Optimizing STI Testing Frequency Among Pre-Exposure Prophylaxis Users: Implications for Long-Acting HIV Prevention in the Real-World Setting

THPEC190

Li Tao, Juan Yang, Gina Brown, Xiwen Huang, Dylan Mezzio, Mark Thrun, and Joshua Gruber

Gilead Sciences, Inc., Foster City, CA, USA

Conclusions

- Most pre-exposure prophylaxis (PrEP) users (66%) had ≤1 routine sexually transmitted infection (STI) testing visit within 12 months of their first PrEP prescription
- Among all PrEP users, 19% had repeat STI testing within the guideline-recommended range of 3–6 months
- Tests <20 weeks apart likely reflected more symptom-driven than routine testing, although symptomatic and asymptomatic testing could not be distinguished
- These findings support testing every 20–28 weeks as a practical screening strategy

Plain Language Summary

- HIV PrEP medicine helps stop people getting HIV, but not other STIs
- In this study of 79,356 people in the United States, most did not get tested for STIs in the first year after starting PrEP
- People who were tested more often had more STI care and costs. However, the percentage of positive tests was about the same, no matter how often people were tested
- Findings from this analysis suggest that getting tested for STIs every 5–7 months may be a good plan. It can help find infections and keep costs balanced. It also fits with twice-a-year PrEP injections

Background

- PrEP is highly effective at preventing HIV acquisition, but it does not protect against other STIs[1]; non-HIV STIs remain highly prevalent among individuals using PrEP[2]
- The Centers for Disease Control and Prevention recommend routine STI testing every 3–6 months for people taking PrEP as part of comprehensive HIV/STI prevention services[3]
- However, there is limited real-world evidence on optimal testing intervals in the context of twice-yearly injectable PrEP

Objective

- To determine the optimal STI testing interval among individuals using PrEP in the United States, balancing STI detection, healthcare costs, and potential alignment with twice-yearly injectable PrEP visits

Methods

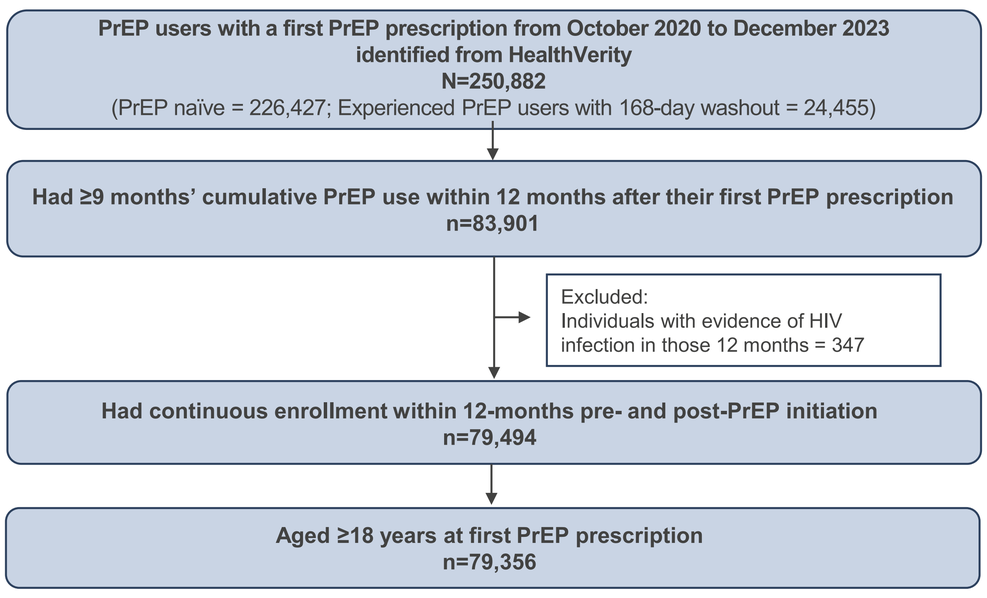
- Adults aged ≥18 years with a new prescription (first in prior ≥6 months) for any PrEP regimen between October 2020 and December 2023 were identified from claims-based HealthVerity data
  - Eligible individuals had ≥9 months of cumulative PrEP use within the 12 months following their initial PrEP prescription
- STI diagnosis rates (in person-years), STI-test positivity (positive diagnoses per 100 STI tests), and costs (STI testing and diagnosis) were calculated from claims data for the following STIs: chlamydia, gonorrhea, and syphilis
- PrEP users were categorized by average STI-testing interval during the 12-month follow-up window: <20 weeks, 20–28 weeks, >28 weeks, one test, or no test

