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

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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:
  - Research funding or donated supplies from the US NIH, US CDC, AIDS Healthcare Foundation, Gilead Sciences, Hologic, Alere-Standard Diagnostics, Chembio, Cepheid and MedMira.
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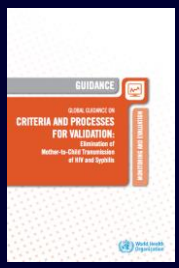
Rationale

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



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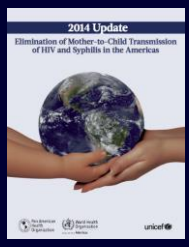
Rationale - continued

- 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



Broutet 2006, Hira1990, Jenniskens 1995, Fonck 2001, Terris-Prestholt 2003

Dual rapid tests

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

Attributes of diagnostic tests

Cost

Potential for false positive results

Time

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Attributes of diagnostic tests

Blood draw method

Number of specimens collected

Location of testing

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Background

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

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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.

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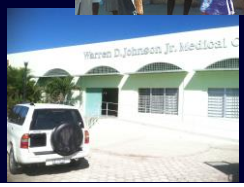
Study site

- GHESKIO Health Centers



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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)

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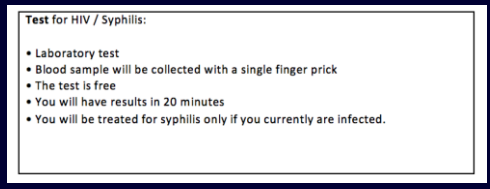
Conjoint analysis procedures

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



Data analysis

- Likert preference scores were converted to a 100-point numeric scale using multiplication
  - Higher scores suggest increase 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

Data analysis

- Assessed differences between 3 groups included in our sample:
  - pregnant women
  - non-pregnant women
  - men

Results

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

Results

Table. Impact of HIV and syphilis test attributes on hypothetical test acceptability among the total sample in Port-au-Prince, Haiti. (N=298)

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

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Results

- Each of the groups had similar prioritization of attributes
  - Cost was the most important driving factor for all groups, followed by number of blood draws and sample collection method
  - However, among the 3 groups, only pregnant women prioritized time to result (impact score=17.22, SD=30.15, p=0.0002)
  - Additionally, males did not prioritize test type (impact score=-2.77, SD=20.4, p=0.2937), while females did

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Discussion

- We assessed **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**

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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

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Thank you

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