Attributes of diagnostic tests to increase uptake of dual testing for syphilis and HIV in Port-au-Prince, Haiti

Jeffrey D. Klausner, MD, MPH
Professor of Medicine and Public Health
Division of Infectious Diseases, Global Health
David Geffen School of Medicine
Department of Epidemiology
Kari and Jonathan Fielding School of Public Health

Co-authors: Claire C. Bristow, Linda Sever, Joan William Pape, Christian Pérodin

Rationale

• The WHO has called for the dual elimination of HIV and syphilis MTCT
  – An integrated approach

Dual rapid tests

• Simplifies training
• Streamlines procurement
• Ensures testing for both HIV and syphilis
• Improves client experience

Disclosures

• Dr. Klausner is a faculty member of the University of California Los Angeles
• Dr. Klausner is a board member of YTH, Inc, non-profit
• Dr. Klausner is an unpaid medical advisor for Healthvana.com

In the past 12 months:
– Speakers Bureau: None
– Advisory Board: None
– Consultant activities: AIDS Healthcare Foundation, Flora Biosciences, Sentient Research, AIDS Project Los Angeles

Rationale - continued

• Almost all nations have national policies recommending universal syphilis screening for pregnant women
• Maternal syphilis testing/treatment is highly cost effective
• Rapid tests are available

References

Attributes of diagnostic tests

<table>
<thead>
<tr>
<th>Cost</th>
<th>Potential for false positive results</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>$</td>
<td>False Positive</td>
<td></td>
</tr>
<tr>
<td>$4</td>
<td>False Positive</td>
<td></td>
</tr>
</tbody>
</table>

Background

- Conjoint analysis is a method for systematically estimating consumer preferences across discrete attributes.

Objective

- In order to understand preferences for the integration of HIV and syphilis testing, we used conjoint analysis to identify factors associated with willingness to test for HIV and syphilis infection.

Study site

- GHESKIO Health Centers

Study methods

- 8 hypothetical test profiles were created
- Those varied across 6 dichotomous testing attributes:
  - cost (free vs. $4),
  - accuracy (no false positive vs. false positive),
  - time-to-result (20 minutes vs. 1 week),
  - blood collection (finger prick vs. venipuncture)
  - number of draws (1 vs. 2),
  - and test type (rapid vs. laboratory)
Conjoint analysis procedures

- Each participant presented with 8 testing scenarios, one at a time
- Participants rated each of the 8 scenarios in terms of how likely they would be to test given that scenario
- Participants’ ratings were recorded using a 5-point Likert preference scale

Participant study card

Test for HIV / Syphilis:
- Laboratory test
- Blood sample will be collected with a single finger prick
- The test is free
- You will have results in 20 minutes
- You will be treated for syphilis only if you currently are infected.

Data analysis

- Likert preference scores were converted to a 100-point numeric scale using multiplication
  - Higher scores suggest increased preference
- An average preference score was generated for each of the 8 test scenarios
- Impact score was generated for each attribute
  - To determine which attribute(s) have the most influence on participants’ decisions regarding HIV and syphilis testing

Data analysis

- Two-sided one-sample t-test was used to generate p-values for the comparisons between the preferred and non-preferred levels for each attribute
- Data analyzed using SAS v9.3

Results

- Of 298 study participants:
  - 61 (20.5%) were male
  - 237 were female
    - 49 (20.7%) were pregnant
Results

<table>
<thead>
<tr>
<th>Test Attributes</th>
<th>Attribute values</th>
<th>Impact on testing</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Free vs. $4</td>
<td>27.22 (36.62)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Number of Blood Draws</td>
<td>1 vs. 2</td>
<td>17.45 (29.80)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Sample Collection Method</td>
<td>Fingerprick vs. Venipuncture</td>
<td>9.73 (26.52)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Test Type</td>
<td>Rapid vs. Laboratory</td>
<td>-4.49 (21.85)</td>
<td>0.0005</td>
</tr>
<tr>
<td>Time to Result</td>
<td>20 minutes vs. 1 week</td>
<td>3.64 (25.46)</td>
<td>0.0139</td>
</tr>
<tr>
<td>Potential for Syphilis False Positive</td>
<td>No vs. Yes</td>
<td>1.34 (23.69)</td>
<td>0.3288</td>
</tr>
</tbody>
</table>

Discussion

- We assessed the likelihood of testing simultaneously for HIV and syphilis.
- Participants prioritized cost and a single blood draw using a fingerprick.
- Only pregnant women prioritized timeliness.
- Females prioritized laboratory-based testing.

Conclusion

- Findings inform how to implement dual screening.
- A low-cost dual rapid test in the laboratory for HIV and syphilis could improve screening uptake and accelerate time to treatment.

Acknowledgements

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Thank you

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