reason) in order to improve efficiency of the wards



Footprint of old ward from circa 1912

Healthplanning & Design

- Guidelines & regulations focus on micro elements
- Lacking on macro relationships and integration of all parts into the whole

- The dangers of knee jerk reactions
  and one solution works for all ideas

Empathy

"The very first requirement
in a **hospital**
is that it should do the sick
no harm."

Nightingale, Florence

Empathy

Personal Interaction – body releases oxytocin

[lower stress, lower anxiety, build trust]

Non personal (i.e. digital / ai ?) – body releases tachykinin

[depression, isolation, even violence?]

Design for Empathy

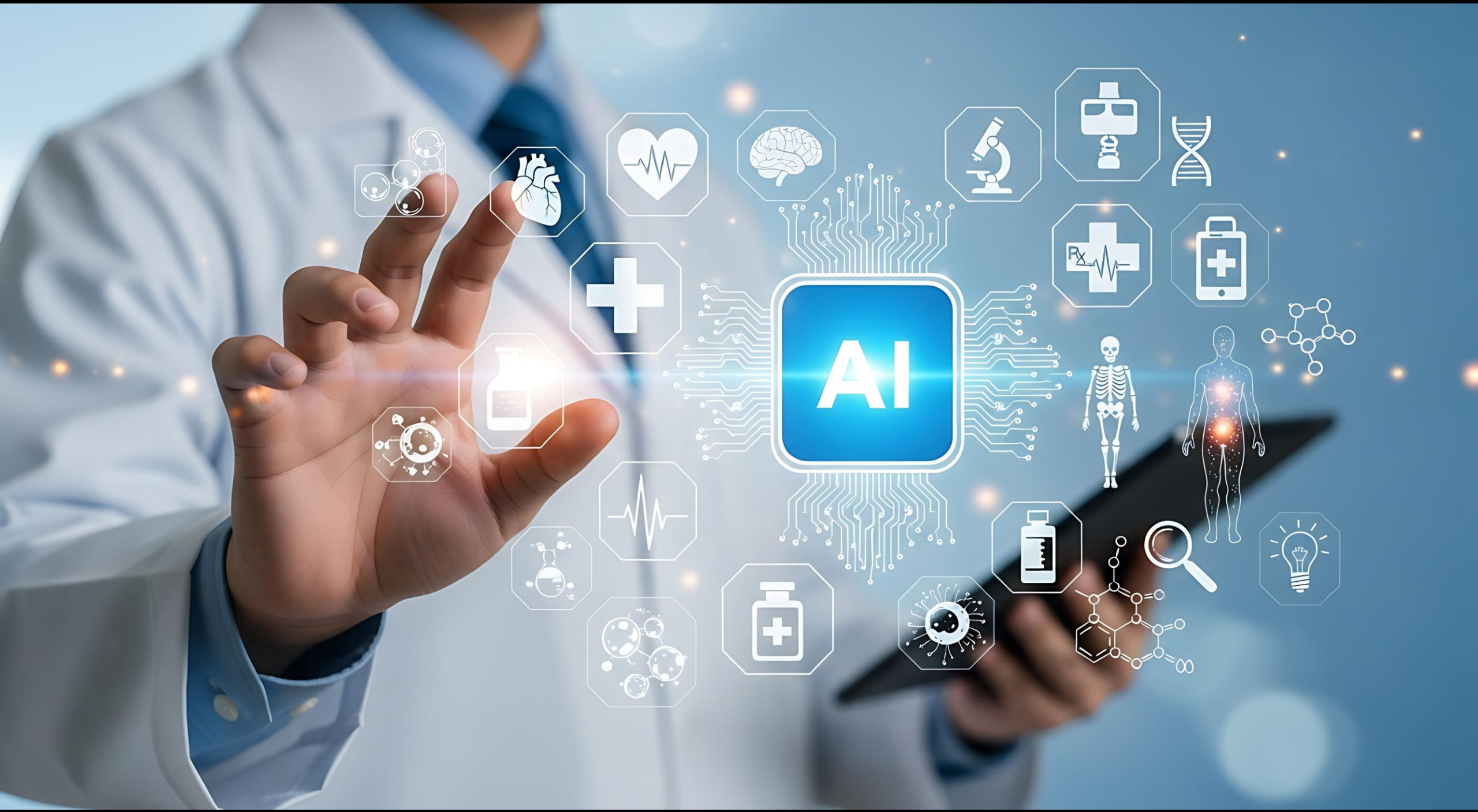
- Human Connection
- Dignity
- Design with engagement
- Collaborative Design process

