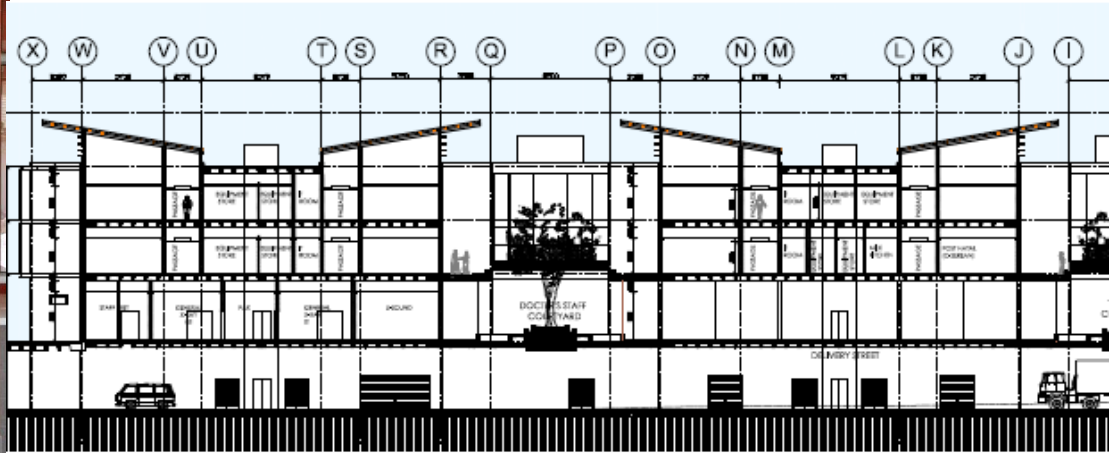


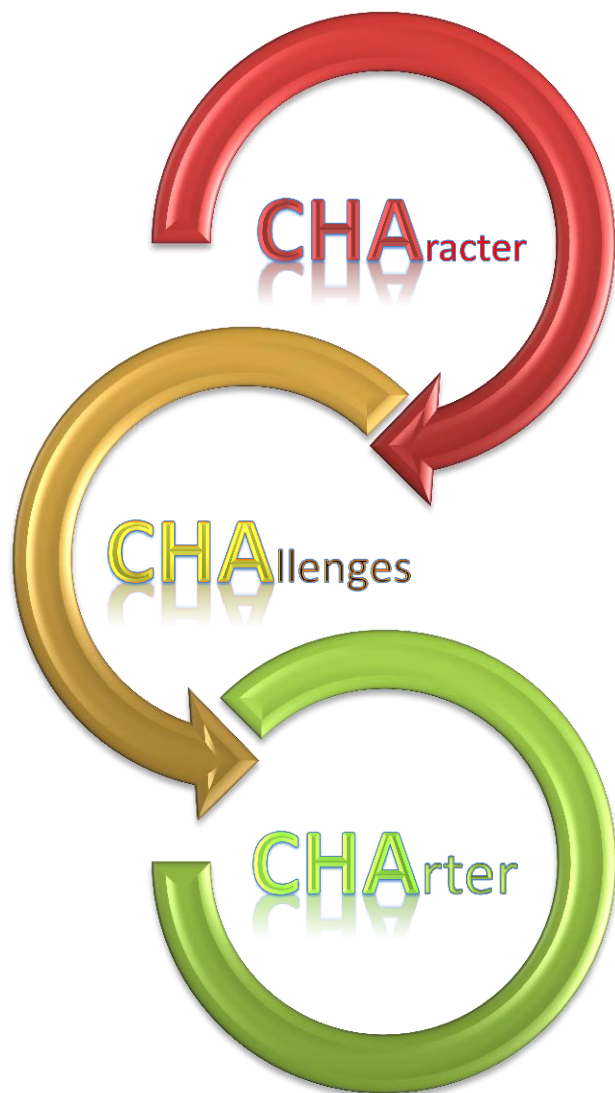
UIA/PHG 2013 Annual Healthcare Forum



From reactive to proactive management of the South African healthcare estate.



Peta de Jager and Geoff Abbott



Assertions:

Everyone has the constitutional right to:
an environment that is not harmful to their
health or well-being; and
access to health care services

Service delivery in the healthcare sector is profoundly
affected by the built infrastructure provided to
support it

Sustainability requires that the value of your wealth,
in all its forms, should increase over time – and South
Africa's is declining [3]

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sectorisation of healthcare provision with distinctive characteristics:

PRIVATE SECTOR

- Market driven (brand-conscious, attract HCW and patients); 
- Must remain viable: 
 - Economic imperative to minimise capital cost;
 - Replicates successes;
 - “In-house” capability;
- Agile (selects its services);
- Formerly legislated with reference to minimum standards (R158).

PUBLIC SECTOR

- Complex institutional split between custodial and user departments;
- Economic imperative to minimise operating costs:
 - Maintenance averse;
 - Roster-based professional selection;
- Inert;
- Formerly legislated with reference to maximum area and cost norms (SAHnorms)

48.5% of spend (R 120.8-billion)
 16.2% of the population
 8.2-million

49.2%* of spend (R 122.4-billion)
 84% of the population
 42-million people

[4]

[4]* excludes works on health infrastructure



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Khayelitsha Public Hospital – Western Cape [6]



Fourways Private Hospital – Gauteng [5]



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DEADLY
EARTH
An investigation into the collapse of a health system

+ CITIZENS' REPORTS

A HOSPITAL CRUMBLES

Health care at Canzibe Hospital has all but collapsed as two foreign doctors desperately try to keep basic services going.

The road to Canzibe Hospital is dusty, mountainous and potholed. Turning off the gravel road from Mdumbi, it takes about two hours to travel the more than 20km from Coffee Bay. It's hard to imagine trying to survive this trip in the back of an ambulance or taxi when you are pregnant or ill. But this is the daily reality for the many patients who cannot be helped at Canzibe Hospital, a 140-bed district hospital that serves more than 150 000 people in the Ngqeleni sub-district.

The hospital is a collection of crumbling and collapsed buildings, with long grass and scattered rubbish everywhere. It has five inpatient wards, an outpatient department and a casualty section. The hospital also has any x-ray department, pharmacy and antiretroviral therapy unit.

While there are three doctors employed, the hospital essentially runs on the services of two Dutch doctors; the third doctor being mostly absent. Before the second Dutch doctor arrived this year, the hospital ran with one Dutch doctor for eight months.

The two doctors manage an outpatient department of between 80 and 100 patients daily, and are only able to attend to the seriously ill or injured patients. In addition, there are more than 80 inpatients that need to be attended to. The doctors work long hours with more overtime than should be allowed, an unsafe and unsustainable practice, with a high risk of burnout.

The hospital is unable to offer any outreach or preventative services to the 11 clinics it serves. This means patients often arrive at the hospital only when they are extremely ill, putting additional strain on the over-stretched staff and compromised services.

The litany of problems is extensive.

