SCALING-UP ACCESS TO HIV VIRAL LOAD TESTING

Viral Load Scale-up and Decentralized Testing Experience in Botswana

Madisa Mine
National Health Laboratory
Gaborone, BOTSWANA
Presentation Format

I. Background information
II. Knowing Your Epidemic
III. National Guidelines
IV. Laboratory Referral System
V. Issues to address
VI. Strategic Partnerships
1. BACKGROUND

- Botswana is a landlocked country in the centre of southern Africa.

- Population
  - 2,024,904
    (2011 Pop. Census)

- First case of AIDS
  - Reported in 1985
2. Knowing Your Epidemic

- Type of Technology? Automated & High throughput versus Point-of Care (POC)
2.1 Geographical Distribution

• Geographical regions
  • Cities
  • Towns
  • Urban Villages, and
  • Rural Districts

• Defined as per the 2011 Population and Housing Census.
• The HIV/AIDS epidemic in Botswana has affected all districts; rural areas are affected with equal (and in some cases, greater) intensity as urban areas (National AIDS Coordinating Agency, 2003).

• The challenge for Botswana has always been how to best reach those who need treatment urgently in both rural and urban areas.
The High HIV Prevalence Districts in Botswana

<table>
<thead>
<tr>
<th>District</th>
<th>Total population prevalence (%)</th>
<th>PLWHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kweneng East</td>
<td>21.5</td>
<td>57,154</td>
</tr>
<tr>
<td>Gaborone</td>
<td>17.0</td>
<td>38,647</td>
</tr>
<tr>
<td>Central - Serowe</td>
<td>17.1</td>
<td>32,178</td>
</tr>
<tr>
<td>Central- Mahalapye</td>
<td>23.1</td>
<td>27,141</td>
</tr>
<tr>
<td>Central- Tutume</td>
<td>18.2</td>
<td>26,371</td>
</tr>
<tr>
<td>Francistown</td>
<td>24.3</td>
<td>24,319</td>
</tr>
<tr>
<td>Kgatleng</td>
<td>19.9</td>
<td>18,357</td>
</tr>
<tr>
<td>Ngamiland South</td>
<td>15.2</td>
<td>14,646</td>
</tr>
<tr>
<td>Selibe Phikwe</td>
<td>27.5</td>
<td>13,674</td>
</tr>
<tr>
<td>Central- Bobonong</td>
<td>19.3</td>
<td>13,666</td>
</tr>
</tbody>
</table>
2.2 HIV Epidemic In The Population

- Botswana has a generalized HIV epidemic.
  - One of the countries with highest levels of HIV prevalence in the world,
  - Higher than any other country except Swaziland.

- BAIS II – 2004: 17.1%
- BAIS III – 2008: 17.6%
- BAIS IV – 2013: 18.5% (18 months and above)
2.2.1. Various Populations

- **Adults aged 15 – 49 years**
  - 25%

- **Pregnant women** *(Ministry of Health ANC Surveillance Report, 2011)*
  - 30.4%

- **Female sex workers (FSW)***
  - 61.9% (95% CI, 56.7-69.2)

- **Men who have sex with other men (MSM)***
  - 13.1% (95% CI, 10.0-16.2)
  - Adjusted HIV prevalence - 9.2%

3. National Guidelines – regarding viral load testing and other tests
3.1 Laboratory Monitoring in Botswana


- Standard of Care
  - CD4 testing
  - Viral Load Testing
  - HIV Drug Resistance Testing
3.1.1 Botswana’s Clinical Care Guidelines

- Since 2002, STRONG POLITICAL WILL allowed Botswana to improve upon WHO recommendations by adding:
  - Routine Viral Load Monitoring
  - Resistance Testing
  - Optimal ART Regimens
  - Universal HAART/Triple ARV Prophylaxis
  - Approaches in Integrative Care

The 2012 Revisions build upon these strengths including improved eligibility criteria.
4. Laboratory Referral System
Typical ARV Sites

Satellite Clinic 1

Satellite Clinic 2

Satellite Clinic 3

Satellite Clinic 4

Infectious Disease Clinic

LABORATORY SUPPORT
CD4
Viral Load
Infant PCR
Drug Resistance Testing

Blood Specimens

Results
Botswana started laboratory monitoring with 2 HIV Reference Laboratories with CD4 and Viral Load Capabilities 2002-2004

BHHRL – Botswana Harvard HIV Reference Laboratory

NHHRL – Nyangagbwe Hospital HIV Reference Laboratory
“Solution to Laboratory Problems”

- Roll out the laboratory services to the district/primary hospitals and eventually to the clinics

- “Taking the services closer to the people rather people coming to the services”
Laboratory Capacity in 2016

[Map showing laboratory capacity in 2016, with various locations marked.]
Patients on HAART in the public sector and deaths in public sector, January 2002 - January 2012

- Currently on HAART in Public Sector
- Currently on HAART and Outsourced to Private Sector
- Cumulative deaths

Month / Year

Currently on HAART in Public Sector
Currently on HAART and Outsourced to Private Sector
Cumulative deaths
4. Issues to Address
1. Human Resource
   1. Training and mentoring
   2. Support – particularly on site

2. Infrastructure
   1. Buildings
   2. Equipment
   3. Services and maintenance

3. Reagents

4. Logistics
6. Strategic Partnerships
• Most of these issues can be addressed through:

“Strategic Partnerships”
Collaboration between Ministry of Health and Partners

Partnerships

- Purchase of Equipment
  - PEPFAR (CDC Bots) ACHAP

- Development of Infrastructure
  - PEPFAR (CDC Bots) ACHAP Ministry of Health

- Short Term Training and Capacity Development
  - BHP

- Recruitment of Personnel and Long Term Training
  - Ministry of Health
Laboratory Procedures

• Quality Assurance
  – Internal Quality control
  – External Quality Control

• Training and Competence Assessments

• Data management
8. Our Challenges

• Specimen management
  
  A. TRANSPORTATION -
  – road was the main mode of transport

  – Specimens were transported for long distances and under extreme weather conditions

  – Specimen integrity compromised, thus affecting the quality of results

B. RETURNING OF THE RESULTS: taking too long return results to patients particularly in rural areas
Thank You for Attention

Keep The Promise. Stop AIDS