

Trends in PrEP Awareness and Use and Associations with Use among Men who Have Sex with Men, New York City, 2012-2016

Abstract # 184

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Background

- In 2015, 2,493 people were newly diagnosed with HIV in New York City (NYC); 58% of diagnoses were among men who have sex with men (MSM)¹
- Pre-exposure prophylaxis (PrEP) is effective at preventing HIV²
- Since 2014, the NYC Department of Health and Mental Hygiene (DOHMH) has supported programs to increase PrEP awareness and uptake

Methods

Objectives

To examine: 1) Trends in PrEP awareness and use, 2012-2016 and 2) Associations between use, sociodemographic and behavioral factors

Data source

Sexual Health Survey (SHS), a cross-sectional survey conducted semi-annually among NYC MSM since 2009

Recruitment

- In-person:** Bars/clubs and a public, outdoor space popular among MSM of color; interviewer-administered; incentivized (\$15 gift card)
- Online:** 5-7 dating/hook-up sites popular among MSM of color (e.g., BGCLive, Grindr); self-administered; not incentivized

Eligibility: NYC resident, assigned male sex at birth, aged 18-40, reporting anal sex with a man (past 6 months)

Analytic sample: Includes surveys conducted 2012-2016; excludes participants who reported being diagnosed with HIV

Outcomes

- 1) PrEP awareness: Ever heard of PrEP
- 2) PrEP use: Use in the past 6 months

Potential Correlates

- Demographic characteristics:** Age, race/ethnicity, education, birth country, income and insurance status
- PrEP eligibility, as per New York State Guidelines:** No condom use at last sexual encounter (receptive or insertive), known HIV-positive partner (last sexual encounter), and any of the following in the past 6 months: number of partners (</>3) with whom no condom used (receptive or insertive), stimulant or injection drug use (IDU), exchange sex and post-exposure prophylaxis (PEP) use; examined as a composite variable (eligibility vs. not) and as individual characteristics

Data analysis

- Trends 2012-2016:**
 - Logistic regression to assess trends in awareness and use overall, adjusted for age, race/ethnicity, and survey type
- Associations with PrEP use, 2016:**
 - Bivariate logistic regression to assess associations with demographic characteristics and PrEP eligibility
 - Multivariable model constructed to include demographic characteristics bivariate associated with PrEP use (p<0.05) and PrEP eligibility composite variable, adjusted for age, race/ethnicity, survey type (in-person/online);
 - For each individual characteristic related to PrEP eligibility, similar multivariable models constructed where individual characteristics replaced composite variable

Results

Trends Analysis, 2012-2016

Sample characteristics

- 3,081 online and 1,371 in-person
- 58% online and 70% in-person were aged 18-29 vs. 30-40
- 37% online and 79% in-person self-reported Black and/or Hispanic race/ethnicity

PrEP awareness and use increased significantly (Figure 1)

- Awareness:** 35% to 95% online (p<0.0001) and 28% to 94% in-person (p<0.001)
- Use:** 2% to 28% online (p<0.0001) and 0% to 26% in-person (p<0.001)
- Trends adjusted for race/ethnicity and age

Key Findings: Individual behavioral characteristics associated with use, 2016, multivariable models