The doctor shortage means Caesarean sections are referred to other hospitals, as two doctors have to be present during surgery. The closest hospital is St Barnabas in Libode, more than an hour's drive

away on bumpy, unsafe roads. The risks to pregnant women are exacerbated when they are forced to wait, often for hours, for transport to arrive. This situation compounds the problems at Canzibe: the hospital management recently directed a doctor to accompany mothers to St Barnabas, which meant Canzibe was left with no doctor on the premises. The doctor refused. St Barnabas is also facing severe staff shortages and mothers are often referred on to Mthatha, between 90 minutes and two hours drive away. A hospital source said there is no doubt that some pregnant women and their unborn babies have died during the trip or after arriving at Mthatha.

Canzibe has a severe nursing shortage, no physiotherapist and no pharmacist. Staff members who work in the hospital pharmacy basically hand out drugs, but can offer no information on adverse side effects or drug combinations.

The x-ray machine has been due for its quarterly quality assurance test since October 2012, but management has failed to arrange the mandatory testing. The machine has been used nonetheless. It is now malfunctioning, and patients are referred to Mthatha for a simple x-ray test. A round trip to Mthatha by bus takes more than 12 hours, and suspected TB cases who are also sent to Mthatha for x-rays travel in the same bus as everyone else.

The hospital regularly runs out of oxygen. One source who spoke to SECTION27 was aware of at least one infant in respiratory distress who died because there was no oxygen supply.

A daily bus meant to transport patients between Canzibe and Mthatha does not operate every day, and is frequently used to transport supplies such as blood.

The hospital regularly runs out of medical supplies and drugs, including antibiotics.

Poor hospital management is identified as a major reason for the breakdown of services.

+ Canzibe Hospital is a 140-bed district hospital that serves more than 150 000 people in the Ngqeleni sub-district.



"When I went at 6am to deliver my baby at Canzibe, they first refused to admit me because I did not have a referral letter. Once they admitted me the nurses abused me by slapping me. When I need to go to Pili, they often do not have drugs. They were out of stock of vaccinations when I had to take my child." Nonceba Gwebengana

What workers & patients say...



"There is a poor management at the hospital, the broken x-ray machine being a prime example. The hospital grounds and buildings are totally neglected. Patients often sleep at the hospital as they wait to be seen. Transcape is now denied access to the hospital despite donors having invested hugely. Our malnutrition project was closed down by the hospital and the building is used for staff accommodation."

Luzuko Bango - Transcape chair



"Our community depends on the Canzibe Gateway Clinic and Canzibe Hospital. There are no nurses and doctors, and people often wait long before being turned away. One nurse runs the clinic, which is on the same grounds as the hospital. The clinic and hospital often run out of medications and there is no ambulance, so we have to hire our

own transport. If people do wait, they can wait for days before an ambulance takes them to Nelson Mandela Academic Hospital in Mthatha. The hospital grounds are in complete disrepair with overgrown bushes and grass. A patient was recently bitten by a snake on the hospital grounds. The toilet facilities are abysmal!"

Bigall Lamle - patient



"I have been a community health worker since 2008. My patients are regularly turned away from the clinic and hospital, without medication. Patients are sometimes told to go and buy their medication, or given painkillers for serious conditions. The patients are devastated as they often travel long distances. Young children and elderly patients are made to stand in long queues outside, in the sun. I have often waited the entire day with my patients without them seeing a doctor. Sometimes we sleep at the hospital in the hope of being seen the next day. Ambulances

services are completely unreliable and mostly unavailable. Once an ambulance driver abandoned a minor patient in Mthatha and I had to reply on the goodwill of stranger to pay his taxi fare home. My salary payments are unreliable and I am not always paid!"

Nontandazo Mlilo - community health worker

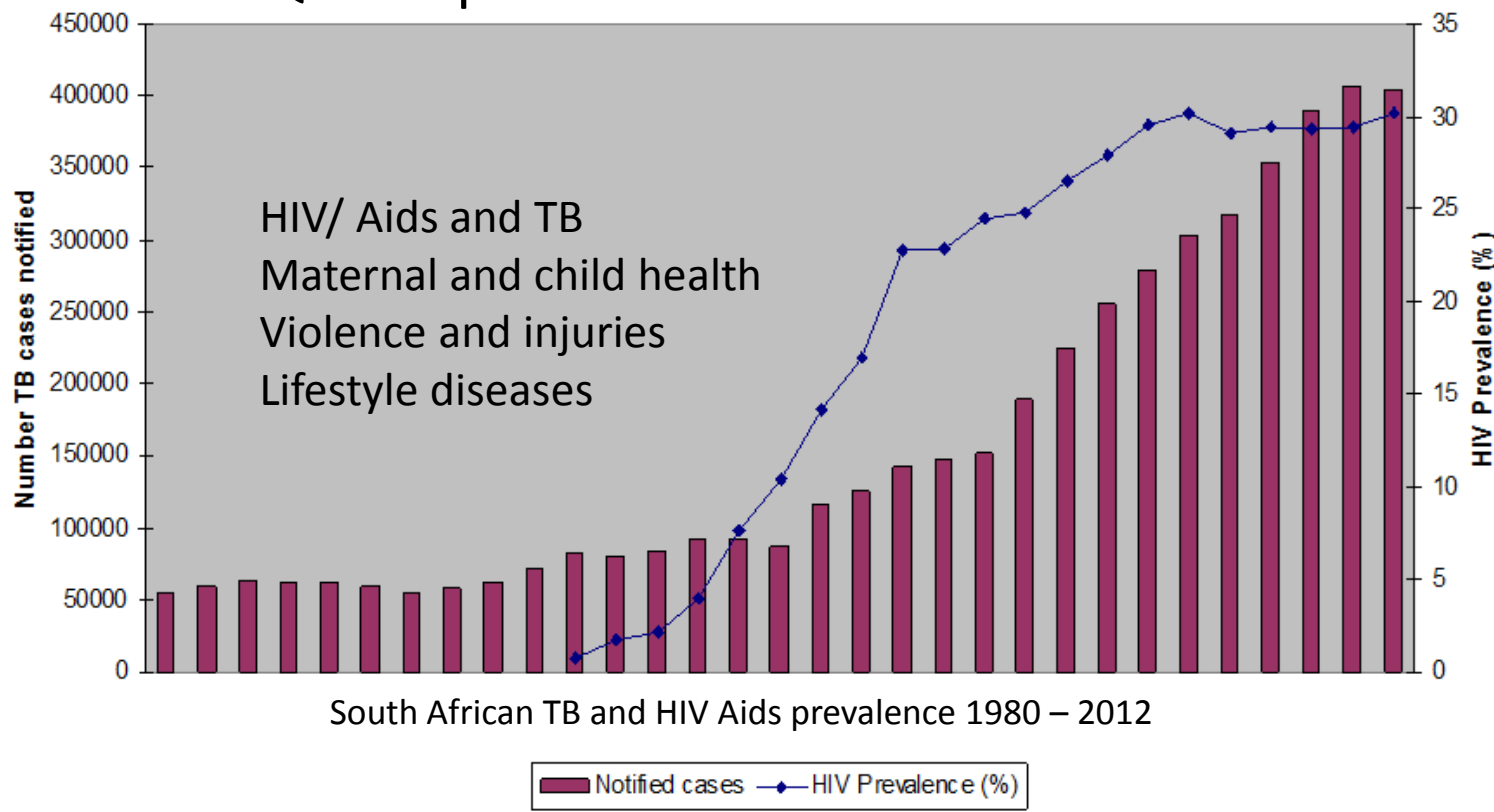


"I have been a community health worker since 2008 and work for social services. The absence of ambulance services has caused great suffering. Mostly sickly patients have to pay for private transport and I have to loan them the money, even though I have very little. Canzibe has huge staff and medication shortages. Sometimes patients have to share ARVs because they do not get all their treatment. It really hurts me when my patients are in pain and I feel helpless. The clinic has now told us they will not be open on Fridays!"

