

Measuring NAS Outcomes

The Role of HIV Surveillance



Lucia V. Torian, PhD, Deputy Director
HIV Epidemiology & Field Services Program
New York City Department of Health and Mental Hygiene
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<http://www.nyc.gov/html/doh/html/dires/hivepi.shtml>

Plan for Today

- What are the NAS objectives?
- What role does Surveillance play?
 - All of the problems addressed by the NAS were identified by surveillance data
 - Why all of the NAS objectives that have hard outcomes can (and should) be measured by data routinely reported to surveillance
- Examples of NAS-like analyses from NYC

NAS Objectives with Hard Outcomes

This is where the rubber meets the road

- Reduce transmission
- Diagnose *everyone* in the prevalence pool
- Get newly dx'd into care -- promptly
- Retain in care
- Treat per DHHS (<350/500, ↑VL, pregnancy)
- Suppress viral load
 - Reduce HIV-related morbidity and mortality
 - Reduce incidence?

We have heard most of this before...

What is new?

Newly emphasized:

- Data on importance of prompt initiation and retention in care
- Data on importance of viral load suppression

There are other NAS objectives (e.g., behavioral change)

- Do self-reported safe behaviors really matter if we can't reduce incidence and suppress viral load?
 - Absence of long-term data
 - Inconsistent self-report vs. pill count vs. drug detected

Why is Surveillance the Single Legitimate Data Source for NAS Outcomes?

- Population-based
 - Not a sample -- entire population dx'd/reported
- Transparent
- Standardized
 - Methods, variable definitions, laws, guidelines, and structure are standardized across US
- Reproducible
 - Data routinely published (reports, web tables, peer review)
- Quantitative – hard outcomes

Comprehensive Surveillance: What is It?

- Almost all states now have comprehensive surveillance of HIV-related laboratory tests:
 - All positive WB
 - All values of CD4
 - All values of VL
 - All resistance results

VIEWPOINT

Striving Toward Comprehensive HIV/AIDS Surveillance: The View from New York City

LUCIA V. TORIAN, PhD^a
KELLY J. HENNING, MD^b
SCOTT E. KELLERMAN, MD,
MPH^c
THOMAS R. FRIEDEN, MD, MPH^b

On June 1, 2005, New York State issued regulations requiring laboratories to report all CD4 and viral load (VL) values and nucleotide sequences obtained for genotypic analyses, continuing eight years of steady progress toward comprehensive surveillance of HIV/AIDS.¹ Since 2000, confidential named reporting of HIV diagnoses, CD4<500, and detectable HIV VL has been mandatory in New York State, and 36,985 people with HIV (non-AIDS) have been reported to the New York City surveillance system. As of June 30, 2006, 189,770 people had been diagnosed and reported with HIV or AIDS in the city's 25-year surveillance history.

New York has an increasingly comprehensive HIV surveillance system by virtue of its state law, citywide behavioral risk factor surveys, and supplemental surveillance systems supported by the Centers for Disease Control and Prevention

Why do we need comprehensive surveillance? *HIV has changed*

- **1981:** HIV inevitably fatal
 - Two sentinel events, diagnosis and death
 - One followed the other within months
- **2011:** HIV is a long-term chronic disease
 - Rarely diagnosed in the acute phase
 - Asymptomatic for many years
 - Survival measured in decades (people living now will live to see the 60th anniversary of AIDS)
- It is transmissible at every stage of infection
 - Transmission efficiency is related to VL in PLWHA
 - Community incidence is driven by combination of behavior and VL in the prevalence pool

Milestones in HIV



→ First WB+

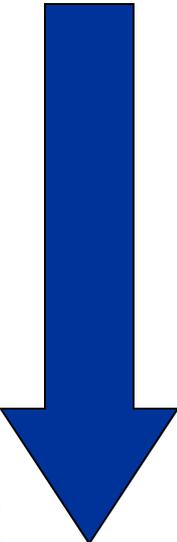
→ Initiation of care = first CD4 or VL

→ Initiation of ART = first CD4 < 350 (500)

→ First undetectable VL

→ First [®] genotype

→ Serial CD4s, VLs and genotypes



→ AIDS (first CD4 < 200)

→ Death

Questions that can be answered by comprehensive laboratory surveillance

- Incident diagnosis: *New vs. previously reported WB+*
- Possible AHI: *High VL in person with no WB*
- Stage of disease at diagnosis: *CD4 <200 = AIDS*
- Eligible for ART: *CD4 <500, VL >100K*
- Time from ART to undetectable VL: *Days to VL = UND*
- ART resistance:
 - *TDR = (R) genotype within 3 months of initial diagnosis*
 - *Time to (R) in new diagnosis with CD4 <350/500 (initiation of ART)*
 - *(R) in prevalence pool*
- Progression to AIDS: *Time from HIV dx to CD4 <200*
- Mortality
 - *By CD4, VL at initial diagnosis*
 - *By year of diagnosis (cohort analysis)*
 - *By cause (HIV-related vs. non-related)*

Questions that NAS is Asking

- How many *new* diagnoses of HIV in *your state*?
- What % is delayed dx (concurrent HIV/AIDS)?
- What % initiates care within 3 months?
 - What % initiating care is already eligible for ART? (CD4 < 500, VL > 100,000, comorbidity, e.g., HBV)?
- What % suppresses VL and how fast?
- What % is retained in care over time?
- Two sentinel end points: AIDS, death
 - Is time between dx and AIDS increasing?
- *Is incidence declining?*

What are the Indicators that Surveillance Will Use to Answer to these Questions?

Routinely reported labs

- WB+ = New Diagnosis of HIV
 - Case matches to existing record in Registry
 - Case does not match = 'new to HARS'=new dx
- CD4 = Stage of disease at diagnosis
 - Date of first CD4 indicates initiation of care
 - CD4<350 (500) indicates eligibility for ART
 - CD4<200 = AIDS
- VL = diagnostic tool, therapeutic monitoring tool
 - Possible New diagnosis of AHI
 - Initial or follow-up indicator of care
 - Undetectable VL in individual
 - CVL by jurisdiction, neighborhood, zip

Examples of Surveillance Analyses that Coincide with NAS Goals

Routinely published reports

Publications in the peer-reviewed literature

New Diagnoses of HIV

- Question: Does expanded HIV testing per TNT increase new diagnoses of HIV?

EPIDEMIOLOGY AND SOCIAL SCIENCE

Most Positive HIV Western Blot Tests Do Not Diagnose New Cases in New York City: Implications for HIV Testing Programs

David B. Hanna, MS, Benjamin W. Tsoi, MD, MPH,† and Elizabeth M. Begier, MD, MPH**

Objective: To evaluate HIV testing efforts based on surveillance data.

Methods: We determined the contribution of new diagnoses to all positive confidential HIV-1 Western blotting conducted in New York City between 2004 and 2006 based on clinical history recorded in the HIV Surveillance Registry, by testing site type.

