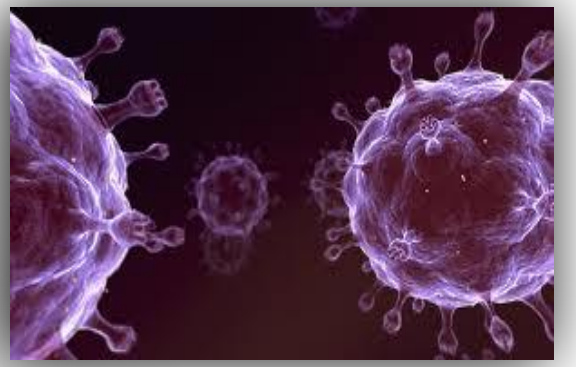
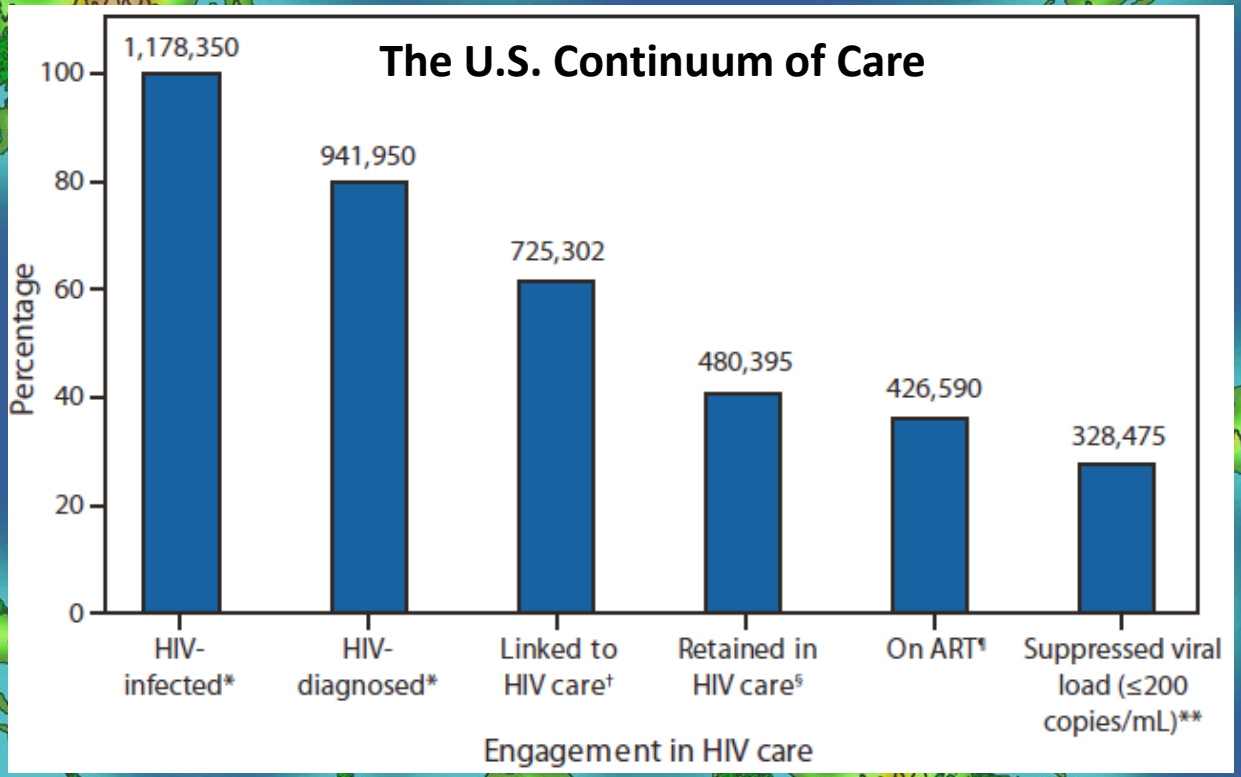
System-Level Change & Population-Based Approaches to Improve HIV Outcomes in NYC