Mayikwa Bottomane - community health worker

Challenge 1

Quadruple burden of disease



South African's life expectancy has dropped

[10]

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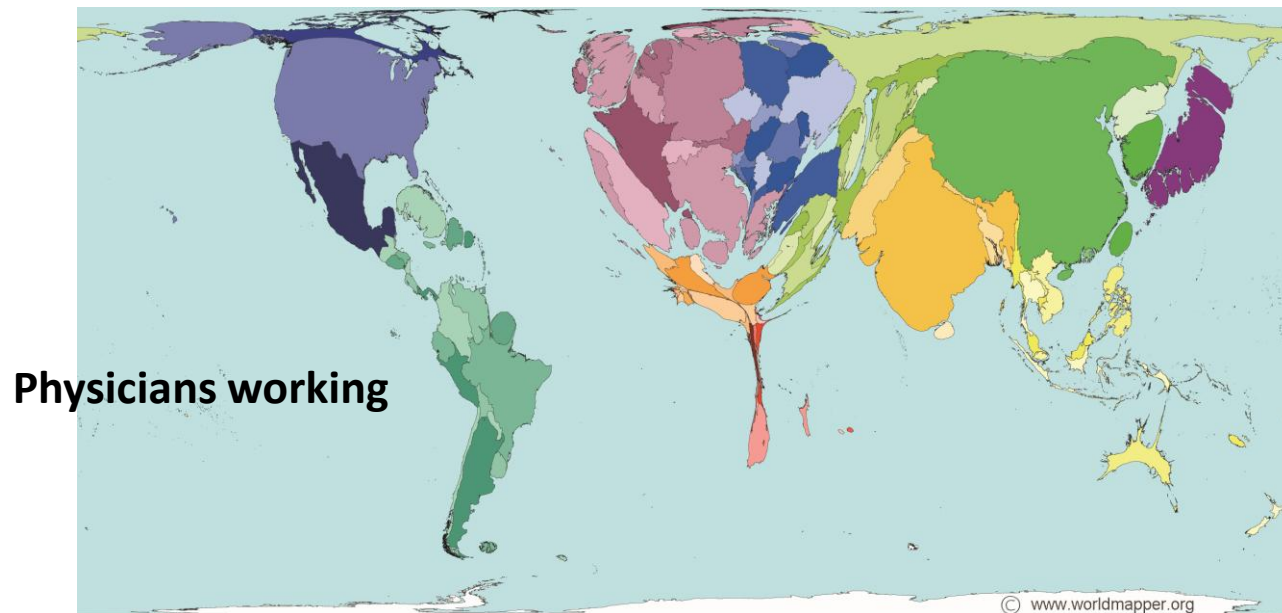
Challenge 2

Resource constraints

Severe staffing constraints (healthcare and built environment)

Legacy service platform

Very slow replacement rate – about 40 years



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Challenge 3

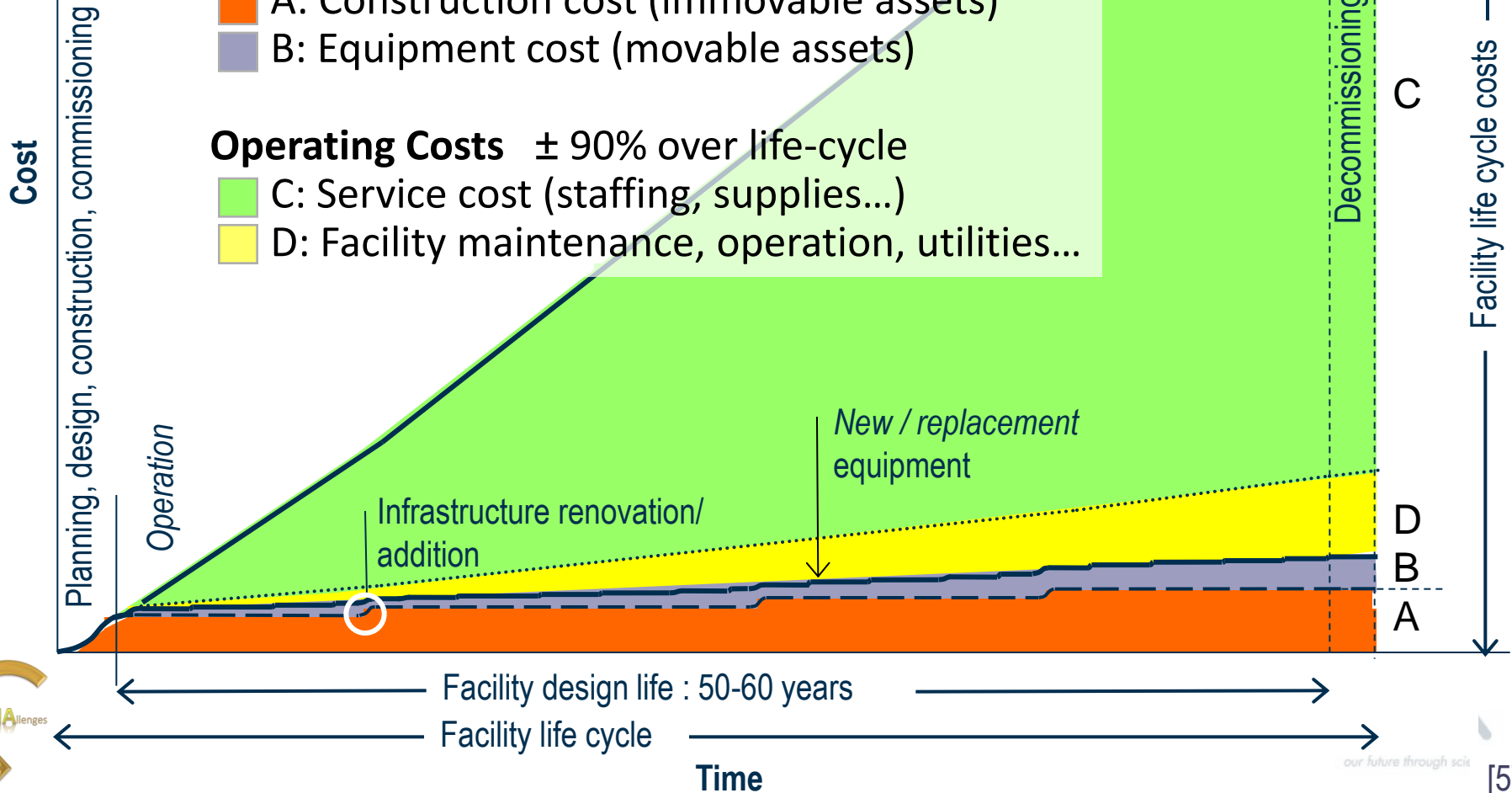
Healthcare infrastructure lifecycle costs

