Are Bisexual Men a Bridge Population* for HIV Transmission to Women in NYC?

Evidence from Surveillance Data and the HIV Testing Survey (HITS)

Judith Sackoff and Laura Coffee

New York City Department of Health and Mental Hygiene
HIV Surveillance & Epidemiology Program
Abstract

**Background:** Men who have sex with men and women (MSM/W) may serve as a bridge for the transmission of HIV from MSM to heterosexual women. We examined the prevalence of MSM/W among men living with HIV/AIDS in NYC and the prevalence of high risk sex in men sexually active with men and women.

**Methods:** NYC HIV/AIDS surveillance data and the HIV Testing Survey (HITS). HITS is an anonymous behavioral survey of populations at risk for HIV and was conducted at 7 gay bars in NYC (2000-2002).

**Results:** 12% of MSM living with HIV/AIDS in NYC in 2002 also have sex with women (MSM/W). The prevalence of MSM/W is highest in blacks (166 per 100,000) and men 40-49 years (151 per 100,000). Of the 490 men surveyed in HITS, 26% were either sexually active with both men and women or self-identified as bisexual. 51% of the 59 bisexualy active men engaged in high risk sex with other men (i.e. unprotected anal sex with last partner or 4+ casual partners in the previous 12 months), and 25% (15/59) [95% CI = 18%,32%] engaged in high risk sex with both men and women.

**Conclusions:** Our data provide indirect evidence that bisexual men play a role in the HIV epidemic among heterosexual women. HIV prevention messages should acknowledge the intersection of MSM and heterosexual women.
* “The sexual transmission of HIV beyond a high-risk or ‘core’ group into the low-risk general population; depends on linkages between sexual networks, i.e. the ‘core group’ and sexual partners outside the core group”
Background

1. A significant proportion of HIV-infected men who have sex with men (MSM) also report sex with women
   - In SHAS, the Supplemental HIV/AIDS Survey, 1995-2000, 13% of HIV-infected white MSM reported sex with women, 34% of black MSM, and 26% of Hispanic MSM (Montgomery et al, AIDS Care, 2003)

2. Men who have sex with men and women are (MSM/W) at equal or greater risk for HIV infection than MSM.
   - Among black men in Los Angeles the odds of being HIV–infection were 30 times greater among MSM/W and 13 times greater among MSM compared with exclusively heterosexual men (LA HIV Epidemiology Program, 2002)
Objectives

1. To describe the prevalence and demographic characteristics of men who have sex with men and women (MSM/W) living with HIV/AIDS in New York City using surveillance data.

2. To determine the frequency of high risk sex with men and women among MSM/W in a sample of men recruited from gay bars for the HIV Testing Survey (HITS).
Methods
In NYC, HIV and AIDS are reported through active and passive surveillance, the HIV/AIDS Reporting System (HARS).

As of December 31, 2002, 80,862 persons were known to be living with HIV/AIDS (PLWHA) in NYC, including 20,920 men who have sex with men.

Heterosexual transmission accounts for 54% of AIDS in women with known risk.
HIV Testing Survey (HITS)

- An anonymous behavioral risk survey of populations at risk for HIV
- Structured interview covering sexual behavior with primary and casual male and female partners
- Total sample = 490
HIV Testing Survey

Variable Definitions

- **Bisexual**
  - Men who have sex with men and women in the previous 12 months (MSM/W) or self-identification as bisexual

- **High risk sex with men**
  - No condom during receptive or insertive anal sex with last primary or casual partner
  - 4+ casual sex partners in previous 12 months

- **High risk sex with women**
  - No condom during vaginal or anal sex with last primary or casual partner
  - 4+ casual partners in previous 12 months
HIV Testing Survey Sample

(n=490)

Bisexual
(n=129)

Sexually active with men and women (MSM/W) (n=59)

Self-identified as bisexual and not MSM/W (n=70)

Sexually active with men only (“MSM”) (n=316)

Not Bisexual
(n=361)

Other: not sexually active, sex with women only (n=45)
Results
Characteristics of **2,458** Men Living with HIV/AIDS in NYC who Have Sex with Men and Women

*Rate per 100,000 men in NYC by Race and Age*

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Rate</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>1,102</td>
<td>45%</td>
</tr>
<tr>
<td>White</td>
<td>794</td>
<td>32%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>496</td>
<td>20%</td>
</tr>
<tr>
<td>API/NA/Other/Unknown</td>
<td>66</td>
<td>3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Rate</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-19</td>
<td>12</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>20-29</td>
<td>218</td>
<td>9%</td>
</tr>
<tr>
<td>30-39</td>
<td>849</td>
<td>35%</td>
</tr>
<tr>
<td>40-49</td>
<td>817</td>
<td>33%</td>
</tr>
<tr>
<td>50+</td>
<td>562</td>
<td>23%</td>
</tr>
</tbody>
</table>