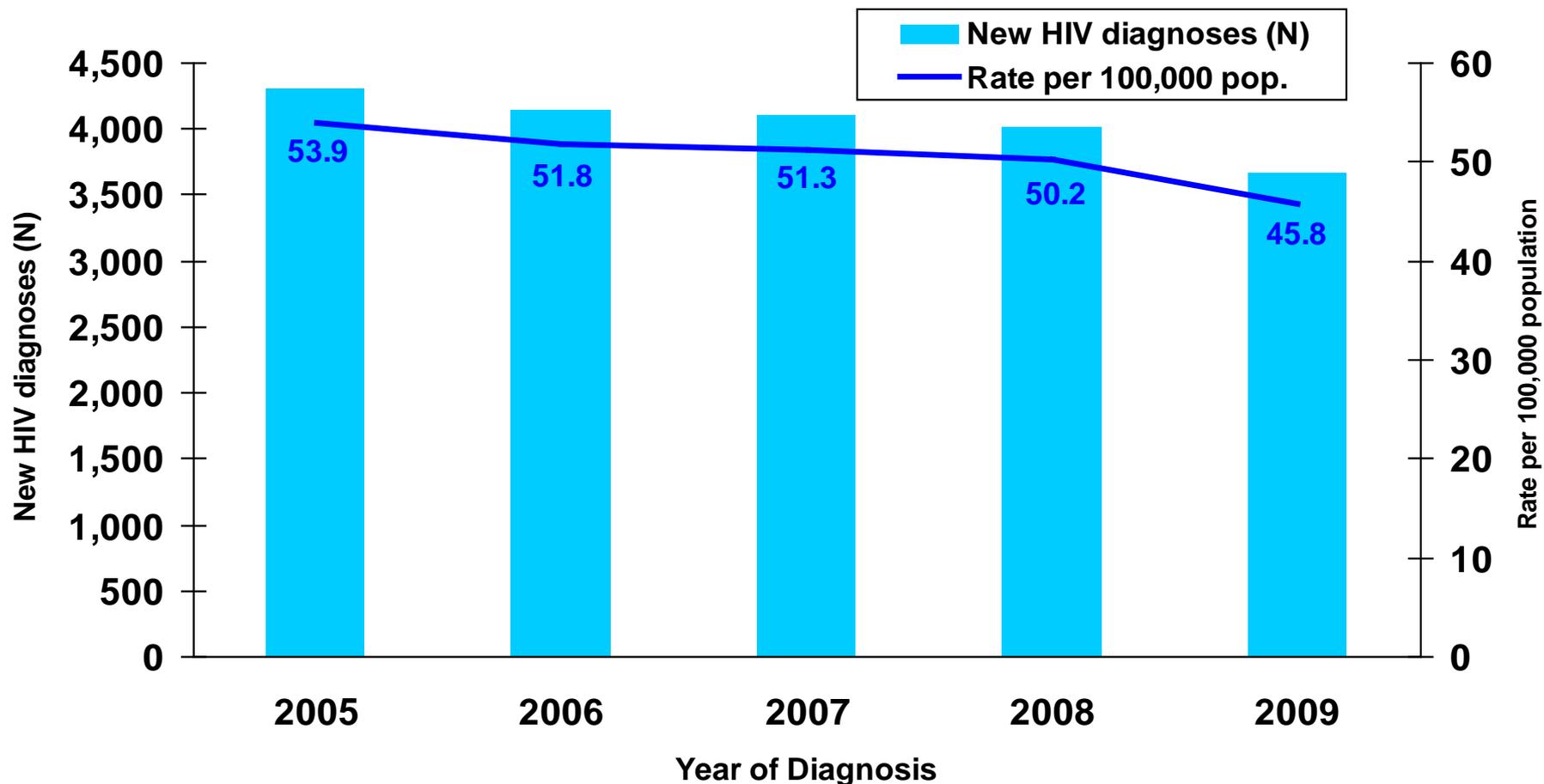
Results: Of 31,504 positive Western blots reported and linked to Registry cases, 36.8% were new diagnoses and 63.2% were repeat positive tests. City health department clinics and private physicians' offices reported greater proportions of new diagnoses than other testing sites (64.4% and 58.3% vs. 31.1%). The percentage of positive tests at health department clinics that were new diagnoses increased from 59.8% in 2004 to 69.0% in 2006 ($P = 0.001$), coinciding with efforts to expand HIV testing. Repeat positive testers were significantly older, more likely to have an injection drug use

INTRODUCTION

An estimated 5%–21% of persons who are HIV infected have not been recently tested for HIV and therefore are not aware of their status.^{1,2} Identifying these people is central to HIV prevention efforts in the United States because those unaware of their status are believed to be over 3 times more likely to transmit HIV sexually than those aware of their status.³ A focus of HIV prevention has been to develop and support programs to diagnose those not aware of their status,⁴ including recruitment of at risk persons from social networks of already known positives,⁵ partner counseling and referral services,⁶ and increased HIV testing.⁷ Such initiatives aim to identify persons not previously known to be HIV infected rather than those already aware.

Recently, improvements in rapid HIV test technology⁸ and the implementation of recent Centers for Disease Control