Capital Costs ± 10% over life-cycle

- A: Construction cost (immovable assets)
- B: Equipment cost (movable assets)

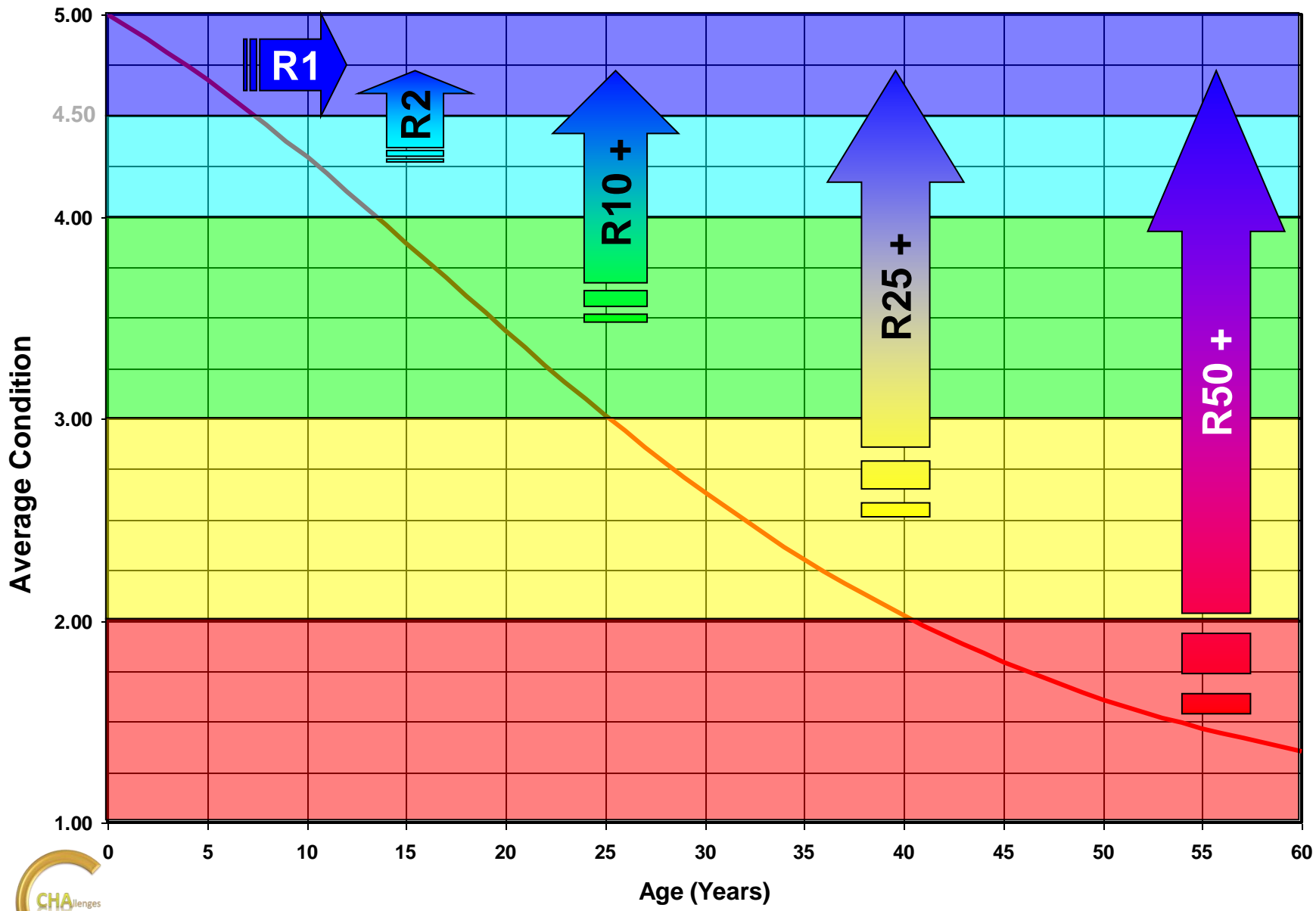
Operating Costs ± 90% over life-cycle

- C: Service cost (staffing, supplies...)
- D: Facility maintenance, operation, utilities...



NEGLECTING MAINTENANCE IS VERY COSTLY = UNSUSTAINABLE

(vs cost to retain in "VERY GOOD" condition)



— Average Condition

Challenge

4

Buildings are fixed assets –
but healthcare services may best be flexible to
address technology developments and need

The screenshot shows the NEWS MEDICAL website interface. At the top, there is a navigation bar with links: Home, News A-Z, Health A-Z, Drugs A-Z, Health Products, Health Services, News Archive, and Info / About. Below the navigation bar is a search bar with a search button and a notification that 683 people are on the site. There are also social media icons for Drugs, Health, and News. The main content area features a 'Drug Trial News' section with two articles:

- Novel combination drug regimen could be more effective than existing treatments for TB**: A novel approach to discover the first new tuberculosis (TB) combination drug regimen cleared a major hurdle when Phase II clinical trial results found it could kill more than 99 percent of patients' TB bacteria within two weeks and could be more effective than existing treatments, according to a study published today in the Lancet. [More]
- Topline results from first of four Phase 3 studies of Pfizer's bapineuzumab for Alzheimer's**: Pfizer Inc. announced today that the co-primary clinical endpoints, change in cognitive and functional performance compared to placebo, were not met in the Janssen Alzheimer Immunotherapy R&D LLC (Janssen AI)-led Phase 3 trial of intravenous (IV) bapineuzumab in patients with mild-to-moderate Alzheimer's disease who carry the ApoE4 (apolipoprotein E epsilon 4) genotype. [More]

On the right side of the page, there is a 'tags' section with a list of keywords: Antiretroviral, Bone, Brain, Cancer, Cell, Depression, Diabetes, Diet, DNA, Education, Exercise, Gene, Health and Human Services, Health Insurance, HIV, HIV/AIDS, Hospital, Infectious Diseases, Medicaid, Medi-Cal, Medical Technical, Medicare, Mental Health, Muscle, Nervous System, Neurology, Neuroscience, Nursing, Obesity, Oncology, Pain, Placebo, Protein, Psychiatry, Respiratory, Stress, Stroke, Thrombosis, Vaccine, Virus.

