

Background

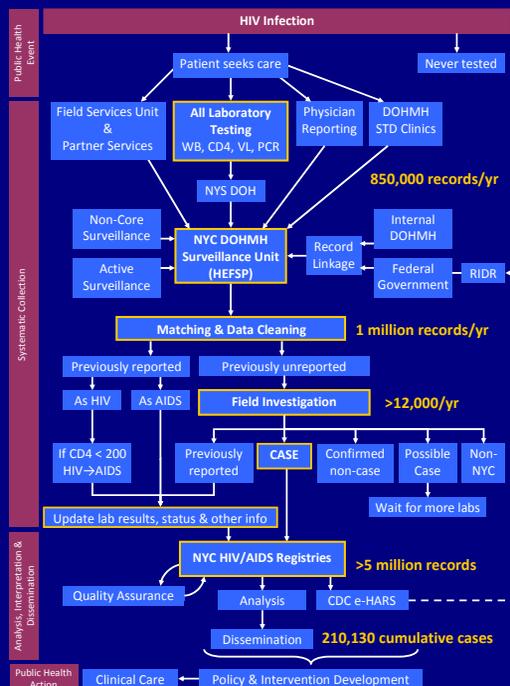
- New York City (NYC) has the oldest, largest HIV epidemic in the Western world. There are currently over 105,000 New Yorkers living with HIV/AIDS (PLWHA) and nearly 4,000 new HIV diagnoses each year.
- NYC began core AIDS surveillance in 1981, HIV surveillance in 2000.
- The HIV Epidemiology & Field Services Program (HEFSP) undertakes perinatal, incidence, resistance and acute surveillance, as well.
- HIV/AIDS has changed from conferring a limited life expectancy to being a chronic, manageable condition. This necessitates changes in surveillance with increased demand for care-related analyses.

Methods

Evaluated the NYC HIV/AIDS surveillance system using CDC's "Updated Guidelines for Evaluating Public Health Surveillance Systems."

- Identified and interviewed key stakeholders and staff, and analyzed surveillance data and reports.
- Focused on 2008 and 2009 activities.

Data flow, processing and volume:



WB = Western blot test; VL = Viral load test; PCR = polymerase chain reaction; DOHMH = Department of Health & Mental Hygiene; NYS DOH = New York State Department of Health; RIDR = Routine Interstate Deduplication Review; eHARS = Enhanced HIV/AIDS Reporting System

Results

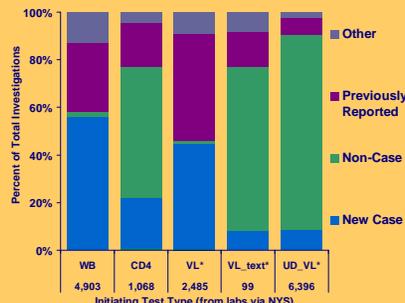
Completeness. Selected variables, when complete, facilitate record linkage and advanced analyses such as geocoding.

Registry and eHARS completeness	% Complete
Case completeness ¹	98.0%
Risk Ascertainment	
CDC-defined	62.0%
with HEFSP expanded heterosexual definition ²	64.0%
Social Security Number	68.3%
Street address of residence (2008 new diagnoses)	95.1%

Care-related indicators ³	% Complete
New 2008 diagnoses with a CD4 within 3 months	66.7%
PLWHA in care in 2007 who returned to care in 2008	92.0%

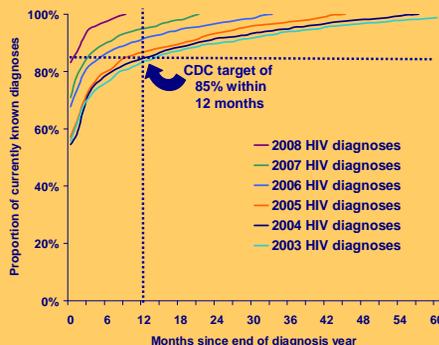
¹ Based on historical trends and least squares regression modeling.
² Please see: http://www.nyc.gov/html/doh/html/dines/epi_reports.shtml#quarterly
³ Based on available surveillance data. VL and CD4 tests can indicate care because they must be ordered by a physician. However, lab-based reporting does not provide information on the quality or characteristics of the care.