New HIV Diagnoses, NYC 2005-2009

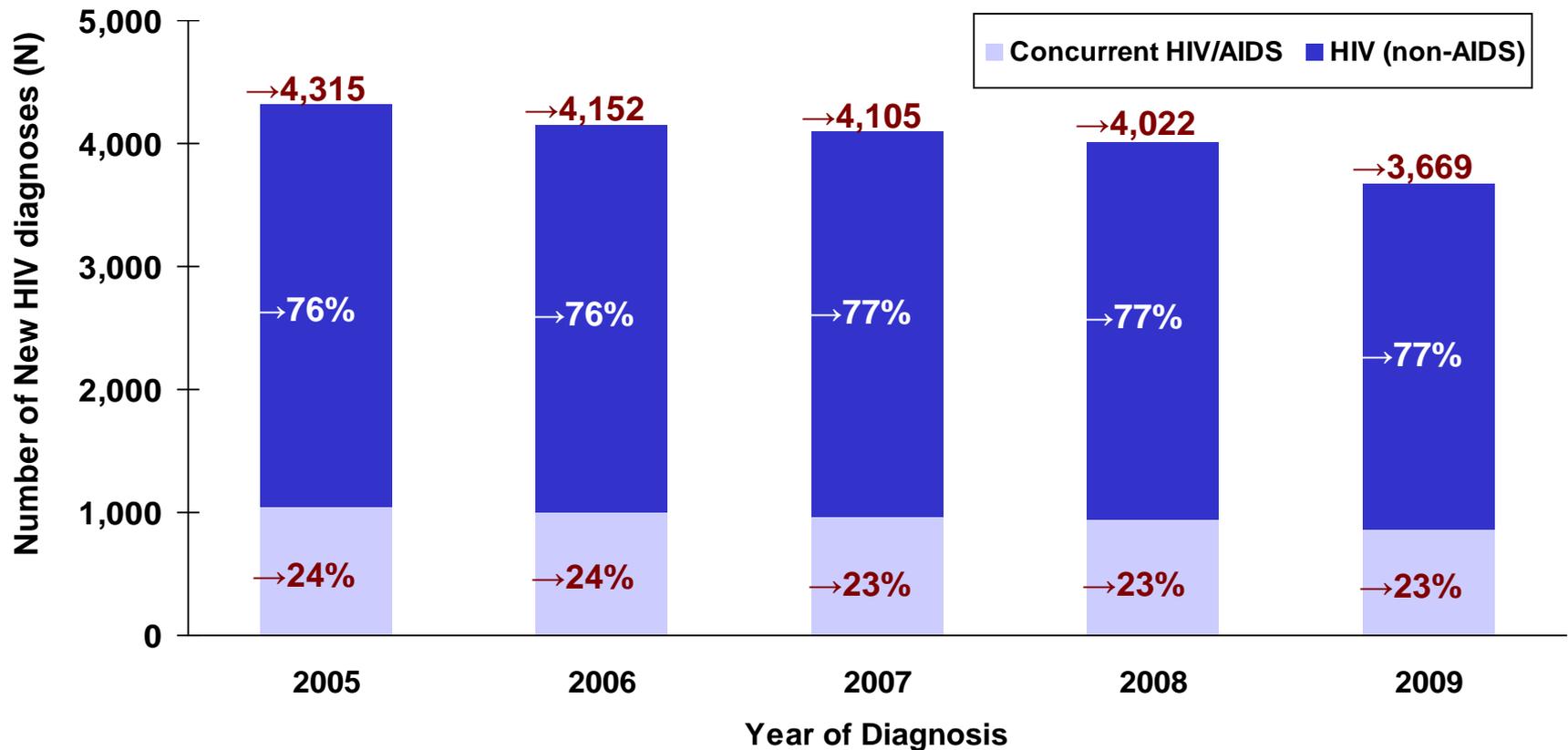


→ The number of new HIV diagnoses has been decreasing from 2005 to 2009 but is still over 3,700 each year.

→ Rate based on 2000 Census population.

→ As reported to the New York City Department of Health and Mental Hygiene by September 30, 2010.

Concurrent HIV/AIDS Diagnoses as Percent of Total HIV Diagnoses, NYC 2005-2009



→ Since 2005, nearly one-quarter of those diagnosed with HIV are concurrently diagnosed with AIDS.

→ As reported to the New York City Department of Health and Mental Hygiene by September 30, 2010.

Concurrent Diagnosis of HIV and AIDS

- Questions: What are the risk factors for delayed dx of HIV? Is expanded testing reducing the number of concurrent dx?

Paper #:

964



Title:

Risk Factors for Concurrent Diagnosis of HIV/AIDS in New York City, 2004: The Role of Age, Transmission Risk, and Country of Birth

Authors

L Torian and Ellen Wiewel*

and

New York City Dept of Hlth and Mental Hygiene, New York, NY, US

Affiliations:

Concurrent Diagnosis: Missed Opportunities for Earlier Detection

ORIGINAL STUDY

Barriers to HIV Testing Among HIV/AIDS Concurrently Diagnosed Persons in New York City

Caroline W. Mills, MPH, Charulata J. Sabharwal, MD, MPH, Chi-Chi Udeagu, MPH, Angelica Bocour, MPH, Sara Bodach, MPH, Colin Shepard, MD, and Elizabeth M. Begier, MD, MPH

Objectives: To assess barriers to human immunodeficiency virus (HIV) testing, health care contacts history, and HIV testing history among patients diagnosed concurrently with HIV and acquired immunodeficiency syndrome (AIDS).

Methods: We surveyed patients concurrently diagnosed with HIV/AIDS who had participated in the partner notification program of the New York City Department of Health and Mental Hygiene, between January 2008 and December 2008.

Results: The most common reason interviewees volunteered for delaying testing (64%) was that they did not believe they were at risk for HIV. When read a list of potential barriers, 69% of interviewees replied affirmatively that they did not test for HIV because they did not believe they were at risk, and 52% replied affirmatively that they did not test because they thought their behaviors kept them safe from getting HIV. Half of all interviewees reported having insurance during part or all of the year before they were diagnosed with HIV/AIDS, and 70% had at least 1 health care visit in the year before they were diagnosed with HIV/AIDS.

Conclusions: A lack of perception of risk was the most common reason for not testing for HIV sooner among these concurrently diagnosed patients. The majority of these patients were accessing medical care, indicating that this population could have benefited from routine HIV testing.

In 2008, 3809 persons in New York City (NYC) were newly diagnosed with human immunodeficiency virus (HIV), of whom 24.6% were concurrently diagnosed with acquired immunodeficiency syndrome (AIDS) (within 31 days of HIV diagnosis).¹ About a quarter of new diagnoses of HIV in the past several years in NYC have been concurrent diagnoses.¹ In the United States, late diagnosis of HIV represents a substantial proportion of new diagnoses.²⁻⁴ Without treatment, the mean time between HIV diagnosis and development of AIDS is 10 years,⁵ indicating that a concurrent diagnosis usually represents years of missed opportunities when infected persons could have initiated treatment and lowered their chances of HIV-related

to others because knowledge of one's HIV-positive status reduces risk behavior on average by 50%.⁸⁻¹⁰

Medical and billing record studies have demonstrated that a majority of persons diagnosed with HIV have medical encounters before their diagnosis but are not tested,¹¹⁻¹³ supporting the Centers for Disease Control and Prevention (CDC) recommendation for opt-out routine HIV screening for all patients aged 13 to 64 years.¹⁴ Prior studies have examined patient-level barriers to testing among HIV negative or status unknown persons.¹⁵⁻²¹ However, very few studies have explored the barriers for individuals concurrently diagnosed with HIV and AIDS ("late testers"), and these studies are limited by small sample size.^{22,23} We undertook this survey to describe reasons for delayed HIV testing and missed opportunities for testing among individuals concurrently diagnosed with HIV and AIDS in NYC.

METHODS

Study Sample and Data Collection

Concurrently diagnosed persons were identified from patients participating in the NYC Department of Health and Mental Hygiene's (NYC DOHMH) HIV partner notification (PN) program, which provides PN and linkage to care services, between January 1, 2008 to December 31, 2008.²⁴ As part of this program, NYC DOHMH staff members were stationed to 8 hospitals in 3 NYC neighborhoods most affected by the HIV epidemic (South Bronx, Central Brooklyn, and Harlem) and NYC's main jail complex (Rikers Island).

Concurrent diagnosis was defined as an AIDS-defining CD4 count (<200 cells/mL or CD4% <14) within 90 days of first HIV diagnosis; 90 days duration was considered rather than 31 days, the NYC standard,⁶ for a larger participant pool. The presence of AIDS-defining opportunistic illnesses was not assessed for eligibility because available data on these illnesses were unreliable.

Concurrent Diagnosis of HIV/AIDS

- Question: How can surveillance distinguish between rapid progression and late dx?

