

Acute HIV Surveillance Documents Population Impact of p-NAAT Screening in New York City STD Clinics

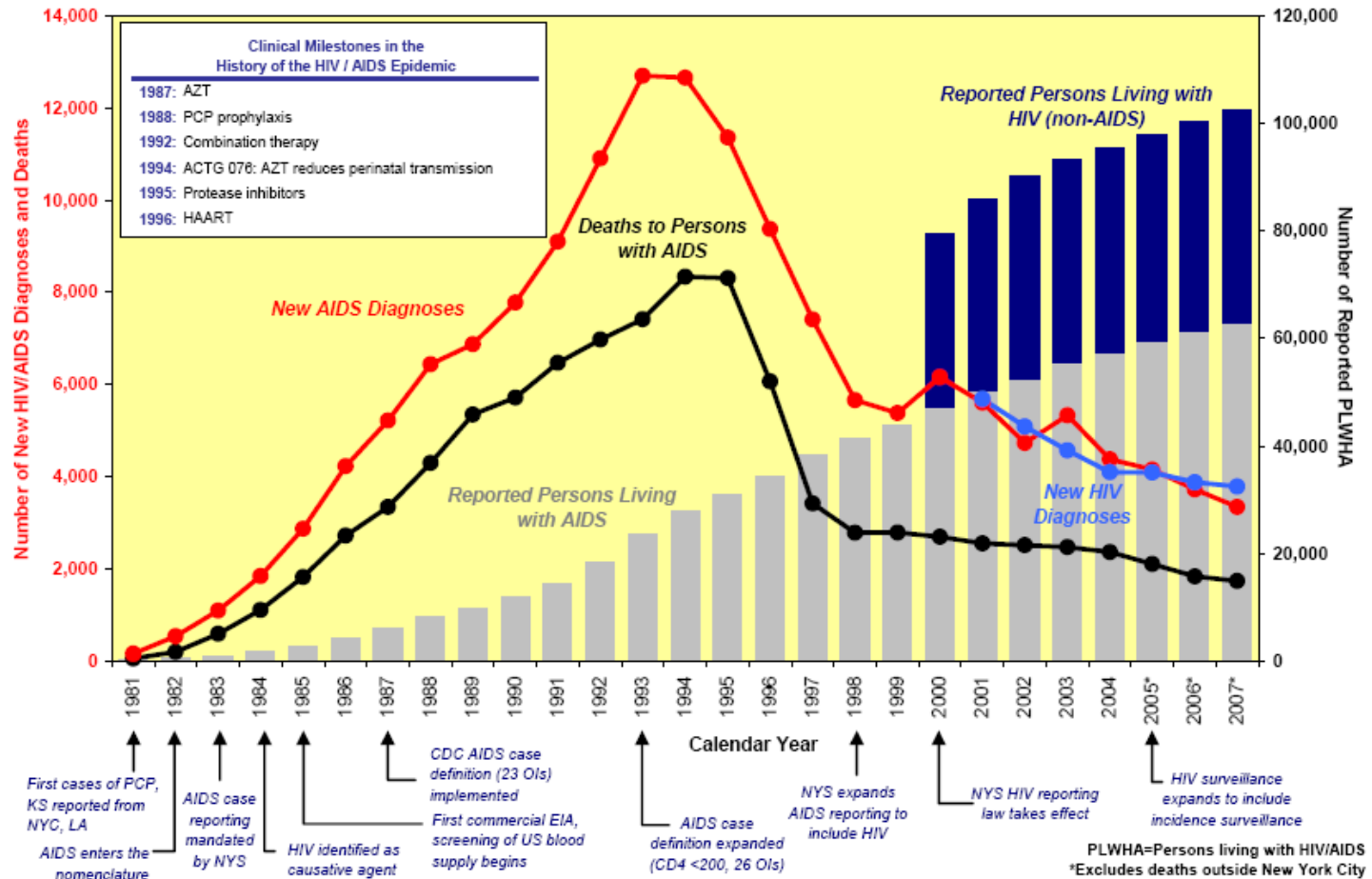


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New York City Department of Health and Mental Hygiene
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<http://www.nyc.gov/html/doh/html/dires/hivepi.shtml>

