SFDPH CBA Program

Nonclinical HIV Testing
- Community-based testing
- Home testing
- Novel testing technologies
- Testing with social networks

Prevention for HIV-Negative Persons
- PrEP implementation
- Personalized Cognitive Counseling (PCC)
- Addressing social determinants of health

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Today’s Speakers

- Dr. Hyman Scott, SF DPH
  Presentation of the HOME HIV testing study

- Raj Gill, MPH, Santa Clara PHD
  Overview of Santa Clara home HIV testing program

- Moderator: Dr. Jessica Bloome, SF DPH
  Discussion on building capacity for home HIV testing
Hyman Scott, MD, MPH

Bridge HIV, San Francisco Department of Health
UCSF Division of HIV, Infectious Diseases, and Global Health
HOME: A mHealth combination HIV prevention intervention for young Black and Latinx men who have sex with men

Hyman M. Scott¹, Kenneth Coleman¹, Rafael Gonzalez¹, Nicole Walker¹, Nicole Laborde², Albert Liu¹, Eric Vittinghoff³, Susan Buchbinder¹

¹Bridge HIV, San Francisco Department of Public Health; ²Consultant; ³University of California, San Francisco
Disclosures

• I have no disclosures or conflicts of interest.
The Status Neutral Continuum

Adapted from https://www.nastad.org/domestic/hiv-prevention-health-equity
Timeline Following HIV Infection

Hurt et al STD 2017
Graphic adapted from Action for AIDS Singapore
HIV Testing Algorithm

Lab-based Ab/Ag Test

(+) HIV-1/2 Ab Differentiation Assay

(+) Ab Detected
HIV-1 or HIV-2 infected

HIV-1 (-) or Indeterminate
HIV-2 Negative

HIV-1 NAT
Hologic APTIMA HIV-1 RNA

Ab & Ag (-)
Negative for HIV-1 & HIV-2

Ab = Antibody
Ag = Antigen

HIV-1 NAT (+)
Acute HIV-1 Infection

HIV-1 NAT (-)
Negative for HIV-1
Never Testers Among MSM

- Internet survey of 1,170 MSM.
- Recruitment on social media and MSM networking sites.
- 13% reported never testing.
Strategies to Increase HIV Testing

Individual
- Incentives may have a role among some populations.
- Home testing options.

Social
- Social and sexual network-based testing strategies.
- Peer/social support (including family).
- Social marketing.

Structural
- Increased access to healthcare services.
- Non-clinical testing sites.

Home HIV-self Test (Oraquick)

Rapid H.I.V. Home Test Wins Federal Approval

By DONALD G. MCNEIL JR.

After decades of controversy, the Food and Drug Administration approved a new H.I.V. test on

- Approved in July 2012

- 20-40 minutes for result

- Comparable to older EIA (lab) tests
  (90 day window period)
Home HIV Self-Testing (Oraquick)

• Advantages
  • Privacy
  • Control of testing
  • Availability (pharmacy/online)
  • Rapid result
  • Ease of use

• Disadvantages
  • Cost
  • Sensitivity (vs. blood tests)
  • Packaging (single use)
  • Linkage?
  • Lack of counseling?
Acceptable among YMSM

• Study of 425 YMSM randomized to receive home self-testing, home self-collection, or medical/CBO testing.
  ➢ Self-testing and medical/CBO testing was higher than self-collection
  ➢ No difference by race/ethnicity (Black, Latinx, White)

<table>
<thead>
<tr>
<th></th>
<th>Self-test</th>
<th>Self-collection</th>
<th>Medical/CBO</th>
</tr>
</thead>
<tbody>
<tr>
<td>% completing test</td>
<td>66.2 (58.4, 74.0)</td>
<td>40.1 (32.1, 48.2)</td>
<td>56.0 (47.8, 64.2)</td>
</tr>
<tr>
<td>Time to completion (days)</td>
<td>14.0 (11.0, 17.0)</td>
<td>17.0 (15.0, 22.0)</td>
<td>17.0 (11.0, 26.0)</td>
</tr>
</tbody>
</table>

Merchant et al AIDS Behav 2018
The Potential Impact of the Long Window

Stable 18.6% HIV prevalence among MSM in Seattle.

Katz et al STD 2014
Background

• Young Black and Latinx MSM have the highest proportion of undiagnosed HIV infections.
  • High rates of STIs among these populations, which is likely driving new infections.

• Home HIV self-testing is acceptable and may reach groups that don’t access available community based organization or clinic testing locations.

• PrEP uptake has been slow among young Black and Latinx MSM in the US.

• Mobile health (mHealth)-based interventions have potential to reach young Black and Latinx MSM who may not access other HIV prevention and care services.

