980 Laboratory Testing of A US Cohort of Privately Insured Users of HIV PrEP, 2011-2014

Ya-Lin (Aileen) Huang, PhD, Guoyu Tao, PhD, Taraz Samandari, MD, Karen Hoover, MD
Centers for Disease Control and Prevention, Atlanta, GA, USA

BACKGROUND

- Antiretroviral (ARV) preexposure prophylaxis (PrEP) is highly effective in preventing HIV infection but requires laboratory monitoring.
- CDC recommends initial testing for HIV, renal function (serum creatinine), hepatitis B infections, and sexually transmitted infections (STIs) when starting PrEP.
- Ongoing testing is recommended for HIV every 6 months; for creatinine after 3 months and then every 6 months; and for STIs every 6 months.
- **Objective**—To assess the uptake of these recommendations, we examined laboratory testing rates before and after PrEP initiation.

METHODS

- **Data Source**—Truven Health Marketscan data, a large commercial insurance claims database.
- **Study Sample**—We followed a cohort of 2,140 HIV-uninfected persons aged 18-64 years who started PrEP during 2011-2014. Their first PrEP prescription date was the index date. The sample was limited to persons continuously enrolled in the health plan for ≥ 6 months pre-index. PrEP users were followed until the earliest occurrence of: a) evidence of HIV infection, b) health plan disenrollment, or c) December 31, 2014.
- **Analysis**—We estimated the incidence of laboratory testing at baseline (≤ 3 months pre-index) and conducted Kaplan-Meier analyses to estimate the cumulative incidence of follow-up tests. We used the Cochrane-Armitage trend test to assess if testing rates varied by index year.

RESULTS

Table 1. Sample Characteristics

	N	(%)
Total N	2,140	
Age in the index year, mean (SD)	38.5 (10.2)	
Age group (years)		
18-34	851	(40.8)
35-44	686	(32.1)
45-54	439	(20.5)
55-64	164	(7.7)
Sex		
Male	2,067	(96.6)
Female	73	(3.4)
Region (missing=26)		
Northeast	462	(21.6)
North central	292	(13.6)
South	547	(25.6)
West	813	(38.0)
Residence (missing=26)		
Urban	2,073	(96.9)
Rural	41	(1.9)
Capitated health plan (missing=58)		
Yes	397	(18.6)
No	1,685	(78.7)
Comorbidity (6 months pre-index)		
Alcohol or drug use disorder	98	(4.6)
Depression	286	(13.4)
Other mental disorders	517	(24.2)
Physician office visits (6 months pre-index)		
0	145	(6.8)
1-2	527	(24.6)
3-7	870	(40.7)
8+	598	(27.9)
Index year		
2011	70	(3.3)
2012	134	(6.3)
2013	263	(12.3)
2014	1,673	(78.2)
Follow-up endpoint		
Occurrence of HIV infection	89	(4.2)
Disenrollment from health benefits	307	(14.3)
Study end date of December 31, 2014	1,744	(81.5)
Duration of follow-up period in days, median (IQR)	142 (79-237)	

Figure 1. Laboratory Testing Rates Before PrEP Initiation, by Year

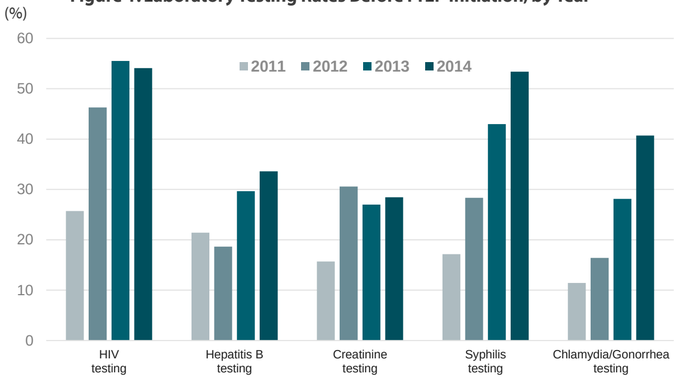
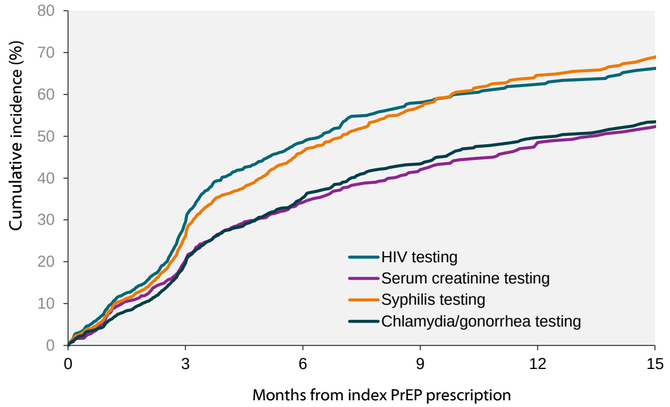


Figure 2. Kaplan-Meier Plot of First Follow-Up Testing After PrEP Initiation



KEY FINDINGS

- Prior to PrEP initiation, 53% of the cohort was tested for HIV, 32% for hepatitis B, 28% for serum creatinine, 49% for syphilis, and 37% for chlamydia or gonorrhea.
- Among the 1,261 persons prescribed PrEP for ≥3 months, at 3 months after PrEP initiation, 30% had their first monitoring testing for HIV and 20% for creatinine; at 12 months, 62% had testing for HIV and 49% for creatinine.
- When stratified by year, both baseline and follow-up testing rates increased significantly from 2011 to 2014 for all tests except for creatinine.

CONCLUSIONS

- For these PrEP users, laboratory testing was less frequent than recommended, although most of the testing rates improved as the number of PrEP prescriptions increased.
- Monitoring for HIV infection is crucial for early detection and to avoid ARV drug resistance. Other tests are important to detect possible renal toxicity of PrEP and incident STIs. There are opportunities to increase laboratory testing for PrEP users, especially for hepatitis B and serum creatinine.
- **Limitation**—The findings could only be generalized to persons with commercial insurance.

CONTACT INFO

Ya-Lin (Aileen) Huang, PhD
Yhuang@cdc.gov / 404-639-2992

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

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