*Represents 12% (1,458/20,920) of men living with HIV/AIDS in NYC (end of 2002) with a known risk factor of MSM.*
Men Living with HIV/AIDS in NYC who Have Sex with Men and Women, by Race and Age

NYC HIV/AIDS Reporting System (HARS), 2002
Men Living with HIV/AIDS in NYC who Have Sex with Men and Women, by Neighborhood

NYC HIV/AIDS Reporting System (HARS), 2002
Demographic Characteristics of Bisexual and Not Bisexual Men

*HIV Testing Survey (HITS)*

<table>
<thead>
<tr>
<th></th>
<th>Bisexual (n=139)</th>
<th>Not Bisexual (n=361)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Age (years)*</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>Black*</td>
<td>40%</td>
<td>23%</td>
</tr>
<tr>
<td>White</td>
<td>14%</td>
<td>35%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>29%</td>
<td>24%</td>
</tr>
<tr>
<td>A/PI</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>&lt; HS Graduate*</td>
<td>33%</td>
<td>19%</td>
</tr>
<tr>
<td>Manhattan Residents*</td>
<td>34%</td>
<td>52%</td>
</tr>
</tbody>
</table>

The bisexual men are significantly (p<.05) younger, more likely to be black, less educated, and more likely to live outside Manhattan (*p<0.001*)
# Characteristics of MSM/W who Engaged in High Risk (HR) Sex with Men (vs. no HR sex with men)

*HIV Testing Survey (HITS)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HR Sex with Men (n=30)</th>
<th>No HR Sex with Men (n=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Age (years)*</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>Black*</td>
<td>27%</td>
<td>45%</td>
</tr>
<tr>
<td>White</td>
<td>17%</td>
<td>10%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>17%</td>
<td>38%</td>
</tr>
<tr>
<td>A/PI</td>
<td>23%</td>
<td>3%</td>
</tr>
<tr>
<td>&lt; HS Graduate*</td>
<td>10%</td>
<td>41%</td>
</tr>
<tr>
<td>Manhattan Residents</td>
<td>43%</td>
<td>38%</td>
</tr>
</tbody>
</table>

*MSM/W who engage in HR sex with men were significantly older, less likely to be Black or Hispanic (and more likely to be A/PI), and better educated (*p<0.05)*
Sexual Behaviors of MSM/W and MSM

HIV Testing Survey (HITS)

Percent of MSM/W and MSM Engaging in Any HR Sex

51% for MSM/W
58% for MSM

Distribution of HR Sex Practices in MSM/W and MSM

MSM/W
- Unprotected anal sex: 13%
- 4+ casual partners: 67%
- Both: 20%

MSM
- Unprotected anal sex: 55%
- 4+ casual partners: 20%
- Both: 25%
## Characteristics of MSM/W who Engaged in High Risk Sex with Women (vs. no HR sex with women)*

*HIV Testing Survey (HITS)*

<table>
<thead>
<tr>
<th></th>
<th>HR with Women (n=23)</th>
<th>No HR with Women (n=35)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median Age (years)</strong></td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td><strong>Black</strong></td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>White</strong></td>
<td>38%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>22%</td>
<td>31%</td>
</tr>
<tr>
<td><strong>A/PI</strong></td>
<td>26%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>&lt; HS Graduate</strong></td>
<td>9%</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Manhattan Residents</strong></td>
<td>59%</td>
<td>45%</td>
</tr>
</tbody>
</table>

*None of these differences is statistically significant.*
MSM/W Who Engage in High Risk Sex with Both Men and Women

- 25% (15/59) [95% CI = 18%, 32%] of all MSM/W engaged in high risk sex with men and women
- There were no significant differences in the demographic characteristics of men who did and did not engage in high risk sex with both men and women
Conclusion

- Our data provide indirect evidence that bisexual men may be an important bridge for bringing HIV from the MSM population to heterosexual women.

- High rates of HIV-infected MSM/W in blacks, 40-49 year olds and in neighborhoods in Brooklyn and the Bronx mirror the epidemic in heterosexually-infected women in NYC.

- MSM/W have a high prevalence (51%) of high risk sexual behaviors (comparable to MSM) and overall, 25% engage in high risk sex with both men and women.
Limitations

- Our data cannot directly support the sexual network analysis needed to establish bisexual men as a bridge population.
- The HIV risk of male partners of women infected with HIV through heterosexual sex is poorly characterized in surveillance data.
- The true size of the HIV-infected bisexual population in NYC is not known since stigma may deter men from reporting same-sex behavior.
- High risk sexual practices may be under-reported in HITS.
- The HITS sample of bisexual men who engaged in high risk sex with men and women was too small to adequately characterize.
Recommendations

- HIV prevention messages to men and women should acknowledge the intersection of MSM and heterosexual women.
- HIV prevention messages for women should focus on their risk from partner’s sexual exposure outside the relationship, including sexual relationships with other men.
- Larger and more diverse samples of bisexual men are needed to explore the extent of the HIV risks for both bisexual men and their female partners.