OBJECTIVE
Evaluate the contribution of subgroups of individuals in different stages of HIV disease and the HIV care continuum to new HIV infections among MSM in Baltimore over the past 30 years.

3. METHODS: ESTIMATING THE PROPORTION OF INFECTIONS CONTRIBUTED BY DIFFERENT GROUPS

The 118 simulated epidemics were used to estimate:

- The number and fraction of HIV+ MSM belonging to each group every year over 30-year periods,
- The Population Attributable Fraction (PAF) of excess of infections attributable to HIV+ MSM in different disease stages and continuum groups over 10-year periods. PAF obtained using counterfactual scenarios assuming the group could not transmit HIV (the ‘no spread’ period - from July 1, 2008, to June 30, 2018), with lower (95% CI) being the estimated cumulative number of incident HIV infections over the period (PAF), and upper (95% CI) being calculated using the counterfactual scenario,
- The per capita HIV transmission rate per 100 infected person-years (TPR) from group to group was estimated by dividing the total number of excess infections over that period by the cumulative number of person-years lived in that period: TPR = (P − P0) / P0, where P is the total number of excess infections over that period and P0 is the cumulative number of person-years lived in that period: TPR = (P − P0) / P0, where P is the total number of excess infections over that period and P0 is the cumulative number of person-years lived in that period.

We report median estimates across the 118 simulated epidemics, and 95% uncertainty intervals (UI 1.95 and 97.5I percentile).

4. RESULTS: CONTRIBUTION OF UNTREATED HIV+ MSM WITHIN DIFFERENT HIV DISEASE STAGES

- 14.2% (7.2I% 26.3I%) of transmissions, while 34.5% (18.7I% 56.3I%) of transmissions, while 39.5% (23.7I% 57.3I%) of transmissions, while 50.6% (43.7I% 57.3I%) of transmissions, while 80.6% (71.3I% 87.0I%) of transmissions, while 87.0% (79.0I% 91.4I%) of transmissions, while 94% (84.3I% 95.5I%) of transmissions, while 95% (85.3I% 95.9I%) of transmissions, while 99.8% (96.7I% 99.9I%) of transmissions, while

5. CONCLUSIONS
We estimated that undiagnosed MSM might have contributed to 40% of HIV transmissions among MSM in Baltimore over the past 15 years, with undiagnosed HIV+ MSM in the acute stage of the disease contributing to 20% of transmissions. It is important to improve the diagnosis of HIV and treatment. In the future, interventions will need to address the remaining diagnosis and treatment gaps.

The estimated fraction of untreated HIV+ MSM on ART who are virally suppressed over time, using Baltimore/Maryland/US MSM data (Figure 2c, Table 1).

The model suggests that the contribution of untreated HIV+ MSM in the different stages has remained constant over time (Figure 5).

We estimated that over the past 30 years:
- 87% and 22% of new HIV infections were from treated (20% ART initiation or 60% ART adherence) and untreated (40% ART initiation or 20% ART adherence) MSM, respectively (Figures 5, 6a, Table 1).
- 14% (7.2I% 26.3I%) of transmissions, while 34.5% (18.7I% 56.3I%) of transmissions, while 39.5% (23.7I% 57.3I%) of transmissions, while 50.6% (43.7I% 57.3I%) of transmissions, while 80.6% (71.3I% 87.0I%) of transmissions, while 87.0% (79.0I% 91.4I%) of transmissions, while 94% (84.3I% 95.5I%) of transmissions, while 95% (85.3I% 95.9I%) of transmissions, while 99.8% (96.7I% 99.9I%) of transmissions, while

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