Seroadaptive behaviors and HIV prevention strategies among sexually active MSM receiving HIV care in San Francisco

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BACKGROUND

2010 iPrEx

2011 HPTN 052

2012 FDA PrEP
OBJECTIVES

• Describe the frequency of prevention strategies used by MSM receiving HIV care in SF

• Examine how prevention strategies are combined
METHODS

Medical Monitoring Project (MMP)

Stage 1: Project Areas
23 Project Areas

Stage 2: HIV Care Facilities
25-35 Facilities per cycle

Stage 3: HIV+ Patients
400 patients per cycle
METHODS

• Interviews from August 2014 - April 2015
• Men with ≥1 male anal sex partner in the 12 months prior to interview
• Each participant could report up to 5 most recent sexual partners
• Male-male anal sex partnerships are included in this analysis
### Definition of Prevention Strategies

<table>
<thead>
<tr>
<th>Serosorting</th>
<th>TasP</th>
</tr>
</thead>
<tbody>
<tr>
<td>sex with an HIV-positive partner</td>
<td>participant reported being virally suppressed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PrEP</th>
<th>Condom use</th>
</tr>
</thead>
<tbody>
<tr>
<td>sex with an HIV-negative partner using PrEP</td>
<td>always using condoms</td>
</tr>
</tbody>
</table>
RESULTS

Sample
400 HIV+ adults

Participants
238 agreed and were interviewed

MSM
121 men with ≥1 male anal sex partner
### Table 1: Characteristics of the 121 men who reported ≥1 male anal sex partner in the previous 12 months, San Francisco MMP 2014.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, mean (median)</strong></td>
<td>49.6</td>
<td>50</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>75</td>
<td>62%</td>
</tr>
<tr>
<td>African American</td>
<td>10</td>
<td>8%</td>
</tr>
<tr>
<td>Latino</td>
<td>30</td>
<td>25%</td>
</tr>
<tr>
<td>Other/Multi</td>
<td>6</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Diagnosed with HIV for 10 or more years</strong></td>
<td>86</td>
<td>72%</td>
</tr>
<tr>
<td><strong>Homeless</strong></td>
<td>11</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Foreign born</strong></td>
<td>23</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Some college education or greater</strong></td>
<td>111</td>
<td>92%</td>
</tr>
<tr>
<td><strong>On ART (self-report)</strong></td>
<td>119</td>
<td>98%</td>
</tr>
<tr>
<td><strong>Virally suppressed (self-report)</strong></td>
<td>100</td>
<td>83%</td>
</tr>
<tr>
<td><strong># male sex partners past 12 months, mean (median)</strong></td>
<td>12.7</td>
<td>4</td>
</tr>
</tbody>
</table>
HIV serostatus of partners

- 380 partnerships
  - 197 (51.8%) HIV-positive
  - 100 (26.3%) unknown HIV status
  - 83 (21.8%) HIV-negative

Serosorting
Condom use

380 partnerships

197 (51.8%) HIV-positive

12 (6.1%) condom use

100 (26.3%) unknown HIV status

54 (54.0%) condom use

83 (21.8%) HIV-negative

34 (41.0%) condom use
TasP among HIV-/unknown partners

380 partnerships

197 (51.8%) HIV-positive

100 (26.3%) unknown HIV status

83 (21.8%) HIV-negative

88 (88.0%) TasP

70 (84.3%) TasP
PrEP use among negative partners

380 partnerships

197 (51.8%) HIV-positive

100 (26.3%) unknown HIV status

83 (21.8%) HIV-negative

30 (36.1%) PrEP
RESULTS

Serosorting: 185
Condoms: 12
TasP: 72
PrEP: 2

None: 9
197 (52%) used serosorting

- Serosorting: 197
- Condoms: 12, 72, 2, 24, 2
- TasP: 60, 2
- PrEP: 2
- None: 9
158 (42%) used TasP