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ORIGINAL ARTICLE

Impact of Accelerated Progression to AIDS on Public Health Monitoring of Late HIV Diagnosis

Charulata J. Sabharwal, M.D., M.P.H.¹, Kent Sepkowitz, M.D.¹, Rashmi Mehta,² Colin Shepard, M.D.,¹
Sara Bodech, M.P.H.¹, Lucia Tofani, Ph.D.,¹ and Elizabeth M. Begler, M.D., M.P.H.¹

Abstract

Some patients develop AIDS within a year of HIV infection ("accelerated progression"). Classifying such cases as late HIV diagnosis may lead to inaccurate evaluation of HIV testing efforts. We sought to determine this group's contribution to overall late diagnosis rates. To identify cases of accelerated progression (development of AIDS within 12 months of a negative HIV test), we reviewed published HIV seroconverter cohort studies and used New York City's (NYC) HIV/AIDS surveillance registry. From the literature review, three seroconverter cohort studies revealed that 1.0–3.6% of participants had accelerated progression to AIDS. Applying this frequency estimate to the number of new infections in NYC (4762) for 2006 calculated by the Centers for Disease Control and Prevention's incidence formula, we estimated that 3.6–13.0% of 1317 NYC HIV cases who are diagnosed with AIDS within 12 months of HIV diagnosis are accelerated progressors, not persons HIV infected for many years who did not test and present with AIDS (i.e., delayed diagnosis). In addition, our analysis of the 2006 NYC surveillance registry confirmed the occurrence of accelerated progression in a population-based setting: 67 accelerated progressors were reported and 9 (13%) could be confirmed through follow-up medical record review. With increased HIV testing initiatives, the irreducible proportion of AIDS cases with accelerated progression must be considered when interpreting late diagnosis data.

Introduction

The Centers for Disease Control and Prevention (CDC) routinely estimates the number and proportion of persons with HIV whose diagnosis was made late in the course of the disease by examining trends among persons

progressors^{1,2} have not progressed to AIDS after 10 or more years of untreated HIV infection, while other HIV-infected persons, referred to as "rapid progressors" in the literature, progress to AIDS within 5 years of infection.³ Included among these published observations of rapid progressors are HIV-infected individuals who progress to AIDS within 1 year of

Initiation of Care

- What proportion of newly diagnosed persons initiate care within 3 months?

ORIGINAL INVESTIGATION

Risk Factors for Delayed Initiation of Medical Care After Diagnosis of Human Immunodeficiency Virus

Lucia V. Torian, PhD; Ellen W. Wiewel, MHS; Kai-Lih Liu, PhD; Judith E. Sackoff, PhD; Thomas R. Frieden, MD, MPH

Background: The full benefit of timely diagnosis of human immunodeficiency virus (HIV) infection is realized only if there is timely initiation of medical care. We used routine surveillance data to measure time to initiation of care in New York City residents diagnosed as having HIV by positive Western blot test in 2003.

Methods: The time between the first positive Western blot test and the first reported viral load and/or CD4 cell count or percentage was used to indicate the interval from initial diagnosis of HIV (non-AIDS) to first HIV-related medical care visit. Using Cox proportional hazards regression, we identified variables associated with delayed initiation of care and calculated their hazard ratios (HRs).

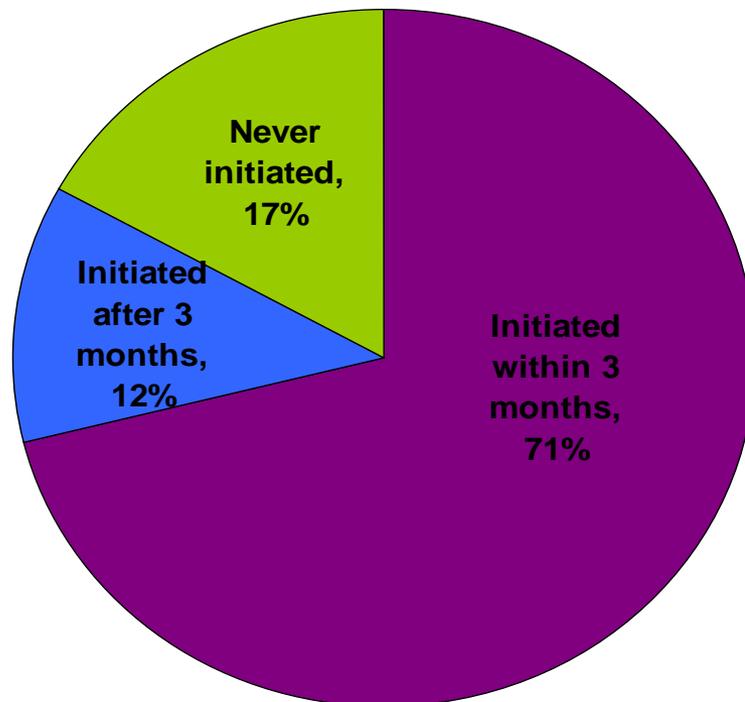
Results: Of 1928 patients, 1228 (63.7%) initiated care within 3 months of diagnosis, 369 (19.1%) initiated care later than 3 months, and 331 (17.2%) never initiated care. Predictors of delayed care were as follows: diagno-

sis at a community testing site (HR, 1.9; 95% confidence interval [CI], 1.5-2.3), the city correctional system (HR, 1.6; 95% CI, 1.2-2.0), or Department of Health sexually transmitted diseases or tuberculosis clinics (HR, 1.3; 95% CI, 1.1-1.6) vs a site with colocated primary medical care; nonwhite race/ethnicity (HR, 1.8; 95% CI, 1.5-2.0); injection drug use (HR, 1.3; 95% CI, 1.1-1.5); and location of birth outside the United States (HR, 1.1; 95% CI, 1.0-1.2).

Conclusions: A total of 1597 persons (82.8%) diagnosed as having HIV in 2003 ever initiated care, most within 3 months of diagnosis. Initiation of care was most timely when diagnosis occurred at a testing site that offered colocated medical care. Improving referrals by nonmedical sites is critical. However, because most diagnoses occur in medical sites, improving linkage in these sites will have the greatest effect on timely initiation of care.

Arch Intern Med. 2008;168(11):1181-1187

Initiation of care by persons newly diagnosed with HIV (non-AIDS) in NYC, 2008



Among persons newly diagnosed with HIV (non-AIDS), 71% initiated HIV primary care within three months of diagnosis.

Among 2,591 NYC residents newly diagnosed with HIV (non-AIDS) in 2008 who survived at least three months after diagnosis.

Continuity of Care: Can we successfully retain patients in care?

APC-2010-0151-Torian_1P.3D 01/05/11 11:49am Page 1

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ORIGINAL ARTICLE

Continuity of HIV-Related Medical Care, New York City, 2005–2009: Do Patients who Initiate Care Stay in Care?

Lucia V. Torian, Ph.D., and Ellen W. Wiewel, M.H.S.

