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Background

- New York City (NYC) continues to have one of the largest HIV epidemics in the US with 2,718 new HIV diagnoses in 2014, of which, 67% were among men who have sex with men (MSM).
- Pre-exposure prophylaxis (PrEP) is effective at preventing HIV, yet has been underutilized.
- Starting in 2012, NYC Department of Health and Mental Hygiene (DOHMH) has supported programs to increase PrEP awareness and uptake, including large-scale social marketing campaigns to potential PrEP consumers, provision of PrEP and supportive services to uninsured MSM, and engagement with health care providers.
- Throughout routine behavioral surveillance, we observed a substantial increase in PrEP awareness among NYC MSM from 2012 to 2014 (4% vs. 81%), yet PrEP use appeared to remain low.

Objective

We examined trends and associations with recent PrEP use among NYC MSM surveyed as a part of routine behavioral surveillance, 2013-2015.

Methods

Data source: Sexual Health Survey (SHS), a cross-sectional survey conducted among NYC MSM since 2009, developed to track behaviors that may increase risk for HIV and to monitor impact of DOHMH Prevention Programs.

Survey administration:
- In-person: MSM-focused bars/clubs and one outdoor public space popular among MSM of color; interviewer administered and anonymous.
- Online: Grindr; self-administered without incentive.

Eligibility:
- NYC residents, born male, aged 18-40, who have sex with men (a past 6 months).

Analytic sample: Includes surveys conducted spring 2013, 2014 and 2015 and excludes respondents who reported being diagnosed with HIV.

Data measures:
- PrEP use: use in the past 6 months.
- Demographic characteristics: age (18-29/30-40 years), race/ethnicity (Black/African-American/White/Hispanic), education (college degree or not), insurance status (insured vs. uninsured).

Behavioral characteristics: no condom use at last sexual encounter (consensual or incentive); known HIV-positive partner (last sexual encounter), number of partners (>2/6 months) with whom no condom use (consensual or incentive, past 6 months) and post-exposure prophylaxis (PEP) (past 6 months).

Data analysis:
- Logistic regression used to assess associations between PrEP and past 6 months, and characterize, and year-specific behavioral interaction terms.
- Multivariate models constructed for each characteristic concurrently associated with PrEP use (p<0.05); adjusted for age, race/ethnicity, insurance, survey type (in-person/on-line) and year; PEP use was not collected in 2013; this model included data from years 2014 and 2015 only.

Results

Trends in PrEP use: PrEP use in the past 6 months increased significantly, from 2.1% in 2013 to 14.8% in 2015 (Figure 1, Table 1).

Bivariate models: Characteristics significantly associated with PrEP use in bivariate models included:
- More recent calendar year (Table 1).
- Being insured (Table 1).
- A behavioral characteristic examined: no condom use at last sex, with a known HIV-positive partner, ≥3 partners with whom no condom used and PEP use (Figure 2).

Table 1. Sample Characteristics and PrEP Use in the Past 6 Months among Men who have Sex with Men (MSM) Participating in the Sexual Health Survey, New York City, 2013-2015

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>23.9</td>
<td>23.9</td>
<td>24.1</td>
<td>0.05</td>
</tr>
<tr>
<td>Race/ethnicity</td>
<td>44.5%</td>
<td>43.0%</td>
<td>42.7%</td>
<td>0.02</td>
</tr>
<tr>
<td>Education (college degree or not)</td>
<td>61.2%</td>
<td>61.2%</td>
<td>59.7%</td>
<td>0.07</td>
</tr>
<tr>
<td>Insurance status (insured vs. uninsured)</td>
<td>26.5%</td>
<td>37.2%</td>
<td>37.3%</td>
<td>0.01</td>
</tr>
<tr>
<td>PrEP use</td>
<td>2.1%</td>
<td>3.2%</td>
<td>14.8%</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Multivariate models:
- In the multivariate models, all behavioral characteristics examined remained significantly associated with PrEP use (Table 2).
- None of the associations with PrEP differed by war (interaction term p>0.05, data not shown).

Figure 2. PrEP Use in the Past 6 Months by Behavioral Characteristics among Men who have Sex with Men (MSM) Participating in the Sexual Health Survey, New York City, 2013-2015

Figure 2. Examples of recent NYC DOHMH materials for potential PrEP consumers (left) and providers (right).

Limitations

- Data were self-reported; potentially subject to recall error and social desirability bias.
- Data collected cross-sectionally; cannot measure individuals’ changes over time or distinguish temporality between PrEP use and behavior.
- Convenience sample; potentially subject to selection bias.
- Results may not be generalizable to all NYC MSM; generalizability to MSM in other geographic areas is limited.

Discussion

- Findings suggest PrEP use is increasing among MSM in NYC, especially from 2014 to 2015.
- PrEP use appears to be greater among those with higher behavioral risk, consistent with public health recommendations.
- Association between PrEP use and being uninsured underscores the importance of addressing financial barriers and monitoring for disparities as PrEP use increases.
- NYC DOHMH continues to support PrEP uptake with campaigns targeting patients and providers (Figure 2) and programs to provide PrEP and supportive services for NYC MSM.

Acknowledgements

We would like to acknowledge the study participants, venue staff, surveyors and NYCDOHMH Bureau of HIV Prevention and Control who support this work.

References


Figure 1. Increasing PrEP Use among Men who have Sex with Men (MSM) Participating in the Sexual Health Survey, New York City, 2013-2015

Characteristics | 2013 | 2014 | 2015 | p-value
--- | --- | --- | --- | ---
Age (yr) | 23.9 | 23.9 | 24.1 | 0.05
Race/ethnicity | 44.5% | 43.0% | 42.7% | 0.02
Education (college degree or not) | 61.2% | 61.2% | 59.7% | 0.07
Insurance status (insured vs. uninsured) | 26.5% | 37.2% | 37.3% | 0.01
PrEP use | 2.1% | 3.2% | 14.8% | <0.05

**Significantly associated with PrEP use (p<0.05)**