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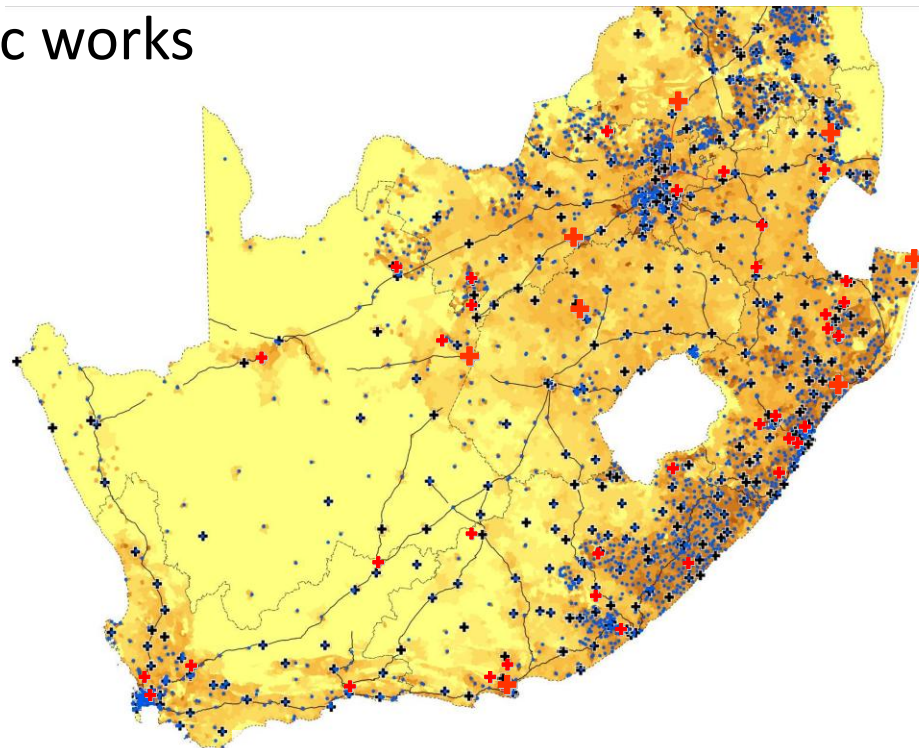
Challenge

5

9 autonomous provinces & a national government

- client department

- public works



South Africa's 4300+ Healthcare Facilities [12]

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By 2030, the health system should provide :
quality care to all,
Universal access to primary health care,
free at the point of service, or insurance-funded.

Focus on prevention, education, disease management and treatment

Hospitals should be effective and efficient, for quality secondary and tertiary care.
More health professionals

[13]



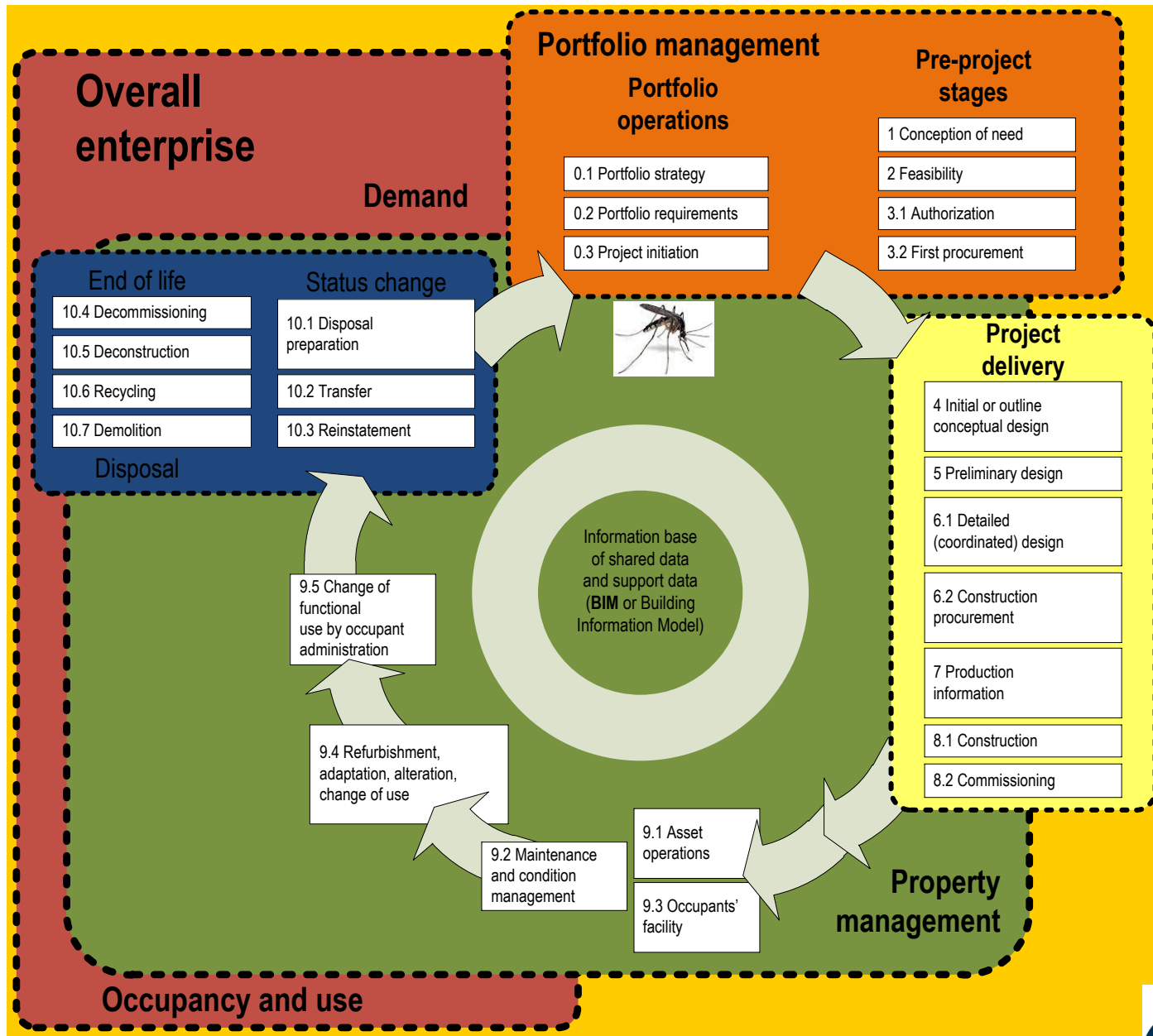
IUSS = National Department of Health initiative
+ DBSA, CSIR structured collaboration
... sustainable set of norms and standards for all levels of health care
facilities to inform and guide work related to all stages of the health
infrastructure lifecycle from strategic planning through to operation
and disposal... [14]



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Schematic diagram of phases and stages in the whole life [15]



Department of Health INFRASTRUCTURE UNIT SUPPORT SYSTEM (IUSS)

Authors: Edwina Fleming, Magda Coetzer and Etha van der Schyf

IUSS

GUIDELINES, NORMS AND STANDARDS
Clinical spaces

The documents outline the policy and service context, to illustrate the desired planning principles and design considerations of Clinical spaces such as in-patient units.

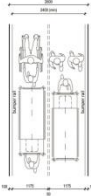
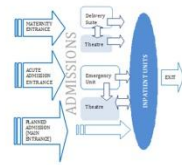
- The documents outline the policy and service context and attempts to illustrate the desired planning principles and design considerations of the relevant facilities.
- Part A outlines the national and provincial service and policy context which are the basic determinants of the planning and design principles;
 - Part B contains planning and design guidance, design considerations, functional relationships between specific units within the nursing college;
 - Part C develops these principles into a room requirements list;
 - Part D contains room data sheets and
 - Part E includes some indicative equipment lists and case studies.



