HIV Risk and Prevalence among NYC Men who Have Sex with Men

Results from the 2008 National HIV Behavioral Surveillance Study
NYC National HIV Behavioral Surveillance Team

NYC Department of Health
Samuel Jenness
Christopher Murrill
Alan Neaigus

New York University
College of Nursing
Holly Hagan

National Development and Research Institutes
Rosa Colon
Camila Gelpi-Acosta
Travis Wendel

CDC
Elizabeth DiNenno
Amy Drake
Isa Miles

CDC Grant#: U62/CCU223595-03-1
Background

- NYC has the largest population of men who have sex with men (MSM) of any U.S. city
- MSM are the largest risk group of people living with HIV/AIDS and new infections
- HIV incidence among MSM increasing
  - Disproportionately growing among non-White and young MSM
- Different HIV risk factors in different MSM communities
  - Social networks and biological determinants (e.g., sexually transmitted diseases) may drive HIV among Black MSM
National HIV Behavioral Surveillance (NHBS)

- 25 cities throughout the United States
- Funded by CDC, designed collaboratively
- Ongoing, cyclical study of three risk groups: MSM, IDU, and high-risk heterosexuals
- NHBS-MSM data collection in 2008
- Cross-sectional study design
- Anonymous quantitative survey & HIV test
NHBS Objectives

• Determine frequency and correlates of HIV risk behaviors
• Assess HIV testing history and patterns
• Assess exposure to and use of HIV prevention services
• Estimate the prevalence of HIV infection
• Understand trends in risk and prevalence
Eligibility Criteria

- Born male & currently identifies as a male
- At least 18 years old
- Resident of NYC metropolitan statistical area
- Speaks English or Spanish
- Had oral or anal sex with a man in the past year
- Resident of NYC
Venue-Based Time-Space Sampling

- Universe of MSM-oriented venues constructed
  - Bars, clubs, parks restaurants, gyms, public strolls
- Venues randomly selected, placed on monthly calendar
  - Special events or venues also added non-randomly
- Field team sequentially samples men at venue
  - Men must cross an imaginary line; venue volume measured
- Approached men are screened, provide informed consent, interviewed, and HIV tested
NHBS-MSM Study Sample

- Approached: n=1130
- Intercepted: n=781 (69%)
- Screened: n=581 (85%)
  - Eligible & Interviewed: n=573 (99%)
  - Active NYC MSM: n=550 (96%)
  - HIV Tested: n=457 (83%)
  - Not Self-Reported HIV+: n=479 (87%)
Statistical Analysis

- Basic descriptive frequencies of demographics, risks, and use of HIV testing and prevention services (n=550)
- Chi-Square tests to compare differences in HIV risks and use of HIV testing and prevention services
  - Most slides focus only on MSM who did not self-report as HIV+ (n=479), since awareness of HIV infection influences risk
- Overall prevalence of HIV infection determined by confirmed western blot test among those who tested (n=457)
  - Awareness of HIV status, among those who tested HIV+ (n=131)
Participant Zip Code of Residence and Location of Recruitment Venues

Legend
- Recruitment Venues

# of Eligible Participants
- Green: 1 - 3
- Light Green: 4 - 6
- Yellow: 7 - 12
- Orange: 13 - 27

Manhattan: 38%
Brooklyn: 28%
Bronx: 17%
Queens: 14%
Staten Island: 3%
Recruitment Venues

NYC NHBS-MSM, 2008, n=550

Bars 58%

Other 7%

Sex Strolls 6%

House Balls 6%

CBOs 7%

Clubs 8%

Parks 8%
## Demographics

**NYC NHBS-MSM, 2008, n=550**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>18-29</td>
</tr>
<tr>
<td>Hispanic</td>
<td>30-39</td>
</tr>
<tr>
<td>White</td>
<td>40-49</td>
</tr>
<tr>
<td>Other</td>
<td>50+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sexual orientation</th>
<th>Birthplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gay</td>
<td>United States</td>
</tr>
<tr>
<td>Bisexual</td>
<td>Puerto Rico</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>Foreign</td>
</tr>
</tbody>
</table>

