

Background

- US men who have sex with men (MSM) have a disproportionate burden of HIV and sexually transmitted infections (STIs)
- Pre-exposure prophylaxis (PrEP) is effective for MSM
- In 2015, the CDC estimated that 24.7% of sexually active MSM had indications for PrEP based on 2014 US Public Health Service (USPHS) clinical practice guidelines ¹
 - Denominator was sexually active 18-59 year old MSM
 - Numerator could not assess partner HIV status
- The 2017 revised USPHS clinical practice guidelines list ²:
 - Age (18+)
 - HIV status (HIV-negative)
 - Recent sexual activity (within 6 months)
 - Sexual network (not in a monogamous relationship with a HIV-negative partner)
 - Recent behavioral risk (condomless anal intercourse (CAI) or bacterial STI diagnosis in prior 6 months)
- Estimates of the fraction of MSM indicated for PrEP can guide scale-up

Methods

Sample Information

- ART-Net was an online sexual network study of MSM across the United States
- Two waves of data collection³
 - July 2017 – Feb 2018, Sep 2018 – Jan 2019
- Recruited US Internet-using MSM who completed the **American Men's Internet Survey (AMIS)**⁴

Survey Eligibility

- Male-born, male-identifying
- Ever sexually active with another man
- Age 15-65

PrEP Eligibility

- Denominator: Sexually active, HIV-negative MSM
- Numerator: Met USPHS indications (2017 guidelines)