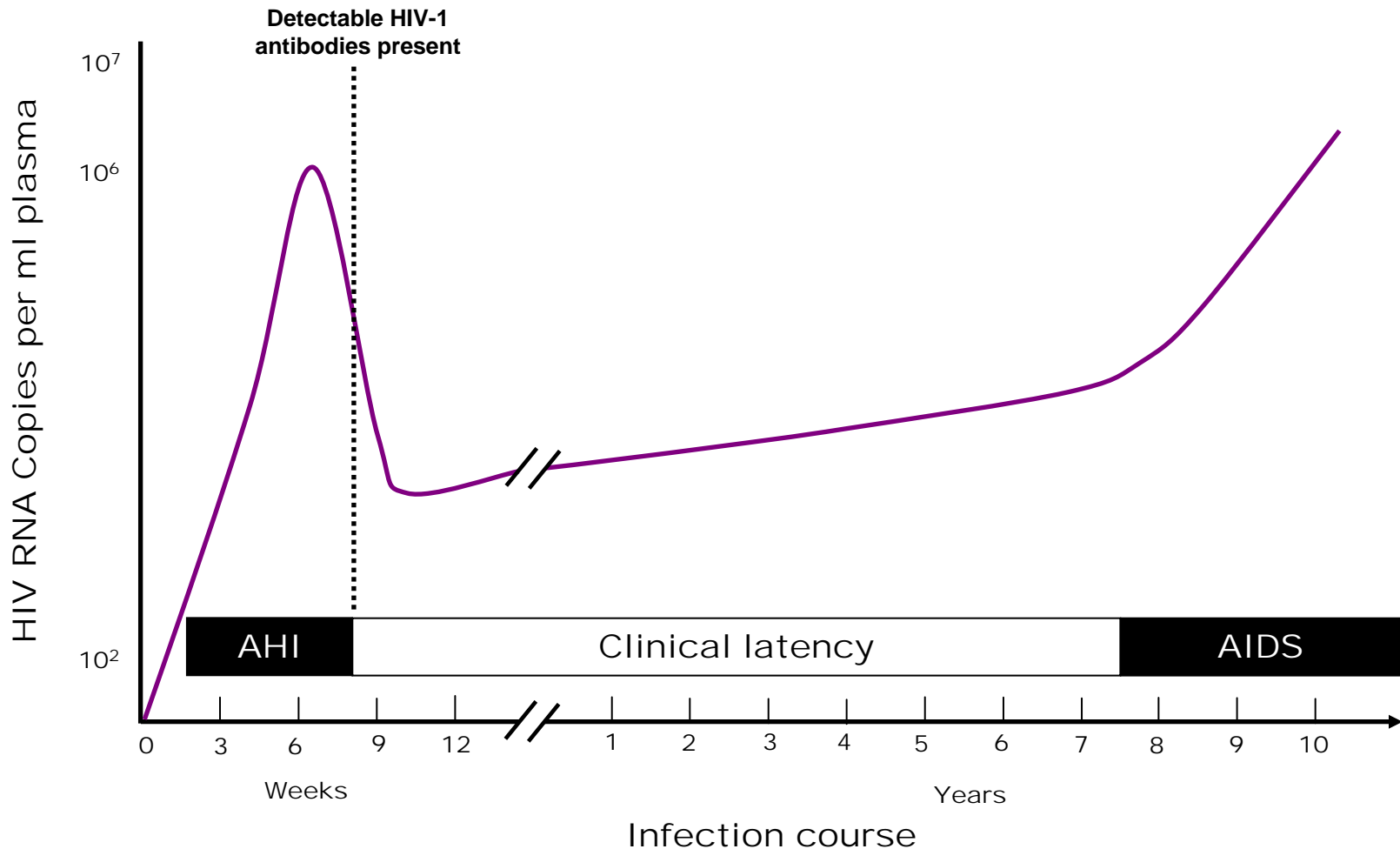
Routine HIV Surveillance

History of the HIV/AIDS Epidemic in New York City, 1981 – 2007



HIV Infection Course

Viral Load Progression



Challenges Detecting HIV in the Acute Stage

- Acute HIV infection (AHI)
 - Short window
 - Can be asymptomatic
- Individual
 - May not seek medical care or HIV test
 - May not be aware of recent exposure
- Provider
 - May not test for HIV
 - Misdiagnose with other viral syndrome
 - May use antibody-screening tests only

Public Health Importance

- Highly infectious time in the disease course
 - Prevent forward transmission at a time when individual is unaware of infection status
- Efforts in North Carolina, Seattle, California, Atlanta, and other areas to ascertain cases in the acute stage

Lack of AHI Surveillance

- AHI is not specified as part of routine HIV surveillance in the US
 - Absent from national HIV surveillance reports
- No national surveillance case definition

Objective

Enhance routine HIV surveillance to distinguish HIV cases reported in New York City as:

Acute

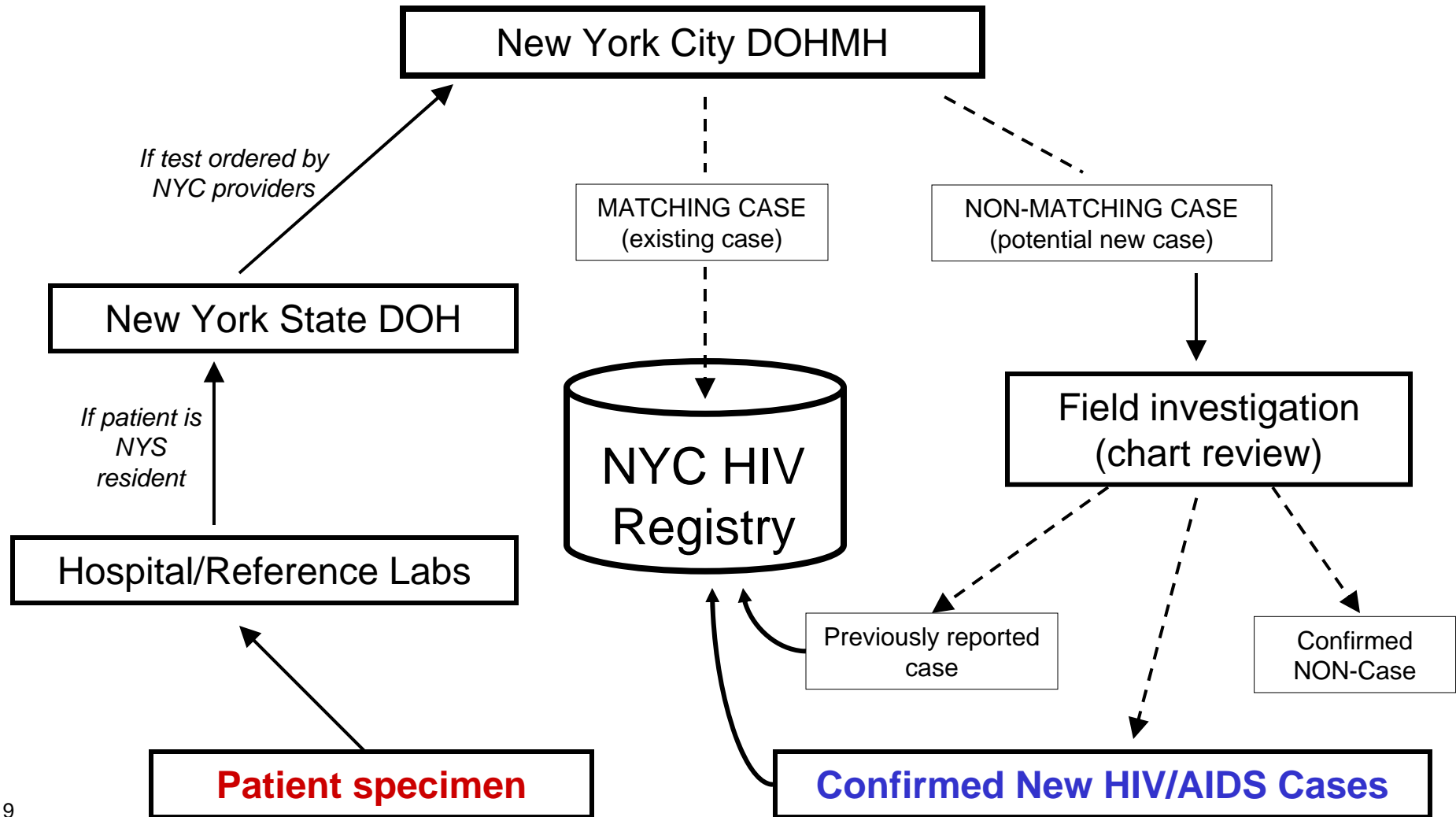
-or-

Non-acute

New York State Reporting Mandates

- REPORTABLE EVENTS
 - *Providers:*
 - All **new diagnoses** of HIV, HIV-related illness, and AIDS
 - *Laboratories:*
 - **Positive** Western blot (WB) tests
 - Viral load tests
 - CD4 tests
 - HIV nucleotide sequencing tests
- UNREPORTABLE EVENTS
 - **Negative or indeterminate** Western blot tests
 - **Screening antibody** (i.e., EIA) test results

Surveillance System Components: From HIV lab test to Confirmed Case



Data Collection

- Enhanced data collection during chart review on forms since February 2008

Assigned:		Field Investigation Form		Date:	
NYS#	MEM#	NYSID	SR	PH#	
Last	First	Middle	DOB	AGE	
AKA Last	AKA First	AKA DOB			
Type R C H S U	Address	City	State	Zip	PI
Sex	Ethnicity	Race	Country of Birth		
<input type="checkbox"/> M <input type="checkbox"/> F	<input type="checkbox"/> Hispanic <input type="checkbox"/> Non Hispanic	<input type="checkbox"/> Black/African Am. <input type="checkbox"/> Am. Indian/Alaskan <input type="checkbox"/> White	<input type="checkbox"/> U.S. <input type="checkbox"/> U.S. D&P <input type="checkbox"/> Other (Specify)		
Mortality Status	DC				
HARS Name	OFFICE USE ONLY				

CODE	MEN and WOMEN	NOTE
100	Probable Heterosexual Transmission	
113	No History of Injection Drug Use (IDU)	
102	Heterosexual Partner has an Infected Partner	
103	Multiple Sex Partners Sex with ~5 partners after 1977; can use if chart has multiple sex partners only or MSP.	
104	Sexually Transmitted Disease History of herpes simplex, gonorrhea, chlamydia, syphilis, chancroid, condyloma, genital HPV, lympho-granuloma venereum, etc.	
105	Sexual Partner of Non-Injecting Drug User	
106	Sexual Contact with a Male Prostitute	
107	Sexual Contact with a Female Prostitute	
108	Sexual Contact with a Prostitute Sex not specified	
109	Prostitution History of sex for money, drugs, or other.	
110	Sexual Abuse History of abuse, rape, incest, etc.	
111	Monogamy Claims history of a single sex partner.	
112	Abstinence Claims no history of sexual contact.	
200	Marijuana (Cannabis) Use	
	IDU:	
	date not specified.	
	"crystal meth") Use	
	(her or type not specified.	
	tick or Other Exposure involving	
	Body Fluids	
301	Blood Transfusion Unconfirmed or after 3/85.	
302	Dental Procedure Claims as risk.	
303	Medical Procedure Claims as risk.	
304	Hemodialysis or Peritoneal Dialysis >1977 Claims as risk.	
305	Medical Condition Requiring Frequent Injections Such as for diabetes, allergies, etc.	
306	Acupuncture	
400	Hepatitis B Diagnosis of infection noted in chart.	
401	Hepatitis C Diagnosis of infection noted in chart.	
500	Activities Involving Blood, Needles, Knives Includes electrolysis, piercing, scarring, etc.	
501	Tattoos includes tattoos that have been removed.	
600	Incarceration includes any history, past or current.	
601	Partner Has History of Incarceration	
602	Mental Illness	
603	Domestic Violence	
604	Homelessness	
700	Other Select this code and describe in the comments.	
CODE	MEN only	
800	Proctitis	
802	Anal or Rectal Sexually Transmitted Disease	
803	Anal Cancer	
801	Transgender (male-to-female)	
CODE	WOMEN only	
901	Mother of a Pediatric Case	
902	Artificial Insemination	
903	Transgender (female-to-male)	

AHI/PHI at diagnosis? Yes No Unk.