Blayne Cutler, MD PhD
Director, HIV Prevention
Bureau of HIV/AIDS Prevention & Control
NYC Department of Health

The World of Cascade



0 250 500

MMWR. December 2, 2011 / 60(47);1618-1623

Early HIV/AIDS Surveillance in NYC

NEW YORK SURVEILLANCE FIGURES 4-28-82

Men:

Disease	as 1st Dx (March fig.)	Total Dx'd (Mar. fig.)
KS	82 (74)	87 (79)
PCP	53 (47)	70 (62)
Other OI*	18 (16)	44 (39)
Total	153 (137)	

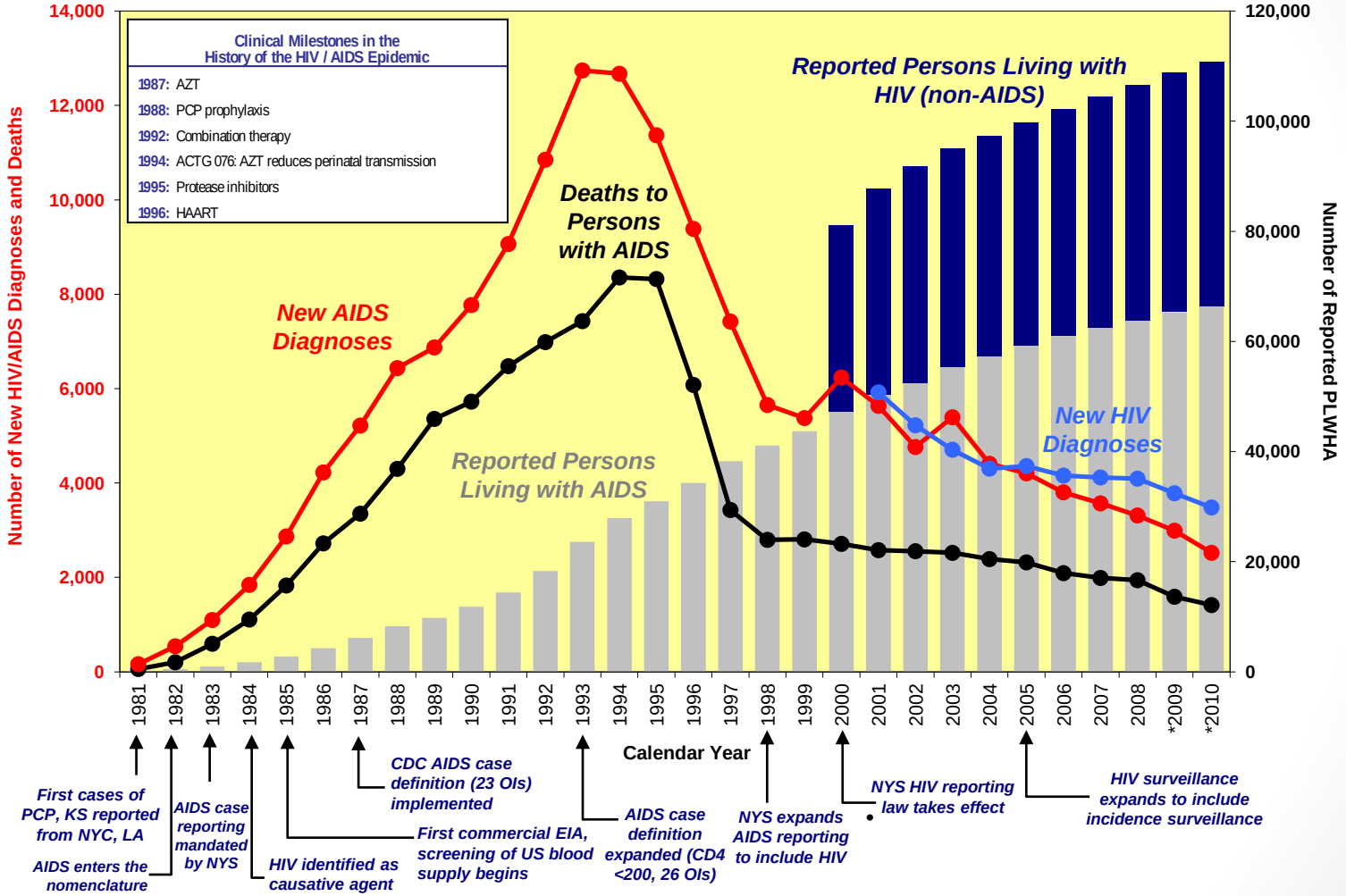
Women:

PCP alone	2
PCP + other OI	3
Other OI	1
	6

Total cases NYC = 159
(Total reported to CDC = 323)

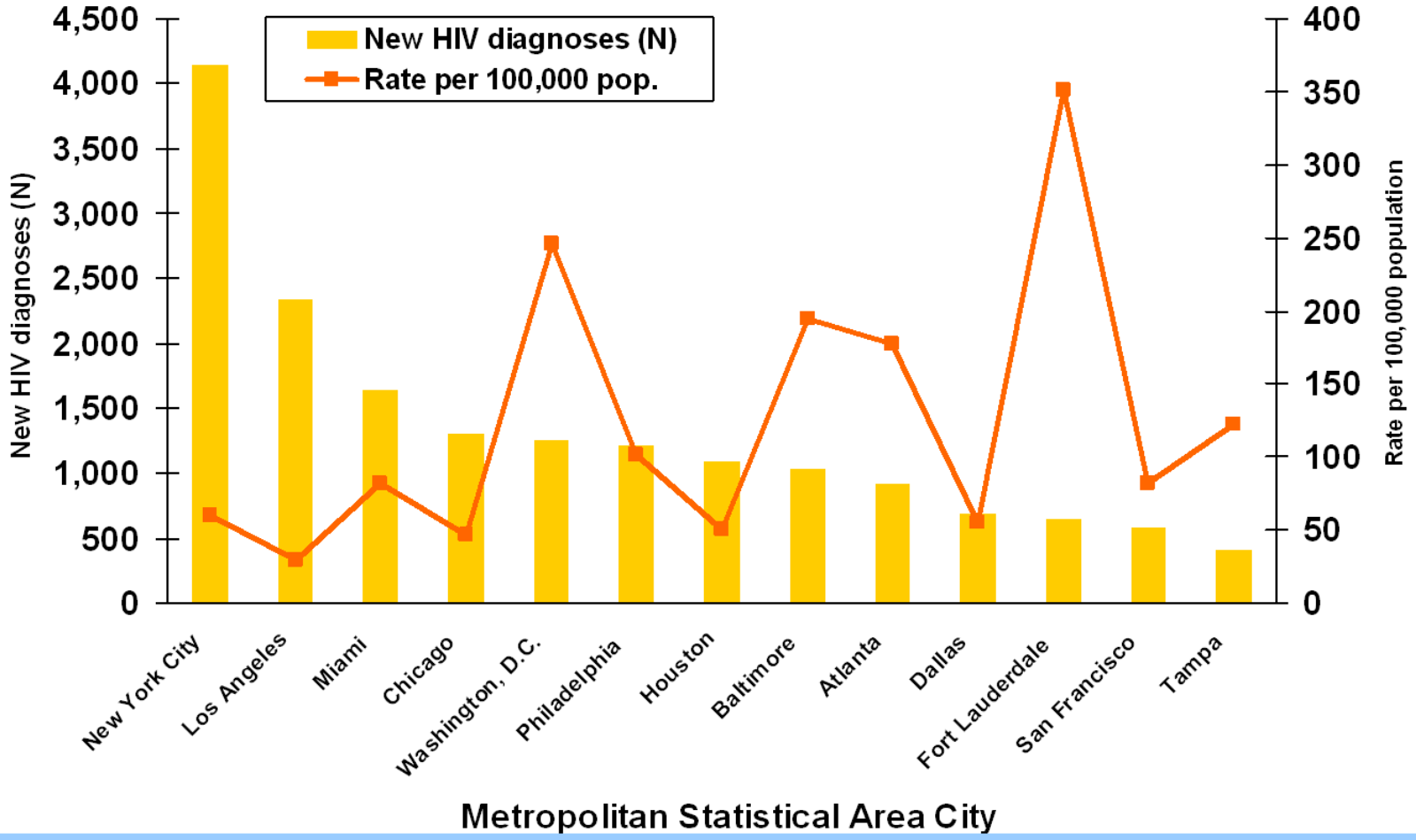
*OI is Opportunistic Infection.

