HIV Risk and Prevalence among People who Inject Drugs in New York City

Findings from the 2018 National HIV Behavioral Surveillance Study
Background

• New York City (NYC) has a large population of people who inject drugs (PWID).

• The number of new HIV diagnoses among people with a history of injection drug use in NYC has decreased over the course of the epidemic.
  • Largely attributed to the success of sterile syringe access programs and increased safe injection practices by NYC PWID.

• In 2018, 1% of new HIV diagnoses in NYC were among people with a history of injection drug use.

• Yet ongoing sexual and injection-related risk behaviors among PWID persist and may be influenced by the current opioid epidemic.
National HIV Behavioral Surveillance (NHBS)

• Ongoing, cyclical study of three groups at elevated risk for HIV: men who have sex with men (MSM), PWID, and heterosexually-active adults at high risk.

  - Conducted in 22 cities throughout the U.S.
  - Funded by CDC, designed collaboratively
  - Cross-sectional study design
  - Anonymous, structured interview and optional HIV testing

• Data were collected for the 5th cycle among PWID (“IDU5”) during July – November 2018.
NHBS-IDU5 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 HIV risk and prevalence
Eligibility Criteria

• At least 18 years old

• Resident of NYC metropolitan statistical area

• Has injected drugs without a prescription in the past 12 months

• Able to complete the interview in English or Spanish

• Interviewer assessment of injection track marks and knowledge of the preparation of drugs for injection
Recruitment through Respondent-Driven Sampling

1. Study team recruits small number of initial participants (“seeds”) through community outreach.
   - In order to increase the proportion of young PWID, initial seeds were 18-29 years old.

2. Seeds participate in the study then recruit up to 5 peers in their social networks.

3. If eligible, those recruited peers participate and each recruits up to 5 more peers until sample size is met.
   - Recruitment chains continually monitored to ensure demographic representativeness

4. Incentives provided for completing the survey, HIV testing, HCV testing, and peer recruitment.
Each node represents a study participant. Linking lines show recruitment chains, initiated by 10 productive seeds (represented by larger square nodes).
Study Sample

Seeds n=17

Total recruits n=609

Eligible recruits n=503 (83%)

Tested for HIV N=502 (99.8%)

Self-reported HIV-negative or unknown status n=458 (91%)
Statistical Analyses

• Weighted analyses were conducted with RDS Analyst (RDS-A); data were weighted to take into account network size.
  • Those with large network sizes have a higher probability of selection.

• An advantage of RDS is that, if methodological assumptions are met, RDS-A may estimate proportions that are generalizable to the larger population.
Statistical Analyses

• Basic descriptive frequencies of risk behaviors, and use of HIV testing and prevention services were calculated.

• Chi-square tests (categorical variables) and t-tests (continuous variables) were used to compare differences in HIV risk and the use of HIV testing and prevention services. Any statistically significant associations are denoted.

• Since seeds were not recruited randomly, they are removed from the analysis.

• Since awareness of HIV infection influences risk, self-reported HIV-positive participants (n=45) were removed from behavioral risk analyses.

• Overall prevalence of HIV infection was determined by HIV test result among those agreeing to take an HIV test (n=502).
Demographics
NYC NHBS-IDU5, 2018, n=503

