



Western Cape
Government

Health

Capability concerns for sustainable public sector healthcare infrastructure and technology

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Director: Health Technology

Problems are not new

Tackling wastage and inefficiency in the health sector

David Parker & William Newbrander

Governments and the private sector must actively combat wastage and inefficiency in health systems, and then make corresponding changes in management and technical procedures.

*“Raising sufficient money for health is imperative, but just having the money will not ensure universal coverage. Nor will removing financial barriers to access through prepayment and pooling. The final requirement is to **ensure resources are used efficiently.**”*

WHR 2010: HEALTH SYSTEMS FINANCING - The path to universal coverage

Round Table - World Health Forum, Vol. 15 (1994)

Future reality



OR



Required Capital Funding to Retain Estate

| <i>Buildings</i> | Estate MEA | Funding required | Funding available | Shortfall/ excess | Assumptions |
|--------------------------|------------------|---------------------|----------------------|----------------------|--|
| Replacement | R 138 460 | 2.0% | R 2 769 | | 50 year average life cycle |
| Growth | R 138 460 | 1.0% | R 1 385 | | Constant growth rate |
| Maintenance | R 138 460 | 4.0% | R 5 538 | | All facilities in good condition Backlog worked into growth and replacement |
| Total Buildings | R 138 460 | | R 9 692 | R 3 320 | (R 6 372) Current platform acceptable |
| <i>Equipment</i> | | | | | |
| Replacement | R 41 540 | 6.7% | R 2 771 | | 15 year average life cycle |
| Growth | R 41 540 | 1.0% | R 415 | | Constant growth rate |
| Maintenance | R 41 540 | 5.0% | R 2 077 | | As for Buildings maintenance |
| Total Equipment | R 41 540 | | R 5 263 | R 2 146 | (R 3 117) Current platform acceptable |
| Total all Capital | R 180 000 | | R 14 955 | R 5 466 | (R 9 489) |

All figures Rm; 2007 base

CSIR – G Abbott

Required Capital Funding to Retain HI&T

| <i>Buildings</i> | | Funding required | Funding available | Shortfall/excess |
|--------------------------|--------------|------------------|-------------------|--------------------------------|
| Replacement | | R 2,8 | | |
| Growth | | R 1,4 | | |
| Maintenance | | R 5,5 | | |
| Total Buildings | R 139 | R 9,7 | R 3,3 | (R 6,4) |
| Equipment | | | | |
| Replacement | | R 2,8 | | |
| Growth | | R 0,4 | | |
| Maintenance | | R 2,1 | | |
| Total Equipment | R 42 | R 5,3 | R 2,1 | (R 3,2) |
| Total all Capital | R 181 | R 15,0 | R 5,4 | (R 9,6) ← 66% shortfall |

Source: DBSA Infrastructure Barometer 2008 All figures ZAR-billion; 2007 base

Whom shall I send?



Staffing

Provincial health department - Maintenance
*R16,5bn estate
 59 hospitals, 291 PHC, 75 other facilities
 10 021 beds*

| | Filled | Vacant | Total | % v |
|--------------------|------------|------------|------------|-----|
| Management | 4 | 2 | 6 | |
| Engineers | 3 | 8 | 11 | |
| Technical (indust) | 50 | 20 | 70 | |
| Artisans | 184 | 86 | 250 | |
| Tradesmen | 125 | 49 | 174 | |
| Handymen | 107 | 50 | 157 | |
| Groundsmen | 12 | 2 | 14 | |
| Other | 18 | 2 | 20 | |
| Total | 479 | 217 | 696 | |

- Unfunded posts
- Poor salaries
- No career paths
- Few CPD opportunities

| VACANT POSITIONS | | | | | | | | |
|------------------|------|------------|--------|---------|------|------|------|------|
| POST | DEPT | PROGRESS % | STATUS | CONTACT | DATE | DATE | DATE | DATE |
| ... | ... | ... | ... | ... | ... | ... | ... | ... |