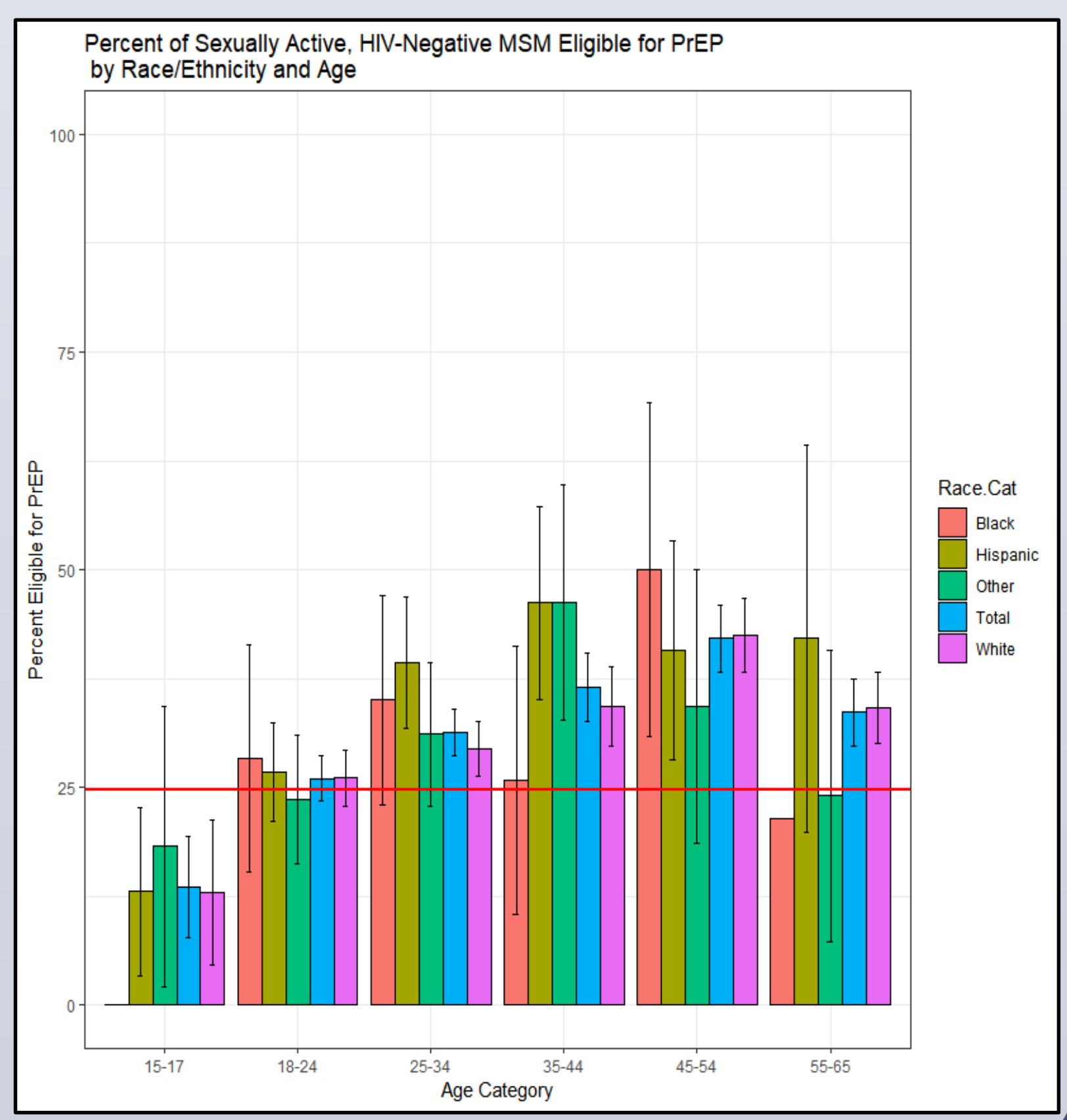
| | Denominator: Sexually active, HIV-negative | Numerator: USPHS/CDC Indications (2017 Update) |
|------------------------|--|---|
| Criteria | <ul style="list-style-type: none"> Sexually active with another male in the past 12 months HIV-negative | <ul style="list-style-type: none"> Base Indications: <ul style="list-style-type: none"> Aged 18 or older HIV-negative Sexually active with a man in the past 6 months Not in a monogamous partnership with a recently tested, HIV-negative man Additional indications (at least one of the following): <ul style="list-style-type: none"> Condomless anal intercourse (CAI) in the past 6 months Bacterial STI diagnosis in the past 6 months |
| ART-Net Implementation | <ul style="list-style-type: none"> Reported partnership with last active end date in the past 12 months HIV-negative | <ul style="list-style-type: none"> Base Indications: <ul style="list-style-type: none"> Aged 18 or older (18-65) (<i>Note: excluded indication for 15-17 year olds</i>) HIV-negative Reported male partner in the past 6 months One of the following: <ul style="list-style-type: none"> One ongoing partner with either HIV-positive or unknown serostatus More than one ongoing partner Additional Indications (at least one of the following): <ul style="list-style-type: none"> At least one CAI act in the past 6 months Bacterial STI diagnosis in the past 12 months |

| Category | All | Non-Hispanic White | Non-Hispanic Black | Hispanic | Other Race/Ethnicity | Northeast | Midwest | South | West | 15-17 | 18-24 | 25-34 | 35-44 | 45-54 | 55-65 |
|------------------------------|-------------|--------------------|--------------------|----------|----------------------|-----------|---------|-------|------|-------|-------|-------|-------|-------|-------|
| ART-Net Respondents | N 4904 | 3523 | 266 | 676 | 439 | 882 | 994 | 1782 | 1246 | 145 | 1179 | 1268 | 694 | 833 | 785 |
| Percent of Total Respondents | Row % 100.0 | 71.8 | 5.4 | 13.8 | 9.0 | 18.0 | 20.3 | 36.3 | 25.4 | 3.0 | 24.0 | 25.9 | 14.2 | 17.0 | 16.0 |