- Serosorting: 185
- Condoms: 12
- PrEP: 2
- None: 9
100 (26%) used condoms

- Serosorting: 185
- TasP: 60
- PrEP: 2
- None: 9
30 (8%) used PrEP

- Serosorting: 185
- TasP: 60
- Condoms: 12
- None: 9

PrEP: 30
259 (68%) used one prevention method

- Serosorting: 185
- Condoms: 12
- TasP: 60
- PrEP: 2

None: 9
110 (29%) used two prevention methods

- Serosorting: 185
- Condoms: 12
- TasP: 60
- PrEP: 2

110 (29%) used two prevention methods:
- Condoms and Serosorting: 12
- Condoms and PrEP: 2
- Condoms and TasP: 72
- Serosorting and TasP: 2
- Serosorting and PrEP: 24
- None: 9
2 (<1%) used three prevention methods

- **Serosorting**: 185
- **Condoms**: 12
- **TasP**: 72
- **PrEP**: 2

None: 9
9 (2%) used no prevention method

- Serosorting: 185
- Condoms: 12
- TasP: 72
- PrEP: 2
- None: 9
LIMITATIONS

• Unweighted data
• Descriptive; no associations or statistical tests
• 37% of the 121 MSM had more than 5 sexual partners in the past 12 months
• Social-desirability bias and measurement error
CONCLUSION

• High use of seroadaptive behaviors and HIV prevention strategies
• Nine partnerships had no evidence of any prevention strategy
• PrEP was used as a prevention strategy in 36% of HIV-negative partnerships
Extra slides
If my partner tells me he or she is HIV positive, I am more likely to have unprotected sex with him or her.
<table>
<thead>
<tr>
<th>Serostatus of partner</th>
<th>CAI</th>
<th>ICAI*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV+ (n=197)</td>
<td>94%</td>
<td>64%</td>
</tr>
<tr>
<td>HIV-/unknown (n=183)</td>
<td>52%</td>
<td>28%</td>
</tr>
</tbody>
</table>

*from perspective of MMP participant
If I have an undetectable HIV viral load, I am more likely to have unprotected sex.

- Strongly disagree: 22.3%
- Disagree: 5.8%
- Neutral: 11.6%
- Agree: 33.1%
- Strongly agree: 27.3%

60.4% agree.
<table>
<thead>
<tr>
<th>Participant’s self reported viral load</th>
<th>CAI</th>
<th>ICAI*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undetectable (n=158)</td>
<td>53%</td>
<td>30%</td>
</tr>
<tr>
<td>Detectable (n=25)</td>
<td>44%</td>
<td>12%</td>
</tr>
</tbody>
</table>

*from perspective of MMP participant
RESULTS

Serosorting 185
Condoms 12
TasP 60
PrEP 2

12
72
24

None 9

7 with no ICAI
2 with ICAI
Viral load agreement

<table>
<thead>
<tr>
<th></th>
<th>Undetectable</th>
<th>Detectable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Self-report</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undetectable</td>
<td>91</td>
<td>5</td>
</tr>
<tr>
<td>Detectable</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

\[
\frac{97}{108} = 90\% \text{ of observations agree}
\]
Differences in characteristics and type of prevention method?

• Condoms: homeless, older partners, and if MMP participant disclosed, less likely to use condoms
• PrEP: younger MMP age more likely to have partnership with partner on PrEP
• TasP: younger MMP age and younger partner age more likely to use TasP; disclosure less likely
• Serosort: older MMP age, older partner age, higher education more likely; foreign born less likely
STI diagnosis and prevention type

• No self-reported STI in 2014 interview
• Data in MRA on diagnosis comes from primary HIV care site (many MSM in SF get STI tests at Magnet and SFCC, no data on STI tests there)
• STI incidence is increasing in SF
• Warrants further investigation
Condom use - by PrEP for negatives

380 partnerships

197 (51.8%) HIV-positive
- 6.1% condom use

100 (26.3%) unknown HIV status
- 54.0% condom use

83 (21.8%) HIV-negative
- 56.6% condom use (HIV- no PrEP)
- 13.3% condom use (HIV- & PrEP)