Why are we still losing people from HIV

1. What are people dying of?
# Health and Health Care in South Africa — 20 Years after Mandela

Bongani M. Mayosi, M.B., Ch.B., D.Phil., and Solomon R. Benatar, M.B., Ch.B., D.Sc.(Med.)

<table>
<thead>
<tr>
<th>Years of Life Lost in Thousands (% of total)</th>
<th>1990 Rank</th>
<th>Disorder</th>
<th>2010 Rank</th>
<th>Disorder</th>
<th>Years of Life Lost in Thousands (% of total)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1413 (12.2%)</td>
<td>1</td>
<td>Diarrheal diseases</td>
<td>1</td>
<td>HIV/AIDS</td>
<td>11,201 (47%)</td>
<td>4923</td>
</tr>
<tr>
<td>1083 (9.3%)</td>
<td>2</td>
<td>Lower respiratory infections</td>
<td>2</td>
<td>Diarrheal diseases</td>
<td>1,138 (4.9%)</td>
<td>-19</td>
</tr>
<tr>
<td>692 (6.0%)</td>
<td>3</td>
<td>Interpersonal violence</td>
<td>3</td>
<td>Interpersonal violence</td>
<td>1,018 (4.4%)</td>
<td>-24</td>
</tr>
<tr>
<td>668 (5.8%)</td>
<td>4</td>
<td>Tuberculosis</td>
<td>4</td>
<td>Lower respiratory infections</td>
<td>873 (3.7%)</td>
<td>47</td>
</tr>
<tr>
<td>524 (4.5%)</td>
<td>5</td>
<td>Preterm birth difficulties</td>
<td>5</td>
<td>Tuberculosis</td>
<td>760 (3.7%)</td>
<td>14</td>
</tr>
<tr>
<td>467 (4.0%)</td>
<td>6</td>
<td>Stroke</td>
<td>6</td>
<td>Stroke</td>
<td>543 (2.3%)</td>
<td>16</td>
</tr>
<tr>
<td>367 (3.2%)</td>
<td>7</td>
<td>Ischemic heart disease</td>
<td>7</td>
<td>Preterm birth difficulties</td>
<td>500 (2.1%)</td>
<td>-5</td>
</tr>
<tr>
<td>349 (3.0%)</td>
<td>8</td>
<td>Neonatal encephalopathy</td>
<td>8</td>
<td>Diabetes</td>
<td>489 (2.1%)</td>
<td>98</td>
</tr>
<tr>
<td>297 (2.6%)</td>
<td>9</td>
<td>Mechanical forces</td>
<td>9</td>
<td>Mechanical forces</td>
<td>393 (1.7%)</td>
<td>32</td>
</tr>
<tr>
<td>271 (2.1%)</td>
<td>10</td>
<td>Congenital anomalies</td>
<td>10</td>
<td>Ischemic heart disease</td>
<td>383 (1.6%)</td>
<td>4</td>
</tr>
<tr>
<td>247 (1.9%)</td>
<td>11</td>
<td>Diabetes</td>
<td>11</td>
<td>Neonatal encephalopathy</td>
<td>341 (1.5%)</td>
<td>-2</td>
</tr>
<tr>
<td>223 (1.9%)</td>
<td>12</td>
<td>HIV/AIDS</td>
<td>12</td>
<td>Road injury</td>
<td>237 (1.0%)</td>
<td>77</td>
</tr>
<tr>
<td>216 (1.9%)</td>
<td>13</td>
<td>Measles</td>
<td>13</td>
<td>Hypertensive heart disease</td>
<td>213 (0.9%)</td>
<td>90</td>
</tr>
<tr>
<td>203 (1.8%)</td>
<td>14</td>
<td>Protein-energy malnutrition</td>
<td>14</td>
<td>Drug-use disorders</td>
<td>212 (0.9%)</td>
<td>2079</td>
</tr>
<tr>
<td>199 (1.7%)</td>
<td>15</td>
<td>Syphilis</td>
<td>15</td>
<td>Chronic kidney disease</td>
<td>211 (0.9%)</td>
<td>138</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td>Road injury</td>
<td>17</td>
<td>Congenital anomalies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>Hypertensive heart disease</td>
<td>31</td>
<td>Syphilis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>Chronic kidney disease</td>
<td>39</td>
<td>Measles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67</td>
<td></td>
<td>Drug-use disorders</td>
<td>47</td>
<td>Protein-energy malnutrition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>Leading Underlying Causes of Death</td>
<td>2015</td>
<td>2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------</td>
<td>------</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Tuberculosis</td>
<td>7.2%</td>
<td>6.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Diabetes mellitus</td>
<td>5.4%</td>
<td>5.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cerebrovascular diseases</td>
<td>5.0%</td>
<td>5.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Other forms of heart disease</td>
<td>4.8%</td>
<td>5.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>HIV disease</td>
<td>4.8%</td>
<td>4.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Influenza and pneumonia</td>
<td>4.5%</td>
<td>4.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Hypertensive diseases</td>
<td>4.2%</td>
<td>4.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Other viral diseases</td>
<td>3.5%</td>
<td>3.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Chronic lower respiratory diseases</td>
<td>2.8%</td>
<td>2.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Ischaemic heart diseases</td>
<td>2.7%</td>
<td>2.8%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: STATSA, NDUP

