SA’s healthcare estate: a lean, green machine?

Peta de Jager
The best time to plant a tree is twenty years ago, the second best time is now.

- African Proverb

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

- quality
- cost
- time

Why our own?

- starting point
- unique demand profile
- health service vs. estate management
Private sector

- Market driven
- Must remain viable:
  - imperative to minimise capital cost;
  - Replicates successes;
  - “In-house” capability;
- Agile and responsive
Public sector

- Complex institutional split between custodial and user departments
- Economic imperative to minimise operating costs:
  - Maintenance averse;
  - Roster-based professional selection;
  - Cumbersome processes.
Private sector

50% spending
16% of the population
8.2-million

Public sector

50% spending
84% of the population
42-million people
Quadruple burden

- Lifestyle diseases
- Child and maternal mortality
- Violence and trauma
- Infectious diseases
What South Africans die of

Total Deaths 458,933

Distribution of deaths by causes of death 2013

- 25% Other
- 23% Infectious & parasitic disease
- 17% Circulatory system diseases
- 10% Respiratory diseases
- 8% Neoplasms
- 6% Metabolic disorders
- 5% Homicide
- 4% Suicide
- 3% Accidents & other external causes
- 2% Malnutrition
- 1% Intrauterine growth restriction
- 1% Malformation
- 1% Haemorrhage

Stats SA, 2015

<table>
<thead>
<tr>
<th>Work location</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient facilities</td>
<td>4.2 – 11.6</td>
</tr>
<tr>
<td>General medical wards</td>
<td>3.9 – 36.6</td>
</tr>
<tr>
<td>Inpatient facilities</td>
<td>14.6 – 99.0</td>
</tr>
<tr>
<td>Emergency rooms</td>
<td>26.6 – 31.9</td>
</tr>
<tr>
<td>Laboratories</td>
<td>42.5 – 135.3</td>
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</tbody>
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Infrastructure design and TB risk
TB cases vs. international standards

- Contextually sensitive
- Evidence-based/current best-practice
Applicability

- 46 work areas - documents, software tools
- Non-prescriptive approach, mandatory
- Gazette No
  - 37348: R116, 17 February 2014
  - 37790: R512, 30 June 2014
  - 38776: R4141, 8 May 2015
- prospective
- public sector
- Opensource dissemination
Principles

- First, do no harm.
- Lean.
- Green.
- Legible.
First – do no harm

3D CAD model and CFD studies for two bedroom ward unit at Sidney Parsons AIR facility, eMalahleni
Lean

Cost-model tools
Order of magnitude estimators for greenfield & brownfield capital work
- Clinics and hospitals
- Detailed estimators
- Maintenance estimators
- Cash flows
- Operating costs
- Indicative maintenance
Annual cooling degree.hours

Green

Cities: Windhoek, Gaborone, Potchefstroom, Pretoria, Johannesberg, Maseru, Pietermaritzburg, Durban, East London, Port Elizabeth, Uitenhage, Mdantsane, Sutherland, Calvinia, Carnarvon, De Aar, Graaff-Reinet, Umlaas.

Legend:
- 44 - 447
- 447 - 678
- 678 - 926
- 926 - 1201
- 1201 - 1466
- 1466 - 1698
- 1698 - 1929
- 1929 - 2229
South Africa’s oldest hospital: Somerset Hospital. Circa 1890

Photo: Etienne du Plessis
SA has 47,051 hospital beds (public)

- 0.9 beds to 1000 people in the public sector
- 1.6 beds per 1000 population incl. private
- Brazil - 2.3 beds per 1000
- China - 4.2 beds per 1000
- India - 0.9 per 1000
• The right thing
• in the right place
• at the right time?

• Timely, integrated strategic planning
• Invest in resources, capacity, health and infrastructure
• Research – collecting and using information
“Seize opportunity by the beard, for it is bald behind”

- African Proverb