WB/IFA	VL [Qb]	
Ex/Intr WB/IFA	VL [Qb]	
PCR WB/IFA		
PCR WB/IFA		
If pos, record test type and date of last test, neg. not	cells %	
Type	cells %	
AHI/PHI at diagnosis? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk.	cells %	
II. PHYSICIAN DOCUMENTATION (MM/DD/YYYY)	This case was previously diagnosed before the WB date and/or the "doc. by physician" date, but the prior date is unknown.	
Documented by physician? <input type="checkbox"/> Yes		
III. DATA SOURCE	MM DD YYYY	VI. ALSO SEEN AT
<input type="checkbox"/> Database <input type="checkbox"/> Contact <input type="checkbox"/> Chart		(Name)
IV. PATIENT HISTORY	V. CLINICAL STATUS	(Address)
MM DD YYYY	MM / DD / YYYY	
I #6, provide date: / /	1 D/P / /	
If #8, specify as exp: / /	2 D/P / /	
	3 D/P / /	
	<input type="checkbox"/> Case needs to be re-evaluated here	
VII. CASE STATUS - SELECT ONE		
<input type="checkbox"/> New Case <input type="checkbox"/> Dec. Non Case # <input type="checkbox"/> Prev. Eyal. NYC # <input type="checkbox"/> Chart N/A		
<input type="checkbox"/> Pass. Case/Misc Info. <input type="checkbox"/> Provider Refused <input type="checkbox"/> PI Not At Site <input type="checkbox"/> Dup. NYSW <input type="checkbox"/> OGI		
Comments:	Sup. Init.	Completed: / /