ACTS & REGULATIONS

The National Health Act, 2003 (Act No. 63 of 2006) which provides guidelines for service delivery in South Africa
Services provided by hospitals are categorized in the Government Gazette No 185, 2nd March 2012.

PATIENT FLOW

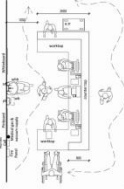


INPATIENT FACILITIES

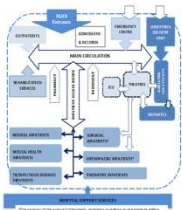
The adult inpatient unit is the clinical unit in a hospital where patient bed space and clinical treatment space is combined to provide a therapeutic unit for clinical diagnosis, medical and nursing care and treatment for patients admitted to the hospital.

- The document outlines:
- General design and planning principles;
 - Location and inter departmental relationships;
 - Flow patterns;
 - Functional Zones;
 - Inpatient activities;
 - Operational design considerations;
 - Room requirements.

FUNCTIONAL AREAS



DEPARTMENTAL RELATIONSHIPS



PAEDIATRICS

Key design principles for planning a paediatric facility:

- Dedicated paediatric facilities;
- Child centred design;
- Friendly healthcare environments for children and young people;
- Family-orientated;
- Play area;
- Outside spaces;
- Education;
- Artwork in the hospital;
- Sense Sensitive Design;
- The use of Colour;
- Noise Control;
- Natural lighting.

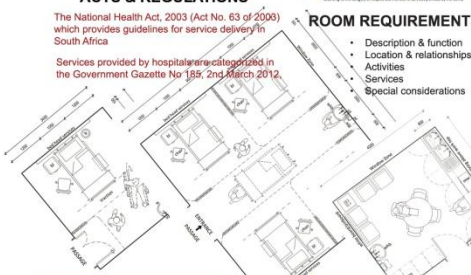
NURSING EDUCATION INSTITUTIONS



South Africa's healthcare system is predominantly nurse-based, requiring nurses to have the competence and expertise to manage the country's burden of disease and to meet South Africa's healthcare needs. The essential role of nurses is recognized by the Minister of Health as critical to achieving 'A long and a healthy life for all South Africans', Strategic Plan for Nursing Education, Training and Practice 2012/13 – 2016/17

ROOM REQUIREMENTS

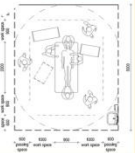
- Description & function
- Location & relationships
- Activities
- Services
- Special considerations



EMERGENCY CENTRES:

The Emergency Centre (EC) is defined as the dedicated area in a health facility that is organised and administered to provide a high standard of emergency care to those in the community who are in need of acute or urgent care. It forms the direct portal of entry for patients requiring emergency services. The patient flow through the EC determines the main areas within the Emergency Centre:

- Resuscitation area;
- Majors area
- Minors area



MATERNITY CARE FACILITIES

The maternity care facilities, collectively known as the maternity unit (MU), provide services for the safe antenatal, birthing and postnatal care of mothers and their new born babies in a comfortable environment that facilitates the normal physiological process of pregnancy and birth. The services includes all perinatal services that include: antenatal care, delivery rooms, postnatal care, neonatal and kangaroo mother care and termination of pregnancy management. These services are provided in terms of the promulgated levels of care for healthcare services.



- Non-prescriptive approach
- Service delivery driver and evidence-base drivers for guidelines, norms and standards;
- Open building for flexibility? ;
- Promotion of equity and access through appropriate standardisation;
- Value management

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GUIDELINES, NORMS AND STANDARDS
Cross-cutting Issues

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Cross-cutting Issues is a grouping of work packages for services and disciplines that are applicable to and impact on a broad spectrum of healthcare infrastructure, for example, Building Engineering Services (BES), Inclusive Environments (IE) and Infection Prevention and Control (IPC).

BUILDING ENGINEERING SERVICES (BES) Towards Functional & Sustainable Design

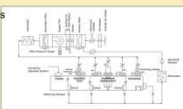
The focus of the building engineering services guidance document is towards sustainable clinical outcomes as they can be achieved through appropriate infection control measures and technical relevance.

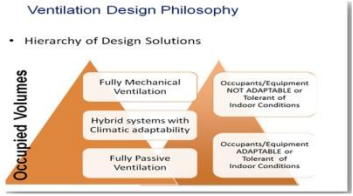


Broad Ranging Standards and Regulations Consulted and Incorporated:



Services addressed:

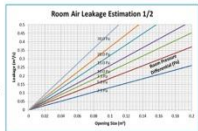
- Heating Ventilation & Air Conditioning
 - Wet services
 - Medical gas and vacuum services
 - Fire protection
 - Electrical services
 - Electronic services
 - Lifts
- 



Heating Ventilation and Air-conditioning

The following design interventions should be considered for implementation singly or in combination in the following hierarchy where the internal design condition cannot be met:

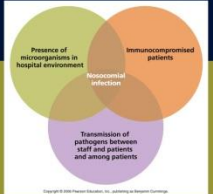
- Reducing solar and internal heat gains
- Using thermal mass to move room temperature extremes to outside of occupancy periods.
- Change occupancy schedules seasonally to improve indoor comfort conditions. (eg. Shift consultation hours from or towards the warmest daytime hours during summer or winter respectively)
- Introducing passive cooling or heating strategies
- Increasing ventilation rates
- Providing mechanical cooling or heating



INFECTION PREVENTION & CONTROL (IPC)

Infection control practices can be grouped in two categories: Standard precautions which must be applied at all times, and additional transmission-based controls where, by virtue of particular circumstances such as patient diagnosis, infectiousness, vulnerability profiles of susceptible individuals or epidemiological factors additional precautions are indicated.

IPC practice is a systematic hierarchical bundle of mitigating measures for managerial, administrative, environmental and personal protective risk management.





Courtesy: Nicholas Thorne

	LOW RISK	MODERATE RISK	HIGH RISK	HIGHEST RISK
TYPE A	+	+	+	+
TYPE B	+	+	+	+
TYPE C	+	+	+	+
TYPE D	+	+	+	+

Precautionary Measures - Before and During Activity

Precautionary Measures Upon Completion of Activity

- Lifecycle perspective;
 - Maintenance phases
 - Positive decommissioning
- Performance and consumption targets;
- Engineered passive design encouraged with wide occupancy comfort levels defined

