Uptake and yield of a 24/7 HIV testing service across four Eastern Cape hospital Emergency departments

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Background

• HIV testing is the critical first step to meeting the WHO 90-90-90 goals
• Only 65% of South Africans report ever taking a HIV test (59% males, 72% females)
• Emergency Departments (ED) in US have found higher rates of HIV compared with antenatal and other primary care settings with 20-27% new diagnoses
• CDC in 2006 has recognized critical role of ED in US HIV strategy
• SA NSP recommends universal HIV counselling and testing (HCT) at all health care facilities & departments, but it is seldom offered in South African EDs

Methods

- 4 prospective observational studies in 3 tertiary and 1 regional hospital
- PE, EL and Mthatha, 2016 to July 2018
- Shifts of 2 lay counsellors ea. provided HCT 24/7
- All patients presenting to the ED that were ≥18 years, fully conscious, and clinically stable were eligible for enrolment, and offered point-of-care finger-prick HIV testing
- 3 sites also took blood for HIV VL, ARV levels, incidence testing
- Ethics approval (WSU, UCT, and Johns Hopkins University)
Results

Total ED patient volume over study period: 17583

Patients approached: 6206 (35%)

Enrolled in study: 5898 (95%)

- Known HIV+: 860 (14.6%)
- Accepted HCT: 4039 (65%)
- Unknown status, declined testing: 999 (17%)

New HIV+: 331 (8.2% of tested)

Total HIV+: 1191 (20% of enrolled)
### Baseline characteristics of enrolled patients

<table>
<thead>
<tr>
<th></th>
<th>Frere Hospital \ n = 2,355(^*) (%)</th>
<th>Nelson Mandela Academic Hospital + Mthatha Regional Hospital \ n = 1,880(^*) (%)</th>
<th>Livingstone Hospital \ n = 1,657(^*) (%)</th>
<th>Total \ n = 5,892(^*) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-30</td>
<td>993 (42.2)</td>
<td>794 (42.2)</td>
<td>590 (35.6)</td>
<td>2,377 (40.3)</td>
</tr>
<tr>
<td>31-50</td>
<td>928 (39.4)</td>
<td>563 (29.9)</td>
<td>700 (42.3)</td>
<td>2,191 (37.2)</td>
</tr>
<tr>
<td>51-70</td>
<td>352 (14.9)</td>
<td>345 (18.4)</td>
<td>328 (19.8)</td>
<td>1,025 (17.4)</td>
</tr>
<tr>
<td>70+</td>
<td>80 (3.4)</td>
<td>178 (9.5)</td>
<td>39 (2.4)</td>
<td>297 (5.0)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1,361 (57.8)</td>
<td>914 (48.6)</td>
<td>864 (52.1)</td>
<td>3,139 (53.3)</td>
</tr>
<tr>
<td>Female</td>
<td>994 (42.2)</td>
<td>967 (51.4)</td>
<td>793 (47.9)</td>
<td>2,754 (46.7)</td>
</tr>
<tr>
<td><strong>Presenting complaint</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical</td>
<td>694 (29.5)</td>
<td>1,277 (67.9)</td>
<td>742 (44.8)</td>
<td>2,713 (46.1)</td>
</tr>
<tr>
<td>Trauma</td>
<td>1,661 (70.5)</td>
<td>602 (32.0)</td>
<td>914 (55.2)</td>
<td>3,177 (53.9)</td>
</tr>
</tbody>
</table>
Prevalence of HIV Among South Africa ER patients
by age categories

- **<20**:
  - Female: 10%
  - Male: 5%

- **20-29**:
  - Female: 40%
  - Male: 20%

- **30-39**:
  - Female: 60%
  - Male: 40%

- **40-49**:
  - Female: 40%
  - Male: 30%

- **>=50**:
  - Female: 20%
  - Male: 15%
## HIV Incidence testing

<table>
<thead>
<tr>
<th>Site</th>
<th>MAA incidence</th>
<th>LAg+vl incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livingstone</td>
<td>2.4 (1.0, 3.8)</td>
<td>2.2 (0.4, 4.0)</td>
</tr>
<tr>
<td>Mthatha</td>
<td>3.6 (1.6, 5.6)</td>
<td>2.5 (0.3, 4.7)</td>
</tr>
<tr>
<td>Nelson Mandela</td>
<td>0.6 (0.0, 1.7)</td>
<td>1.1 (0.0, 3.1)</td>
</tr>
<tr>
<td>All three sites</td>
<td>2.8 (1.7, 3.9)</td>
<td>2.1 (0.9, 3.4)</td>
</tr>
<tr>
<td>Men</td>
<td>1.5 (0.5, 2.5)</td>
<td>1.5 (0.2, 2.9)</td>
</tr>
<tr>
<td>Women</td>
<td>4.5 (2.4, 6.5)</td>
<td>2.9 (0.7, 5.0)</td>
</tr>
<tr>
<td>&lt;25</td>
<td>2.5 (0.6, 4.4)</td>
<td>1.8 (0.0, 3.9)</td>
</tr>
<tr>
<td>26-40</td>
<td>4.3 (2.0, 6.6)</td>
<td>4.0 (1.0, 6.9)</td>
</tr>
<tr>
<td>40+</td>
<td>1.8 (0.5, 3.1)</td>
<td>0.8 (0.0, 2.0)</td>
</tr>
</tbody>
</table>

(National estimate incidence for 15-49 years = 1.72)
Care cascade of HIV infected ED patients (PE & Mthatha)

- 100% HIV infected
  - 811 people
- 71% Known HIV status
  - 577 people
- 76% ARV present
  - 293 people
- 81% Virally suppressed
  - 233 people
Conclusions

• Emergency Departments in the Eastern Cape carry a high burden of HIV disease (>20%)
• The patient profile was slightly male predominant and younger
• There was a high up take of HCT (80% of those unsure of status)
• 1 in 12 tested revealed a new diagnosis of HIV
• HIV prevalence peaks in females 30-39 years
• The overall HIV incidence is higher than national estimates
• The biggest gap in the HIV care cascade among ED population is being tested
Acknowledgement

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• Respective hospital emergency department staff