Using implementation strategies to increase use of PPE among traditional healers

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Traditional healer health concerns

• Treating any disease with traditional ‘vaccination’ – exposure to HIV, HCV, and/or HBV – via patient blood

HBV, hepatitis B virus; HCV, hepatitis C virus
Multivariable model: Risk of HIV infection (n=162)

<table>
<thead>
<tr>
<th>Exposure to blood while performing ‘vaccinations’</th>
<th>Risk ratio</th>
<th>95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure to blood while performing ‘vaccinations’</td>
<td>2.35</td>
<td>1.55–3.56</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>No. of sex partners</td>
<td>1.04</td>
<td>0.93–1.16</td>
<td>0.500</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>2.42</td>
<td>1.40–4.20</td>
<td>&lt;0.002*</td>
</tr>
<tr>
<td>Married/living with partner</td>
<td>Reference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>1.38</td>
<td>0.66–2.88</td>
<td>0.397</td>
</tr>
<tr>
<td>Divorced/separated</td>
<td>1.33</td>
<td>0.60–2.92</td>
<td>0.481</td>
</tr>
<tr>
<td>Practice as a traditional healer (years)</td>
<td>0.98</td>
<td>0.96–0.99</td>
<td>0.011*</td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.91</td>
<td>0.85–0.98</td>
<td>0.011*</td>
</tr>
<tr>
<td>Sex (female)</td>
<td>1.00</td>
<td>0.53–1.91</td>
<td>0.995</td>
</tr>
<tr>
<td>No. of clients last week</td>
<td>1.07</td>
<td>1.03–1.11</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Age (years)</td>
<td>0.99</td>
<td>0.97–1.01</td>
<td>0.995</td>
</tr>
</tbody>
</table>

CI, confidence interval
* Indicates statistical significance
Increase use of PPE among healers
Who uses PPE regularly now?

When a patient comes for vaccinations, I prepare the medicine first, wear the gloves, then open a razor blade and start with the vaccinations... When I don’t have the hand gloves, I use the plastics [shopping bags]. I never vaccinate without wearing anything on my hands. (Female, 50–59)

The government should give the healers the hand gloves because we are struggling, and we are at risk of contracting the diseases when we don’t have the hand gloves. Traditional healing is another way of treating patients and we have some things in common with the medical doctors because we also inspect the wounds and treat them, and that requires the gloves. (Female, 70–79)
Can we use a healer-led strategy?

• We hypothesize that ‘early adopter’ healer messaging and delivery of evidence-based training programs will have greater impact on healer behavior:
  • given their trusted position within their own community
  • will be more easily scaled up nationwide given the large number of healers in SA
  • will be conducted more cost-efficiently given the lower hourly rate for healers (vs. HCWs)

• But we also need (1) access to PPE and (2) PPE and sharps disposal to ensure compliance

HCWs, health care workers; SA, South Africa
Aim 1: Adapt OSHA- and WHO-certified PPE training programs (the EBI) using the ADAPT-ITT model for use among traditional healers

- Modification of the WHO PPE training program to be appropriate for healers with low levels of literacy and who work outside of the clinical setting will follow the ADAPT-ITT model

### Examples of anticipated PPE training module adaptation

<table>
<thead>
<tr>
<th>PPE training</th>
<th>Potential adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloves</td>
<td>We will need to simplify training and provide instructions for safe disposal at home</td>
</tr>
<tr>
<td>Sharps safety</td>
<td>With no infrastructure for disposal, we will develop a system for sharps containers and glove disposal</td>
</tr>
<tr>
<td>Masks</td>
<td>Use of surgical or cloth masks will be emphasized to prevent air-borne illness</td>
</tr>
</tbody>
</table>

EBI, Evidence-Based Intervention; OSHA, Occupational Safety and Health Administration; WHO, World Health Organization
The trial: RCT of two strategies

Implementation strategy 1
PPE education and training
& Outreach and coaching delivered by ‘early adopter’ healers who use PPE and clinicians

Implementation strategy 2
PPE education and training
& Educational outreach and coaching delivered by clinicians

Outcomes

Implementation outcomes
(Primary) Fidelity to PPE training (continuous score)

Effectiveness outcomes
(Primary) Proportion of injections conducted without blood exposure (collection of all razors and gloves/plastics used)
HIV seroconversion
Why might this work?

**Intervention characteristics**
- Cost
- Simplicity
- Feasibility
- Trialability
- Acceptability

**Inner setting**
- Tension for change
- Compatibility of intervention with current practice

**Outer setting**
- Peer pressure
- Compatibility of intervention with current practice

**Process**
- Engaging healers in PPE training
- Champions within healer organization

**Motivation**
- Self efficacy
- Perception of HIV risk
- Belief in PPE effectiveness

**Information**
- HIV transmission knowledge
- PPE knowledge

**Behavioral skills**
- Previous use of PPE
- Donning and doffing PPE safely

**Correct use of PPE to reduce blood exposure (aim 3)**
Aim 2: Compare fidelity to delivery of PPE training between HCW-only and healer + HCW teams

• We will rate training fidelity via two constructs: (1) content and (2) coverage during the week-long training session and community-based outreach sessions
Project implementation: Fidelity to training content

1. Delivered information about the definition of PPE. Score ________
2. Provided information about when to use PPE. Score ________
3. Provided information about what types of PPE to use in different circumstances. Score ________
4. Provided information about the appropriate fit of PPE. Score ________
5. Provided dos and don’ts of glove use. Score ________
6. Provided information about don PPE. Score ________
7. Provided information about how and where to remove PPE. Score ________
8. Provided information about how to safely store used PPE. Score ________
9. Provided information about hand hygiene. Score ________
10. Provided instruction and feedback during PPE practice session. Score ________

TOTAL SCORE FOR TRAINING SESSION ________ / 100
## Fidelity to care delivery: Observation

<table>
<thead>
<tr>
<th>User's PPE sequence</th>
<th>Task</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand hygiene</td>
<td>Hand hygiene was performed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The choice of hand hygiene was appropriate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mask</td>
<td>Chosen mask is appropriate face protection for the situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Place mask over the nose and mouth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mold metal strip to nose</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secure elastics or ties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloves</td>
<td>Remove inappropriate jewelry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choose correct type of gloves (if available)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Choose well-fitting gloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Put on gloves (if gown is worn, place gloves over gown cuffs)</td>
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</tbody>
</table>
Aim 3: Compare the effects of the two implementation strategies on healer exposure to patient blood

1. **Collect used sharps and PPE.** Healers will be given containers to place all used gloves and razors/sharps to both ensure healer safety and allow us to count materials used (healers use gloves and a single razor once per patient and subsequently throw them into latrines or trash piles).

   We will use the *number of glove pairs as the numerator* (number of times they used gloves during procedures) and the *number of razor blades as the denominator* (number of injections given).

2. **Self-report.** Healers will note every time they conduct a vaccination and the corresponding use (or not) of PPE.

3. **HIV seroconversion among healers**
Fast-Track Cities

The importance of...

1. understanding the local epidemic
2. tailoring evidence-based interventions and creating buy-in
3. measuring implementation metrics, including acceptability and fidelity
4. measuring clinical outcomes
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Any questions?
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