

Flagging possible acute HIV infections based on viral load values among routine surveillance field investigations in New York City

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Issue

- The sequence of negative and indeterminate HIV antibody (Ab) tests along with detectable HIV RNA tests is critical for classifying acute HIV infection (AHI).
- However, negative/indeterminate Ab tests are not reportable HIV laboratory events in New York State.

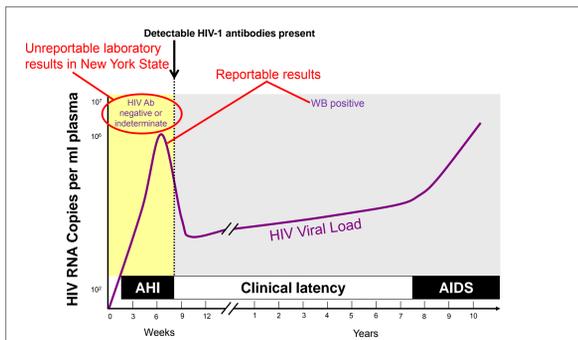
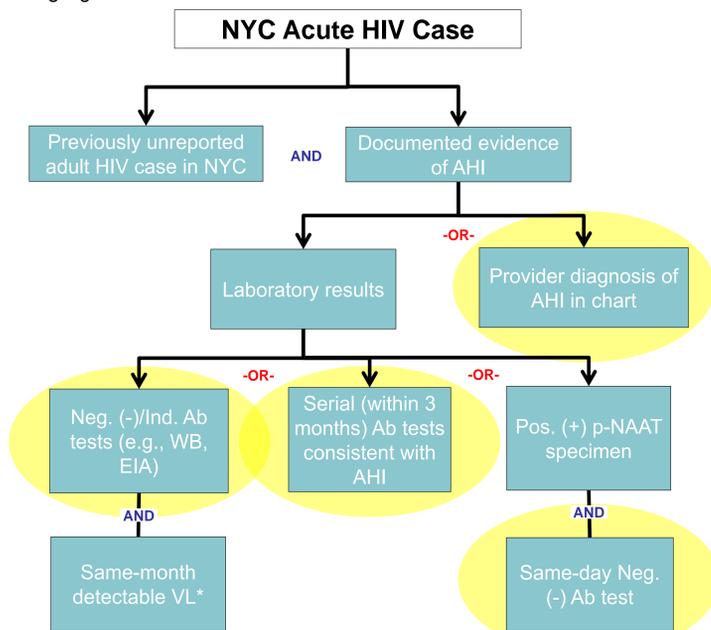


Figure 1. HIV disease infection course, highlighting HIV antibody (Ab) testing results and viral load progression.

Setting

- New York City (NYC) is a high volume surveillance jurisdiction with ~4,000 new HIV diagnoses annually.
- Surveillance public health advisors (PHAs) perform chart reviews at the ordering facility for new reports of HIV/AIDS and the following laboratory tests:
 - HIV viral load (VL) (including undetectable test results)
 - positive Western blot (WB) results
 - CD4 test results
 - Genotypes
- In 2008, the NYC Department of Health and Mental Hygiene (DOHMH) enhanced routine HIV/AIDS surveillance to specify AHI among adult and adolescent cases using a local NYC case definition.
- AHI ascertainment in NYC relies on chart review for essential AHI-characterizing information.
 - Cases are reviewed by a DOHMH medical reviewer for final assignment of AHI case status.

Figure 2. NYC AHI case definition, with chart review components highlighted.



= Information from surveillance chart review

* The quantitative VL value should be >5,000 copies/ml.
<http://home2.nyc.gov/html/doh/downloads/pdf/ah/ahi-case-definition-current.pdf>

Project

- GOAL:** To prioritize surveillance field investigations of possible AHI cases for timely partner notification and to alert PHAs of possible acute status for improved case yield.
- As electronic laboratory reporting is the largest source of new HIV diagnoses, we printed the flag "PAHI" to indicate "possible AHI" on field investigation forms assigned since June 2009, based on the following algorithm:

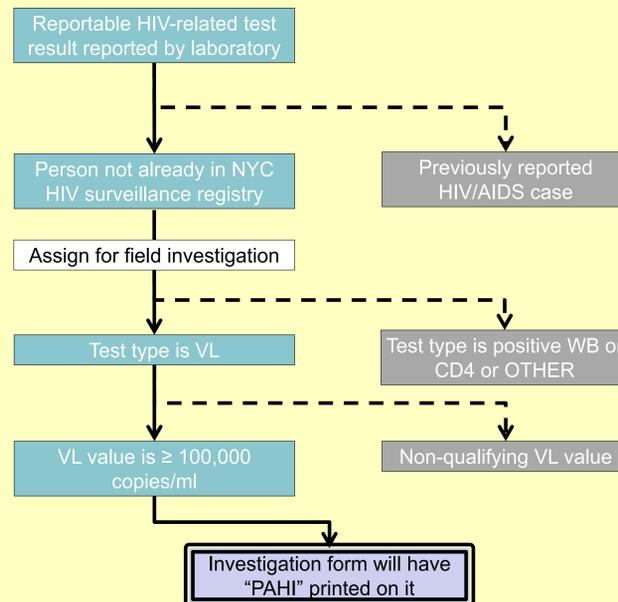


Figure 3. Algorithm for printing "PAHI" (possible AHI) on field investigation forms.

