Charting Achievable Milestones for HIV Care Enhancement and Prevention in the US Through 2035

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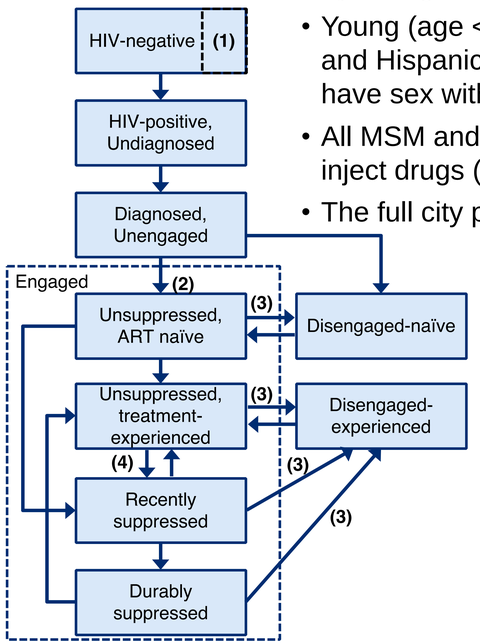
BACKGROUND

Many US cities are not on track to reach the Ending the HIV Epidemic (EHE) target of a 90% reduction in new infections by 2030. We sought to **identify attainable ten-year goals for the US HIV epidemic** through scale-up of existing interventions.

METHODS

We adapted the Johns Hopkins Epidemiological and Economic Model (**JHEEM**) to quantify the impact of **four interventions** in **three key risk groups** across 18 metropolitan statistical areas (MSAs) in the US:

1. Increased **PrEP** use
2. Improve **linkage to care** for newly diagnosed people living with HIV (PWH)
3. Increased **retention** among PWH in care
4. Improved rate of **viral suppression** among unsuppressed PWH in care



Key risk groups

- Young (age <35) Black and Hispanic men who have sex with men (MSM)
- All MSM and people who inject drugs (PWID)
- The full city population

- To maximize impact, EHE cities may consider prioritizing PrEP coverage and retention in care, as well as focusing on risk groups.
- Many EHE cities may find that achieving high 10-year incidence reductions will be challenging, with the relative impact of individual interventions varying by city.

RESULTS

Reduction in HIV Incidence from 2025 to 2035 in Two Example Metropolitan Statistical Areas

Risk Group	No intervention	25% PrEP	95% Linkage	95% Retention	95% Gain of suppression	All Interventions Combined
Baltimore, MD						
Black/Hispanic MSM, age <35	34% [25-44]	40% [32-50]	34% [25-44]	40% [34-49]	35% [26-45]	47% [40-54]
All MSM & PWID		47% [37-56]	34% [25-44]	58% [52-63]	39% [30-48]	68% [63-73]
Full city population		52% [44-61]	34% [25-44]	60% [54-65]	40% [31-49]	75% [72-78]
Los Angeles, CA						
Black/Hispanic MSM, age <35	14% [5-26]	31% [25-39]	14% [5-26]	22% [14-32]	16% [8-27]	38% [33-45]
All MSM & PWID		44% [39-51]	15% [6-26]	38% [30-45]	23% [15-34]	66% [62-69]
Full city population		45% [40-52]	15% [6-26]	38% [31-45]	24% [15-34]	67% [63-70]
Total (across all 18 metropolitan statistical areas)						
Black/Hispanic MSM, age <35	20% [13-27]	35% [31-41]	21% [14-28]	27% [21-33]	23% [16-29]	42% [38-47]
All MSM, All PWID		46% [42-50]	21% [14-28]	37% [34-41]	27% [21-33]	62% [60-65]
Full city population		49% [45-53]	21% [14-28]	39% [35-42]	28% [21-34]	67% [64-68]

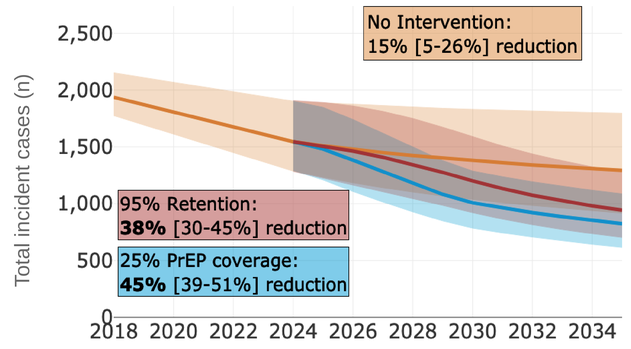
Values represent the mean percent reduction in incidence (and 95% credible interval), relative to 2025 incidence, across 100 independent model simulations.



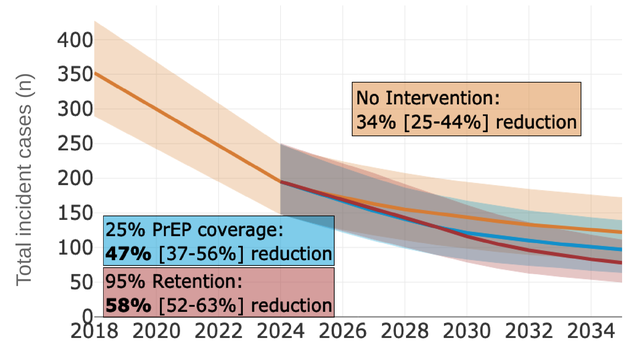
RESULTS

Reduction in HIV Incidence in Los Angeles vs Baltimore, PrEP vs retention

Los Angeles (All MSM and PWID)



Baltimore (All MSM and PWID)



CONCLUSIONS

- Reaching EHE goals may not be feasible in many US cities.
- This analysis can help inform targets for the next decade and identify interventions and risk groups that maximize impact in each city.
- Future targets may consider focusing on the barriers to uptake and effectiveness of existing interventions.

Funding: This research was supported by Grant Numbers T32 AI102623 (MS), K08MH118094 (ATF), R01MD018539 (ATF), K01-AI138853 (PK)