Whitham et al AIDS and Behavior 2018; Rolle et al JAIDS 2017; Merchant et al AIDS Behav 2018; Smith et al CROI 2018;
HOME Intervention

• Developed and optimized through formative work using Information-Motivation-Behavioral Skills (IMB) model.
  • Focus groups and interviews
  • Pilot tested with 30 young MSM

Intervention Components
1. Information and Linkage to PrEP and HIV care
2. HIV Risk Assessment – Sex Pro
3. SMS Testing Reminders
4. Home HIV/STI testing options
5. HIV/STI testing log
6. Support to test with a “buddy”
Home HIV and STI Testing Options

Home HIV self-testing

Home STI self-collection

Rectal Swabs

Penile Swabs (meatal)
Study Design

<table>
<thead>
<tr>
<th>Month</th>
<th>0</th>
<th>3</th>
<th>6</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex Pro</td>
<td>Sex Pro</td>
<td>Sex Pro</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOME Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PrEP Referrals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CASI*</td>
<td>CASI</td>
<td>CASI</td>
<td>IDI*</td>
<td></td>
</tr>
</tbody>
</table>

| **Control** | | | |
| HIV/STI Testing Education | CASI | CASI | CASI |
| PrEP Referrals | | | |
| CASI | | | IDI |

*Computer assisted self interview

*In depth interview

In person baseline visit; follow-up assessments completed online. IDI was only in a subset of participants.
Study Objectives

• *Primary Objectives*
  • To evaluate the efficacy of the HOME mHealth intervention to increase HIV and STI testing frequency.
  
  • To evaluate efficacy of the HOME mHealth intervention package to support linkage to PrEP (for HIV-negative men) or HIV care (for HIV-positive men).

• *Secondary Objective*
  • Feasibility and acceptability of the individual components.
Methods

• Inclusion Criteria
  • Age 18-35.
  • Self-identify as a man and male sex at birth.
  • Self-identify as Black or Latinx.
  • Report anal sex with at least one male sex partner in the prior 12 months.
  • HIV negative by self-report.
  • Currently own a cell phone.
  • Willing and able to provide written informed consent.

• Recruitment on Social Media Sites and venues:

• Statistical Analysis
  Logistic regression to evaluate the primary outcomes assessed via computer assisted self interview (CASI).
Enrollment and Retention

Assessed for eligibility (n=158)
- Excluded (n=55)
  - Not meeting inclusion criteria (n=36)
  - Other reasons (n=19)

Randomized (n=103)
- Allocated to intervention (n=69)
  - Received allocated intervention (n=69)
- Allocated to control (n=34)
  - Received allocated control (n=34)

Follow-Up
- Completed 9 month f/u (n=53)
  - Lost to follow-up (n=16)
- Completed 9 month f/u (n=27)
  - Lost to follow-up (n=7)

Analysis
- Analysed (n=69)
  - Excluded from analysis (give reasons) (n=0)
- Analysed (n=33)
  - Excluded from analysis (give reasons) (n=0)
## Baseline Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Control (N=34)</th>
<th>Intervention (N=69)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median, IQR)</td>
<td>26 (23-29)</td>
<td>27 (23-31)</td>
<td>0.80</td>
</tr>
<tr>
<td>Latinx</td>
<td>67%</td>
<td>64%</td>
<td>0.70</td>
</tr>
<tr>
<td>Black</td>
<td>35%</td>
<td>41%</td>
<td>0.43</td>
</tr>
<tr>
<td>Lives in San Francisco County</td>
<td>50%</td>
<td>35%</td>
<td>0.14</td>
</tr>
<tr>
<td>Annual Income &lt; $30,000</td>
<td>41%</td>
<td>62%</td>
<td>0.052</td>
</tr>
<tr>
<td>Ever incarcerated</td>
<td>5.9%</td>
<td>22%</td>
<td>0.04</td>
</tr>
<tr>
<td>Education - Some college or more</td>
<td>82%</td>
<td>82%</td>
<td>0.76</td>
</tr>
<tr>
<td>Number of male partners* (median, IQR)</td>
<td>3.0 (1-4.5)</td>
<td>3.5 (1-5)</td>
<td>0.62</td>
</tr>
<tr>
<td>Exchange sex (Ever)</td>
<td>31%</td>
<td>26%</td>
<td>0.62</td>
</tr>
<tr>
<td>Recreational Drug Use*</td>
<td>49%</td>
<td>34%</td>
<td>0.17</td>
</tr>
<tr>
<td>Previously on PrEP</td>
<td>23%</td>
<td>15%</td>
<td>0.33</td>
</tr>
<tr>
<td>Very/Extremely Interested in PrEP</td>
<td>53%</td>
<td>32%</td>
<td>0.045</td>
</tr>
</tbody>
</table>