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
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</thead>
<tbody>
<tr>
<td>Hispanic/Latino</td>
<td>61%</td>
</tr>
<tr>
<td>Black</td>
<td>25%</td>
</tr>
<tr>
<td>White</td>
<td>12%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>9%</td>
</tr>
<tr>
<td>30-39</td>
<td>22%</td>
</tr>
<tr>
<td>40-49</td>
<td>37%</td>
</tr>
<tr>
<td>50+</td>
<td>33%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Self-Identified Gender</th>
<th></th>
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<tbody>
<tr>
<td>Male</td>
<td>73%</td>
</tr>
<tr>
<td>Female</td>
<td>25%</td>
</tr>
<tr>
<td>Transgender</td>
<td>1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Birthplace</th>
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<tbody>
<tr>
<td>Continental US</td>
<td>68%</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>25%</td>
</tr>
<tr>
<td>Outside US</td>
<td>7%</td>
</tr>
<tr>
<td>Demographics</td>
<td>NYC NHBS-IDU5, 2018, n=503</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
</tr>
<tr>
<td>Less than $10k/year</td>
<td>64%</td>
</tr>
<tr>
<td>$10k or more/year</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Borough of Residence</strong></td>
<td></td>
</tr>
<tr>
<td>Bronx</td>
<td>56%</td>
</tr>
<tr>
<td>Brooklyn</td>
<td>19%</td>
</tr>
<tr>
<td>Manhattan</td>
<td>17%</td>
</tr>
<tr>
<td>Queens</td>
<td>8%</td>
</tr>
<tr>
<td>Staten Island</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;High School</td>
<td>41%</td>
</tr>
<tr>
<td>&gt;High School</td>
<td>59%</td>
</tr>
<tr>
<td><strong>Homelessness</strong></td>
<td></td>
</tr>
<tr>
<td>Homeless in past 12m</td>
<td>54%</td>
</tr>
<tr>
<td>Not homeless in past 12m</td>
<td>46%</td>
</tr>
</tbody>
</table>
Injection Drug Use
Lifetime Injection History, by Race/Ethnicity

NYC NHBS-IDU5, 2018, n=500*

- **Hispanic/Latino**
  - Median Age at First Injection**: 18
  - Median Age at Interview***: 34
  - Median Years Since First Injection***: 13

- **Black**
  - Median Age at First Injection**: 20
  - Median Age at Interview***: 45
  - Median Years Since First Injection***: 18

- **White**
  - Median Age at First Injection**: 22
  - Median Age at Interview***: 46
  - Median Years Since First Injection***: 23

*Excludes those of ‘Other’ Race/Ethnicity (n=3); **p = 0.004; ***p < 0.001.
Most Common Injection Location, Past 12 Months
NYC NHBS-IDU5, 2018, n=503

- Own place: 51%
- Street/Park: 20%
- Friend’s place: 7%
- Public bathroom: 7%
- Other: 23%
Frequency of Drugs Injected, Past 12 Months
NYC NHBS-IDU5, 2018, n=503

<table>
<thead>
<tr>
<th>Drug</th>
<th>Daily</th>
<th>More than weekly</th>
<th>Once a week or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>89%</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>Heroin Only</td>
<td>72%</td>
<td>12%</td>
<td>7%</td>
</tr>
<tr>
<td>Speedball (heroin and cocaine together)</td>
<td>43%</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>30%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Painkillers</td>
<td>8%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Crack</td>
<td>10%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>6%</td>
<td>1%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Nonmedical Prescription Opioid Use, by Race/Ethnicity
NYC NHBS-IDU5, 2018, n=500*

*Excludes those of ‘Other’ Race/Ethnicity (n=3).

- Hooked on Painkillers before First Lifetime Injection:
  - Total: 50%
  - Hispanic/Latino: 20%
  - Black: 24%
  - White: 20%

- Injected Painkillers, Past 12 Months:
  - Hispanic/Latino: 18%
  - Black: 18%
  - White: 29%

- Used or Believed to Have Used a Drug with Fentanyl In It, Past 12 Months:
  - Hispanic/Latino: 42%
  - Black: 24%
  - White: 56%

*p = 0.0004
*p = 0.0056
Sterile Syringe Sources, Past 12 Months*

NYC NHBS-IDU5, 2018, n=503

*Respondents could choose more than one response.
Syringe Reuse and Sharing by Self-Reported HIV Status, Past 12 Months
NYC NHBS-IDU5, 2018, n=503

Syringe reuse: not using a new, sterile needle when injecting.
Receptive sharing: using a needle after someone else injected with it.
Distributive sharing: giving a needle to someone else after using it to inject with.
Other Equipment Sharing by Self-Reported HIV Status, Past 12 Months
NYC NHBS-IDU5, 2018, n=503

- Cooker, Cotton, or Water Sharing: Total 34%, HIV-Negative/Unknown 36%, HIV-Positive 19%
- Dividing Drugs in Used Syringe: Total 24%, HIV-Negative/Unknown 25%, HIV-Positive 15%
- Any Receptive Syringe or Equipment Sharing: Total 37%, HIV-Negative/Unknown 40%, HIV-Positive 20%