Results

Study population

- A total of 79,356 PrEP users were included in the analysis (**Figure 1; Table 1**)
- Most PrEP users were male (94%) and mean (SD) age was 36.7 (11.4) years

Figure 1. Study Population Disposition



PrEP, pre-exposure prophylaxis.

Table 1. Demographic Characteristics of Study Population (n=79,356)

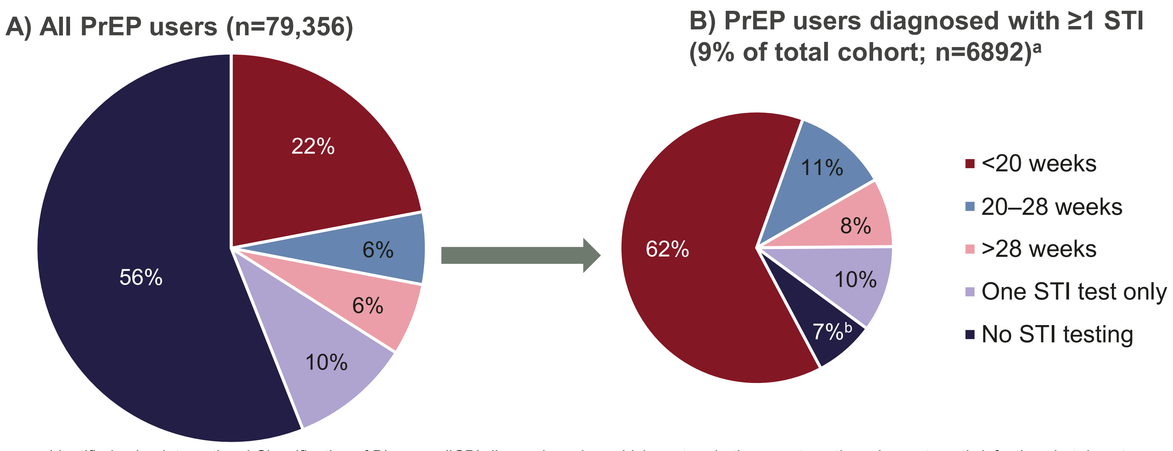
Demographic characteristic	n (%)
Age at index date, years	
18–24	9563 (12)
25–34	31,380 (40)
35–44	19,915 (25)
≥45	18,498 (23)
Sex at birth	
Female	4444 (6)
Male	74,860 (94)
Insurance type	
Commercial	63,857 (80)
Medicaid	13,927 (18)
Medicare	1013 (1)
Region	
Midwest	14,480 (18)
Northeast	19,261 (24)
South	25,162 (32)
West	19,598 (25)

STI Testing Frequency Among PrEP Users

- Most PrEP users had no claims for STI testing during 12 months of follow-up (**Figure 2A**)
- Among all PrEP users, 19% underwent repeat STI testing, with the interval between tests falling within the guideline-recommended range of 3–6 months
- Among PrEP users diagnosed with ≥1 STI (9% of all PrEP users), the majority had claims for STI testing at intervals of less than 20 weeks (**Figure 2B**)
- The average testing and diagnosis cost per STI case was $1744

Results

Figure 2. Distribution of STI Testing Frequency Among:

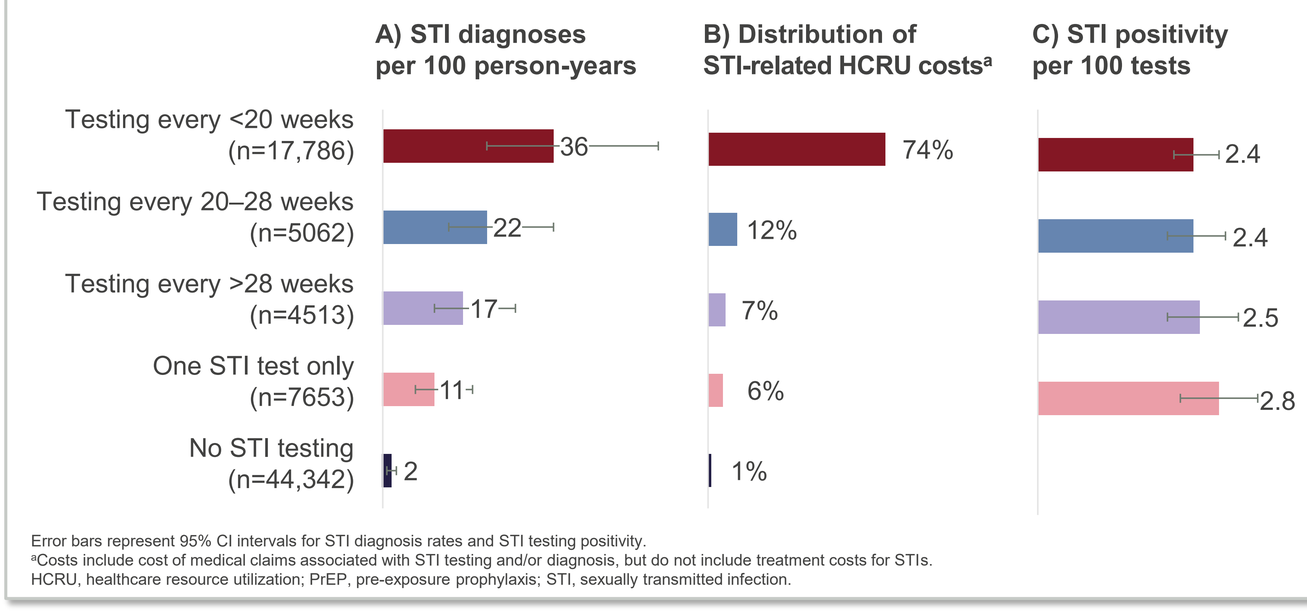


[a]STI cases were identified using International Classification of Diseases (ICD) diagnosis codes, which capture both asymptomatic and symptomatic infections but do not distinguish between the two. [b]The 'No STI testing' group may include individuals with an STI diagnosis but no observable STI testing claim during follow-up.
PrEP, pre-exposure prophylaxis; STI, sexually transmitted infection.

STI-Related Outcomes

- PrEP users who underwent STI testing every <20 weeks had the highest STI diagnosis rate and accounted for most STI-related healthcare resource utilization costs (**Figure 3A–B**)
- STI test positivity was generally similar across testing intervals (**Figure 3C**), and, compared with testing every 20–28 weeks, the STI testing positivity rate ratios were:
  - 1.02 (95% CI 0.89; 1.17) for testing every <20 weeks
  - 1.04 (95% CI 0.84; 1.28) for testing every >28 weeks
  - 1.16 (95% CI 0.94; 1.43) for one STI test only

Figure 3. STI-Related Outcomes Among Prep Users by STI Testing Frequency (n=79,356)