Abstract

In this era of effective antiretroviral therapy, early diagnosis of HIV and timely linkage to and retention in care are vital to survival and quality of life. Federal guidelines recommend regular monitoring of HIV-related laboratory parameters and initiation of antiretroviral treatment at specified thresholds. We used routinely reported laboratory data to measure intervals between visits by New York City residents newly diagnosed with HIV July 1 to September 30, 2005, and initiating care within 3 months of diagnosis. We measured regular care (≥ 1 visit every 6 months) and retention in care (last visit ≤ 6 months before close of analysis) through June 30, 2009. Patients were followed for 45–48 months. Seventy-seven percent (650/842) of patients initiated care within 3 months of diag-

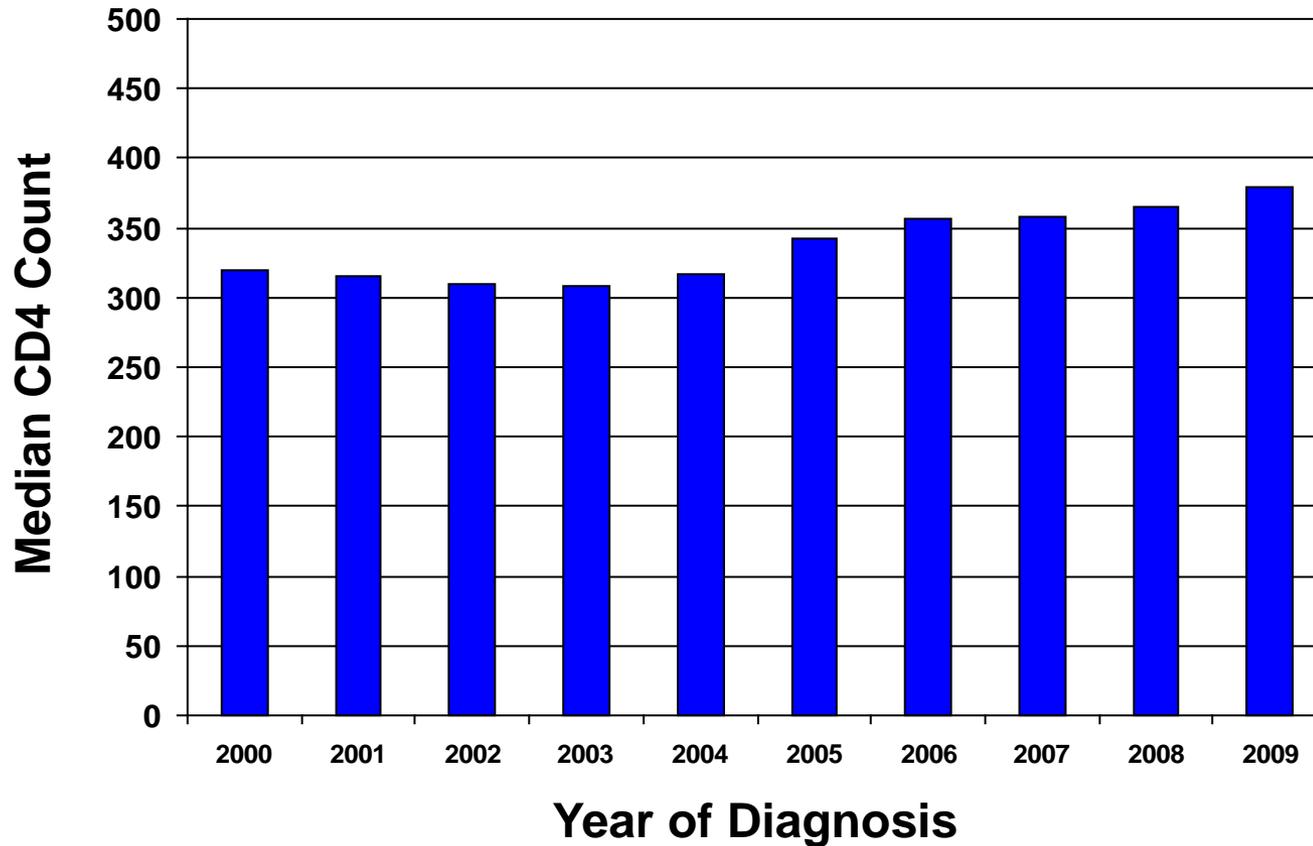
Continuity of Care is Suboptimal

- Only 45% have regular care (q6mo); 78% retained in care over 4 years of F/U
- Despite: 32 DACS (all located in high-prevalence neighborhoods except Chelsea, W Village), best public transportation, full range of RW and case management services, best ADAP and benefits package in US
- How can we implement TNT or PrEP if this is so?
 - Patients: utilization of care is irregular and discontinuous
 - Physicians: access to patient history, management of ART
- Do we need to **open the registry** to assist with patient management, initiation and/or return to care, etc., e.g., use registry as universal ELR?

Early Detection

- Is increased testing bringing in the low-hanging fruit?
 - Patients who are known HIV+ but have dropped out of care
 - Patients who have already progressed to AIDS and present to ER with AIDS-defining illness
 - or...
- Are we succeeding at
 - Early detection
 - Routine or “universal” testing
- How to measure?
 - New to HARS
 - Median first CD4 after diagnosis

Median First CD4 Count after New Diagnosis of HIV, 2000-2009



What is the prevalence of ARV resistance in newly diagnosed persons?

Antiretroviral Drug Resistance among Newly-Diagnosed HIV Cases in New York State, 2006-2008

DE Gordon¹, AC Readhead², ZY Wang¹, KS Brousseau¹, BJ Anderson¹, MA Kouznetsova¹, LC Smith¹ and LV Torian²

¹New York State Department of Health, Albany, New York ²New York City Department of Health and Mental Health Hygiene

Contact: Daniel Gordon
Bureau of HIV/AIDS Epidemiology
AIDS Institute
NYS Department of Health
Corning Tower, ESP
Albany, NY 12237
deg02@health.state.ny.us

Background and Data Sources

Genotypic antiretroviral (ARV) drug resistance during initial medical evaluation of a person newly diagnosed with HIV is recommended in US DHHS "Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents."

Estimates of adherence to these recommendations are possible using genotypic resistance data routinely reported to the New York State (NYS) Department of Health. Biomedical laboratories have been required since June 2005 to report to protease and reverse transcriptase gene sequences from clinical genotypic ARV drug resistance tests (DRT) performed on NYS residents or ordered by NYS providers.

This analysis used routinely collected genotype data, merged with the combined surveillance registries of New York State and New York City. Data are gathered from medical record reviews, physician reporting and mandated laboratory reporting of confirmed positive HIV antibody tests, all viral load and CD4 tests, and HIV antiretroviral drug resistance test gene sequences.

Cases were defined as 'in-care' if a viral load, CD4 or resistance test was recorded within 3 months of diagnosis.

Results (1)

- Out of 13,109 newly diagnosed HIV cases,
 - 32% (4,155) had a reported ARV DRT within 3 months of diagnosis ("Initial Test")
 - 43% of cases in care had an initial test.

Frequency of ARV genotypic drug resistance testing within 3 months of HIV diagnosis

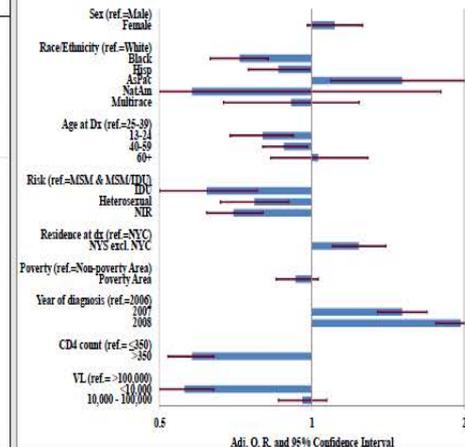
Results (2)

Initial ARV drug resistance testing among cases in care is associated with race/ethnicity, age, transmission risk, region of residence and stage of illness.

