Cost-Effectiveness of Community Pharmacy-Based HIV PrEP for Men Who Have Sex With Men in Atlanta

1235

Jacinda Tran[1,2], Anu Mishra[2], Ryan Hansen[1], Marita Zimmermann[2]
[1]Comparative Health Outcomes, Policy, and Economics (CHOICE) Institute, University of Washington, Seattle, WA, USA, [2]Institute for Disease Modeling, Gates Foundation, Seattle, WA, USA

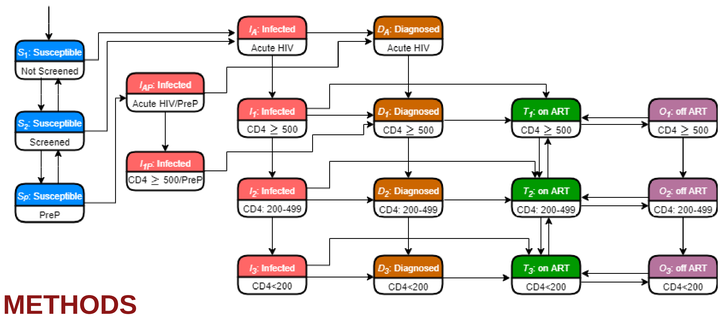
BACKGROUND

- Atlanta has one of the highest HIV incidences in the US.
- Pre-exposure prophylaxis (PrEP) coverage in Georgia is suboptimal, with only 35.2% of PrEP-eligible individuals on therapy in 2022.[1]
- Several community pharmacy-based interventions have successfully expanded access to PrEP since 2015, and over 17 states have policies explicitly permitting community pharmacists to provide PrEP services as of Fall 2023.

OBJECTIVE

To assess the potential long-term clinical and economic impact of pharmacy-based PrEP among men who have sex with men (MSM) in the Atlanta metropolitan area.

Figure 1: Model Schematic Diagram[2]



METHODS

- A published, dynamic HIV transmission compartmental model[2] (Figure 1) of Atlanta was adapted to simulate the status quo and pharmacy-based PrEP for 15 to 64 year old MSM/MSM who inject drugs over a 50-year time horizon.
- We employed a US healthcare sector perspective and discounted costs (2023 US $) & outcomes at 3% annually.
- We assessed incremental cost-effectiveness ratios (ICERs), with a willingness to pay threshold of $150,000 per quality-adjusted life-years (QALY) gained.
- Key pharmacy-based PrEP assumptions included:
  - PrEP uptake:[3] Assumed 50% increase over 2 years
  - Pharmacy PrEP services costs (based on similar pharmacy-based services):[4,5] $41 ($25 – $86)
  - HIV/STI point of care or self-test and send-out test costs:[6-9] $42 ($35 – $48) and $113 ($17 – $135)

Community pharmacy-based PrEP services for MSM in Atlanta could substantially *reduce new HIV cases* and be *cost-saving* or *cost-effective*.

RESULTS

- Compared to the status quo, pharmacy-based PrEP decreased new HIV diagnoses by 13.3%, increased QALYs by 0.02% and decreased costs by 0.02% in our base case (Table 1).
- Depending on the assumptions related to adherence, persistence, and delivery method, pharmacy-based PrEP could be cost-saving or cost-effective.

CONCLUSIONS

- This study provides valuable insights for policymakers to leverage community pharmacies to expand access to PrEP and support efforts to end the HIV epidemic in Atlanta and the US.
- Additional policy work and research are needed to address implementation and scale-up challenges, ensure financial sustainability, and fully realize the full potential of pharmacy-based PrEP interventions.

Table 1: Cost-Effectiveness Analysis Results

Scenario	New HIV Cases, N (95% CI)	QALYs, N (95% CI)	Costs,* $ (95% CI)	ICER, $/QALY
Status quo	34,670 (24,110 – 8,395)	89.46 million [M] (89.31 – 9.51 M)	423.8 billion [B] (420.3 – 430.3 B)	--
Incremental outcomes and costs compared to status quo (% change)				
Pharmacy-based PrEP**	-4,611 (-13.3%)	15,384 (0.02%)	-59.69 M (-0.02%)	Dominant (-3,879)
Pharmacy-based PrEP** with increased adherence (83.7%) & reduced discontinuation (2.5%)	-4,694 (-13.5%)	20,601 (0.02%)	-461.3 M (-0.11%)	Dominant (-14,984)
Pharmacy-based PrEP** with increased discontinuation (15%)	-3,669 (-10.6%)	8,092 (0.01%)	302.1 M (0.07%)	37,337
Pharmacy-based telehealth PrEP†	-1,823 (-5.3%)	6,155 (0.01%)	7.71 M (-0.01%)	1,253

*In 2023 USD; **50% increase in PrEP over 24 months; †25% increase in PrEP over 24 months

Acknowledgments
The authors thank the Localized HIV Modeling Study Group for their assistance with the model.

Contact information:
Jacinda.Tran@GatesFoundation.org

References:
1. Centers for Disease Control and Prevention. Core indicators for monitoring the Ending the HIV Epidemic initiative. HIV Surveillance Data Tables. 2023;4(4).
2. Krebs E, et al. 2019. doi:10.1371/journal.pone.0217559
3. Wells A, Nguyen A. 2022. https://www.goodrx.com/healthcare-access/research/pharmacist-prescriber-authority-hiv-prep
4. Hoover ND, et al. 2020. doi:10.18553/jmcp.2020.26.1.30
5. Lecher SL, et al. 2015. doi:10.1331/JAPhA.2015.150630
6. American Society of Health-System Pharmacists. June 2019. https://www.ashp.org/-/media/assets/ambulatory-care-practitioner/docs/billing-quick-reference-sheet.pdf
7. Shrestha RK, et al. 2024. doi:10.1097/QAI.0000000000003323
8. Shrestha RK, et al. 2020. doi:10.1002/jia2.25445
9. CMS Fee Schedules. https://www.cms.gov/medicare/payment/fee-schedules