

Getting Close to Zero New HIV Infections: Consistency in Multiple Methods for Measuring Low HIV Incidence among People who Inject Drugs in New York City

GETTING CLOSE TO ZERO NEW HIV INFECTIONS: CONSISTENCY IN MULTIPLE METHODS FOR MEASURING LOW HIV INCIDENCE AMONG PEOPLE WHO INJECT DRUGS IN NEW YORK CITY

Don Des Jarlais¹, Kamyar Arasteh¹, Courtney McKnight¹, Jonathan Feelemyer¹, Aimee C. Campbell², Susan Tross², Lou Smith³, Hannah L.F. Cooper⁴, Holly Hagan⁵, David Perlman¹

¹The Baron Edmond de Rothschild Chemical Dependency Institute, Mount Sinai Beth Israel

²Department of Psychiatry, Columbia University

³New York State Department of Health

⁴Rollins School of Public Health, Emory University

⁵College of Nursing, New York University

Dr. Don Des Jarlais

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INTRODUCTION

- Valid measurements of HIV incidence is critical for evaluating prevention goals
- Low HIV incidence is particularly difficult to measure
- Even at low HIV incidence, differences may be of great importance for large at-risk populations (such as person who inject drugs)

OBJECTIVES

- Examine four different methods for estimating HIV incidence among person who inject drugs (PWID) in New York City from 2005-2014
- Determine if the four different measurement methods vary in terms of reported HIV incidence in New York City

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METHOD ONE

- HIV seroconversions among repeat PWID participants in a research study
- Participants derived from long-running research study collecting data on patients entering Mount Sinai Beth Israel drug detoxification and methadone programs

METHOD TWO

- Slope of the curve of HIV prevalence by years of injecting
- Participants derived from same long-running research study as (Method 1) collecting data on patients entering Mount Sinai Beth Israel drug detoxification and methadone programs

METHOD THREE

- Stratified Extrapolation (SEA) Method developed by the Centers for Disease Control and Prevention (CDC) using newly identified HIV+ cases from the NY State Department DOH
- BED testing and information on HIV testing behavior among different strata are used to model the number of incident infections if BED testing was used with all members of each strata
- Denominator is estimated PWID in NY State

METHOD FOUR

- Newly diagnosed HIV cases among PWID in New York City
- Includes newly identified cases of HIV among PWID (excluding concurrent AIDS diagnosis) in the New York City MSA collected by the New York City Department of Health (NYCDOHMH)
- Denominator is estimated PWID population in NY State

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RESULTS

Consistency in HIV incidence was noted among the four different methods examined

Method One: 0.37/100 PY (95% CI: 0.05-1.33/100PY)

Method Two: 0.61/100 PY (95% CI: 0.36-0.87/100PY)

Method Three: 0.32/100PY (95% CI: 0.18-0.46/100PY)

Method Four: 0.14/100PY (95% CI: 0.11-0.16/100PY)

RESULTS

Estimates from 2011-2014 ranged from 0.0/100PY to 0.2/100PY

Best estimate of HIV incidence
0.01/100 PY

DISCUSSION

- No outliers present among the four estimation methods
- All estimates ranged from 0.14/100 PY to 0.61/100 PY
- Overlap documented among all 95% confidence intervals for the four estimation methods examined

DISCUSSION

- The three methods for which we were able to examine trends indicated declines in HIV incidence over time in New York City
- Results suggest that methods are capturing a situation of low/decreasing HIV incidence among PWID in New York City

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LIMITATIONS

- Unable to distinguish between injecting-related and sexual acquisition of HIV among PWID
- We did not have standard cohort data available to compare with the four estimation methods examined in this study
- All methods relied on PWID tested for HIV

CONCLUSIONS

- Consistency among four estimation methods indicate that all are capturing the same underlying phenomena of very low/declining HIV incidence
- Prevention programs for PWID should be continued to ensure that HIV infections remain low

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