Prescriptions for Oral vs Injectable HIV Preexposure Prophylaxis, 2012-2025

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BACKGROUND

- Pre-exposure prophylaxis (PrEP) is an effective pharmacologic strategy for HIV prevention.
- Available as both oral and injectable modalities.
- Differences in access to different PrEP modalities across geographical rurality, and social vulnerability index (SVI) are still unknown.

METHODS

- Retrospective cohort analysis of PrEP initiation using patient-level data harmonized in Epic Cosmos.
- Evaluated four PrEP medications:
  - emtricitabine/tenofovir disoproxil fumarate [FTC/TDF] (Approved 2012)
  - emtricitabine/tenofovir alafenamide [FTC/TAF] (Approved Oct. 2019)
  - Cabotegravir [CAB] (Approved Dec. 2021)
  - Lenacapavir [LEN] (Approved Jun. 2025)
- PrEP initiation defined as the first documented medication event (prescribed, dispensed, or hospital-administered) for an individual without an HIV diagnosis code.
- HIV Prevalence determined using diagnostic and lab codes.
- Described PrEP initiation by modality, sex, race, ethnicity, rurality, and Social Vulnerability Index (SVI) at the ZIP Code level.

Table 1. Characteristics of individuals with documented PrEP initiations in Epic Cosmos (n=819,044), 2012-2025.

Characteristic	N = 819,044
Mean age in years at initiation (SD)	35.81 (12.56)
Sex	
Female	231,012 (28.21%)
Male	585,571 (71.49%)
Unknown	2,461 (0.30%)
Race/Ethnicity	
Asian Non-Hispanic	35,599 (4.35%)
Hispanic Any Race	113,456 (13.85%)
Non-Hispanic Black or African American	144,029 (17.59%)
Non-Hispanic White	358,972 (43.83%)
Other Non-Hispanic	16,206 (1.98%)
*Combined/Unknown	150,782 (18.41%)
Rurality	
Rural	45,631 (5.57%)
Urban	759,027 (92.67%)
Missing	14,386 (1.76%)
SVI (overall)	
<25%	100,749 (12.30%)
>=25% & <50%	165,343 (20.19%)
>=50% & <75%	200,050 (24.42%)
>=75%	336,997 (41.15%)
Missing	15,905 (1.94%)
Agent at initiation	
FTC/TDF	632,768 (77.26%)
FTC/TAF	173,632 (21.20%)
Cabotegravir	11,693 (1.43%)
Lenacapavir	951 (0.12%)

*American Indian, Alaska Native, Native Hawaiian, Pacific Islander were combined due to small sample sizes.

Disparities in PrEP initiation in rural areas highlight potential barriers to care within the U.S.

RESULTS

- Between 2012 and 2025, 819,044 individuals initiated PrEP, with majority initiating FTC/TDF (632,768; 77.26%), followed by FTC/TAF (173,632; 21.20%), CAB (11,693; 1.43%), and LEN (951; 0.12%).
- The average age at PrEP initiation was 35.8 years of age
- Geographically, 759,027 (92.67%) resided in urban areas and 45,631 (5.57%) in rural areas.
- By SVI, 336,997 (41.15%) individuals were in the highest quartile (≥75%), and 100,749 (12.30%) were in the lowest quartile (<25%).