The South Africa I Know, The Home I Understand
Extra-Pulmonary Tuberculosis

Extrapulmonary tuberculosis in the setting of HIV hyperendemicity at a tertiary hospital in Durban, South Africa

Retrospective chart review: TB diagnosis n=188

<table>
<thead>
<tr>
<th>Study period</th>
<th>EPTB</th>
<th>EPTB + HIV</th>
<th>ART naïve</th>
<th>CD4 cell count</th>
<th>Race (Black)</th>
<th>Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-Mar 2016</td>
<td>n = 80</td>
<td>71/80 (88%)</td>
<td>34/71 (47%)</td>
<td>68 (IQR 32-165)</td>
<td>76/80 (96%)</td>
<td>57/80 (71%)</td>
</tr>
</tbody>
</table>

Extra-Pulmonary TB (1 or more of the following, with or without Pulmonary TB): Lymph node, Pleura, Bone, Abdomen, Milliary pattern on Chest Xray, Pericardium, Meninges, Blood or Bone Marrow
A retrospective review of compliance with the National Tuberculosis Management Guidelines:
Gene Xpert MTB/Rif Algorithm in a Primary Health Care Center in eThekwini Municipality, KwaZulu-Natal, South Africa
Diabetes and HIV

**WHO criteria**

<table>
<thead>
<tr>
<th></th>
<th>HIV negative</th>
<th>HIV infected not starting</th>
<th>HIV infected starting ART</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>4.9%</td>
<td>3.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>HIV infected</td>
<td>8.6%</td>
<td>2.4%</td>
<td>2.96%</td>
</tr>
<tr>
<td>HIV infected starting ART</td>
<td>0%</td>
<td>1.2%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

**ADA criteria**

<table>
<thead>
<tr>
<th></th>
<th>HIV negative</th>
<th>HIV infected not starting</th>
<th>HIV infected starting ART</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>4.9%</td>
<td>3.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>HIV infected</td>
<td>11.1%</td>
<td>2.4%</td>
<td>3.6%</td>
</tr>
<tr>
<td>HIV infected starting ART</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**p<0.01 D group 3 vs. group 1**

*Magula et al. PhD thesis data*
Clinical characteristics during 24 months follow-up on ART

Body mass index (kg/m²) at 2 years on ART: 29.4 ± 7.0

Magula et al. PhD thesis data
Causes of morbidity and mortality: SSA

Records identified through database searching (n = 409)

Additional records identified through other sources (n = 0)

Records after duplicates removed (n = 388)