*p = 0.03*
Frequency of Non-Injection Drugs Used, Past 12 Months
NYC NHBS-IDU5, 2018, n=503

Overall  | Marijuana  | Heroin  | Cocaine  | Crack  | Downers  | Painkillers  | Methamphetamine
---------|------------|---------|----------|--------|----------|--------------|-----------------

Daily: 49%  | 26%  | 23%  | 13%  | 14%  | 14%  | 10%  | 9%
More than weekly: 10%  | 8%  | 10%  | 17%  | 7%  | 10%  | 6%  | 3%
Once a week or less: 9%  | 17%  | 9%  | 17%  | 16%  | 13%  | 11%  | 9%
**Alcohol Use, Past 30 Days**

NYC NHBS-IDU5, 2018, n=503

*Binge drinking is consuming at least 5 drinks for men or 4 drinks for women in one sitting.*
Sexual Activity
Sexual Partnerships by Participant Gender, Past 12 Months
NYC NHBS-IDU5, 2018, n=451 (HIV-/Unknown Status)*

*Sexual behavior questions were not asked among those who identified as transgender (n=9).
Risk Behaviors with Opposite-Sex Partners by Participant Gender, Past 12 Months

NYC NHBS-IDU5, 2018, n=345 (HIV-/Unknown Status with Opposite-Sex Partners)*

*Sexual behavior questions were not asked among those who identified as transgender (n=9).
Characteristics of Last Opposite-Sex Partner, by Participant Gender

NYC NHBS-IDU5, 2018, n=345 (HIV-/Unknown Status with Opposite-Sex Partners)*

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner HIV+/Unknown Status</td>
<td>45%</td>
<td>48%</td>
<td>31%</td>
</tr>
<tr>
<td>Partner Ever Injected Drugs</td>
<td>50%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>Partner Ever Used Crack</td>
<td>50%</td>
<td>45%</td>
<td>67%</td>
</tr>
<tr>
<td>Partner Ever Incarcerated</td>
<td>53%</td>
<td>43%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Definite or Probable**

*Sexual behavior questions were not asked among those who identified as transgender (n=9).

**Participant was asked whether last partner definitely did, probably did, probably did not, or definitely did not have the characteristic.
HIV Testing and Other Healthcare
**Healthcare and Drug Treatment, Past 12 Months**

NYC NHBS-IDU5, 2018, n=503

- **Saw Medical Provider:** 89%
- **Participated in a Drug Treatment Program:** 61%
- **Received Medication Assisted Treatment*:** 73%

*Includes medicines like methadone, buprenorphine, Suboxone or Subutex, among those who reported opioid use in the past 12 months (n=498).
HIV Testing History among PWID Compared to Other NHBS Populations

NYC NHBS-HET (2016)*, MSM (2017), and IDU (2018) (HIV-/Unknown status across all cycles)

**Ever HIV Tested**
- HET: 90%
- MSM: 97%
- IDU: 98%

**Tested in Past 12 Months**
- HET: 55%
- MSM: 81%
- IDU: 71%

*In 2016, the NYC NHBS-HET4 cycle was conducted among women who exchange sex for money or drugs.
HIV Testing History among PWID in the Past Three NHBS-IDU Cycles

<table>
<thead>
<tr>
<th></th>
<th>IDU3</th>
<th>IDU4</th>
<th>IDU5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever HIV Tested</td>
<td>92%</td>
<td>99%</td>
<td>98%</td>
</tr>
<tr>
<td>HIV Tested in Past 12 Months</td>
<td>66%</td>
<td>81%</td>
<td>71%</td>
</tr>
</tbody>
</table>
HIV Prevention Services
Use of HIV Prevention Services by Self-Reported HIV Status, Past 12 Months
NYC NHBS-IDU5, 2018, n=503

- Received Free Condoms: 71% (Total), 68% (HIV-Negative/Unknown), 91% (HIV-Positive)
- Individual Counseling*: 44% (Total), 44% (HIV-Negative/Unknown), 48% (HIV-Positive)
- Group Counseling**: 30% (Total), 28% (HIV-Negative/Unknown), 47% (HIV-Positive)

*p = 0.006

*Defined as a one-on-one conversation with an outreach worker, counselor, or prevention program worker about ways to prevent HIV. Does not include counseling as part of an HIV test.