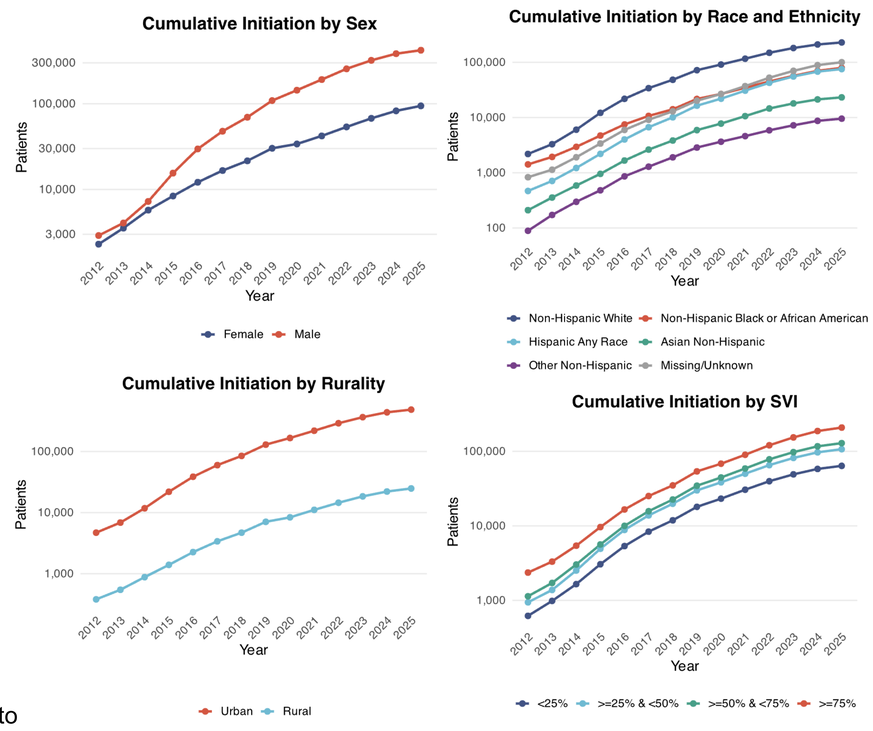


Figure 1. Cumulative Initiations by Sex, Race/Ethnicity, Rurality, and SVI from 2012-2025 (log scale).

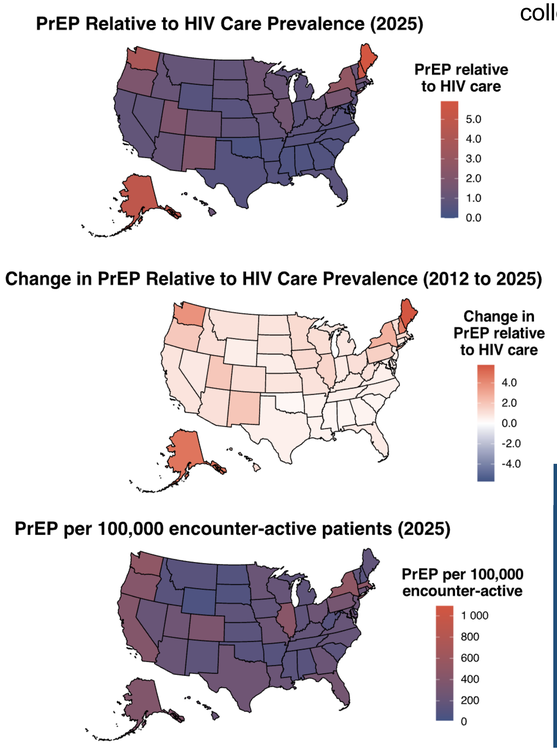


Figure 2. Map of the U.S. looking at PrEP to HIV Prevalence Ratio (2025).

CONCLUSIONS

- The majority of PrEP initiations in Epic Cosmos occurred among individuals with a composite SVI score of >50%.
- Despite 13-20% of the U.S. population residing in rural areas, only 6% of PrEP initiations were from rural areas.
- Findings underscore the significance of contextual and structural factors in determining equitable access to PrEP modalities.
- Next Steps: Further analysis will be done comparing relationships between individual PrEP modalities, and calculating PrEP to need Ratios to further determine access to PrEP within the U.S.

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PLAIN LANGUAGE SUMMARY

Our study utilized Epic Cosmos, a large patient database to identify PrEP initiations. Findings may suggest disparities in PrEP initiation. More research is needed to evaluate disparities in PrEP access and between modalities.