Records excluded (n = 367) irrelevant

Records screened (n = 388)

Full-text articles assessed for eligibility (n = 21)

Studies included in qualitative synthesis (n = 12)

Full-text articles excluded, with reasons (n = 10): 3 systematic review, 6 no responding to research question, 1: outside sub-Saharan Africa Sub-Saharan Africa

Cause of death or the most frequent diagnoses among HIV infected patients in Sub-Saharan Africa from 2008 to 2018
Causes of morbidity and mortality: SSA

- Opportunistic infections, opportunistic malignancies, and non-AIDS related

1. Tuberculosis commonest cause of hospitalization and death
2. Cryptococcal meningitis
3. Pneumonia
4. Anaemia
5. Cerebral toxoplasmosis
6. Chronic diarrhea
7. Sepsis
8. ARV toxicities
9. Opportunistic malignancies…
2.

90 – 90 – 90

needs to carefully identify a target to specifically reduce morbidity and mortality due to AIDS

(viral suppression alone may not suffice)
3. What did we do differently in the past?
ART Initiation: 2004

• Compulsory Readiness Program was incorporated into decision making on when to start ART

  – Social Worker and Adherence Nurse had to be satisfied after attendance of educational sessions that the patient had:

  • Basic knowledge of HIV transmission and prevention

  • Understanding of ART, side-effects and belief in treatment efficacy

  • Ability to comprehend, cope and comply with prescribed actions such as treatment adherence and safer sexual practices

  • Received a recommendation to disclose HIV status to at least one friend or family member or to join a support group, including bringing a treatment supporter to at least one of the counselling sessions
Experiences of the first 100 patients at Teaching Hospital in Durban

<table>
<thead>
<tr>
<th>Education/Action</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/AIDS, positive living</td>
<td>✔</td>
</tr>
<tr>
<td>Opportunistic infections, treatment of HIV/AIDS, ART side-effects, importance of treatment adherence</td>
<td>✔</td>
</tr>
<tr>
<td>Treatment supporter/disclosure to family or friend/ join support group</td>
<td>✔</td>
</tr>
</tbody>
</table>

Magula et al. PhD thesis data
Experiences of the first 100 patients at Teaching Hospital in Durban

100 → 70 → 61 → 53

START

Eligible to start 0 months 6 months 12 months

Magula et al. Masters thesis data
3. Yet…

We aim to treat as quickly as possible
What are the realities?

Are we doing 90 90 90 right?
• Do individuals in the community and the community at large get it?

• Is the fear of losing HIV funding not driving the fast pace strategy living us spinning clockwise and anti-clockwise

What are the prevailing issues?
• People are still having people issues like
  – Food security
  – Employment
  – Fear of finding out
  – Fear of discrimination
  – High risk behaviour
Imagine, if we took our time…

1. Taking the 90 90 90 story to the community in ways they will understand

2. Taking individuals and walking the journey with them
SuperScientists

Clinician
HIV/ARV  Heart Disease
Physician Scientist
Durban, KZN
UKZN College of Health Sciences
IAPAC KOL

TB/HIV Scientist
Physician Scientist
USA
AHRI

HIV Scientist
Virologist
Kenya
AHRI (Africa Health Research Initiative)

TB Scientist
Immunologist
LP, South Africa
AHRI

www.superscientists.org
HIV still kills!

Against Complacency and risky behavior

www.superscientists.org
SuperScientists + Champions

Advocacy

Policy

Public Health

Drug Dev.

www.superscientists.org
Political Will and Commitment

• KwaZulu-Natal Health MEC Project: Doctors and other healthcare workers mobilized to visit communities in rural areas, townships to give free healthcare services e.g.
  - HIV testing and treatment
  - TB screening
  - Pap smears
  - Cancer screening (breast, prostate)

• Communities are mobilized by Mayors, Counsellors, Traditional and other political leaders
Acknowledgements

Participants
AA Motala
UG Laloo
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University of KwaZulu-Natal