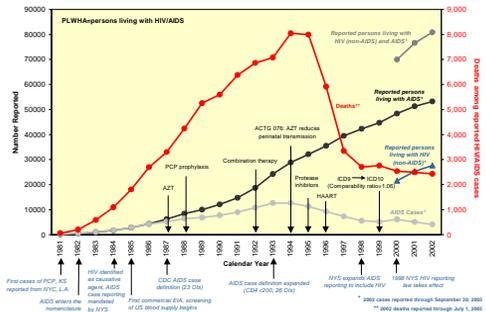


## HIV in New York City, 1981-2002



## HIV Reporting in New York State

**The New Law:** On June 1, 2000, New York State implemented legislation mandating named reporting of HIV infection (AIDS reportable since 1984)

**Who must report?**  
All diagnostic and clinical providers—doctors, nurses, physicians assistants, and all others diagnosing HIV or providing care to HIV+ persons  
Laboratories conducting testing for HIV antibody, viral antigen, and CD4 lymphocytes on residents of NYC

## Reportable Events

- Providers:**
  - Diagnosis of HIV infection (WB+ test)
  - Diagnosis of HIV illness or laboratory finding in previously unreported individual (HIV illness not meeting the AIDS case definition, report of <500 CD4 cells/uL, or detectable viral load)
  - Diagnosis of AIDS-defining conditions
- Laboratories:**
  - All positive Western Blot results
  - All detectable viral load results (>400 copies)
  - All CD4 test results <500 cells/uL

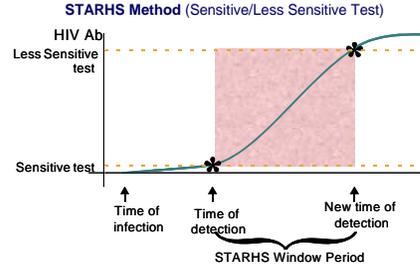
## Objectives of HARS:STARHS

- Evaluate use of STARHS to distinguish recent from established infections among new diagnoses reported to HARS
- Assess the ability of the HIV/AIDS Reporting System (HARS) to monitor incident vs. prevalent HIV over time
- Estimate HIV incidence

## HARS:STARHS 2000-2002, New York City: Using the Laboratory to Evaluate Detection of Incident vs. Prevalent HIV by a New Surveillance System

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## Definitions

- Recent Infection**=WB+ specimen shows antibody levels characteristic of infection <=12 months prior to the blood draw
- Established Infection**=WB+ specimen shows antibody levels characteristic of infection >12 months prior to the blood draw

## Methods: HARS:STARHS

•7,243 WB+ specimens from NYC residents diagnosed at the Public Health Laboratories in 2000-2002 were identified as non-AIDS were matched to their HARS record

•All personal identifiers were removed, and the specimens were tested at the NYS Regional STARHS lab

## Results

Half Year of Dx	% Newly Infected	95% CI
June-Dec 2000	13.8%	11.6%, 16.0%
Jan-June 2001	12.9%	10.3%, 15.6%
July-Dec 2001	17.4%	13.8%, 21.0%
Jan-June 2002	21.0%	17.3%, 24.5%

## Incident vs. Prevalent HIV? A New System Absorbs Many Cases that were Previously Not Reportable

•How many of the newly diagnosed HIV cases represent incident (new) HIV infections, and how many represent prevalent (established) infections?

•A total of 7,243 'new' HIV diagnoses were reported to have occurred between June 1, 2000, and June 30, 2002

•Does the trend toward reporting of incident HIV demonstrate elimination of prevalence backlog, increased testing with improved early detection, or epidemic growth?

## STARHS: The Serologic Testing Algorithm for Recent HIV Seroconversion

•STARHS is a laboratory method that distinguishes between recent (<=6 months) and established (>6 months) HIV infections (*incident vs. prevalent HIV*)

•It is a comparison of the results of two tests:

–The highly sensitive EIA that was used to diagnose the HIV infection (the regular HIV test)

–A less sensitive version of the same test that cannot detect diagnostic levels of HIV antibody until approximately twelve months post-seroconversion

## Distribution of Recent vs. Established Infection vs. PLWHA

Risk Exposure	New Diagnosis Recent Infection	New Diagnosis Established Infection	PLWHA
MSM	32% (28%,37%)	19% (18%,19%)	26% (25%,26%)
IDU	11% (8%,14%)	17% (16%,18%)	26% (26%,27%)
Heterosexual	25% (21%,31%)	24% (23%,25%)	18% (18%,18%)
Other/Unk	31% (27%,36%)	40% (39%,41%)	30% (29%,30%)
Age Group			
<25	22% (18%,26%)	7% (6%,8%)	5% (5%,5%)
25+	78% (74%,82%)	93% (92%,94%)	95% (95%,95%)
TOTAL N	382	7,243	79,124

## Significant Increases in Detection of Recent Infection, 2000-2002

	% Newly Infected Jun-Dec 2000	% Newly Infected Jan-July 2002
Men	13.6% (10.6,16.6)	23.3% (18.6,28.0)
MSM	20.8% (14.7,27.0)	34.0% (24.7,43.3)
IDU	6.9% (3.3, 10.7)	24.3% (10.5, 38.2)
Age 25+	12.1% (9.8,14.3)	19.1% (15.3,22.7)

## Conclusions

•Detection of incident vs. prevalent HIV increased over the first two years of named reporting as the backlog of previously unreported cases diminished

•There are significant differences in the leading vs. the trailing edge of the epidemic. STARHS can identify these differences and assist prevention planners to develop targeted, strategic prevention policy

## Limitations of this Specimen Set

•Data represent only those HARS cases whose first HIV+ specimens were tested at the PHL. 27% of NYC's new HARS cases were diagnosed by PHL and had sufficient remnant serum for STARHS.

•Persons tested at PHL vs. commercial labs were:

- More likely to be nonwhite, young
- More likely to have heterosexual transmission as risk

•Bolus of 'new diagnoses' in 2000 and 2001 included many infections diagnosed prior to HIV reporting—reports of established infections are still coming in via lab events such as VL and CD4, expected to decrease over time

## Limitations of the STARHS Method

•**False positives**—AIDS cases, people on HAART with viral suppression, people on HBV chemotherapy, people with late infection and low antibody titers, natural nonprogressors with low viral load setpoints

•**Individual vs. population accuracy**; clinical utility not established: Proceed with caution, but don't miss an important opportunity to estimate incidence and evaluate the surveillance system

•**Validity dependent on test frequency**, e.g., if MSM are frequent testers there are more opportunities to test them at or near their time of seroconversion

## Future of HARS:STARHS

•Despite its limitations, STARHS represents a new method that, in combination with named HIV reporting, allows NYC to monitor the leading edge of the HIV epidemic for the first time.

•Add specimens tested at commercial laboratories to the sample

•Benefits of routine HARS STARHS:

- Establish and track incidence rates
- Evaluate the maturation of the new HIV surveillance system
- Evaluate public policy encouraging testing and early detection
- Evaluate impact of prevention programming for specific target populations

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