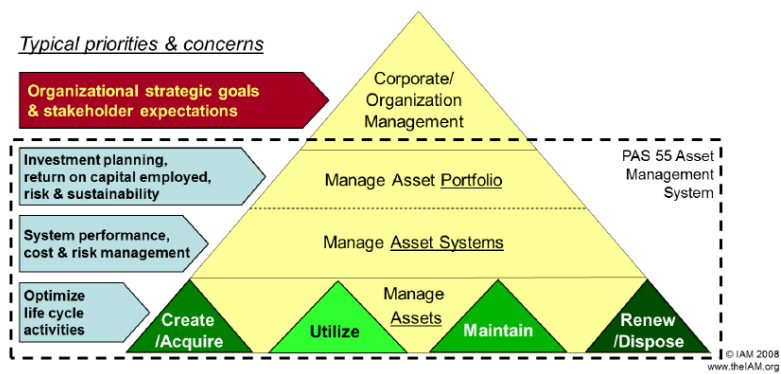
Key Issues

- Awareness of the major risk posed to the realisation of UHC/UHA under NHI by insufficient in-house capability related to life-cycle management of healthcare infrastructure and technology (HIT).
- The need for an appropriate, integrated and sustainable HIT-related capacity development strategy.
- The likely consequences (national, sectoral, regional, institutional and professional) of not responding to the current challenges.



NOT ROCKET SCIENCE !

Engineering Asset Management

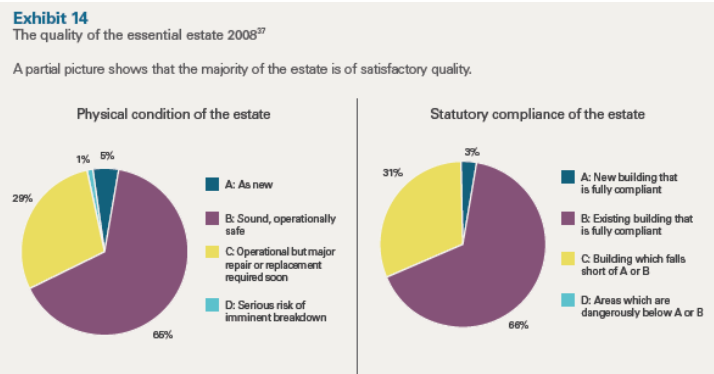


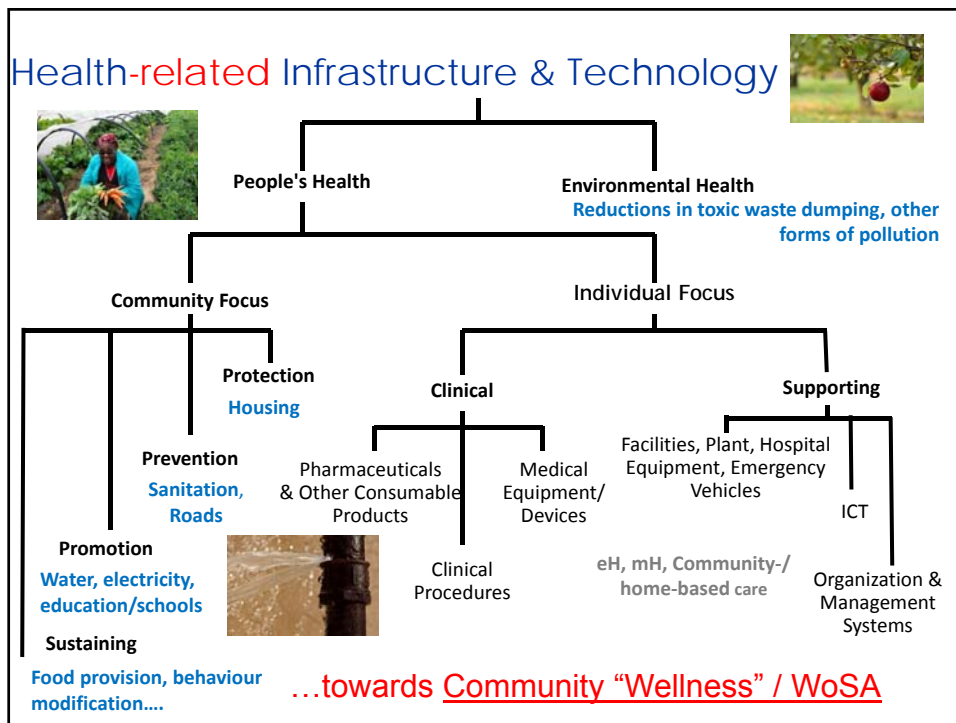
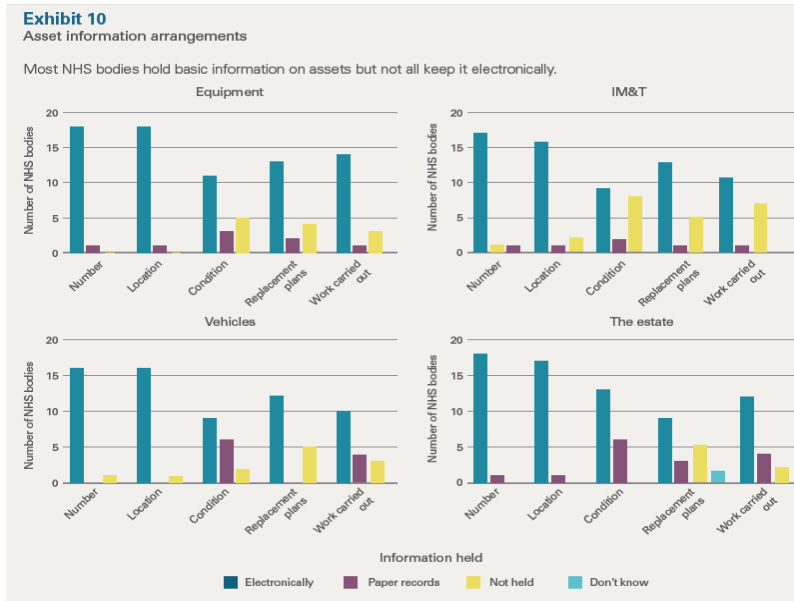
BSI: PAS 55 → ISO 55000 Series on Asset Management

