HIV/AIDS Prevalence Among South African Health Workers

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Human Sciences Research Council and Medical Research Council
Introduction

- The first systematically sampled national community-based survey of the prevalence of HIV in South Africa was undertaken in 2002.
- The survey also reviewed risk, risk reduction, HIV/AIDS knowledge, mass media and communication, psychosocial and socio-cultural aspects of HIV/AIDS.
Survey Method

- Location of master sample PSUs in South Africa
The HIV prevalence in the population of South Africa is 11.4% –
(Confidence Interval (CI): 10.0%–12.7%)

15.6% of persons in the 15–49 age group were HIV positive
(Confidence Interval (CI): 13.9%–17.5%)
Provincial HIV prevalence

HIV Prevalence by province, South Africa 2002
Problem

- **South Africa**: 2002 5.3 million people were estimated to be living with HIV/AIDS—?? health workers??
- **USA**: Between the time that the epidemic started up until December 2002, 5.1% of AIDS cases, had worked in the health sector (CDC)
- **Zambia**: 44% of female nurses and 39% of nurse midwives were HIV positive (Siziya and Hakim, 1996)
Modes of Transmission

- Health workers may acquire HIV through heterosexual or occupational exposure.
Injuries on Duty in South African health workers (over 2 years)

- 100 injuries occurred on duty among health workers
- 41% occurred among nurses
- 38% among cleaners
- 6% among administrators.
- Cleaners comprised 16 percent of the total personnel of the hospital but reported 38% injuries
- 45% of reported injuries were needle-stick

(A study conducted by de Villiers 2000)
Objective

- Estimate HIV prevalence among South African health workers in four provinces
Sampling Health Workers

- A complex multistage probability sample of 5% of medical professionals i.e., specialists and doctors, nursing professionals and other nursing staff, and other health professionals in Mpumalanga, Gauteng, Kwazulu/Natal and Free State.
- Includes public and private health sector (excluding GPs)
- Sample size = 721
1. **Target population**: Health Workers in the public and private health sectors in four South African provinces

2. **Sampling frame**: DoH health facility database

3. **Define sampling PSU**: District

4. **Stratify by prov & type of facility**

5. **Reporting domain**: province

6. **Define SSU**: clinics & hospitals

7. **MOS**: No. of facilities per district

8. **Define MOS**: number of beds

9. **Define USU**: health workers

10. **Allocation of Sample to MOS**
Sampled health facilities
DATA COLLECTION

- Questionnaire: demographics
- Face-to-face interviews of Health Workers (N=721)
- HIV testing
**HIV testing**

- The OraSure® HIV-1 Oral Specimen Collection Device was used to collect oral mucosa transudate (oral fluid) specimens.
- Vironostika test kits were utilised for conducting antibody tests.
- Used since 1986, and in Africa since 1990.
- Approved by FDA for all clades.
- Studies on sensitivity and specificity show high correlations with blood results (98%-100%).
Ethics

- Procedure & content approved by Research & Ethics Review Committee NSPH, MEDUNSA

Participation –
- anonymous
- non-compulsory
- confidential

- Link interviews & specimens with bar codes
## Response rates health workers: HIV test

<table>
<thead>
<tr>
<th>Prov</th>
<th>Total (N)</th>
<th>Tests done (N)</th>
<th>%</th>
<th>Refusals/ faulty specimens (N)</th>
<th>%</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>KZN</td>
<td>284</td>
<td>231</td>
<td>81.3</td>
<td>53</td>
<td>18.7</td>
<td>100</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>109</td>
<td>79</td>
<td>72.5</td>
<td>30</td>
<td>27.5</td>
<td>100</td>
</tr>
<tr>
<td>North West</td>
<td>156</td>
<td>143</td>
<td>91.7</td>
<td>13</td>
<td>8.3</td>
<td>100</td>
</tr>
<tr>
<td>Free State</td>
<td>172</td>
<td>142</td>
<td>82.6</td>
<td>30</td>
<td>17.4</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>721</td>
<td>595</td>
<td>82.5</td>
<td>126</td>
<td>17.5</td>
<td>100</td>
</tr>
</tbody>
</table>
Results
HIV prevalence by type of health facility

- Overall Public: 16.3%
- Primary Health care facility/clinic: 17.5%
- Public Hospitals: 15.9%
HIV Prevalence among health workers

- HIV+ Health workers by province

- **FS**: 9.6%
- **KZN**: 17.1%
- **MP**: 19.6%
- **NW**: 19.7%
HIV Prevalence among health workers

- HIV+ Health workers by occupation

<table>
<thead>
<tr>
<th>Occupational status</th>
<th>% Health workers HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>13.7%</td>
</tr>
<tr>
<td>Non-professional</td>
<td>20.3%</td>
</tr>
</tbody>
</table>
HIV Prevalence among health workers by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>% Health workers HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 - 35</td>
<td>20.0%</td>
</tr>
<tr>
<td>36 - 45</td>
<td>16.6%</td>
</tr>
</tbody>
</table>
Summary of findings

- HIV prevalence among health workers is 15.7%
- Prevalence differs substantially between non professional (20.3%) and professional health workers (13.7%)
- Among professional health workers, nurses are much more likely than doctors to be HIV positive (15.4% vs 3% resp) or other professionals (1.9%) (differences are not statistically significant because of small n).
- HIV prevalence appears to be higher for younger than older health workers.
- HIV prevalence appears to be much higher for African health worker than for others.
Meaning of the study results

- The observed HIV prevalence of 15.7% among health workers is very high.
- Comparable to HIV prevalence among South Africans of reproductive age (15-49 years), --15.6% (Nelson Mandela/HSRC study of HIV/AIDS, 2002).
- Need to train more nurses to replace those who may be dying of HIV/AIDS.
- With such high prevalence of HIV in the younger population of health workers, it is critical to increase the number of nurses be trained.
<table>
<thead>
<tr>
<th>Category</th>
<th>Registered professionals per 100,000 pop</th>
<th>% change from 1997 to 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors (all)</td>
<td>71.54</td>
<td>16.05</td>
</tr>
<tr>
<td>General practitioners</td>
<td>52.06</td>
<td>24.00</td>
</tr>
<tr>
<td>Specialists</td>
<td>19.48</td>
<td>-0.92</td>
</tr>
<tr>
<td>Dentists</td>
<td>10.82</td>
<td>16.40</td>
</tr>
<tr>
<td>Dental therapists</td>
<td>0.98</td>
<td>50.25</td>
</tr>
<tr>
<td>Nurses (all)</td>
<td>401.07</td>
<td>-6.86</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>25.00</td>
<td>3.25</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>6.05</td>
<td>39.90</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>10.44</td>
<td>25.70</td>
</tr>
</tbody>
</table>
Implications of the findings

- In areas with the high HIV prevalence, perhaps --expect health workers to also have a high prevalence of HIV
- Non-professionals maybe at increased risk of HIV, but so are professionals: Therefore, need for training of more health workers
- A vigorous VCT service targeted at health workers may be necessary to afford them the opportunity to know their HIV status and then reassign the positives to work in non-TB patients wards.
- Need policy to encourage health workers to know their HIV status
Acknowledgements

- Department of Health – commissioning and funding study as well as input to the study
- Centers for Disease Control and Prevention—funding
- Health workers for agreeing to participate
- Retired nurses for data collection