Front

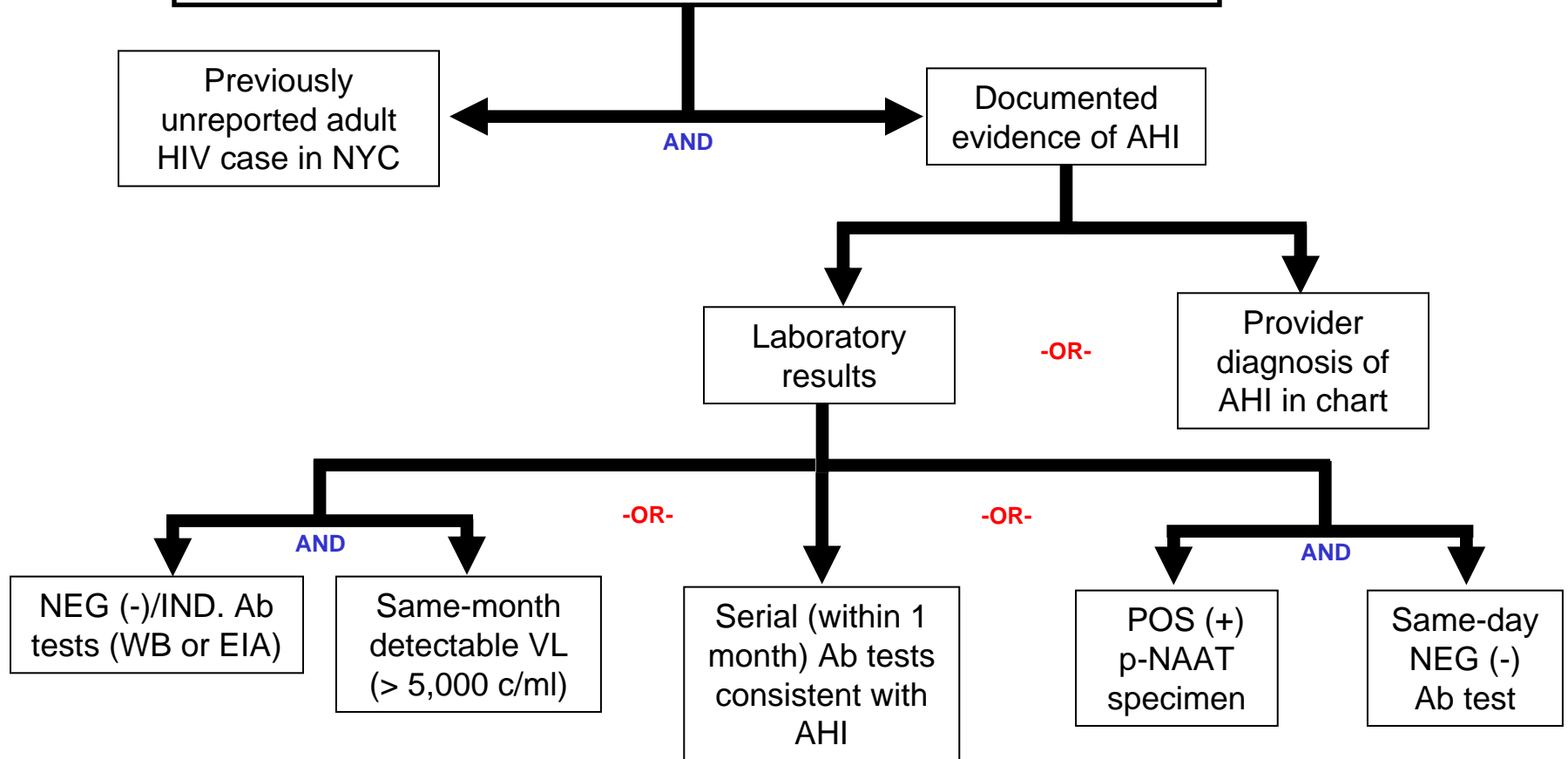
Back

Implementation

- Trained field staff performing chart review about AHI
- NYC DOHMH medical specialist re-reviewed all AHI="yes" forms
- Referred cases to HIV Bureau's Field Services Unit for care linkage and partner notification
- Coordinated with STD Bureau reporting p-NAAT-ascertained cases
 - Follow-up services through STD Bureau

Working Case Definition

NYC working AHI CASE DEFINITION



Example

Assigned: _____		Field Investigation Form		Due: _____		EXPANDED BEHAVIOR CODES		NOTES					
<p><u>September 2008:</u></p> <ul style="list-style-type: none"> • Cold symptoms • NEG HIV 1/2 EIA • NEG HIV 1/2 Multispot • NEG WB • CD4s: 368 cells, 25% • Viral load: 1,000,000 					<p><u>October 2008:</u></p> <ul style="list-style-type: none"> • POS HIV 1/2 EIA • POS WB • CD4s: 747 cells, 46% • Viral load: 121 					<p>MEN and WOMEN</p> <p>Sexual Transmission Noted in chart.</p> <p>Sexual Transmission and Denies IDU Partner had an Infected Partner</p> <p>Sex with >5 partners after 1977; can include sex partners only or MSP.</p> <p>Sexual Disease History of herpes simplex, syphilis, chancroid, condyloma, venereum, etc.</p> <p>Non-Injecting Drug User</p> <p>with a Male Prostitute</p> <p>with a Female Prostitute</p> <p>with a Prostitute Sex not specified.</p> <p>History of sex for money, drugs, or other.</p> <p>History of abuse, rape, incest, etc.</p> <p>History of a single sex partner.</p> <p>No history of sexual contact.</p> <p>Noted in chart.</p> <p>Not in chart.</p> <p>with IDU or when route not specified.</p> <p>Not in chart.</p> <p>Not in chart.</p> <p>(crystal meth) Use Noted in chart.</p>		<p>11/1/08 MSK</p> <p>5 p (P) experienced cold symptoms</p> <p>Multiple sex partners</p> <p>10/1/07 HD/1 EIA E</p> <p>07/1/08 HIV 1/2 AB EIA E</p> <p>09/1/08 HIV 1/2 AB EIA E</p> <p>VL 2401645</p> <p>MD [redacted] dx'd pt. w/ acute HIV</p> <p>09/1/08 HIV 1/2 AB EIA E</p> <p>HIV 1 WB E</p> <p>HIV 1/2 Multispot E</p> <p>CD4 368/25.9%</p> <p>10/1/08 HIV 1/2 AB EDT E</p> <p>HIV 1 WB E</p> <p>CD4 747/46.1 VL 121</p>	
<p>I. LABORATORY TESTS MM / DD / YYYY</p> <p>WB/IFA 10 / 1 / 2008</p> <p>Earliest WB/IFA _____</p> <p>PCR DNA/RNA _____</p> <p>VL (Qty.) 1,000,000</p> <p>VL (Qty.) 121</p>		<p>MM / DD / YYYY</p> <p>09 / 1 / 2008</p> <p>10 / 1 / 2008</p>		<p>MM / DD / YYYY</p> <p>09 / 1 / 2008</p> <p>10 / 1 / 2008</p>		<p>206 Substance Abuse Other or type not specified.</p> <p>300 Accidental Needlestick or Other Exposure Involving Body Fluids</p> <p>301 Blood Transfusion Unconfirmed or after 3/85.</p> <p>302 Dental Procedure Claims as risk.</p> <p>303 Medical Procedure Claims as risk.</p> <p>304 Hemodialysis or Peritoneal Dialysis >1977 Claims as risk.</p> <p>305 Medical Condition Requiring Frequent Injections Such as for diabetes, allergies, etc.</p> <p>306 Acupuncture</p> <p>400 Hepatitis B Noted in chart.</p> <p>401 Hepatitis C Noted in chart.</p> <p>500 Activities Involving Blood, Needles, Knives Includes electrolysis, piercing, scarring, etc.</p> <p>501 Tattoos Includes tattoos that have been removed.</p> <p>600 Incarceration Includes any history, past or current.</p> <p>601 Partner Has History of Incarceration</p> <p>602 Mental Illness</p> <p>603 Domestic Violence</p> <p>604 Homelessness</p> <p>700 Other Select this code and describe in the comments.</p>		<p>VII. CASE STATUS - SELECT ONE</p> <p><input checked="" type="checkbox"/> New Case <input type="checkbox"/> Doc. Non Case # _____ <input type="checkbox"/> Prev. Rptd. NYC # _____ <input type="checkbox"/> Chart N/A</p> <p><input type="checkbox"/> Pos. Case/Miss Info. <input type="checkbox"/> Provider Refused <input type="checkbox"/> Pt Not At Site <input type="checkbox"/> Dup. NYSH# _____ <input type="checkbox"/> OOI</p>					
<p>II. PHYSICIAN DIAGNOSIS (MM / DD / YYYY)</p> <p>Documented by physician? <input checked="" type="checkbox"/> Yes _____</p>		<p>This case was previously diagnosed before the WB date and / or the "doc. by physician" date, but the prior date is unknown. <input type="checkbox"/></p>		<p>III. DATA SOURCE MM DD YYYY</p> <p><input type="checkbox"/> Database <input type="checkbox"/> Contact <input checked="" type="checkbox"/> Chart</p> <p>MM DD YYYY 11 / 04 / 2008</p>		<p>IV. PATIENT HISTORY</p> <p>If #6, provide date: _____</p> <p>If #8, specify occup: _____</p>		<p>V. CLINICAL STATUS MM / DD / YYYY</p> <p>1 _____ D/P _____</p> <p>2 _____ D/P _____</p> <p>3 _____ D/P _____</p> <p><input type="checkbox"/> Case needs to be reintiated here</p>		<p>CODE MEN only</p> <p>800 Proctitis Noted in chart but not specified.</p> <p>801 Transgender (male-to-female)</p> <p>CODE WOMEN only</p> <p>901 Mother of a Pediatric Case</p> <p>902 Artificial Insemination</p> <p>903 Transgender (female-to-male)</p>			
<p>Comments: _____</p>		<p>Sup. Init. _____</p>		<p>Completed: 11 / 04 / 2008</p>		<p>V 0 4 0 8</p>							