Facility Management

- EN 15221 defines *facility management* (also referred to as “Facilities Management”) broadly as “*the integration of processes within an organization to maintain and develop the agreed services, which support and improve the effectiveness of its primary activities*”.
- An essential component of the enabling environment for effective and safe healthcare delivery in health facilities (Cram, 2004).
- Facility management (FM) services are usefully considered to fall into one of two categories:
 - ‘**hard**’ services refer to management and maintenance of HIT
 - ‘**soft**’ services include catering, cleaning, waste management (both general & healthcare risk waste), security, linen and laundry services, pest control and landscaping.

Asset Management (NHS Scotland)





Integrated Health-related Service Delivery

Table 1: Main cause of disease burden in children and adults in demographically developing countries in 1990 and the cost-effectiveness of the interventions available for their control

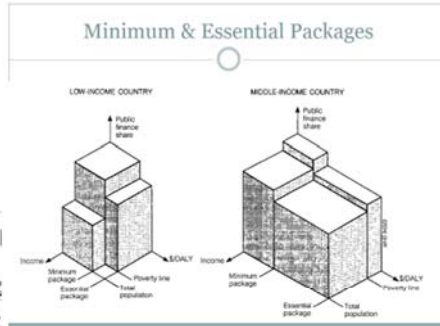
| Disease and injuries | No. of DALYs lost ^a (million) | Main intervention | Cost-effectiveness (\$ per DALY) |
|---|--|--|----------------------------------|
| Children | | | |
| Respiratory infections | 96 (14.8) ^b | Integrated management of the sick child (IMSC) | 20-100 |
| Perinatal morbidity and mortality | 96 (14.6) | (i) Prenatal and delivery care (ii) Family planning | 20-100 |
| Diphtheria disease | 82 (14.0) | IMSC | 20-100 |
| Childhood cluster (diseases preventable through immunization) | 65 (10.2) | Expanded programme of immunization EPI/ptar ^c | 12-30 |
| Congenital malformation | 35 (5.4) | Surgical operations | High (unknown) |
| Malaria | 31 (4.7) | IMSC | 20-100 |

Design, content and fit national package of health services
J.-L. Beaudin, P. Cowley, P. Mungai
Bulletin of the World Health Organization

