Low Rates of HIV Pre-Exposure Prophylaxis Prescriptions Among US Youth in a Claims Database

Nicholas Venturelli, MD[1], Douglas Krakower MD[2], Laura Garabedian PhD[3]

[1]Department of Infectious Disease, Boston Children's Hospital;
[2]Department of Infectious Disease, Beth Israel Deaconess Medical Center; [3]Department of Population Medicine, Harvard Pilgrim Health Care Institute

Background

- Youth under 25 comprised almost 20% of all new HIV infections in 2022
- However, youth under 25 have the lowest absolute PrEP usage and lowest usage relative to need based on risk status
- Few studies focus on youth under 21 within this age group (and fewer under 18). PrEP was FDA approved for youth under 18 in 2018.
- There are significant inequities in PrEP utilization by race/ethnicity, gender, and geography
- Causes for lower PrEP utilization in youth are multifactorial, including confidentiality concerns, poorer healthcare access, provider discomfort, among others

Aims

1. Quantify PrEP utilization among youth with identified risk for HIV
2. Identify clinical and geographic factors that are associated with of PrEP Initiation
3. Characterize providers who recognize sexual risk factors and prescribe PrEP

Methods

Study Design

- Retrospective cohort (time-to-event) analysis within Marketscan® Commercial Claims Database

Cohort Assembly

- Inclusion: Youth aged 13-21 meeting PrEP indication between 2018-2022: defined as ICD-10 code for gonorrhea, chlamydia, syphilis, or high-risk sexual behavior
- Exclusion: Prior HIV, Hepatitis B, or anti-retroviral use

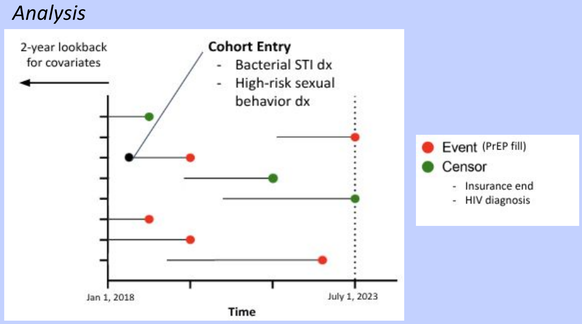
Variables

- Demographic: Sex, age
- Clinical: STI history, mental health condition, substance use
- Geographic: US region, state by presence of adolescent privacy laws for HIV related care, state by high/low rating for LGBTQ+ equality by the Human Rights Campaign

Outcome

- PrEP prescription fill (TDF/FTC, TAF/FTC, cabotegravir)

Analysis

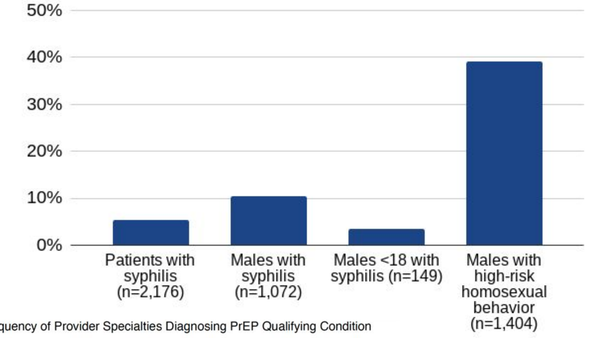


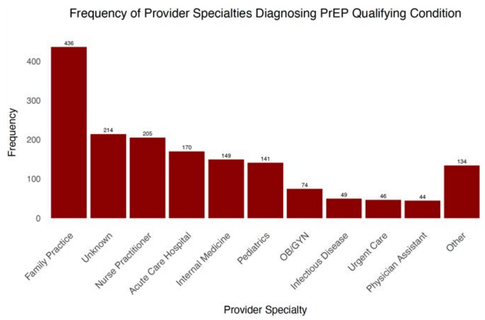
Results

Table 1: Demographic characteristics of youth at risk for sexually transmitted infection

	Total n = 100,540 n (%)	No PrEP n = 98,939 (98.4%) n (%)	Received PrEP n = 1,601 (1.6%) n (%)	p-value
Sex				
Female	71,589 (71.2)	71,569 (72.3)	202 (12.6)	<0.001
Male	28,769 (28.8)	27,370 (27.7)	1,399 (87.4)	
Age (y)				
13-17	23,819 (23.7)	23,670 (23.9)	149 (9.3)	<0.001
18-19	35,405 (35.2)	34,827 (35.2)	578 (33.5)	
20-21	41,316 (41.1)	40,442 (40.9)	874 (57.6)	

