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]
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]

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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, monotonous and perilous. Turning off the tarred road from Mbabane, it takes about half an hour to travel the more than 20 minutes from coffee stop 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 lines and scattered rubbish everywhere. It has five operating theatres, an outpatient department and a casualty section, the hospital also has any 24-hour, pharmacy and antenatal therapy unit.

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

The two doctors manage an outpatient department of between 60 and 100 patients daily, and are only able to attend to the seriously ill or injured patients. In addition, there are more than 30 operators that need to be attended. The doctors work 12-hour shifts with more overtime than should be allowed, as a result and unexplained sick leave, there are a high risk of burnout.

The hospital is unable to offer any outreach or preventative services to the 17 clinics it serves. This means patients often arrive at the hospital only when they are extremely ill, putting additional strain on the already stretched staff and compromised services.

The lack of services is extensive:

- The doctor shortage means Cocuwa and Canzibe are unable to offer any outreach or preventative services to the 17 clinics it serves. This means patients often arrive at the hospital only when they are extremely ill, putting additional strain on the already stretched staff and compromised services.

- 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.

What workers & patients say...

There is a poor relationship between the hospital, the doctors and the patients. The hospital grounds and buildings are totally neglected. Patients often sleep at the hospital as they wait to be seen. Transportation to and from the hospital is a problem. The hospital is located far away from other health facilities.

A frequent visitor to the hospital said: “The hospital is in a state of disrepair. The waiting times are long and the staff is rude. They don’t care about the patients.”

A community health worker said: “There are no nurses and doctors, and people often have to walk long distances to the hospital.”

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

DEATH AND Dying in the Eastern Cape – An investigation into the collapse of a health system

[9]
Challenge 1

Quadruple burden of disease

HIV/ Aids and TB
Maternal and child health
Violence and injuries
Lifestyle diseases


South African’s life expectancy has dropped

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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...

New / replacement equipment
Infrastructure renovation/addition

Planning, design, construction, commissioning

Facility life cycle costs

Facility design life: 50-60 years

Cost

Time

Decommissioning/disposal

A: Construction cost (immovable assets)
B: Equipment cost (movable assets)
C: Service cost (staffing, supplies...)
D: Facility maintenance, operation, utilities...
NEGLECTING MAINTENANCE IS VERY COSTLY = UNSUSTAINABLE

(vs cost to retain in “VERY GOOD” condition)
Challenge 4

Buildings are fixed assets – but healthcare services may best be flexible to address technology developments and need.
Challenge 5

9 autonomous provinces & a national government
- client department
- public works

South Africa’s 4300+ Healthcare Facilities [12]
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

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...
Overall enterprise

Demand

End of life
- 10.4 Decommissioning
- 10.5 Deconstruction
- 10.6 Recycling
- 10.7 Demolition

Status change
- 10.1 Disposal preparation
- 10.2 Transfer
- 10.3 Reinstatement

Disposal

Occupancy and use

Portfolio management

Portfolio operations
- 0.1 Portfolio strategy
- 0.2 Portfolio requirements
- 0.3 Project initiation

Pre-project stages
- 1 Conception of need
- 2 Feasibility
- 3.1 Authorization
- 3.2 First procurement

Project delivery
- 4 Initial or outline conceptual design
- 5 Preliminary design
- 6.1 Detailed (coordinated) design
- 6.2 Construction procurement
- 7 Production information
- 8.1 Construction
- 8.2 Commissioning

Information base of shared data and support data (BIM or Building Information Model)

9.1 Asset operations
- 9.2 Maintenance and condition management
- 9.3 Occupants' facility

9.4 Refurbishment, adaptation, alteration, change of use

9.5 Change of functional use by occupant administration

9.6 Change of functional use by administration

Schematic diagram of phases and stages in the whole life [15]
- 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
• Lifecycle perspective;
• Maintenance phases
• Positive decommissioning

• Performance and consumption targets;
• Engineered passive design encouraged with wide occupancy comfort levels defined
• Cost models (with operational cost horizon)

• Website – on-going stakeholder engagement; www.iussonline.co.za

• Integrated infrastructure planning, resource, staff, and service coordination across line departments

• Website – on-going stakeholder engagement; www.iussonline.co.za

• Cost models (with operational cost horizon)
• Set clear technical and environmental guidance without prescribing solutions
  • Making smart clients

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


[6] Khayelitsha (public) District Hospital, Western Cape. ACG Architects


[10] WHO


Acknowledgements

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