Background:

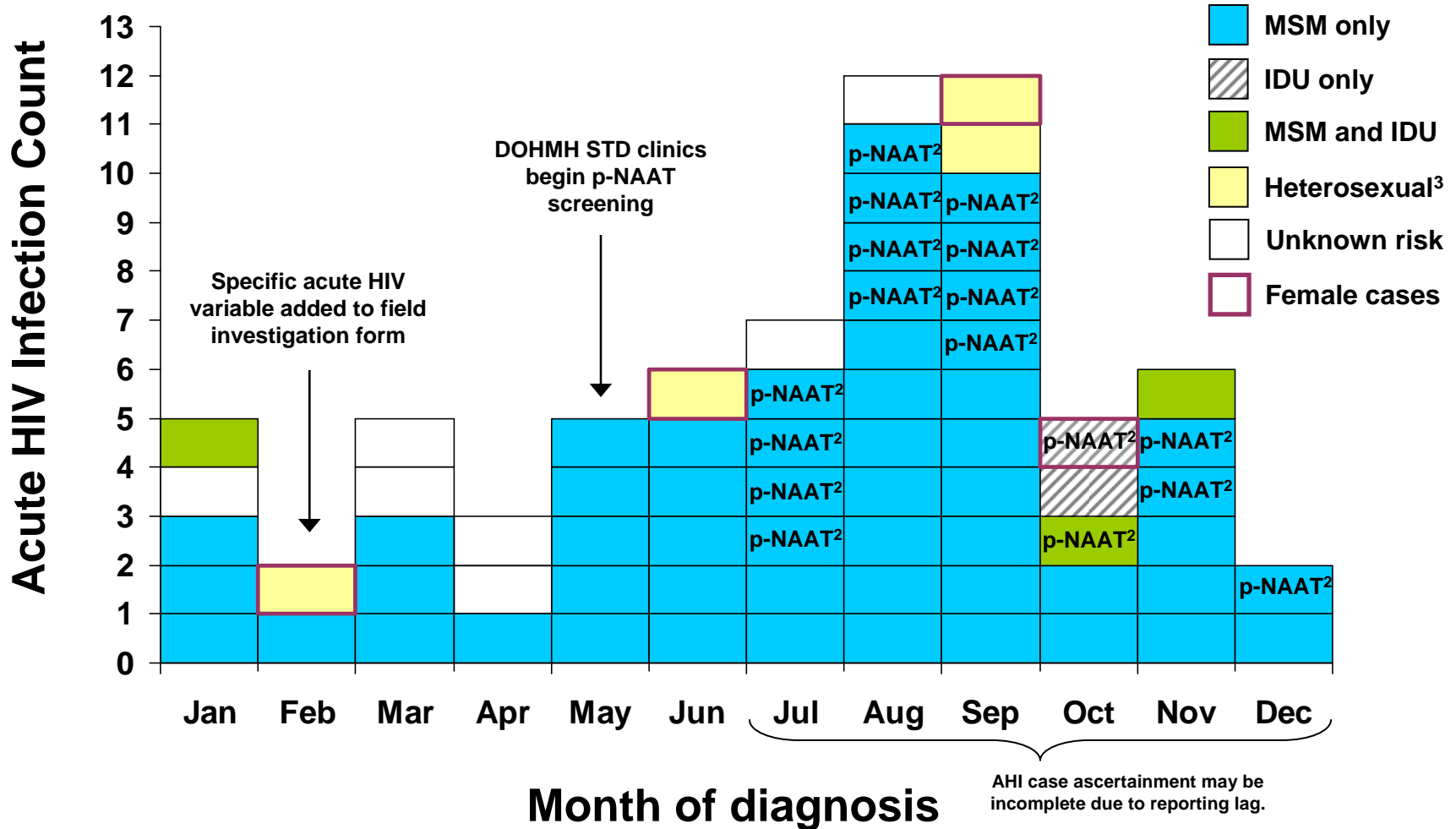
HIV diagnoses in NYC, 2008

- Over 3,700 new HIV diagnoses reported in NYC by the end of June 2009:
 - ~100 more diagnoses occurring in 2008 expected due to reporting lag
 - Majority of HIV diagnoses among Blacks and Hispanics
 - Most affected age group for HIV (non-AIDS) diagnoses among 20-29 year olds
 - Largest proportion of diagnoses among men who have sex with men (MSM)