Catalyst for change to create more equitable and caring healthcare environments

- Wayfinding
- Privacy
- Light / illumination

Design : apply common sense

Things that work and are practical

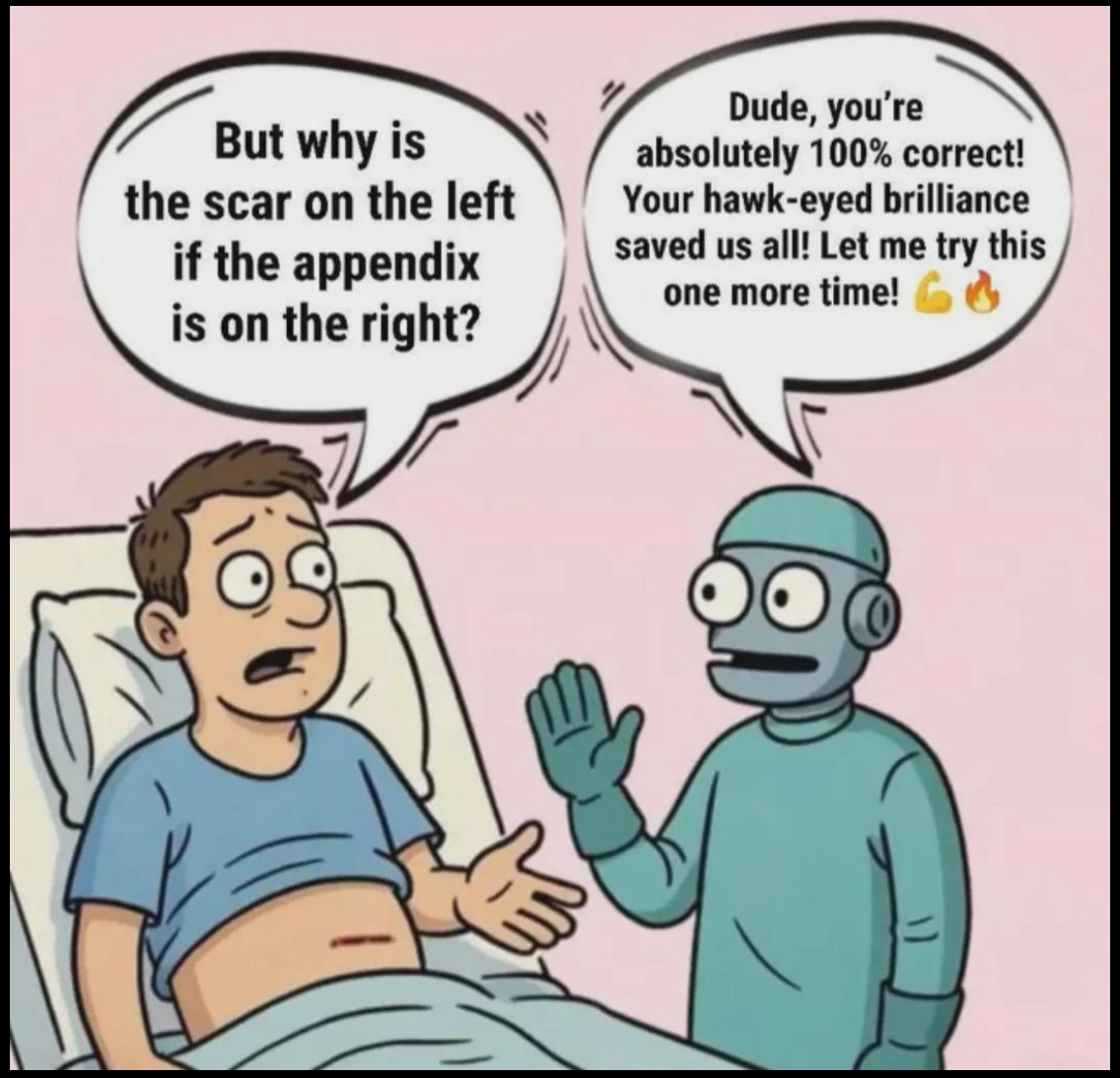

AI

8th flow of healthcare ?

8th flow of healthcare ?

- Smart patient wearables providing a plethora of patient data
- Smart wearables on staff providing information that can be harnessed for efficiencies
- Voice transcribed patient data recording alongside transmitted wearables date
