Pre-exposure Prophylaxis (PrEP) Prescribing Increased in New York City Ambulatory Care Practices, 2012-2014

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Abstract P5

Pre-exposure prophylaxis (PrEP) is a new HIV prevention option for those at highest risk of HIV, including men who have sex with men (MSM), transgender women, injection drug users, and HIV-negative partners in serodiscordant partnerships. In New York City (NYC), awareness of and support for PrEP has increased since FDA approval of oral PrEP (tenofovir/emtricitabine; TDF/FTC) in 2012. We examined time trends and associations with PrEP prescribing in NYC using electronic health record (EHR) data.

Background

• Pre-exposure prophylaxis (PrEP) is a new HIV prevention option for those at highest risk of HIV, including men who have sex with men (MSM), transgender women, injection drug users, and HIV-negative partners in serodiscordant partnerships.

• In NYC, awareness of and support for PrEP has increased since FDA approval of oral PrEP (tenofovir/emtricitabine; TDF/FTC) in 2012.

• We examined time trends and associations with PrEP prescribing in NYC using electronic health record (EHR) data.

Methods

Study design: Retrospective cohort of ambulatory practices using EHR data source: The Hub Population Health System (“The Hub”) of NYC’s DOHMH Primary Care Information System (PCIS), which connects to over 700 practices using the eClinicalWorks EHR vendor.

18% of New Yorkers visited PCP practices in 2013, including 25% of residents in each of 34 United Hospital Fund (UHF) neighborhoods.

Practice eligibility criteria:

• Located in NYC
• Documented visits for ≥50 patients aged 13-100 years in 2012
• ≥80% and ≥22% EHR data completeness for diagnoses and prescriptions, respectively
• Reported data for all quarters, Q3 2012 – Q4 2014

Data collection:

• EMRs were queried for quarterly PrEP prescription rates
• PrEP prescription was defined as current TDF/FTC prescription in patients aged 13-100, in the absence of:
  • Diagnoses of HIV, hepatitis B, and/or HIV-related opportunistic infections (COD-9 codes)
  • Prescription for any HIV medication other than TDF/FTC
• Additional practice-level data used:
  • Location (Manhattan vs. Other)
  • Practice type [independent, hospital outpatient, community health center (CHC)]
  • Proportions of patients seen at each practice in 2013 were dichotomized and compared at the sample median (≤ vs. > median) for each of the following characteristics:
    o Male
    o Assigned to infectious disease (ID) specialist
    o Black/Hispanic
    o Living in high-poverty neighborhoods
• Data analysis:
  • PrEP prescription rate calculated per 100,000 patients seen
  • Associations and trends over time assessed using negative binomial-distributed generalized estimating equations
  • Factors included in multivariable model if significant (p<0.05) in an adjusted model or when adjusted for a time interaction

Results

PracticeCharacteristics (Table 1)

• 538 practices were eligible for this analysis; 19.5% (105/538) of practices had ever prescribed PrEP, Q3 2012 – Q4 2014

Time Trend in NYC

• Overall PrEP prescription rates increased from 10.1 per 100,000 in Q3 2012 to 15.5 per 100,000 in Q4 2014 (p<0.001) (Figure 1, “All NYC”)
• Time (by quarter, continuous) was significantly associated with PrEP prescribing throughout NYC, although the magnitude of effect was greater in Manhattan compared to other boroughs (interaction p<0.001) (Figure 1, Table 2)
• By Q4 2014, highest PrEP prescribing rates were concentrated in Lower Manhattan (e.g. Chelsea-Village) (Figure 2)

Prescription by Practice-Level Factors (Table 2)

• In addition to practice location, PrEP prescribing was also associated with the following characteristics:
  • CHC vs. independent practices (p<0.02)
  • Practices that saw a higher proportion of patients who were male (p<0.006) or assigned to an infectious disease specialist (p<0.001)
  • Practices that saw a lower proportion of patients who were in high-poverty neighborhoods (p<0.001) and, marginally, who were Black/Hispanic (p=0.07)
• The strengths of these associations did not change significantly over time (interaction p=0.05)

Discussion

• Increase in PrEP prescribing may indicate early success of awareness and education campaigns for patients and providers
• Higher PrEP prescribing rates in CHC and practices assigning patients to ID specialists suggest outreach may still be needed for general practitioners and those at independent practices
• Disparities seen by patient population and location highlight need to address access issues; NYC DOHMH plans to continue using the Hub to monitor PrEP prescribing in NYC, adding patient demographics to analyses
• Efforts are being made to leverage existing data sources and develop new tools to track PrEP-related trends citywide
• NYC DOHMH continues to support several PrEP-related initiatives for patients and providers to help address presumed disparities in PrEP access (Figure 3)

Figure 1. PrEP prescriptions per 100,000 patients seen at 538 ambulatory care practices, by Borough, NYC, Q3 2012 - Q4 2014

Figure 2. PrEP prescriptions per 100,000 patients seen at 538 practices, by 34 UHF Neighborhoods, NYC, Q4 2014

Table 1. Select characteristics of ambulatory care practice sample, overall and by ever prescribing PrEP, NYC, Q3 2012-Q4 2014

Table 2. Multivariate associations with PrEP prescribing, NYC, Q3 2012-Q4 2014

Limitations

• PrEP prescriptions identified based on EHR data elements, which could be incomplete or inaccurate
• Data were practice-level and cross-sectional
• Provider- and patient-level data not available for analysis (e.g., provider specialty, patient demographics)
• Practices covered by the Hub may not represent all ambulatory care practices in NYC
• Time trends and patterns may not be generalizable to all NYC practices, or to practices outside of NYC

References


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