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|--------------------------------------|--------|--------------------|--------------------|----------|----------------------|-----------|---------|-------|------|-------|-------|-------|-------|-------|-------|
| Sexually Active, HIV-Negative MSM | N 4196 | 3032 | 180 | 601 | 383 | 767 | 858 | 1508 | 1063 | 133 | 1125 | 1138 | 581 | 639 | 580 |
| Percent of Respondents (in-category) | % 85.6 | 86.1 | 67.7 | 88.9 | 87.2 | 87.0 | 86.3 | 84.6 | 85.3 | 91.7 | 95.4 | 89.7 | 83.7 | 76.7 | 73.9 |

| | Sexually Active, Meet USPHS HIV-negative Denominator | | Have Indications for PrEP | | |
|----------------------|--|---------------|---------------------------|-------------------|-----------------------------|
| | N | N (%) | Base + Recent CAI | Base + Recent STI | Base + Recent CAI or STI ** |
| All Respondents | 4196 | 2015 (45.0) | 1263 (30.1) | 301 (7.2) | 1343 (32.0) |
| Non-Hispanic White | 3032 | 1465 (45.2) | 920 (30.3) | 207 (6.8) | 970 (32.0) |
| Non-Hispanic Black | 180 | 84 (41.6) | 47 (26.1) | 18 (10.0) | 58 (32.2) |
| Hispanic | 601 | 290 (46.7) | 189 (31.4) | 47 (7.8) | 201 (33.4) |
| Other Race/Ethnicity | 383 | 176 (42.5) | 107 (27.9) | 29 (7.6) | 114 (29.8) |
| Northeast | 767 | 377 (46.8) | 211 (27.5) | 57 (7.4) | 235 (30.6) |
| Midwest | 858 | 406 (43.9) | 286 (33.3) | 45 (5.2) | 293 (34.1) |
| South | 1508 | 719 (44.7) | 445 (29.5) | 105 (7.0) | 474 (31.4) |
| West | 1063 | 513 (45.1) | 321 (30.2) | 94 (8.8) | 341 (32.1) |
| 15-17 | 133 | 40 (27.6) *** | 18 (13.5) | 2 (1.5) | 18 (13.5) |
| 18-24 | 1125 | 427 (36.6) | 279 (24.8) | 59 (5.2) | 293 (26.0) |
| 25-34 | 1138 | 506 (42.1) | 326 (28.6) | 97 (8.5) | 356 (31.3) |
| 35-44 | 581 | 306 (49.9) | 198 (34.1) | 59 (10.2) | 212 (36.5) |
| 45-54 | 639 | 396 (57.5) | 255 (39.9) | 53 (8.3) | 269 (42.1) |
| 55-65 | 580 | 340 (51.5) | 187 (32.2) | 31 (5.3) | 195 (33.6) |

* USPHS Base Indications: 1) Aged 18+; 2) HIV-negative; 3) Sexually active with a man in the past 6 months;
 4) Not in a monogamous partnership with a HIV-negative man
 ** USPHS Guidelines for STI diagnoses are based on the past 6 months (ART-Net based on 12 months)
 *** Base indications for 15-17 year olds exclude 18+ USPHS guideline
 Recent CAI: Condomless anal intercourse with another man in the past 6 months
 Recent STI: Bacterial STI diagnosis in the past 12 months



Results

- PrEP eligibility estimates across race/ethnicity, age, and census regions usually exceeded the previous estimate
 - 22 of 25 (88%) adult race/ethnicity and age categories exceeded this value
- Nearly one-third (32.6%) of adult, sexually active, HIV-negative MSM exhibited indications for PrEP (13.5% among 15-17 year old MSM)
- Of those with indications for PrEP, recent condomless anal intercourse (81-100%) was a more common indication than a recent STI diagnosis (11-31%)

Limitations

- Representativeness of sample
- Measured STI diagnoses in the past 12 months
- Cannot separate increasing risky sexual behavior and rising STI incidence (and therefore diagnoses)

Conclusions

- More sexually active MSM are likely indicated for PrEP than previously estimated
- A lower fraction of indicated MSM may be receiving PrEP than previously estimated
- Given rising HIV case counts in younger and minority MSM, additional age- and race/ethnicity-based considerations for uptake may be needed to improve PrEP access

Acknowledgments

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References

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