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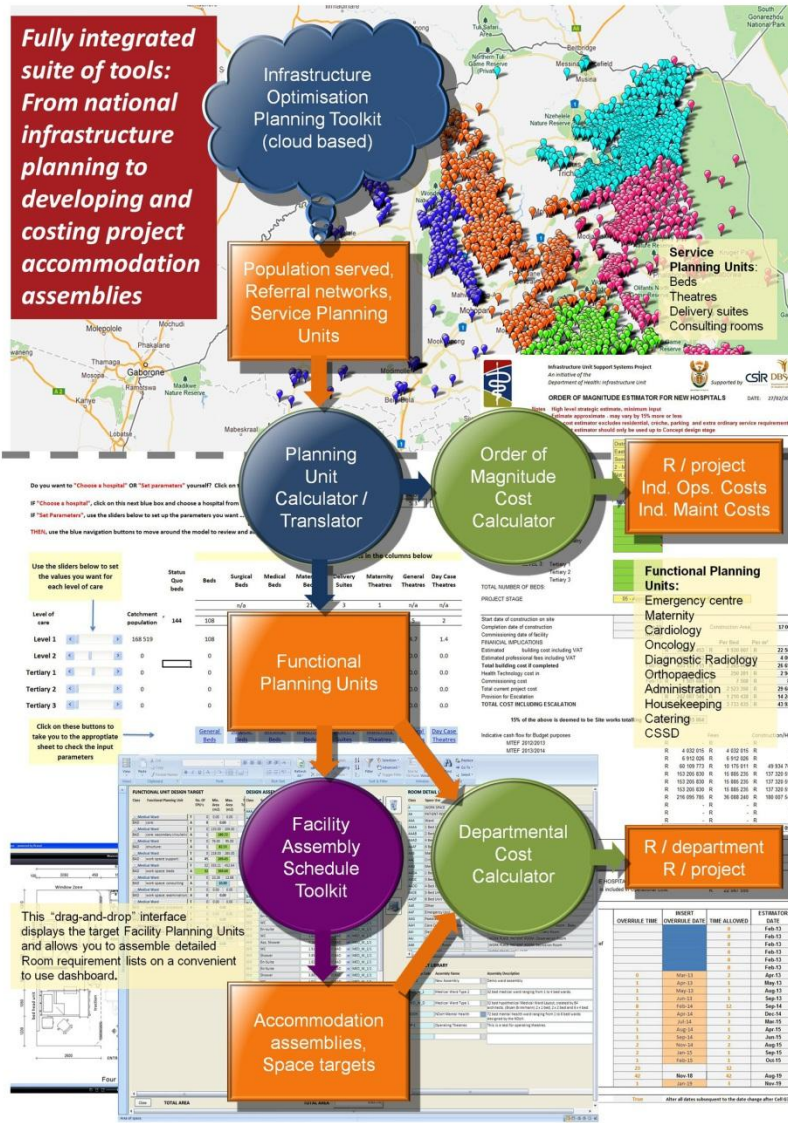


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GUIDELINES, NORMS AND STANDARDS
Project Planning ← Infrastructure Optimisation

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- Cost models (with operational cost horizon)
- Website – on-going stakeholder engagement; www.iussonline.co.za
- Integrated infrastructure planning
 - staff
 - resource
 - and service coordination across line departments

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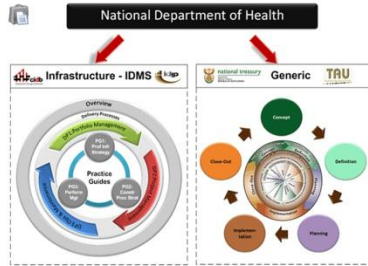
Department of Health INFRASTRUCTURE UNIT SUPPORT SYSTEM (IUSS)

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Project Portfolio Office (PPO) also referred to as the Project Management Information Systems (PMIS) is an online project portfolio management and collaboration application, assisting project teams within the DOH's infrastructure unit, to strengthen the ability to manage their infrastructure programmes and projects more effectively.



PROJECT MANAGEMENT INFORMATION SYSTEMS
Project Portfolio Office (PPO)



PMIS

The tool also provides the users with a visual, interactive view of the programme, project and infrastructure management process, enabling them to manage, monitor and track the required governance with real time e-mail alerts of project events as they happen as well as scheduled alerts and reminders.

Officials can create and allocate tasks, deliverables and milestones to resources, while also allowing team members to update tasks and provide immediate progress

Project Portfolio Office (PPO) will become the backbone of a well-implemented health infrastructure programme that is able to serve the nation with pride.

Key Features:

- Easy to use
- Secure
- Customisable
- Cost Effective
- Methodology & Governance mapping
- Project Documentation control
- No Infrastructure costs
- Web-Based
- Reputable
- Collaboration Tool
- Risk Management
- Issue Management
- Procurement Management
- Quality Management
- Powerful statements
- Uniform System at both provincial & national level
- Standardised programme and project reporting for improved monitoring (ie Specialised Reporting)
- Real time reporting



- Set clear technical and environmental guidance without prescribing solutions
- Making smart clients

Concern – institutional arrangements to encourage multi-disciplinary integration – new roles (Al Straford)

PROJECT MANAGEMENT INFORMATION SYSTEMS
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our future through science



Department of Health INFRASTRUCTURE UNIT SUPPORT SYSTEM (IUSS)

PMSU :Aurecon, Deloitte, Vela VKE part of the Smec group, Indigo Kulani,BTKM

PROGRAMME MANAGEMENT SUPPORT UNIT(PMSU)

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The Programme Management Support Unit (PMSU) has been established by the National Department of Health (NDOH), in association with the Development Bank of Southern Africa (DBSA) to support the NDOH Infrastructure Unit in the roll out of its infrastructure improvement programme.

Overview, vision, mission of PMSU:

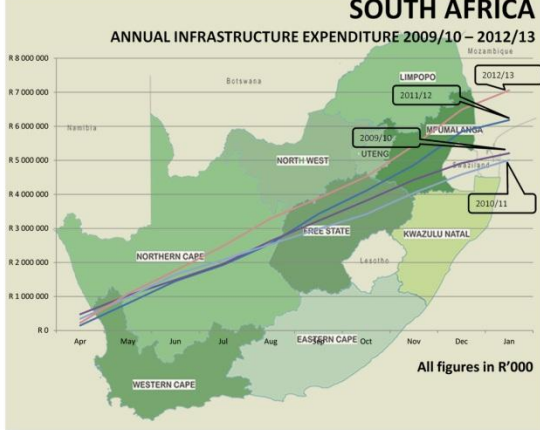
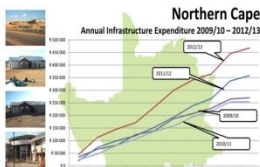
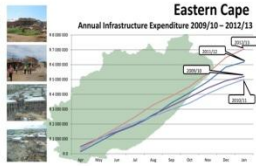
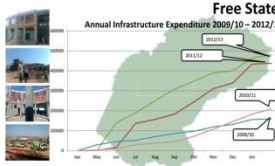
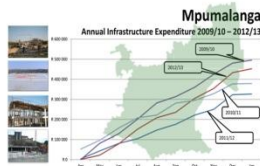
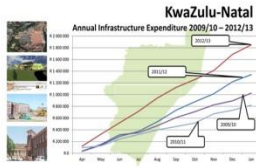
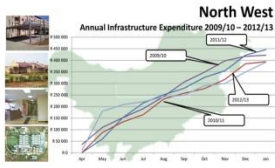
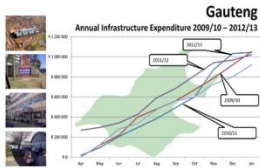
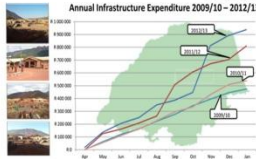
The PMSU has developed out of focus area 4 of the IUSS project. The strategic intent in establishing the Programme Management Support Unit (PMSU) is basically threefold:

- To establish a national monitoring system and improve professional and technical capacity of both National and Provincial departments of Health.
- To improve the quality, quantity and efficiency of spending in the delivery of health infrastructure
- To ensure achievement of planned activities and projects as per Programme Implementation Plan (PIP) and UAMP

Since the effective operationalization of the PMSU in September 2011, there have been significant moves to enhance the functionality of the system.