HIV ARV drug resistance testing within 3 months of diagnosis, cases in care age ≥13 Years, New York State, 2006-2008
Odds ratios and 95% confidence intervals

	Crude		Adjusted	
	O. R.	95% C. I.	O. R.	95% C. I.
Sex (reference=Male)				
Female	0.81	(0.74 - 0.90)	1.11	(0.98 - 1.26)
Race/Ethnicity (Reference=White)				
Black	0.62	(0.55 - 0.70)	0.72	(0.63 - 0.82)
Hispanic	0.78	(0.69 - 0.89)	0.86	(0.75 - 0.99)
Asian/P.Nat. Am.	1.54	(1.13 - 2.11)	1.51	(1.09 - 2.09)
Native American	0.77	(0.26 - 2.31)	0.58	(0.19 - 1.80)
Multi-Race	0.83	(0.65 - 1.18)	0.91	(0.67 - 1.24)
Age at HIV Diagnosis (reference=25-39)				
13-24	0.73	(0.64 - 0.83)	0.80	(0.69 - 0.92)
40-59	0.91	(0.83 - 1.01)	0.88	(0.80 - 0.96)
60+	1.07	(0.87 - 1.32)	1.03	(0.83 - 1.29)
Risk (reference=MSM&MSM/IDU)				
IDU	0.65	(0.53 - 0.80)	0.62	(0.50 - 0.78)
Heterosexual	0.77	(0.68 - 0.87)	0.77	(0.66 - 0.90)
Unknown	0.70	(0.63 - 0.78)	0.70	(0.62 - 0.80)
Residence (reference=New York City)				
NYS excl. NYC	1.41	(1.27 - 1.57)	1.24	(1.10 - 1.40)
Poverty (reference=Non-poverty Area)				
Poverty Area	0.76	(0.70 - 0.83)	0.93	(0.85 - 1.03)
Year of Diagnosis (reference=2006)				
2007	1.51	(1.35 - 1.68)	1.51	(1.35 - 1.69)
2008	1.86	(1.67 - 2.07)	1.97	(1.76 - 2.21)
CD4 Count (reference=≥350)				
>350	0.53	(0.48 - 0.58)	0.58	(0.52 - 0.64)
VL (reference=>100,000)				
<10,000	0.43	(0.38 - 0.48)	0.56	(0.49 - 0.64)
10,000 - 100,000	0.84	(0.76 - 0.94)	0.95	(0.86 - 1.07)

Adjusted odds ratios of initial HIV ARV drug resistance testing, cases in care age ≥13 years, New York State, 2006-2008



Multivariate logistic regression was used to assess the association of patient characteristics with the likelihood of having a DRT within 3 months after diagnosis.

- The regression analysis was restricted to cases in care for whom complete data were available.

Can We Reduce HIV-Related Morbidity and Mortality?

PLWA and “Normal” Aging

Annals of Internal Medicine

ARTICLE

Causes of Death among Persons with AIDS in the Era of Highly Active Antiretroviral Therapy: New York City

Judith E. Sackoff, PhD; David B. Hanna, MS; Melissa R. Pfeiffer, MPH; and Lucia V. Torian, PhD

Background: Monitoring the full spectrum of causes of death among persons with AIDS is increasingly important as survival improves because of highly active antiretroviral therapy.

Objective: To describe recent trends in deaths due to HIV-related and non-HIV-related causes among persons with AIDS, identify factors associated with these deaths, and identify leading causes of non-HIV-related deaths.

Design: Population-based cohort analysis.

Setting: New York City.

Patients: All adults (age ≥ 13 years) living with AIDS between 1999 and 2004 who were reported to the New York City HIV/AIDS Reporting System and Vital Statistics Registry through 2004 ($n = 68\ 609$).

Measurements: Underlying cause of death on the death certificate.

Results: Between 1999 and 2004, the percentage of deaths due to non-HIV-related causes increased by 32.8% (from 19.8% to 26.3%; $P = 0.015$). The age-adjusted mortality rate decreased by 49.6 deaths per 10 000 persons with AIDS ($P < 0.001$) annually for HIV-related causes but only by 7.5 deaths per 10 000 persons with

AIDS ($P = 0.004$) annually for non-HIV-related causes. Of deaths due to non-HIV-related causes, 76% could be attributed to substance abuse, cardiovascular disease, or a non-AIDS-defining type of cancer. Compared with men who have sex with men, injection drug users had a statistically significantly increased risk for death due to HIV-related causes (hazard ratio, 1.59 [95% CI, 1.49 to 1.70]) and non-HIV-related causes (hazard ratio, 2.54 [CI, 2.24 to 2.87]).

Limitations: Compared with autopsy and chart review, death certificates may lack specificity in the underlying cause of death or detailed clinical and treatment-related information.

Conclusions: Non-HIV-related causes of death account for one fourth of all deaths of persons with AIDS. Cardiovascular disease, non-AIDS-defining cancer, and substance abuse account for most non-HIV-related deaths. Reducing deaths from these causes requires a shift in the health care model for persons with AIDS from a primary focus on managing HIV infection to providing care that addresses all aspects of physical and mental health.

Ann Intern Med. 2006;145:257-266.

For author affiliations, see end of text.

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Can We Reduce HIV-Related Morbidity and Mortality?

Risk Factors for Short-Term Mortality

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Concurrent HIV/AIDS Diagnosis Increases the Risk of Short-Term HIV-Related Death among Persons Newly Diagnosed with AIDS, 2002–2005

DAVID B. HANNA, M.S., MELISSA R. PFEIFFER, M.P.H., LUCIA V. TORIAN, Ph.D.,
and JUDITH E. SACKOFF, Ph.D.

ABSTRACT

Despite the overall effectiveness and availability of highly active antiretroviral therapy (HAART), 1500 HIV-related deaths still occur annually in New York City. In considering ways to further reduce deaths, we assessed the contribution of concurrent HIV/AIDS diagnosis to HIV-related mortality in New York City among persons newly diagnosed with AIDS. We used Cox regression to conduct a retrospective cohort analysis of HIV-related mortality among 15,211 residents age 13+ reported with AIDS to the population-based HIV/AIDS registry be-

Can We Suppress Individual and Community Viral Load?

- VL Suppression: Citywide, 66% in care achieve undetectable VL within median of six months after date of first CD4 <350 (presume initiation of ART)
- Mean detectable VL and percent undetectable vary by neighborhood and other factors
- Percent suppressed also varies by site of care (hospital vs. PMD vs. free-standing clinic)

NYC Community Viral Load CROI 2011

18th Conference *on Retroviruses and Opportunistic Infections*

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Session 42-Themed Discussion

TD: Community Viral Load

Wednesday, 1-2 pm; Room 312



Paper # 1024

Disparities in Community Viral Load among HIV-infected Persons in New York City

Fabienne Laraque, H Mavronicolas, H Gortakowski, and A Terzian

New York City Dept of Hlth and Mental Hygiene, NY, US

Background: HIV infection continues to be a major problem in New York City, with more than 100,000 living HIV-infected persons and nearly 4000 new cases diagnosed annually. Novel public health approaches are needed to control the epidemic. The NYC Department of Health and Mental Hygiene evaluated community viral load, an aggregate biologic measure of viral load, as a population-level marker to monitor the impact of HIV-control interventions. We hypothesized that groups and areas with high community viral load would be at high risk for HIV infection and have a

NYC Community Viral Load CROI 2011

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Session 42-Themed Discussion