Figure 4. Sample NYC chart abstraction form with possible acute HIV infection ("PAHI") indicated.

"PAHI" = Possible AHI
indicated on form to alert surveillance field staff

Field investigation trigger event is an HIV viral load test, and the reported value is at least 100,000 copies/ml

TWO-PART EVALUATION:

- Nine months following implementation of the PAHI flag, we retrospectively assessed the proportion of AHI cases ascertained during this period that were flagged.
- For quality assurance, we also evaluated field investigation forms from April-June 2010 for correspondence between PAHI flag and AHI classification.

Results

Figure 5. Proportion of 64 AHI cases ascertained during the time the intervention was implemented (June 2009 – April 2010) that were flagged "PAHI." Detail shows trigger test type assignment among proportion of AHI cases that did not meet the criteria for the PAHI flag.

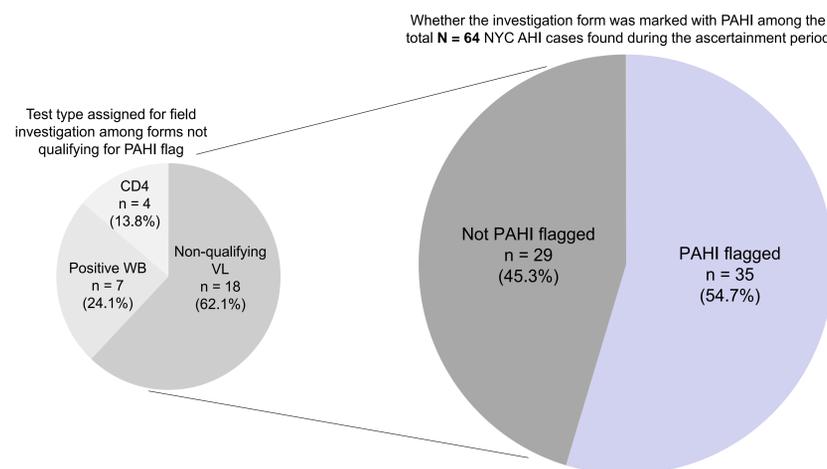
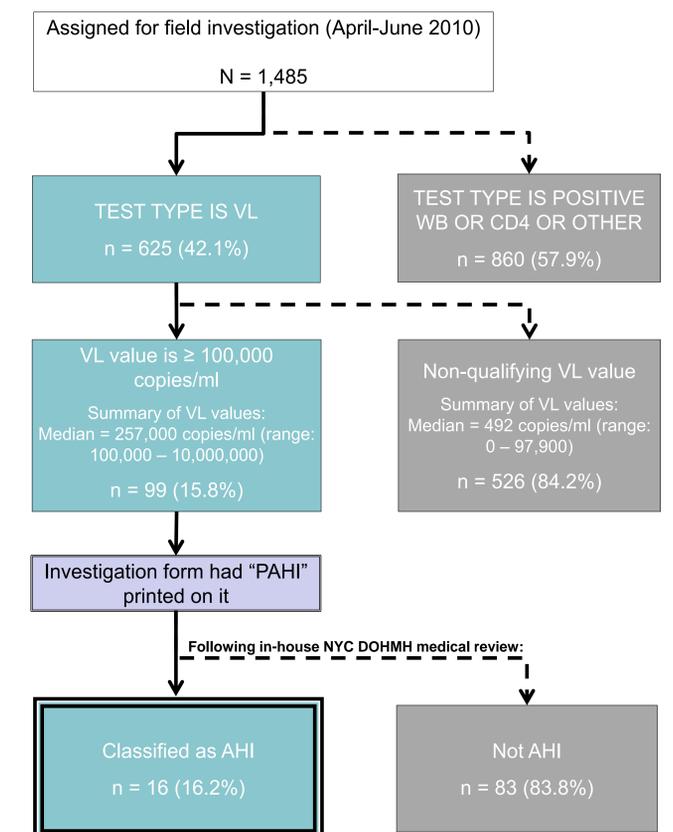


Figure 6. Evaluation of field investigations to assess the correspondence between the PAHI flag and AHI classification.



Lessons learned

- The PAHI flag was easily incorporated into routine surveillance activities as a systematic alert to staff of possible acute infection during field investigations.
- While over half of the eligible AHI cases had a PAHI flag, 45.3% of AHI cases did not meet the criterion to be flagged.
- Furthermore, the majority of PAHI-flagged cases were non-acute HIV diagnoses.
- Thus, the PAHI flag is a useful but insufficient indicator for AHI case ascertainment.**
- NYC plans to improve yield from our PAHI algorithm by lowering the VL test value threshold and incorporating additional laboratory values.

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