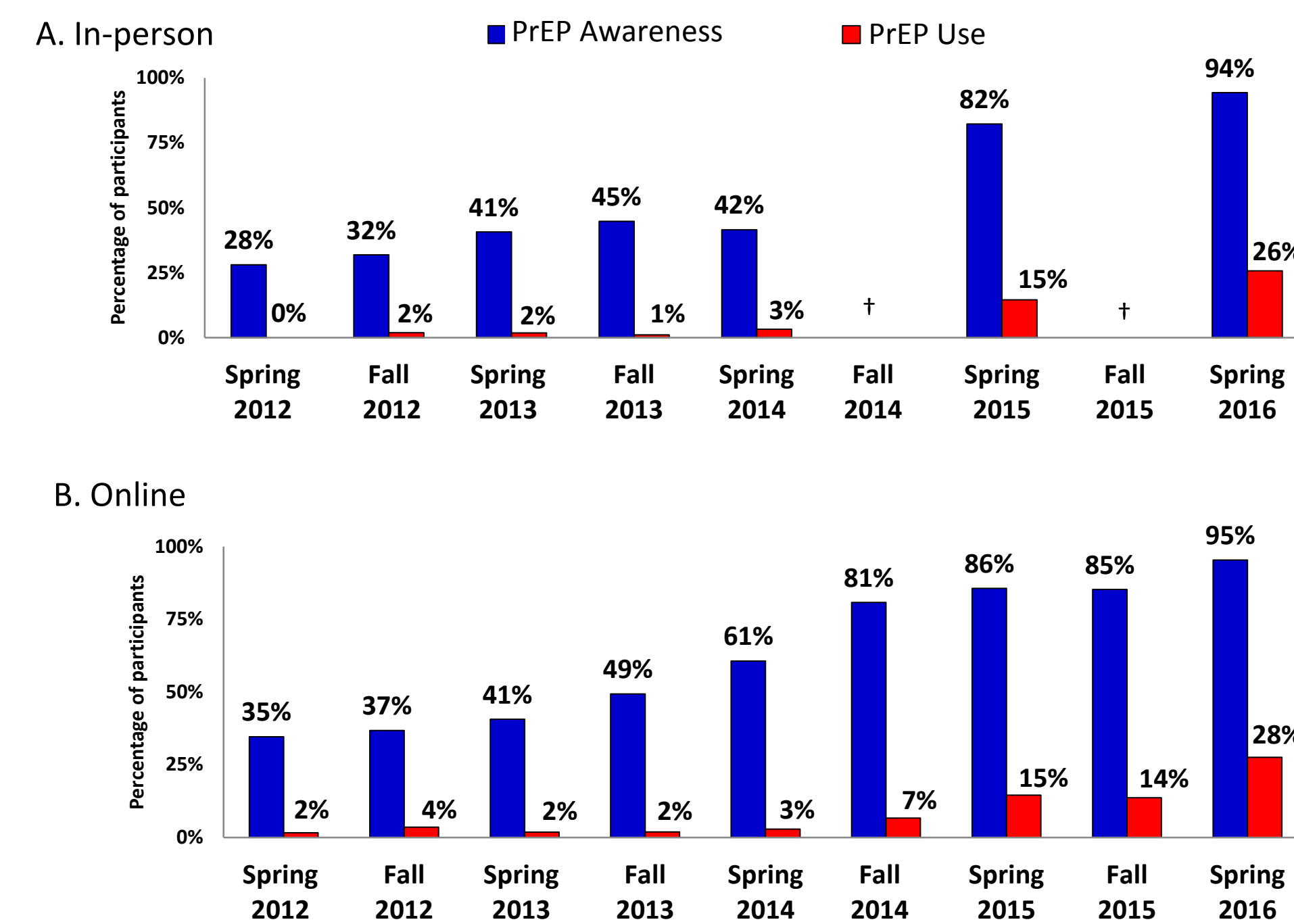
- Insurance status, education and PrEP-eligibility, as composite variable, associated with use (Table 1)
- Individual characteristics associated with use were:
 - No condom use at last sexual encounter (aOR 2.1; 95%CI 1.4, 3.1)
 - Known HIV-positive partner (aOR 4.8; 95%CI 2.8, 8.2)
 - ≥3 partners with whom no condom used (aOR 6.2; 95%CI 3.9, 9.9)
 - Post-exposure prophylaxis (PEP) use (aOR 6.4; 95%CI 3.1, 13.1)
 - STI diagnosis (aOR 4.0; 95%CI 2.5, 6.4)
 - Stimulant drug use (aOR 1.6; 95%CI 1.1, 2.5)
- IDU and exchange sex were not associated with PrEP use (data not shown)