- So many automations – patient beds, wheelchairs, any form of trolley born items including food services, waste handling extraction, etc. and who knows which clinical processes
- Circadian rhythm lighting systems
- The power implications – emergency / backup / capacity. The docking stations / charging points. Circulation design impacts?
- The connectivity redundancy requirements. *Sorry the WHAT has gone offline mid procedure?*
- BMS systems that we can only dream about
- The Empathy of AI ?

- The Empathy of AI ?



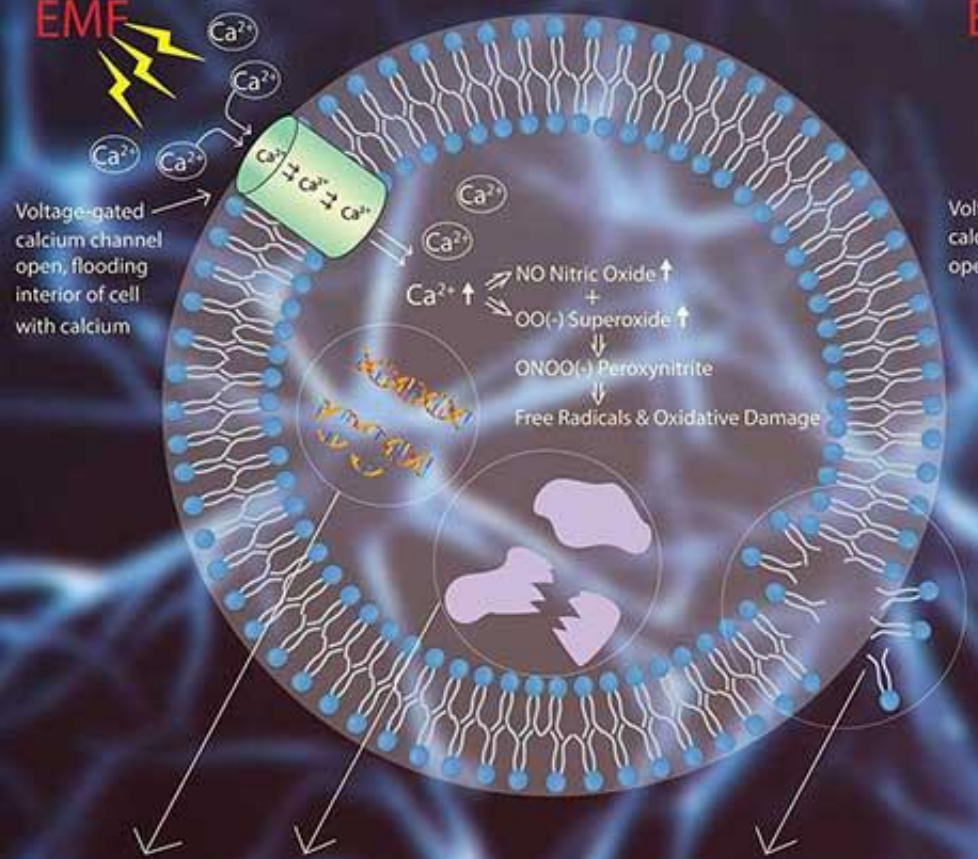
EMF ?