Findings: First Year of AHI Surveillance in NYC, 2008

- Among new HIV diagnoses reported in NYC, **N = 70 (1.9%)** met AHI case definition
 - Cases originated from **39 different providers**
 - **17 (24%)** of the 70 AHI cases were diagnosed at 4 NYC DOHMH STD clinics via p-NAAT screening
 - **66 (94.3%)** male cases, **4 (5.7%)** female cases

HIV Infections Identified¹ in Acute Phase by Month of Diagnosis, NYC — 2008 (N=70)

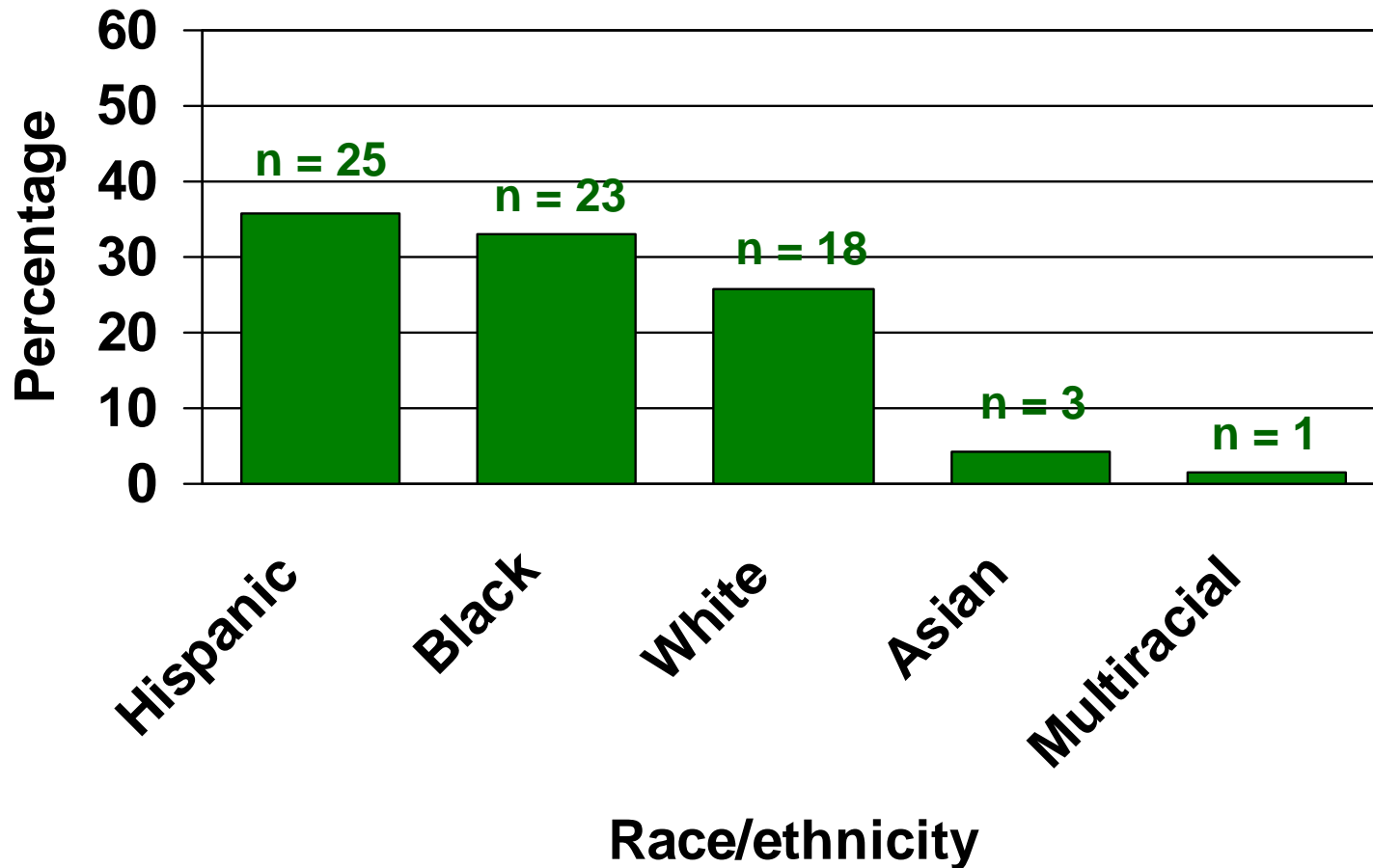


¹Includes HIV infections ascertained to be in acute phase both at report and at diagnosis. ²Case identified by pooled nucleic acid amplification test (p-NAAT) screening.

³Includes probable heterosexual risk for females only.