Yield from field investigations. In 2009, HEFSP initiated 14,951 field investigations that yielded 4,604 new cases.



* Viral load test results are electronically submitted by labs in 3 forms: VL represents detectable values, VL_text represents results submitted with some character values and UD_VL represents undetectable viral load values.

Timeliness. Proportion of currently known HIV diagnoses reported since the end of the diagnosis year. The upper left quadrant exceeds the CDC goal of 85% of diagnoses within 12 months.



Dissemination. Frequent, diverse reports and tailored data requests are a strength of NYC surveillance.

Type	Quantity
Web surveillance tables	74
Geographic & population subgroups	
Slide Sets	8
Characterization of trends	
Semi-Annual Reports	2
Case Counts & Rates	
Customized data requests (2009)	241
Tables, Maps, Statistics	
Publications (2009)	10
Peer-reviewed & MMWR	
Total	
Unique routinely reported data elements	9,000

Limitations

- In an effort to describe NYC's system broadly, in-depth attribute analysis is not included in this presentation.
- While estimated case sensitivity is high, sensitivity calculation for system components (yield from field investigation, data matching) may be more pertinent.

Conclusions

NYC's HIV/AIDS surveillance system is large and complex. While clearly successful at enumerating cases, HEFSP faces increased demand for care-related analyses possible because of the wealth of lab-reported data. The challenges of data management and record linkage necessary for such analyses warrant additional evaluation.

Recommendations

- Earlier data release given the timeliness and high completeness of data.
- Continued improvement of provider reporting to enhance completeness and validity of demographic and risk variables. Novel reporting methods such as electronic provider forms and incentives should continue to be pursued.
- Simultaneously with this analysis, HEFSP has limited field investigation of undetectable viral load tests to increase case yield and maximize resources.

Evaluation Summary

Usefulness

- Data are used by multiple interest groups and within DOHMH to direct public health resources and target and evaluate interventions; examples include the Test and Treat needs assessment and The Bronx Knows initiative evaluation.
- The HEFSP website had over 20,000 page visits and over 90,000 files downloaded in 2009.



Simplicity

- Necessarily complex due to high volume of data from multiple sources.
- Highly trained staff required to link and maintain over 70 databases with five million records.
- Though complex, many components of collection, analysis and dissemination are standardized and efficient due to shared resources and extensive experience.



Flexibility

- Multiple adjustments made in reporting requirements and case definitions.
- Performance of non-core surveillance alongside enumerating cases.
- Flexibility required for cooperative relationship with New York state (NYS).



Data Quality

- High case completeness; verified through rigorous chart abstraction.
- Increased provider reporting would strengthen completeness and validity.
- Affected by recall and reporting bias due to HIV stigma and effort to report.
- The quality of care-related analysis is limited by volume of case updates and migratory testing and care patterns.



Acceptability

- Highly acceptable due to: legal mandate, sustained political will, dedicated community interest, high incidence and prevalence.
- Limited by burden of time on providers and HIV-associated stigma.
- Data requestors accept and depend on high-quality data from surveillance.



Sensitivity & Positive Predictive Value

- There is no gold standard with which to compare surveillance data; this prohibits direct sensitivity and PPV calculation.
- Comparison with independent sources, such as the Medical Monitoring Project, confirms that HEFSP captures 90-99% of confirmed HIV+ individuals.
- Qualitatively, PPV is expected to be higher than sensitivity because of the strong case definition and rigorous chart abstraction.



Representativeness

- Accurately represents the NYC epidemic among those receiving HIV-related tests in NYC.
- Limited by differential testing rates and care utilization by some population subgroups, such as men who have sex with men, and frequent in- and out-migration among New Yorkers.
- However, continuity of surveillance supports reliable trend analyses.



Timeliness

- Efficient field investigations help ensure over 85% of all cases are entered into eHARS within 6 months of the end of a given diagnosis year.
- Lab-based reporting via NYS and subsequent complex data processing speed ascertainment yet are subject to delay. Outbreak detection is limited.



Stability

- Extensive backup, security and appropriate software upgrade procedures.
- HEFSP is vulnerable to some system outages because of reliance on the NYS lab reporting system; 2 such NYS outages delayed transmission in 2009-2010.



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