- Black: 27%
- Hispanic: 35%
- White: 31%
- Other: 7%
- Gay: 80%
- Bisexual: 19%
- Heterosexual: 1%
- United States: 77%
- Puerto Rico: 6%
- Foreign: 18%
## Demographics

**NYC NHBS-MSM, 2008, n=550**

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10k</td>
<td>19%</td>
<td>&lt;High School</td>
<td>9%</td>
</tr>
<tr>
<td>10k-30k</td>
<td>20%</td>
<td>H.S. - Some College</td>
<td>50%</td>
</tr>
<tr>
<td>30k-50k</td>
<td>19%</td>
<td>≥College Grad</td>
<td>40%</td>
</tr>
<tr>
<td>&gt;50k</td>
<td>39%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Homeless</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrested</td>
<td></td>
</tr>
<tr>
<td>Past Year</td>
<td>11%</td>
</tr>
<tr>
<td>Currently</td>
<td>5%</td>
</tr>
</tbody>
</table>
### Average Number of Male Sex* Partners in Past Year

**NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Median</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Casual</td>
<td>2</td>
<td>6.1</td>
</tr>
<tr>
<td>Exchange</td>
<td>0</td>
<td>0.6</td>
</tr>
<tr>
<td>All Types</td>
<td>3</td>
<td>7.7</td>
</tr>
</tbody>
</table>

* Oral or anal sex
Median Number of Male Sex* Partners in Past Year, by Race/Ethnicity

*Oral or anal sex

**p<0.01 in Wilcoxon test

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

<table>
<thead>
<tr>
<th></th>
<th>Black</th>
<th>Hispanic</th>
<th>White</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Casual</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Exchange</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>All Types</strong></td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3.5</td>
</tr>
</tbody>
</table>

*Oral or anal sex

**p<0.01 in Wilcoxon test
Unprotected Anal Intercourse (UAI) in Past Year and Last Sex, by Race/Ethnicity

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

No statistically significant differences
High Risk UAI

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

In Past Year

- UAI with >1 Partner: 19%
- UAI with Casual or Exchange Partner: 21%

At Last Sex

- UAI with Partner of HIV+ or Unknown Status: 10%
Concurrent Partnerships with Last Sex Partner

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

- Of all MSM, had UAI with conc. partner:
  - Had Other Partners: 15%
  - Partner Had Other Partners: 13%

- 53% of all MSM had Other Partners
- 60% of partners had Other Partners
Sex with Women in Past Year

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

Vaginal/Anal Sex*

- Black: 20%
- Hispanic: 18%
- White: 10%
- Other: 17%

Unprot. Vaginal/Anal Sex*

- Black: 11%
- Hispanic: 13%
- White: 5%
- Other: 9%

*p<0.05
Other HIV Risk Factors

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

- Not Circumcised*: 29% Black, 60% Hispanic, 40% Other
- Recreational Viagra Use (Past Year)*: 7% Black, 13% Hispanic, 20% White, 17% Other
- Group Sex (Past Year): 14% Black, 17% Hispanic, 22% White, 14% Other

*p<0.01
Non-Injection Drug Use in Past Year

NYC NHBS-MSM, 2008, n=550

- Overall: 33% (<1x/Week) 18% (≥1x/Week)
- Marijuana: 28% (<1x/Week) 16% (≥1x/Week)
- Cocaine: 7% (<1x/Week) 19% (≥1x/Week)
- Amyl Nitrate: 3% (<1x/Week) 10% (≥1x/Week)
- Meth: 6% (≥1x/Week)
Binge Alcohol Use in Past Year, by Race/Ethnicity

NYC NHBS-MSM, 2008, n=550

- Any Binge*: 45% (Black), 49% (Hispanic), 55% (White), 21% (Other)
- At Least Weekly Binge*: 14% (Black), 21% (Hispanic), 37% (White), 21% (Other)

* p<0.01

Binge: 5 or more drinks in “one sitting”
Alcohol & Drug Use at Last Sex

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

* $p<0.01$
Alcohol/Drug Use and Sexual Risk at Last Sex

NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)