TD: Community Viral Load

Wednesday, 1-2 pm; Room 312

Paper # 1025

Characterizing HIV Viral Load Trajectories among HIV-infected New Yorkers, 2006 to 2007

Arpi Terzian¹, S Bodach¹, E Wiewel¹, S Braunstein¹, K Sepkowitz², V Peters¹, and C Shepard¹

¹New York City Dept of Hlth and Mental Hygiene, NY, US and ²Memorial Sloan-Kettering Cancer Ctr, New York, NY, US

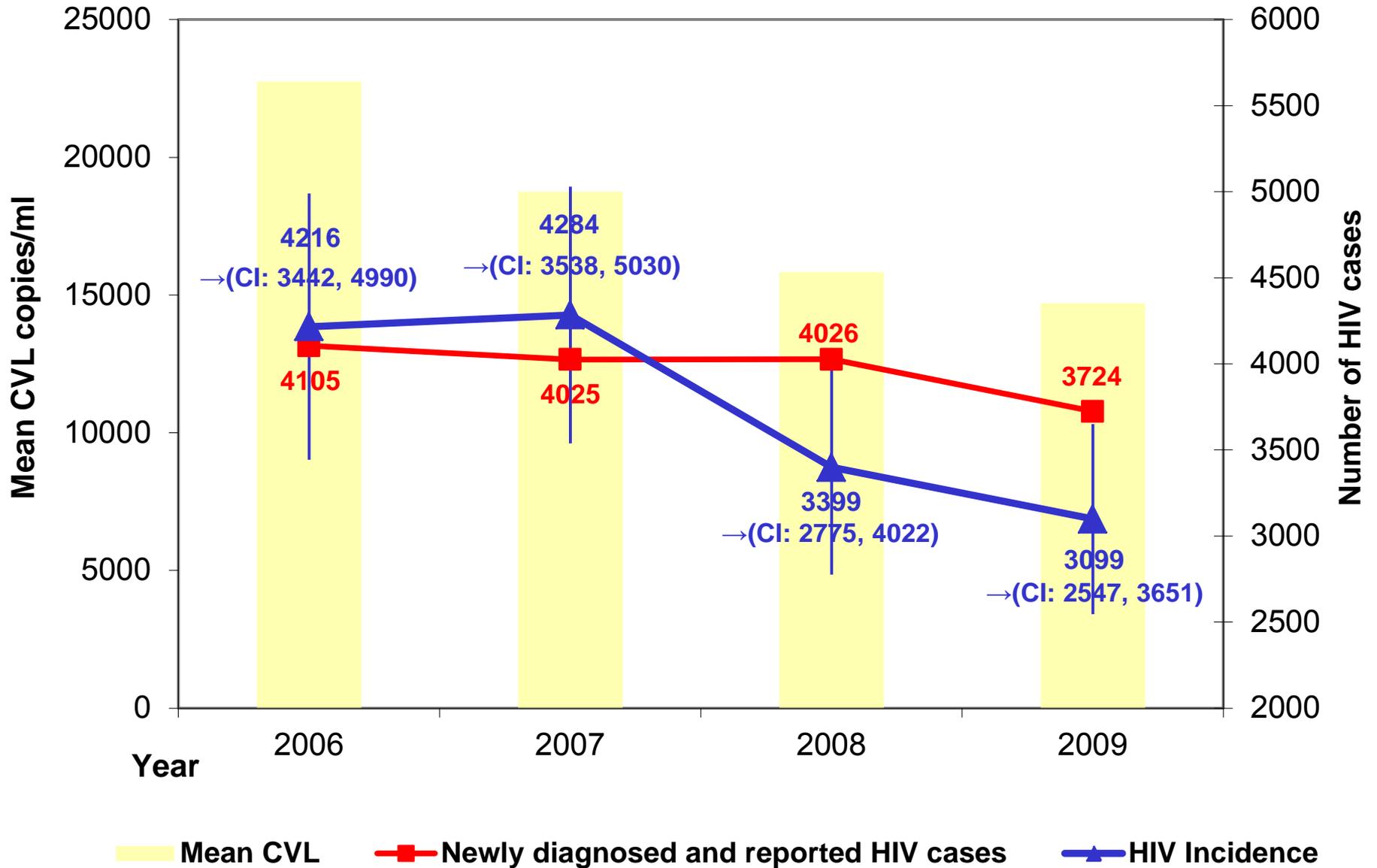
Background: Public health HIV surveillance data can be used to assess population-level efficacy of HIV treatment and prevention efforts, especially in jurisdictions such as New York City (NYC), where all HIV viral load and CD4 results are reportable by law. To determine overall NYC control of viral load, we characterized viral load peaks and trends among all persons living with HIV/AIDS (PLWHA) with ≥ 2 viral load over a 2-year period.

Methods: The NYC HIV Registry (HARS) includes data from all patients with AIDS diagnoses since 1981 and HIV

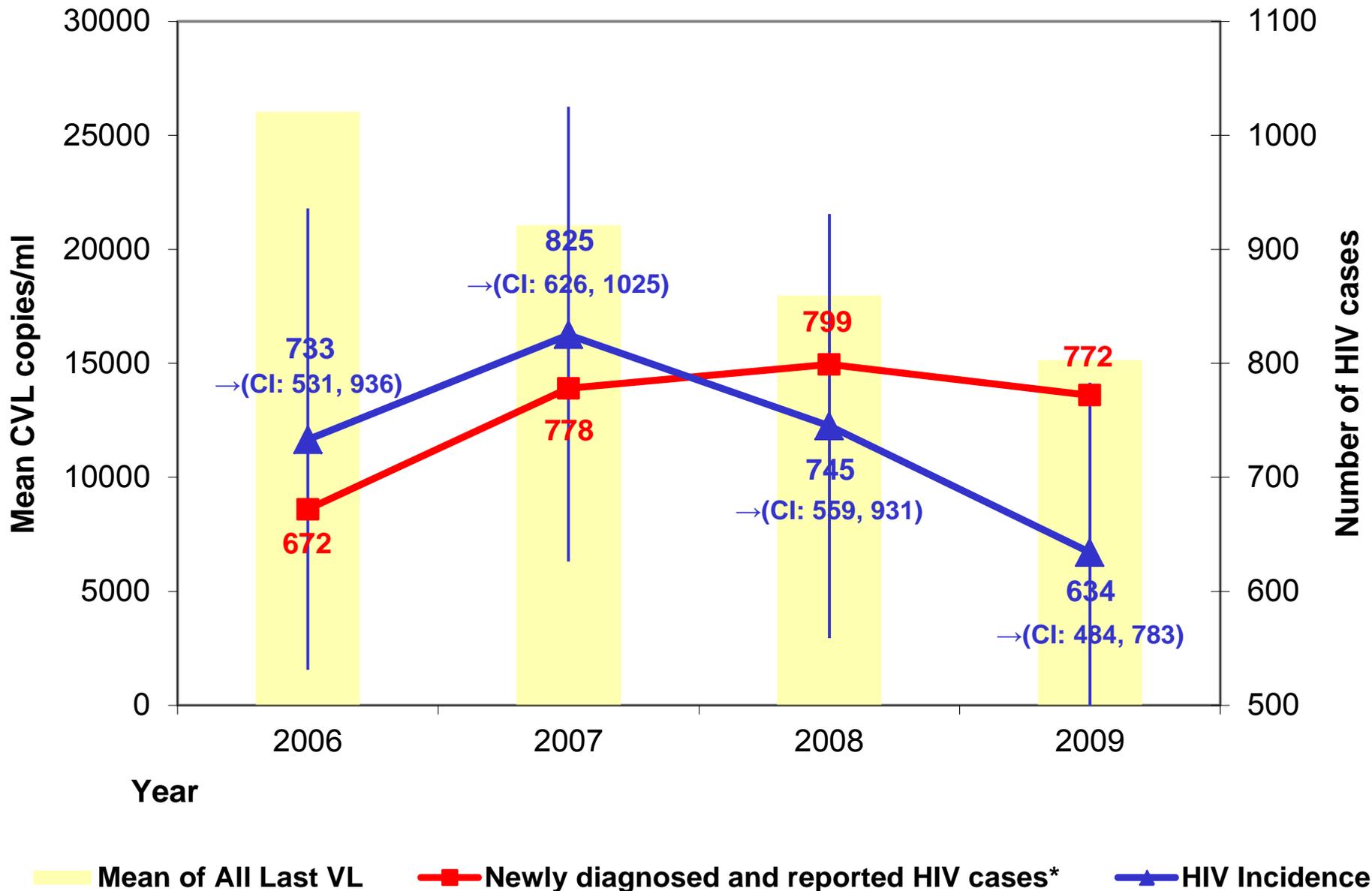
Relationship of Community Viral Load with other Indicators

