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PrEP Utilization Patterns and Indications in a Cohort of HIV-Negative Individuals

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Conclusions

- A large proportion of individuals who have indications for pre-exposure prophylaxis (PrEP) are not prescribed it, while those without such indicators are prescribed at higher rates
- This underscores two challenges:
  - Missed opportunities to offer PrEP to those most likely to benefit
  - The need to refine estimators of PrEP indication so coding and documentation more accurately reflect real-world vulnerability to HIV
- Frequent treatment gaps and discontinuation reduce the impact of PrEP, highlighting the need for supportive strategies to improve adherence and persistence as well as additional PrEP choices including long-acting formulations
- The PrEP cascade provides a valuable framework for identifying where individuals are lost along the journey, guiding efforts to improve prescribing, persistence, and ultimately reduce HIV acquisition

Plain Language Summary

Pre-exposure prophylaxis (PrEP) is a medicine that helps for prevent HIV. It works very well and is safe to use, but many people who may need or want PrEP are not prescribed it. We studied over 160,000 people. Those with signs they might need or want PrEP were less likely to be prescribed it than others. Even when people started PrEP, many stopped or had long gaps in taking it. These results show missed opportunities for prevention and highlight the need for better ways to identify and support people who would benefit from PrEP the most.

Introduction

- PrEP is highly effective for HIV prevention, yet many individuals who need or want PrEP are not prescribed it
- The care cascade illustrates sequential steps: identifying individuals who need or want PrEP, prescribing, adherence, and persistence
- Many people with indicators for PrEP remain under-prescribed
- Understanding PrEP uptake, gaps, and discontinuation can identify missed opportunities and inform prevention strategies

Methods

- Data source: Retrospective longitudinal electronic medical record and dispensing data from the Trio Health Network comprised of 12 federally qualified HIV healthcare centers (includes ≥ 900,000 individuals, including ≥ 70,000 people with HIV)
- Study cohort: HIV-negative individuals with ≥ 2 visits after January 2016 to November 2024
- Definitions:
  - *PrEP indicated:* Evidence of ≥ 1 of the following through ICD10, procedure, lab, or other diagnosis code: sexually transmitted infection (STI) testing, STI diagnosis, HIV testing (antibody or antigen), postexposure prophylaxis (PEP), ICD codes of sexual behaviors associated with HIV acquisition, or prevention counseling
  - *Initiated PrEP:* ≥ 2 prescriptions or ≥ 1 dispense of emtricitabine/tenofovir alafenamide fumarate or emtricitabine/tenofovir disoproxil fumarate
  - *Gap:* No PrEP supply for > 90 days, based on prescription or dispensing data
  - *Discontinuation:* No restart after a ≥ 90-day gap while remaining in care (has ≥ 1 visit post-PrEP)
- Sensitivity analysis expanded the “PrEP indicated” definition to include pregnancy testing, STI symptoms, substance use disorder, and/or family planning

Results

- Among 164,470 HIV-negative individuals who were a part of the study cohort, 857 (1%) seroconverted (Figure 1)
  - Nearly one third (268 [31%]) of individuals who seroconverted had a PrEP prescription prior to seroconversion
- Only 27,175 individuals (17%) received a PrEP prescription; while 85% of those with prescriptions initiated PrEP, representing only 14% of the entire cohort (Table 1)
- Most of the cohort (74%) met the criteria for “PrEP indicated,” but only 15% of those indicated received a PrEP prescription.
- In comparison, individuals who were not classified as “PrEP indicated” were prescribed PrEP more frequently (20%)

Table 1. PrEP Utilization by Indicators of PrEP Eligibility

Total Population		Indications for PrEP	No Indications for PrEP	Indications for PrEP Sensitivity Analysis	No Indications for PrEP Sensitivity Analysis
Starting Population	164,470	121,472	42,998	132,862	31,608
Prescription for PrEP	27,175 (17%)	18,611 (15%)	8564 (20%)	18,781 (14%)	8,394 (27%)
Initiate PrEP	23,050 (14%)	15,286 (13%)	7764 (18%)	15,432 (12%)	7618 (24%)
Non-PrEP Users	141,420 (86%)	106,186 (87%)	35,234 (82%)	117,430 (88%)	23,990 (76%)