- UAI* Used Alcohol/Drugs: 34%
- UAI with HIV+/Unk. Status Partner*: 21%
- UAI* No Alcohol/Drugs: 17%
- UAI with HIV+/Unk. Status Partner*: 7%

*p<0.01

NYC Health

CDUHR CENTER FOR DRUG USE AND HIV RESEARCH
STD Diagnoses in Past Year

*NYC NHBS-MSM, 2008, n=479 (HIV-/Unk.)*

Any STD*

<table>
<thead>
<tr>
<th></th>
<th>Any STD*</th>
<th>Syphilis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Black</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>White</td>
<td>16%</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>3%</td>
</tr>
</tbody>
</table>

*p<0.05
HIV Testing History by Risk Group

NYC NHBS (IDU, HET, & MSM), 2005-8

Ever Tested

- IDU (2005): 96%
- HET (2006): 79%
- MSM (2008): 89%

Tested in Past Year

- IDU (2005): 69%
- HET (2006): 33%
- MSM (2008): 60%
Beliefs about Routine HIV Testing

NYC NHBS-MSM, 2008, n=550

Testing Is...
- Routine: 28%
- Special Procedure: 72%

Testing Should Be...
- Routine: 65%
- Special Procedure: 35%
Offered HIV Test by HIV Risk Factors in Past Year

_NYHC NHBS-MSM, 2008, n=401*

*Self-reported HIV-/Unk. MSM who visited a medical provider in the past year*
HIV Prevention Services

NYC NHBS-MSM, 2008, n=550

- Used NYC Condom*: 55% (White) vs. 70% (Non-White)
- Used Any Free Condom*: 66% (White) vs. 83% (Non-White)
- Individual Counseling*: 9% (White) vs. 18% (Non-White)
- Group Counseling*: 5% (White) vs. 11% (Non-White)

*p<0.05
# HIV Prevalence & Awareness

*NYC NHBS-MSM, 2008, n=457 (Tested in Study)*

<table>
<thead>
<tr>
<th></th>
<th>HIV-Positive</th>
<th>95% CI</th>
<th>% Unaware*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>28.6%</td>
<td>24.4 – 32.8%</td>
<td>53%</td>
</tr>
<tr>
<td>By Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>43.1%</td>
<td>34.5% – 51.7%</td>
<td>59%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>25.7%</td>
<td>19.0% – 32.4%</td>
<td>49%</td>
</tr>
<tr>
<td>White</td>
<td>19.7%</td>
<td>12.8% – 26.6%</td>
<td>42%</td>
</tr>
<tr>
<td>Other</td>
<td>20.7%</td>
<td>5.0 – 36.4%</td>
<td>67%</td>
</tr>
</tbody>
</table>

* Among MSM who tested HIV positive (n=131)
Summary

• Recruited a diverse sample of MSM from throughout NYC
• High HIV prevalence and low awareness of HIV status
• White MSM had the lowest HIV prevalence, yet higher rates of many HIV risk factors
• Binge drinking and alcohol use during sex were more likely among White MSM
• 40% of MSM did not have an HIV test in the past year; being offered a test by a provider did not vary by additional risk factors
• Use of free condoms was high, but exposure to HIV prevention counseling was low
Limitations

• Many MSM not sampled with venue-based method
  • For example, MSM who only meet partners over the internet and do not attend gay-oriented social venues

• MSM likely not representative of all NYC MSM
  • MSM who attend gay-oriented social venues may be at higher risk of HIV infection

• Data may be biased by recall error, and social desirability and self-selection biases

• Cross-sectional data cannot establish causal relationships
Conclusions

• Black MSM have highest HIV prevalence and low awareness of HIV infection
  • Individual risks do not fully explain racial differences in HIV prevalence
  • Network, baseline HIV prevalence, and partner risks likely play a role
  • Social network or venue-based testing targeting MSM should be expanded

• Routine HIV testing, supported by MSM but not practiced by providers, should be implemented throughout NYC

• Condom distribution and HIV prevention counseling are effective at reducing HIV risk
Contact

Samuel Jenness, MPH
NHBS Project Director/Data Analyst
HIV Epidemiology Program
NYC Department of Health
Phone: 212-442-6445
Email: sjenness@health.nyc.gov