Trends in HIV/AIDS New York City, 1981–2010



As reported to NYC DOHMH by September 30, 2011. PLWHA, Persons living with HIV/AIDS. Data on deaths outside New York City are incomplete.

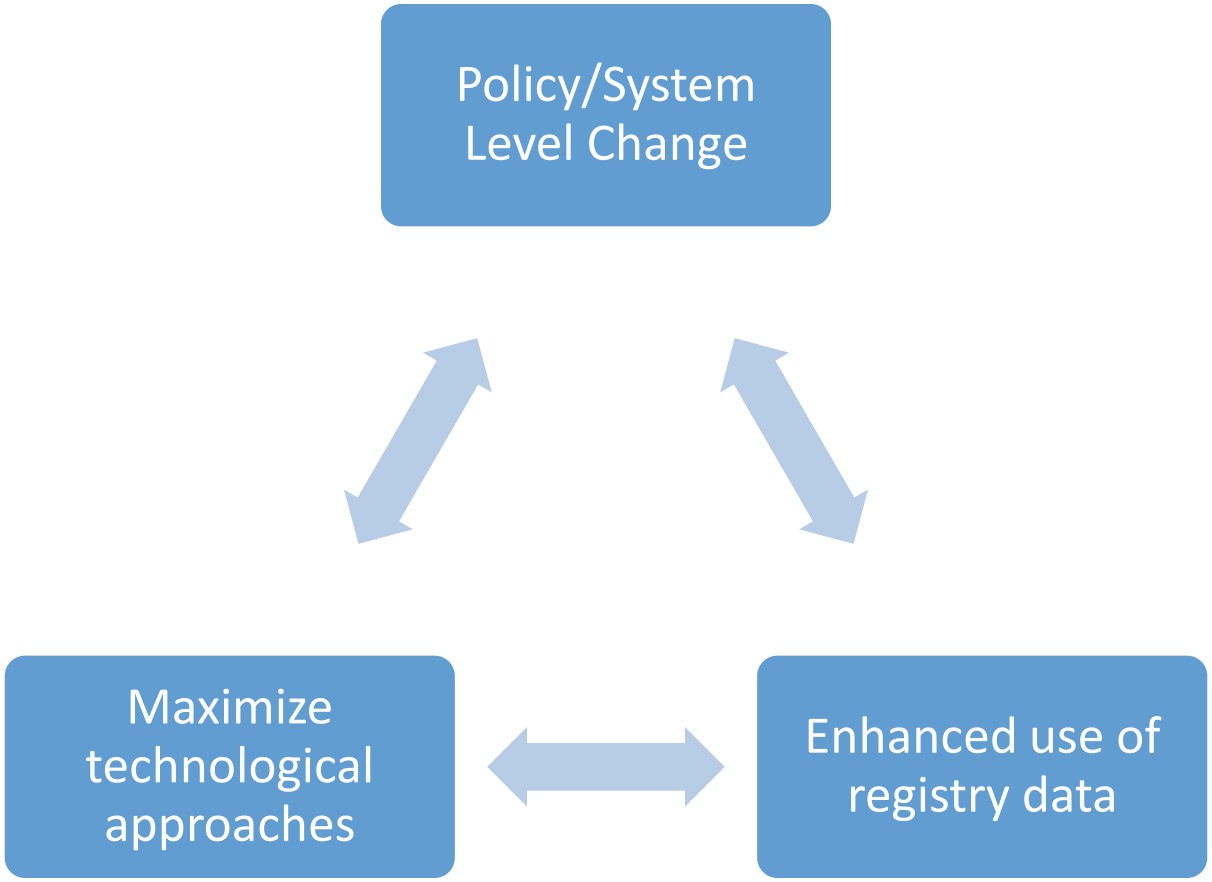
New HIV Diagnoses among Adults and Adolescents in 2007, United States



