Evaluation of the New York City HIV Partner Notification Tracking System

Ryan C. Burke[1,2], Dipal K. Shah[1], Kyle T. Bernstein[1], Tamar C. Renaud[1], Judy E. Sackoff[1], Preeti Pathela[1], Elizabeth Begier[1]

1 - New York City Department of Health and Mental Hygiene - New York, NY

2 - CDC/CSTE Applied Epidemiology Fellowship

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BACKGROUND

HIV/AIDS is a significant public health concern in New York City. In 2005:

- 3800 HIV diagnoses; nearly 100,000 people currently living with HIV/AIDS.
- 28% of new HIV diagnoses were diagnosed within 31 days of an AIDS diagnosis, suggesting many persons with HIV are not being tested.

A major avenue for diagnosing HIV positive individuals is through partner notification (PN).

Definition of PN: the process by which the sexual and needle-sharing partners of an HIV positive individual are notified of their potential exposure to HIV.

The New York City Department of Health and Mental Hygiene (DOHMH) can assist patients and/or providers with PN. Two units provide PN assistance:

- STD Prevention and Control's (BSTDC) Contact Notification Assistance Program (CNAP)
- HIV/AIDS Prevention and Control's (BHIV) Field Services Unit

DESCRIPTION OF SURVEILLANCE SYSTEM

The PN process is tracked in a database operated by the HIV Epidemiology and Field Operations Program (HEP) within BHIV. Partners are elicited by reporting provider and entered in partner surveillance system. DOHMH staff conduct PN and follow-up on much of the PN being conducted by providers and patients. Once a PN case is closed, the outcome is entered in the system.

Characteristics of the system:

- Population under surveillance limited to physical boundaries of NYC
- Passive surveillance system - depends on healthcare providers and HIV positive individuals to provide partner information

The partner tracking system is a sub-system of HIV surveillance. The form that reports the HIV case to HEP also contains the partner information. There are 3 reporting forms with partner information:

- HIV case reporting form from community provider – the Provider Report Form (PRF)
- Interview Record from a DOHMH STD Clinic provider
- Case Investigation Form completed by the BHIV Field Services Unit that interviews HIV positive patients in select facilities.

EVALUATION METHODS

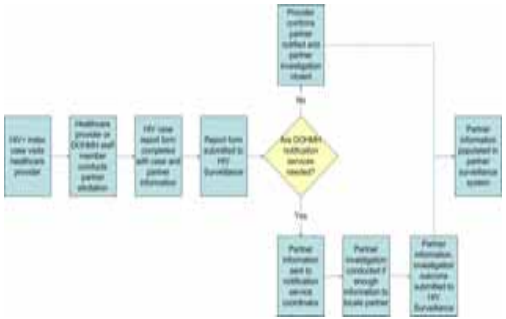
Using CDC guidelines for evaluating a surveillance system, two data sources were compiled for the analysis:

Table 1: Main Datasets Used for Evaluation

Data Source	Time Period	Sample size
HIV Surveillance Data	July 1, 2006 – April 30, 2007	$N_{Reports}$ = 4,748 N_{Cases} = 4,380
Partner Surveillance Data	July 1, 2006 – April 30, 2007	N = 962

RESULTS

Figure 1: Data Flow in the Partner Surveillance System

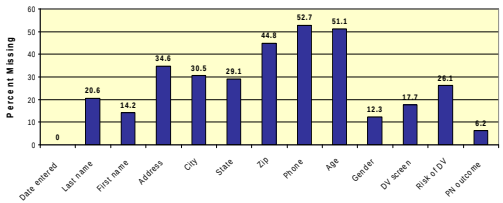


Data Quality: The quality of the data collected is highly variable; the system does not capture all partners of HIV+ cases in the city.

DATA COMPLETENESS:

- System currently not capturing partner information provided by direct calls to CNAP (175 partners/year).
- To determine completeness of partner data as a means to contact individuals, we examined partner investigation outcomes. There were 109 (19.6% of investigation outcomes) partners in which there was insufficient information to begin an investigation (i.e. incomplete contact information).

Figure 2: Completeness of Selected Variables



DATA VALIDITY:

- Partners unable to be located are an indication of invalid information provided. This occurred 74 times during the time period analyzed, (13.3% of partner investigation outcomes).
- Misclassification is present in the number of outcomes categorized as "Other". This occurred 148 times, 26.6% of partner investigation outcomes. A review of these situations revealed many would be better classified elsewhere, decreasing the data's validity.

RESULTS CONTINUED

Usefulness: The system is currently a very useful tool for BHIV.

- The only tracking system for PN activities.
- Provides PN performance measures and data for funding accountability.

Simplicity: The system is not simple.

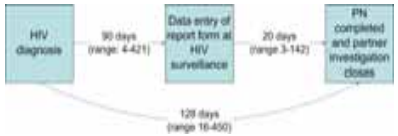
- No integration with data collection tools other than PRF.
- Multiple PN providers with separate forms.

Flexibility: The system is flexible and responsive to changing surveillance needs.

- The system incorporates data from multiple sources and merges the information to fit a defined list of variables.
- Integration with the HIV surveillance system allows it to be flexible to changes in HIV surveillance methods.
- Flexibility recently tested in May 2006 when new PRF was introduced. Integration was very quick (3-4 weeks) and there have been few problems.

Timeliness: PN is a timely process, but there is a long delay in initiating PN services because of a reporting lag.

Figure 3: Median Time Between Steps in PN Surveillance System



Acceptability: The low proportion of new cases with PRFs submitted (52.4%) and low proportion of reports with named partners (17.8%) indicates an overall low acceptance of PN by providers and/or index cases.

Positive Predictive Value: Assumed that PPV was 100% - all reported partners are true sexual, needle sharing, or social network partners.

Sensitivity: The sensitivity (the proportion of partners captured in the system out of the total number of partners) is very low.

- Using estimates for median number of partners from various data sources and the total number of cases in our data (4,380), we estimated the true number of partners in the population and calculated sensitivity.

Table 2: Sensitivity Analysis

Data source	Timeframe	Median # partners per person	Estimated partners in population	Sensitivity estimate
Field surveillance unit data on # sexual partners in previous year	July – December 2006	1	4380	962/4380= 22%
STD clinic data on # sexual partners in previous 3 months	September 2005 – September 2006	2	8760	962/8760= 11%
Assuming each index without a named partner has one partner	N/A	1	4380	962/4380= 22%

Representativeness: Individuals that name partners differ from those that do not name partners in many respects.

- Representativeness was evaluated by comparing the characteristics of index cases reporting partners to index cases not reporting partners.
- Index cases naming partners were significantly ($p<0.05$) more likely to be female, younger, non-white, born outside the U.S., heterosexual, and diagnosed concurrently with AIDS.

Stability: The system is stable on an everyday basis but is dependent on two key staff members. There is nearly no documentation on the operation of the system.

RECOMMENDATIONS

Improve Data Quality

- Immediately add all PN activities conducted by CNAP to the system.
- Clarify definition of all partner outcomes so investigations do not get closed as "Other" when they can be closed in a more informative category.

Recommended Procedural Changes

- Decrease time between patient diagnosis and when report form reaches HEP.
- Integrate partner surveillance system with STD surveillance and CNAP systems so that one integrated database is used.

Improve the Usefulness of the System

- Match each partner to those already included in the system to identify persons needing increased prevention counseling.
- Match partner information to HIV surveillance system to determine if partners subsequently tested positive.

Improve Documentation of System Operation

Educate Clinical Providers on Importance of Partner Elicitation and PN

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Contact Ryan Burke: rburke@health.nyc.gov