Minimum package of health services

Table 2: Cost-effectiveness of the health interventions age of health services in low- and middle-income countries

| Interventions | Cost per beneficiary | | DALYs | | Age group |
|--|----------------------|------|-------|------|-----------|
| Low-income countries | | | | | |
| I. Public health | | | | | |
| Expanded programme of immunization plus ^a | 14.6 | 0.5 | 45 | 0.77 | 12-17 |
| School health programme | 3.6 | 0.3 | 4 | 0.58 | 20-25 |
| Tobacco and alcohol control programme | 6.3 | 0.3 | 12 | 0.14 | 35-65 |
| AIDS prevention programme ^a | 112.2 | 1.7 | 35 | 0.58 | 3-5 |
| Other public health interventions ^a | 2.4 | 1.4 | — | — | — |
| Subtotal | — | 4.2 | — | — | 14 |
| II. Clinical services | | | | | |
| Chemotherapy against tuberculosis | 500.0 | 0.6 | 34 | 0.01 | 3-5 |
| Integrated management of the sick child | 3.0 | 1.6 | 184 | 0.25 | 30-60 |
| Family planning | 12.0 | 0.9 | 7 | 0.79 | 20-30 |
| STD treatment | 11.0 | 0.2 | 26 | 0.42 | 1-3 |
| Prenatal and delivery care | 90.0 | 3.8 | 57 | 0.42 | 30-60 |
| Limited care ^a | 6.0 | 0.7 | — | 0.03 | 200-300 |
| Subtotal | — | 7.8 | — | — | — |
| Total | — | 12.0 | — | — | — |



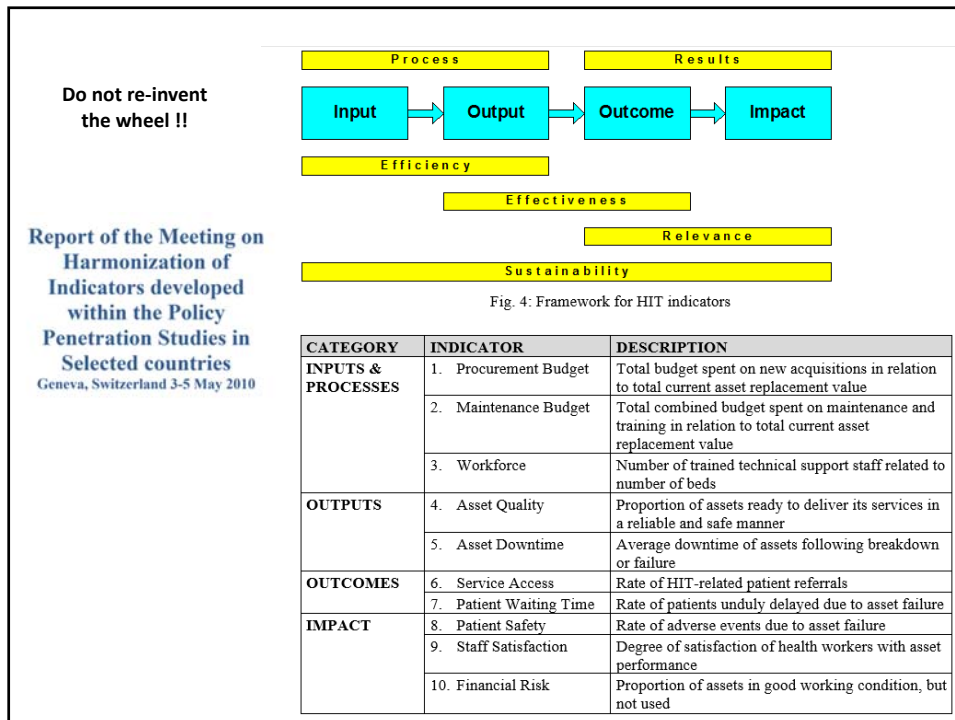
Health-related System Performance

- **Coverage:** probability of receiving an effective health-related intervention when needed
- **Effective coverage:** ratio of actual health gain from health-related interventions to maximum potential health gain achievable from the same interventions.

Elements: **access** (availability, accessibility, affordability and acceptability), **utilisation**, and **effectiveness**

WHR 2000 (WHO): Measuring Health Systems Performance





Key Questions

- How do we 'grow our own wood'?
- Proposal: **Academy* for Healthcare Infrastructure & Technology**
 - Multi-disciplinary / multi-sectoral / multi-stakeholder
 - Distributed / centres of excellences
 - Multiple capacity building interventions
 - International partnerships: WHO, IFMBE (CED), IFHE, IHF, IHEA
- WHY **NOT**?
- WHY NOT **NOW**?

Thank you for your attention

Thoughts/suggestions/crits to:

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(subject heading: HIT Academy)