NYC has a heavy disease burden in terms of number of new diagnoses, but a lower HIV case rate relative to other urban areas.

Based on metropolitan statistical area of residence.
Source: Table 1 of Hall et al. PLoS ONE; September 2010; 5(9).

Core Cascade Approaches in NYC



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Core Cascade Approaches in NYC

Test

- Shift context through law/policy—NYS Mandated Offer (2010); Institutional Quality Indicators
- Deploy/optimize new technologies--support screening tests that minimize the window period (4th gen EIA)
- Normalize HIV screening for NYC resident and providers through social marketing
- Community Mobilization—Include/engage all partners to play their role (Jurisdictional Scale Up)

Link

- Maximize evidence-based strategies (navigation, partner services) through contracts and DOH FSU
- Train designated navigators on linkage models that work (ARTAS)
- Drive programmatic change contractually—ensure that desired actions are discreet payment points
- ? Reward participant for linkage (HPTN 065)

Retain

- Improve 'relay' between testing and care agencies (linkage navigators begin MCM intake).
- Deploy effective medical case management with optimized supports (Care Coordination)
- Use contracting process to support co-localization of services (substance use; mental health)
- Optimize collaboration between clinic and DOH to find out of care individuals (FSU, registry)

Adhere/ Suppress

- Train providers on new DHHS guidelines.
- Deploy multi-tier treatment adherence approaches that 'graduate' toward self-sufficiency
- Provide 'feedback' data to individual sites for CQI: ('Care Continuum Dashboards')

NYC Health

Shifting the Context by Changing the Law

Chapter 308: Laws of 2010

- MANDATORY OFFER of HIV test to all persons 13-64 most healthcare settings
- Simplified consent
  - Documented oral consent for tests that process in < 60 min
  - General medical consent ok
  - Consent is now durable
- Simplified lab ordering
- Requires active linkage to care

NYC Health

Chapter 308 of the Laws of 2010

- **LINKAGE:**

"With the consent of the subject of a test indicating evidence of HIV infection or, if the subject lacks capacity to consent, with the consent of the person authorized pursuant to law to consent to health care for the subject, the person who ordered the performance of the HIV related test, or such person's representative, shall provide or arrange with a health care provider for an appointment for follow-up medical care for HIV for such subject."

- **USE OF REGISTRY DATA**

February 2012 regulations expanded use of registry data to allow limited communication on individual patients between HD and provider of last record ('follow-up needed').

NYC Health

NYS Testing Law: Early Impact

Laboratory Reported HIV Testing
13 Month Before and After NYS Law of 2010
(n=215)