Table 1. Sample Characteristics and Associations with PrEP Use in the Past 6 Months among Men who have Sex with Men (MSM) participating in the Sexual Health Survey, New York City, Spring 2016

| Characteristics | n/N | Col% | n/N | Row% | Bivariate OR | 95% CI | Multivariable OR* | 95% CI |
|--|---------|------|---------|------|--------------|---------|-------------------|---------|
| PrEP Use, past 6 months (Overall) | 183/681 | 26.8 | — | — | — | — | — | — |
| Survey Type | | | | | | | | |
| In-person | 310/839 | 36.9 | 77/297 | 25.9 | ref | | ref | |
| Online | 529/839 | 63.1 | 106/384 | 27.6 | 1.1 | 0.8 1.5 | 1 | 0.7 1.5 |
| Age | | | | | | | | |
| 18-29 | 471/839 | 56.1 | 95/394 | 24.1 | ref | | ref | |
| 30-40 | 368/839 | 43.9 | 88/287 | 30.7 | 1.4 | 1 2 | 1.3 | 0.9 1.9 |
| Race/Ethnicity | | | | | | | | |
| Hispanic | 179/601 | 29.8 | 41/179 | 22.9 | 0.7 | 0.4 1.1 | 0.9 | 0.6 1.6 |
| Black | 135/601 | 22.5 | 36/132 | 27.3 | 0.9 | 0.5 1.4 | 1.1 | 0.6 1.9 |
| White | 226/601 | 37.6 | 67/224 | 29.9 | ref | | ref | |
| Other | 61/601 | 10.1 | 13/61 | 21.3 | 0.6 | 0.3 1.2 | 0.7 | 0.4 1.5 |
| Insurance | 516/599 | 86.1 | 147/512 | 28.7 | 2.3 | 1.2 4.5 | 2.0 | 1.0 3.9 |
| US Born | | | | | | | | |
| Yes | 445/604 | 73.7 | 122/443 | 27.5 | 1.2 | 0.8 1.9 | — | — |
| No | 159/604 | 26.3 | 37/156 | 23.7 | ref | | — | — |
| Education | | | | | | | | |
| Some college or less | 211/609 | 34.6 | 35/211 | 16.6 | ref | | ref | |
| Bachelors or higher | 398/609 | 65.4 | 123/393 | 31.3 | 2.3 | 1.5 3.5 | 2 | 1.2 3.3 |
| Income | | | | | | | | |
| <\$60,000 | 333/577 | 57.7 | 78/331 | 23.6 | ref | | ref | |
| \$60,000 or more | 244/577 | 42.3 | 78/241 | 32.4 | 1.6 | 1.1 2.2 | 1.1 | 0.7 1.7 |
| PrEP Eligible | | | | | | | | |
| Yes | 677/813 | 83.3 | 173/580 | 29.8 | 3.9 | 2 7.6 | 3.3 | 1.6 6.7 |
| No | 136/813 | 16.7 | 10/101 | 9.9 | ref | | ref | |

* In multivariable, controlled for: survey type, age, race/ethnicity, insurance, education, income, PrEP eligible

Figure 1. PrEP Awareness and Use in the Past 6 months among Men who have Sex with Men (MSM), Sexual Health Survey, New York City, In-person (A) and Online (B) Samples, 2012-2016*



* Sample includes sexually active MSM aged 18-40 years who report HIV-negative/unknown status
† Data not collected in-person Fall 2014 forward

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

- Significant increases in PrEP awareness and use among MSM in NYC, particularly since 2014, align with large-scale PrEP implementation support activities in NYC
- Spring 2014 to Spring 2015, awareness increased 42% to 82% among in-person samples
- Spring 2014 to Fall 2015, awareness increased 61% to 81% among online samples
- Two-fold increase in use Spring 2015 to Spring 2016 in online sample (14% to 28%)
- PrEP use appears to be greater among those considered PrEP-eligible according to public health guidelines for prescribing
- Association between PrEP use, insurance status and education underscores the importance of addressing barriers to insurance and monitoring disparities by sociodemographics
- NYC DOHMH continues to promote PrEP uptake among potential consumers and providers and to support programs to provide PrEP and supportive services



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