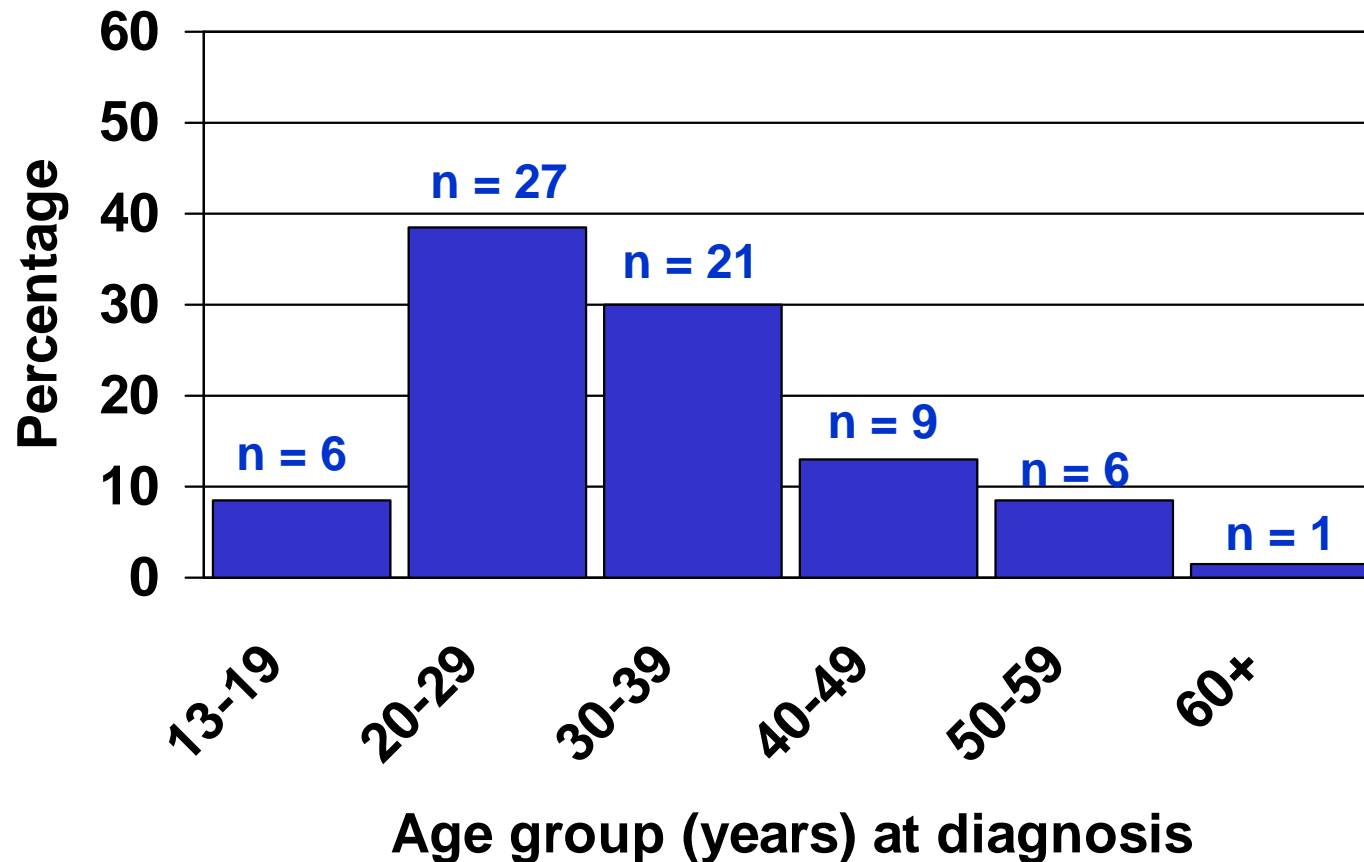
Findings: First Year of AHI Surveillance, NYC 2008

Race/ethnicity among those with AHI diagnosed in 2008 in New York City (N=70).



Findings: First Year of AHI Surveillance, NYC 2008

Age group at diagnosis among those with AHI diagnosed in 2008 in New York City (N=70).



Findings: First Year of AHI Surveillance, NYC 2008

Borough of residence (at diagnosis) among those with AHI diagnosed in 2008 in New York City (N=70).



Discussion

- AHI surveillance can be integrated into routine HIV/AIDS surveillance system protocols
- Population-level impact of p-NAAT screening
- Majority of AHI cases were reported in MSM whether through p-NAAT or not
 - Similar to findings in prior analyses
 - Underscores challenges in this population
 - More frequent testing may explain more frequent ascertainment

Strengths of AHI surveillance in NYC

- Cost is negligible within routine practices
- Contributes more accurate information about the epidemic in NYC
- Important public health implications
 - Awareness of infection status, paired with care linkage and partner notification

Limitations of AHI surveillance in NYC

- Only those tested, diagnosed will be reported
 - Few infections are detected in the acute phase citywide
 - Few women
- Missing information
 - Unreportable tests: EIA, NEG/IND WB
 - Chart with few notes and lab documents
- Potential misclassification
 - Lack of a national case definition

Next Steps

- Expand active surveillance for AHI cases
 - Query providers about patients with laboratory results suggestive of AHI
- Disseminate AHI surveillance data
 - Include AHI data in routine surveillance reports
 - Data on recent infections useful for tailoring preventive interventions
- Provider outreach
 - Encourage providers to suspect AHI when patient presents with symptoms resembling flu and to document thoroughly

Acknowledgements

- Providers documenting AHI cases
- HIV Epidemiology and Field Services Program,
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 - Colin Shepard, MD
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