**Defined as any organized session with a small group of people to discuss ways to prevent HIV. Does not include discussions with a group of friends.
Pre-Exposure Prophylaxis (PrEP) Awareness and Use

NYC NHBS-IDU5, 2018, n=458 (HIV-/Unknown Status)

- Ever Heard of PrEP: 33%
- Took PrEP, Past 12 Months: 3%
HIV Prevalence
HIV Prevalence
NYC NHBS-IDU5, 2018, n=502 (Tested for HIV)

<table>
<thead>
<tr>
<th></th>
<th>Confirmed HIV-Positive Test Result</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>13.6%</td>
<td>6.0% - 21.1%</td>
</tr>
<tr>
<td>Self-Identified Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10.4%</td>
<td>2.8% - 18.0%</td>
</tr>
<tr>
<td>Female</td>
<td>20.2%</td>
<td>1.0% - 39.5%</td>
</tr>
<tr>
<td>Transgender</td>
<td>61.7%</td>
<td>24.2% - 99.3%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>8.0%</td>
<td>4.5% - 11.6%</td>
</tr>
<tr>
<td>Black</td>
<td>30.0%</td>
<td>5.3% - 54.6%</td>
</tr>
<tr>
<td>White</td>
<td>8.2%</td>
<td>0% - 19.0%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>0% - 0%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>0%</td>
<td>0% - 0%</td>
</tr>
<tr>
<td>30-39</td>
<td>7.4%</td>
<td>0.8% - 14.0%</td>
</tr>
<tr>
<td>40-49</td>
<td>17.3%</td>
<td>3.1% - 31.4%</td>
</tr>
<tr>
<td>&gt;50</td>
<td>17.3%</td>
<td>1.8% - 32.7%</td>
</tr>
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Conclusions
Summary

• These data provide some evidence that the opioid epidemic may be changing the drug use landscape in NYC. Although heroin remains the most common drug injected, almost a quarter of the sample reporting being ‘hooked’ on painkillers before first injection. About 40% reported using or believing to use a drug with fentanyl in it in the past 12 months.

• Despite relatively high sterile syringe access, the population reported engaging in injection-related risk behaviors, with more than one quarter (27%) reporting syringe sharing.

• Sexual behaviors continue to pose a risk to PWID with 83% reporting condomless sex in the last year.
Summary (Cont’d)

• Despite successful HIV prevention efforts to decrease HIV transmission among PWID in NYC, HIV prevalence remains higher than that of the general population, with evidence of racial/ethnic disparities in HIV burden.

• Awareness and use of PrEP were low in this population, possibly reflecting disparities in PrEP education and coverage for PWID compared to other populations at risk for HIV. PrEP may be an HIV prevention option for PWID with continuing injection and sexual risk behaviors.
Strengths

• Large dataset with data on multiple HIV risk factors
• National, standardized survey and protocol
• RDS can reach “hidden” populations of PWID who may not access treatment programs and other institutionalized settings
• Local questions were developed to explore issues relevant specifically to PWID living in NYC
• HIV status was confirmed via testing
Limitations

• RDS-based estimates may not be generalizable to the NYC population of PWID if certain methodological assumptions are not met

• RDS can only recruit those who are socially networked to other PWID

• Survey data were collected by self-report and may be biased by recall error or social desirability
NYC National HIV Behavioral Surveillance Team – IDU5

NYC Department of Health

Principal Investigator
Sarah Braunstein, PhD

Project Director
Alexis Rivera, MPH

Project Coordinator/Field Supervisor
Sidney Carrillo, MPH

Data Collection Team
Hasani Escobar
Ivan Garcia
Janell Johnson-Dash
Pablo Martinez
Jerdy Perez Franco
Evelyn Silva

CDC
Dita Broz
Christine Agnew-Brune
Cyprian Wejnert

CDC Grant: NU62PS005086
Alexis Rivera, MPH
NHBS Project Director
HIV Epidemiology Program
Bureau of HIV
NYC Department of Health and Mental Hygiene
Email: arivera6@health.nyc.gov