* Past 3 months.
HIV/STI Testing and PrEP Uptake

- HIV Testing (Ever): 100% (Intervention), 82% (Control), P=0.001
- HIV Testing (Visits): 96% (Intervention), 52% (Control), P<0.001
- STI Testing (Ever): 100% (Intervention), 78% (Control), P<0.001
- STI Testing (Visits): 98% (Intervention), 48% (Control), P<0.001
- PrEP (Ever): 32% (Intervention), 44% (Control), P=0.28
- PrEP (Visits): 28% (Intervention), 27% (Control), P=0.90
## HIV/STI Testing and PrEP Uptake

<table>
<thead>
<tr>
<th>Outcome Variable*</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV Testing</td>
<td>5.89</td>
<td>3.23 - 10.74</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>STI Testing</td>
<td>5.95</td>
<td>3.05 - 11.62</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PrEP Uptake</td>
<td>0.51</td>
<td>0.21 - 1.24</td>
<td>0.14</td>
</tr>
</tbody>
</table>

* Assessed via quarterly CASI
Home HIV and STI testing

- **Home HIV self-testing**
  - 60% used and disclosed home HIV test results on the HOME website testing log
  - 26% tested with a “buddy”
  - 3 participants reported positive home HIV tests (1 false positive; 1 confirmed and linked to care; 1 unable to link to confirmation/care despite multiple linkage attempts)

- **Home STI self-collection**
  - 48% of swabs were returned for testing
  - 5% of rectal swabs were positive for Gonorrhea and 5% for Chlamydia
  - 2% of penile swabs were positive for Gonorrhea and 3% for Chlamydia
Low HIV Risk Perception

HIV Risk Perception

HIV Risk Score

Scott AIBE 2019 [epub ahead of print]
Acceptability

• HOME Website
  • System Usability Score (SUS): median score 82.5/100 (IQR: 70-95)

• Home HIV self-testing
  • 92% reported testing was easy
  • 90% reported testing would be very convenient to use in the future

• Home STI self-collection
  • Penile Swabs – 93% reported collection was easy
  • Anal Swabs – 86% reported collection was easy

System Usability Score (SUS)

- Top 25% of scores: 90.1, "best imaginable"
- Median: 85.5, "excellent"
- Bottom 25% of scores: 20.3, "awful"
- Mean: 71.4, "good"
- Bottom 10%: 12.5, "worst imaginable"
Limitations

• No syphilis or pharyngeal STI screening
• HIV & STI testing and PrEP uptake assessed by self-report
• Retention challenges with online follow-up
Summary

• HOME mHealth intervention led to significant increase in HIV and STI testing.

• Participants were willing to disclose HIV test results online, including positive test results.

• Intervention components were highly acceptable and scalable.

• There was no impact on PrEP uptake, indicating more counseling/support is likely needed.
  • Exploring through individual interviews
Implications

• HOME study results in the context of HIV testing program implementation

• Considerations in efforts to reach young Black and Latinx men who have sex with men for HIV testing
References

Thank You

• Susan Buchbinder
• Al Liu
• Eric Vittinghoff
• Marguerita Lightfoot
• Nicolas Sheon
• Nicole Laborde
• Kenneth Coleman
• Nicole Walker
• Janie Vinson
• Rafael Gonzalez

Our Study Participants!

Funding: R01AI104309 (PI Buchbinder), K23MH104116 (PI: Scott)
Raj Gill, MPH

Health Program Specialist
Santa Clara County Public Health Department
Santa Clara County Home HIV Testing Pilot Program

- Goal: distribute OraQuick home HIV testing kits to MSM who reside in Santa Clara County
  - Focus on confidentiality
- Recruitment: online ads through dating/hook up apps and in-person outreach at events
- Initial roll out: email voucher for Walgreens
  - 42 test kits distributed in 6 months
- Follow up: in-person distribution at events and venues
  - 382 tests distributed in 6 months
- Two individuals were diagnosed as HIV positive and linked to care
Santa Clara County Reflections

Challenges
• Confidentiality
• Redemption Process
• County Processes

Successes
• Partnerships
• Reach/Raising Awareness
• Reduction of Stigma
Home HIV Testing
Health Department Programs

NYC HIV Self-Test Giveaway Program
• Online HIV self-testing program targeting MSM and transgender persons, conducted through advertisements on social media and dating apps
• From 2015 through 2018, >12,000 test kits mailed, 16% reported no prior testing
• Additional Community Home Test Giveaway program through CBO partnerships


Virginia Home HIV Testing Program
• Online HIV self-testing program administered through the state Health Department, focused on MSM
• From 2016 through 2018, 819 test kits were mailed, 45% reported no testing in the prior 12 months


Arizona Department of Health Services Home Test Kit Program
• Online HIV self-test program for all residents, with option for mailed kit or pharmacy voucher

https://hivaz.org/dont-know-your-status/free-home-test-kit
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