Leveraging Unique Data Sources to Improve Prevention: Examples from New York City Department of Health and Mental Hygiene (NYC DOHMH)

Zoe Edelstein, PhD MS
Director of Research and Evaluation, HIV Prevention Program
Bureau of HIV/AIDS Prevention and Control
New York City Department of Health and Mental Hygiene

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Overview

• Electronic Health Record (EHR) “Hub” – PrEP analysis
• Syndromic Surveillance – PEP analysis
• PrEP and PEP Public Health Detailing
EHR “Hub”- PrEP analysis

- **Project:** Analysis of data from NYC DOHMH’s Primary Care Information Project’s (PCIP) Hub Population Health System (Hub)
  - Real-world prescribing practices
  - Pulls data in aggregate from hundreds of ambulatory care practices (>500 in this analysis)
  - Citywide practice reach and patient coverage (>5.6M patient visits in this analysis)

- Queried the Hub records July 2012- December 2014
  - Applied an **algorithm** to identify PrEP prescribing

- **Outcome:** PrEP prescription rates
  - Calculated per 100,000 patients seen
  - Stratified by borough and neighborhood
The Hub is an innovative system by which NYC DOHMH connects to the EHRs of collaborating providers to collect historical and real-time health data.
PrEP Algorithm

Indication of TDF/FTC prescription

ICD-9 codes for prior diagnosis of HIV or HIV-related opportunistic infections; concomitant use of other antiretroviral(s)

ICD-9 codes for prior diagnosis of hepatitis B

ICD-9 codes for “contaminated needle stick” or “prophylaxis”

Exclusions

HIV Diagnosis

Hepatitis B Diagnosis

PEP Provision

Classified as PrEP
Trend in Rate of PrEP Prescriptions

PrEP Prescription per 100,000 Patients Seen at Ambulatory Care Practices (n=538), NYC, 2012-2014

- Chelsea-Village
- Other NYC
- All NYC

Logarithmic scale

Edelstein et al. IAPAC, 2015; Salcuni et al. NYCEF, 2016.
Geographic Distribution of Rate of PrEP Prescriptions

PrEP prescriptions per 100,000 Patients Seen by Practice Location, Q4 2014

Edelstein et al. IAPAC, 2015; Salcuni et al. NYCEF, 2016.
Syndromic Surveillance - PEP analysis

- **Project:** Analysis of NYC syndromic surveillance of ED visits
  - Covered between 30 and 51 hospitals, 2002-2013
  - Represented approximately 95% of all emergency department visits citywide
- Included all NYC ED patients aged 13-64 years old, 2002-2013
- PEP-related visits identified by **keyword scan** of chief complaint field
  - Key words (or word roots) “HIV” or “human immunod” plus one or more of the following: “prophy”, “post exposure”, “PEP”, “exposure” “exposed”, “needle”, “blood”, “fluid”, “rape”, “sexual assault”, or a ICD-9-CM/ICD-10-CM diagnosis code indicating exposure to HIV (V01.7, Z20.6), to other viral or sexually transmitted infections (V01.6, Z20.2, Z20.828) or to contaminated needles (E920.5, W46.)
- **Outcome:** PEP-related visit rates
  - Calculated as a proportion of total ED visits
  - Stratified by sex and neighborhood
Proportion of PEP-Related ED Visits by Sex, NYC, 2002-2013

Proportion of PEP-related visits per 100,000 NYC ED visits, 2002-2013

- Male
- Female
- Total

Geographic Distribution of Rate of PEP-Related Visits

Proportion of PEP-related visits per 100,000 NYC ED visits, By Patient Residence, 2013

PrEP and PEP Public Health Detailing

- DOHMH representatives visited clinical facilities to present targeted messages using the *PrEP and PEP Action Kit for Providers*

- Focused on both primary care & infectious disease specialty practices, with a history of diagnosing HIV among priority populations
  - Data-driven approach to identify facilities
  - Providers visited for initial and f/u visits

- **Key messages**
  - Take a thorough sexual history
  - Screen sexually active patients for STIs
  - Talk about PrEP/PEP to patients as appropriate
  - Prescribe PrEP/PEP according to guidelines (or refer)
NYC Facilities Detailed

- Representatives visited **663 facilities** and **1,403 providers** in first two rounds of detailing.
- 181 sites (27%) located in high-needs neighborhoods.
- Additional **600+ providers** and **300+ sites** visited in Round 3 according to preliminary data.

**Queens** 98 (15%)
**The Bronx** 162 (24%)
**Manhattan** 180 (27%)
**Brooklyn** 202 (30%)
**Staten Island** 21 (3%)

Evaluation Results - PrEP Prescribing

Report of Ever Prescribing PrEP Among Detailed Providers with Initial and Follow-up Visits, Overall and by Specialty

* p < 0.05

Provider specialty

PrEP Prescribing by Location

Report of Ever Prescribing PrEP Among Detailed Providers with Initial and Follow-up Visits, Overall and by Practice Location

PrEP Prescribing by Location

Discussion and Next Steps

• Successfully used available data sources to measure PrEP and PEP trends, however data is limited
  – Not comprehensive of all PrEP and PEP rx
  – Denominator for both is patients, not residents

• Data collected helped motivate an intervention

• All projects discussed are ongoing
  – PrEP and PEP analyses- more current data and increased covariates
  – PrEP and PEP detailing – updated kit materials and increased provider pool

  – NYC DOHMH available for CBA on all topics discussed
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Contact:
Zoe Edelstein
zedelst1@health.nyc.gov

Questions?