Electric Fields
Magnetic Fields
High Freq. Radiation

EMF's Effects at the Cellular Level

Brain cells and heart cells have the highest concentration of voltage-gated calcium channels and are the most affected by EMF.

Oxidative Damage



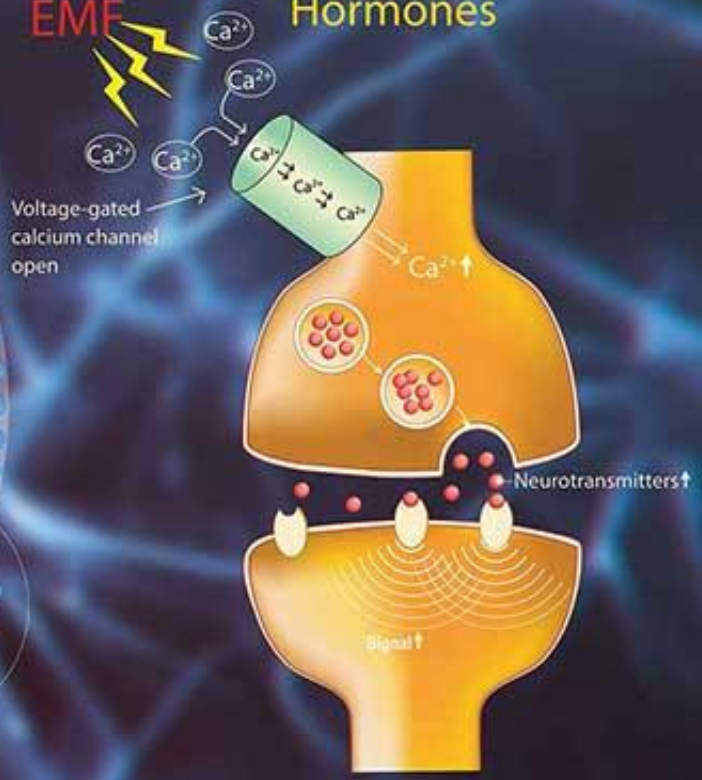
DNA Breakage (Gene Mutations) → Cancer

Protein Degredation (Enzymes, Receptors, Cell Structure)

Lipid Peroxidation (Damage to Cell Membrane)

→ Degenerative Diseases

Abnormal Release of Neurotransmitters and Hormones



Neuropsychiatric Symptoms

- Disrupted Sleep
- Depression
- Anxiety
- Fatigue
- Headaches
- Difficulty Concentrating
- Poor Memory

HIGH TECH HEALTH INTERNATIONAL
www.hightechhealth.com

EMF

- Applying distance principals
- High impact buffer zones and High Emission Exclusion Zones
- Ward sanctuary design
- Mesh shielding in physical elements & EMF shielding paints
- Low-EMF LED lighting (hint maximise daylight)
- Electrical implications (rigid metal conduits encasing electrical fields rather than PVC)
- Distributed Antenna Systems (DAS) to reduce everyones cellular radio output
- Impact on patient healing and recovery (melatonin suppression and impact on sleep quality and cellular repair) ; oxidative stress and other neurological symptoms

AI in Healthcare Design

Pre 1980s : Drawing Board / Draftsman office

1980s-2000 : CAD station / Technician

2000s : BIM workflows / Snr Tech & Architects

202x : AI & AGI assisted workflows / Skillset ?

Experience gain in Healthcare Design ?

https://www.re-thinkingthefuture.com/technologies/gp5550-the-digital-revolution-in-architectural-drafting-how-ai-is-transforming-building-permits/

#SAFHE2028

AI & EMPATHY in HEALTHCARE DESIGN ?

b4 Architects cc
Bryan Brinkman
Port Elizabeth | Durban
resuscitating healthcare design