Limpopo



Dramatic short-term decrease in provincial infrastructure under-expenditure through establishment of internal engineering management competence:

- Oversight and quality control of provincial implementation through building project conceptualization, design, standardization and project controls at a national level
- A specialist contracting unit to oversee project management, sequencing and pricing
- Grant structure reforms

[19]

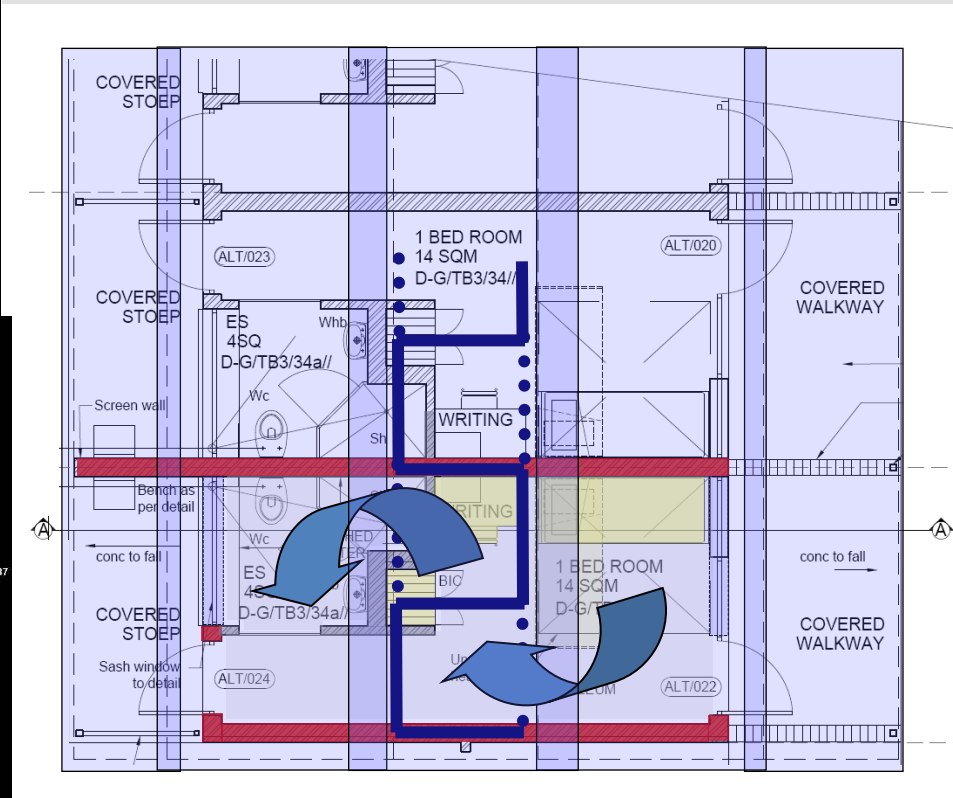
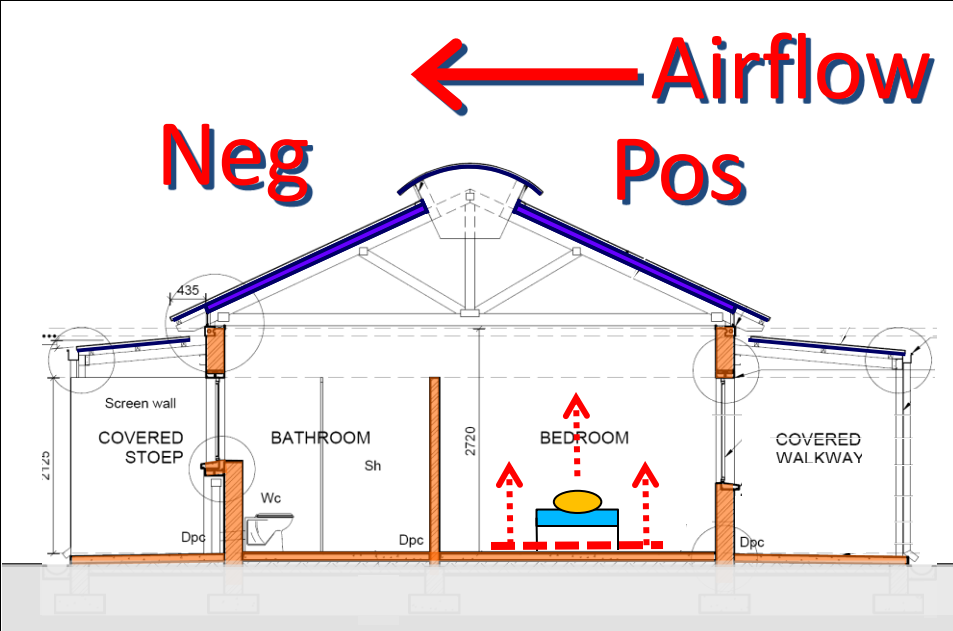
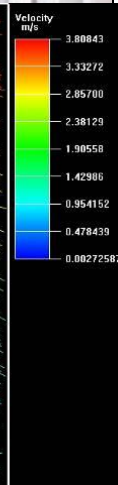
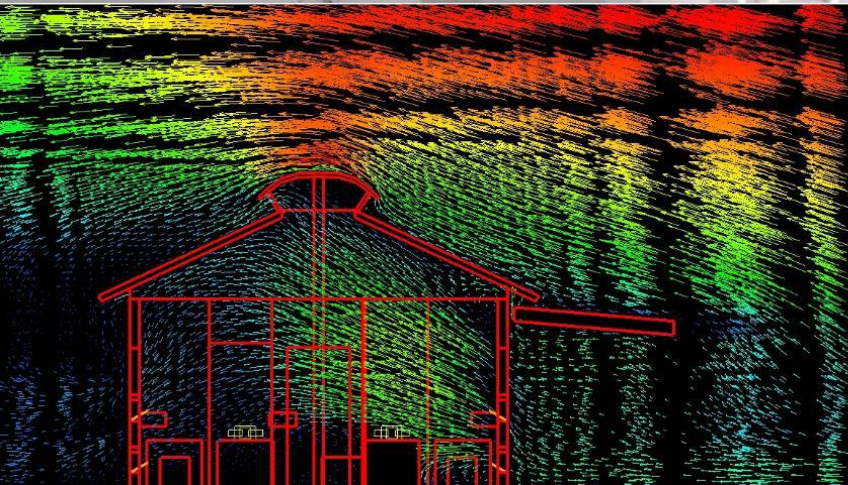
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Modimolle XDR-TB unit





Mitchells Plain Hospital

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