Figure 1: PrEP Fill Percentages for High-Risk Conditions





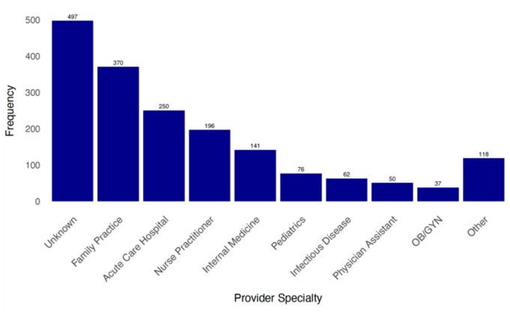


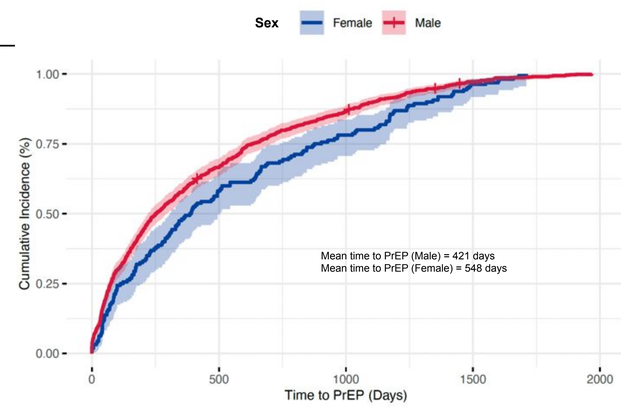
Table 2: Demographic and clinical factors associated with PrEP fill

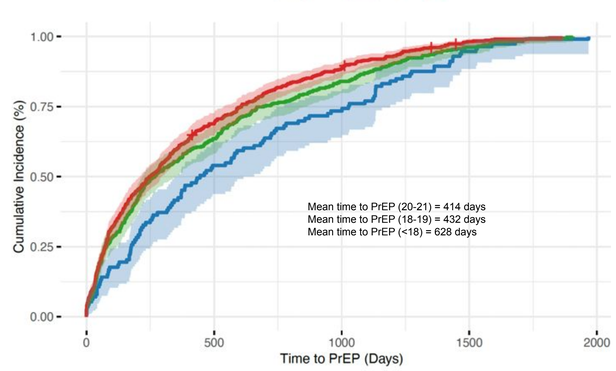
	Adjusted HR (95% CI)
Sex	
Female	*ref*
Male	15.6 (13.4-18.1)
Age (y)	
13-17	*ref*
18-19	2.82 (2.35-3.38)
20-21	3.38 (2.83-4.03)
Year of PrEP indication met	
2018	*ref*
2019	1.24 (1.07-1.43)
2020	1.17 (1.00-1.38)
2021	1.59 (1.36-1.86)
2022	1.64 (1.39-1.94)
High Risk Sexual Behavior Dx	2.36 (1.68-3.33)
Syphilis	4.52 (2.26-9.03)
Gonorrhea	2.47 (1.25-4.87)
Chlamydia	0.64 (0.32-1.27)
Number of prior STIs	
0	*ref*
1	0.75 (0.36-1.56)
2+	0.63 (0.16-2.44)
Mental Health Condition	2.00 (1.80-2.21)
Substance Use	0.66 (0.55-0.80)

Table 3: Geographic factors associated with PrEP fill

Exposure	Adjusted HR (95% CI)
Region	
Northeast	*ref*
Midwest	0.74 (0.63-0.87)
South	0.70 (0.61-0.80)
West	1.15 (0.97-1.37)
State Minor Consent Laws for HIV Treatment	
Not present	Ref
Present	1.09 (0.96-1.25)
State by LGBTQ+ equality index	
Less than full legal protections	Ref
Strong legal protections	1.36 (1.22-1.51)

Figure 2: Time to PrEP by Sex and Age Category





Conclusions

Limitations

- Does not capture publicly insured or uninsured individuals, or those who access PrEP without insurance claims
- Lack of race/ethnicity data, gender identity, sexual orientation
- Some state level data is missing
- Not all individuals in the cohort should be prescribed PrEP. Conversely, many individuals who should be prescribed PrEP are not captured by the inclusion criteria.

Conclusions

- There are significant gaps in PrEP utilization among youth, especially in those under 18 and in females.
- There are geographic disparities, with lower rates of PrEP prescription in the Midwest and South, as well as in states with less progressive laws
- Privacy laws for minors do not influence the rate of PrEP prescription, likely because providers and individuals are unaware of these laws
- Family medicine physicians are prescribing PrEP at higher rates to youth than pediatricians
- Future efforts must address barriers to PrEP access, improve provider education, strengthen adolescent autonomy, and enact equitable public health policies.