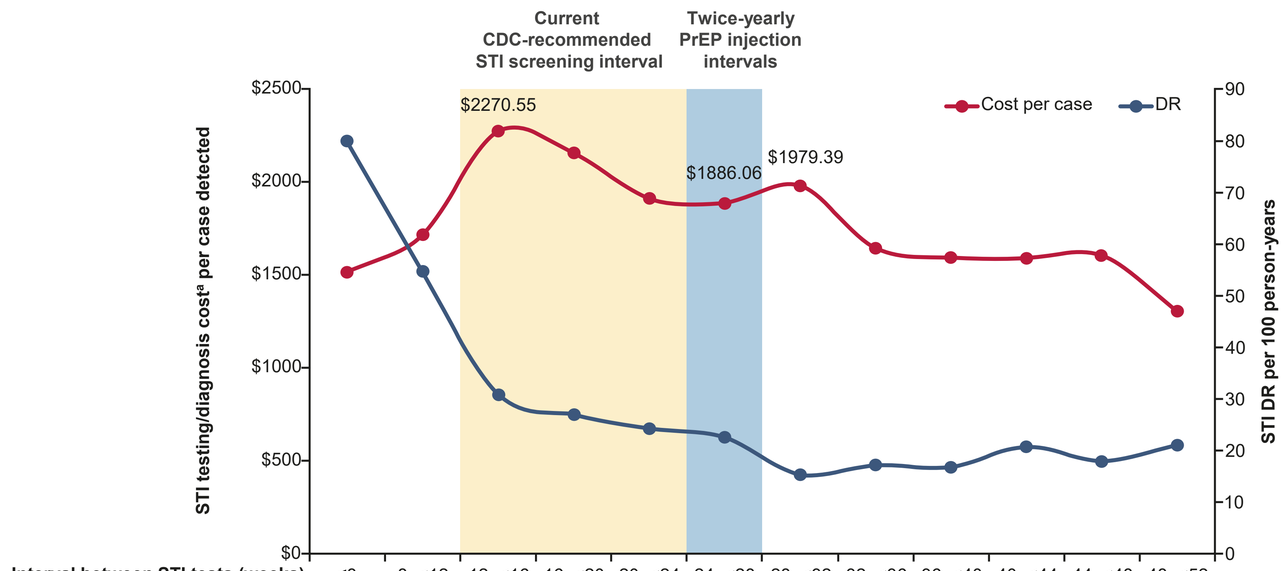


Error bars represent 95% CI intervals for STI diagnosis rates and STI testing positivity.
[a]Costs include cost of medical claims associated with STI testing and/or diagnosis, but do not include treatment costs for STIs.
HCRU, healthcare resource utilization; PrEP, pre-exposure prophylaxis; STI, sexually transmitted infection.

Balancing STI Detection and Healthcare Costs Across Testing Intervals

- Although STI diagnoses fluctuated across testing intervals, costs per STI case diagnosed generally decreased at testing intervals >12 weeks (**Figure 4**)

Figure 4. STI Diagnoses and Testing/Diagnosis Costs Across STI Testing Frequencies



Among PrEP users with ≥2 STI tests, STI diagnoses and testing/diagnosis costs are shown across testing intervals during a 12-month follow-up period.
Yellow shading region represents the current CDC-recommended STI screening interval for PrEP users; blue shading represents twice-yearly PrEP injection intervals.
[a]Costs include medical claims associated with STI testing and/or diagnosis, but do not include treatment costs for STIs.
CDC, Centers for Disease Control and Prevention; DR, diagnosis rate; PrEP, pre-exposure prophylaxis; STI, sexually transmitted infection.

Limitations

- STI tests performed outside insurance claims data (e.g., home testing or at a health system that does not contribute to this dataset) may not have been captured
- Symptomatic and asymptomatic STI infections could not be distinguished
  - The indications for STI testing (e.g., routine screening, symptoms, or other clinical reasons) could not be determined and may have influenced observed differences in STI diagnoses and healthcare costs across testing intervals
- Further research is needed to evaluate the impact of STI testing indications on observed STI diagnoses and healthcare costs

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Correspondence: Li Tao (Li.Tao@gilead.com)

Conflicts of Interest: **LT**, **JY**, **GB**, **XH**, **DM**, **MT**, and **JG** are employees and shareholders of Gilead Sciences, Inc.

References: **1.** Stewart J, Baeten JM. *Nat Rev Urol*. 2022;19:7–15. **2.** Ong JJ, et al. *JAMA Netw Open*. 2019;2:e1917134. **3.** Centers for Disease Control and Prevention. Preexposure prophylaxis for the prevention of HIV infection in the United States – 2021 update. Available at: https://stacks.cdc.gov/view/cdc/112360 (accessed June 2026).