Results

Figure 1. PrEP Cascade Summary

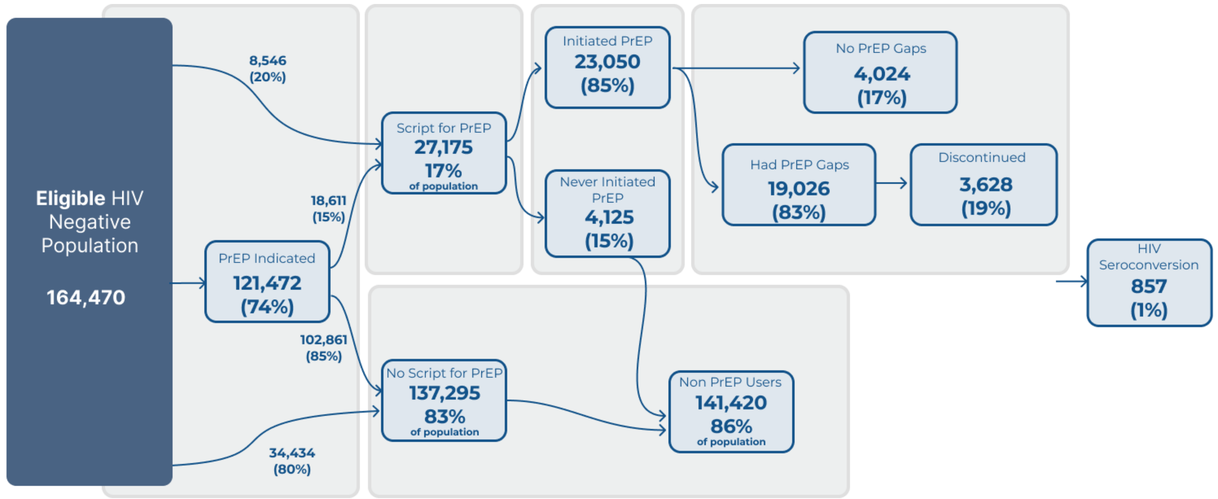

Table 2. HIV Exposure Classification by PrEP Prescriptions and Individuals Who Seroconverted

		Eligible Population		PrEP Prescription	HIV Seroconversion
		Total	n = 164,470	n = 27,175	n = 857
Overall Indications for PrEP			121,472 (74%)	18,611 (68%)	637 (74%)
Clinical indicators	**STI testing (non-HIV)**		104,587 (64%)	16,917 (62%)	579 (67%)
	Prior HIV testing		95,664 (58%)	16,730 (62%)	547 (64%)
	PEP		3658 (2%)	2681 (10%)	87 (10%)
	Non-HIV STI diagnosis		51,327 (31%)	5230 (19%)	267 (31%)
ICD codes	**Sexual behaviors associated with HIV acquisition**		46,874 (29%)	12,191 (45%)	261 (30%)
	Preventative counseling		19,411 (12%)	5900 (22%)	111 (13%)
Indications for PrEP Sensitivity Analysis			132,862 (81%)	18,781 (69%)	645 (75%)
Clinical indicators	**Pregnancy testing[a]**		20,990 (27%)[a]	445 (26%)[a]	14 (14%)[a]
	STI symptoms		29,633 (18%)	3464 (13%)	205 (24%)
ICD codes	**Family planning**		16,810 (10%)	481 (2%)	12 (1%)
	Substance use disorder		51,932 (32%)	3621 (13%)	204 (24%)

[a]Pregnancy testing in individuals assigned female at birth.

- In the sensitivity analysis definition expansion, the “PrEP indicated” proportion increased to 81% of the population, but prescribing rates were lower (14%, vs 27% without indicators)
- Among those prescribed PrEP, interruptions were frequent: 83% experienced ≥ 1 gap of > 90 days, and 19% eventually discontinued
- Individuals prescribed PrEP were more likely to have indicators for sexual behaviors associated with HIV acquisition (45%) or prevention counseling (22%), while STI diagnosis (31%) and HIV testing (58%) were more common among individuals who seroconverted (Table 2)

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