- All epidemics are local
- NYC CVL, incidence, and new diagnoses reflect NYC epidemic and completeness of surveillance data
- NYC epidemic trajectory differs from national in important ways
- NYC findings on age 13-29 and YBMSM diverge from national

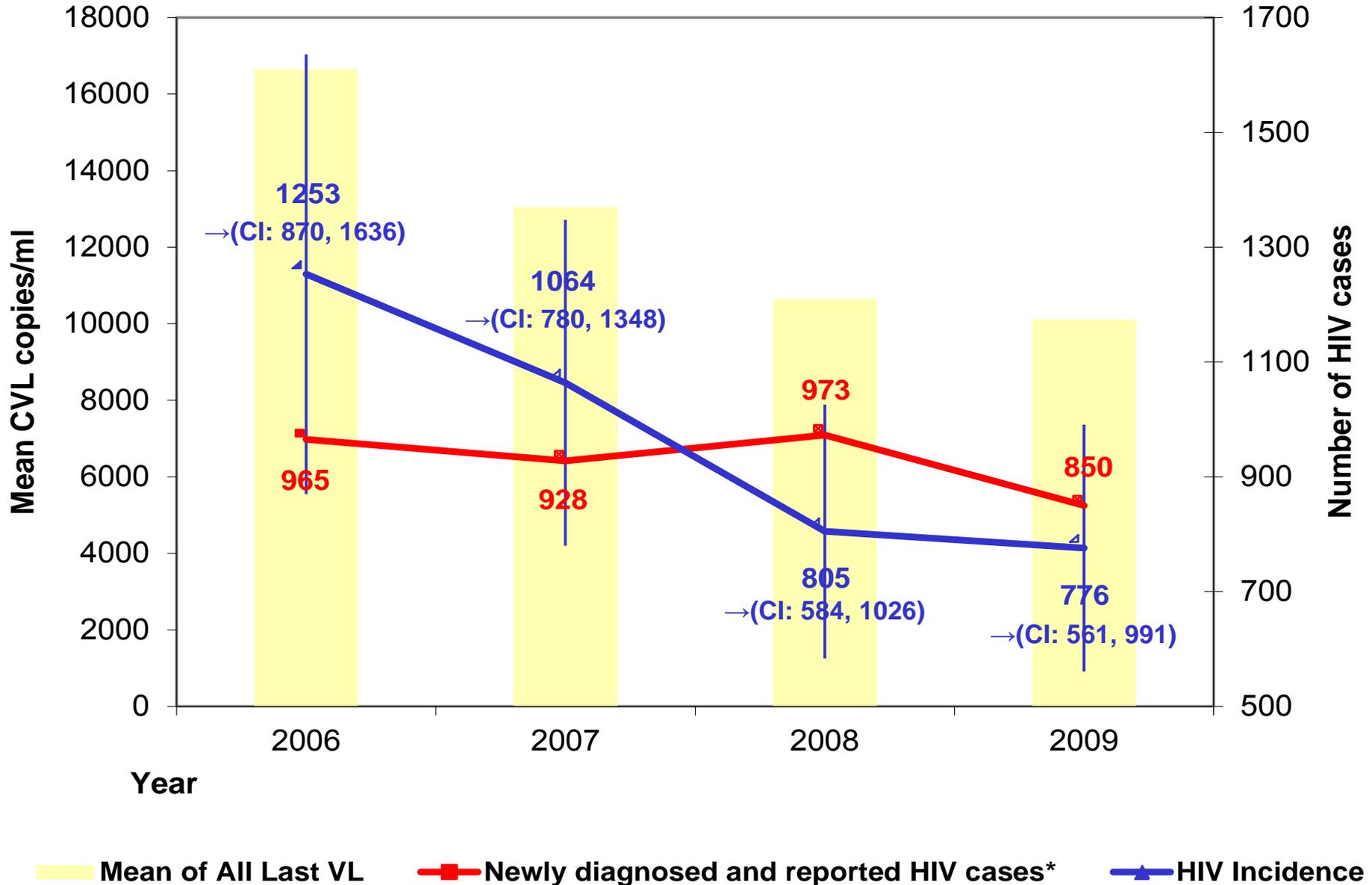
Community Viral Load, New Diagnoses and Estimated Incidence, NYC 2006-2009



Community Viral Load, New Diagnoses and Estimated Incidence, NYC MSM <30, 2006-2009



Community Viral Load, New Diagnoses and Estimated Incidence, NYC MSM 30+, 2006-2009



Conclusion

- Same as slide #2: Surveillance has the data needed to measure the NAS outcomes that really count
- Surveillance routinely performs these analyses
 - Surveillance data were used to identify the problem
 - Surveillance will detect the solutions if and when we achieve them

The next level: Thinking outside the aggregate analysis box

- Surveillance is essentially an ELR on all PLWHA
- It is a resource for the DOH
 - Identification of new cases
 - Partner elicitation, notification and testing
 - Return to care, case management
- It is a potential resource for clinicians – is it time to open the registry to them?
 - Immunization registry
 - A1C registry
- If we are truly serious about epidemic mitigation and control, should we be making greater use of its potential?

Everyone can do this

- Every surveillance system in the US has the data to do this
- Analytic capacity varies from jurisdiction to jurisdiction
- Invest in it – CDC is listening (ELR supplemental, SAS and GIS training) but needs to build infrastructure through *stable* (Coop) funds

Finally,

Thank you

- To the 100+ staff in HIV surveillance who do the shoe-leather epidemiology (field investigations) and data analysis that make our system work
- To all of the doctors and health care providers in NYC who conscientiously report their cases and help us do our job