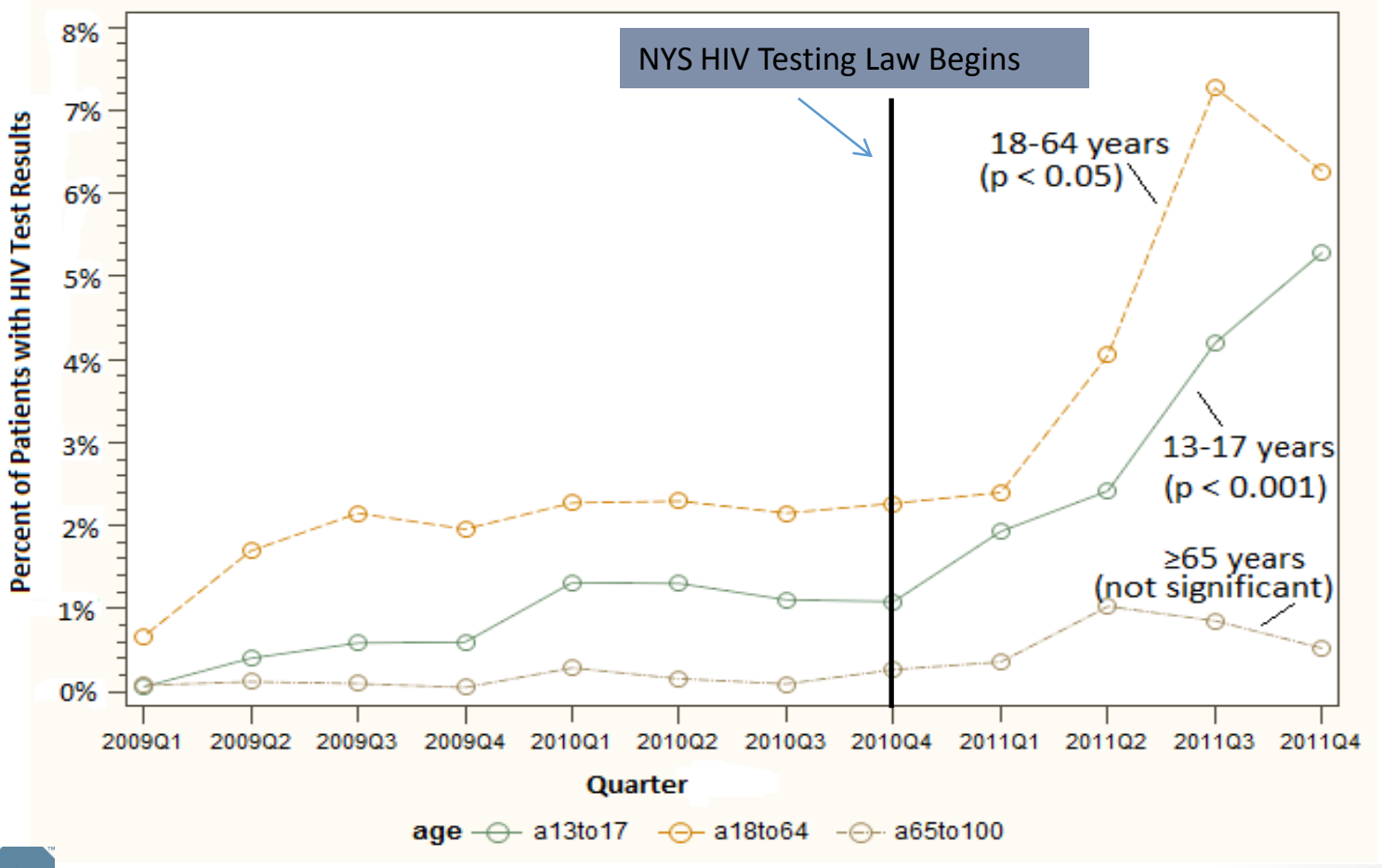
	Total Tests 9/09-9/10 (Pre 2010 HIV Testing Law)	Total Tests 10/10-10/11 (Post 2010 HIV Testing Law)	% Change
Conventional HIV Screening Tests (Labs=98)	2,023,968	2,198,390	9%
Rapid HIV Screening Tests (Labs=138)	294,764	322,881	9.5%
Total (Number of Labs = 215)	2,324,914	2,531,253	9%

NYS Department of Health, Laboratory Survey on HIV Testing Practices, 2009-2011.

NYC Health

NYS Testing Law: Early Impact
CHCs and Small Practice Sites

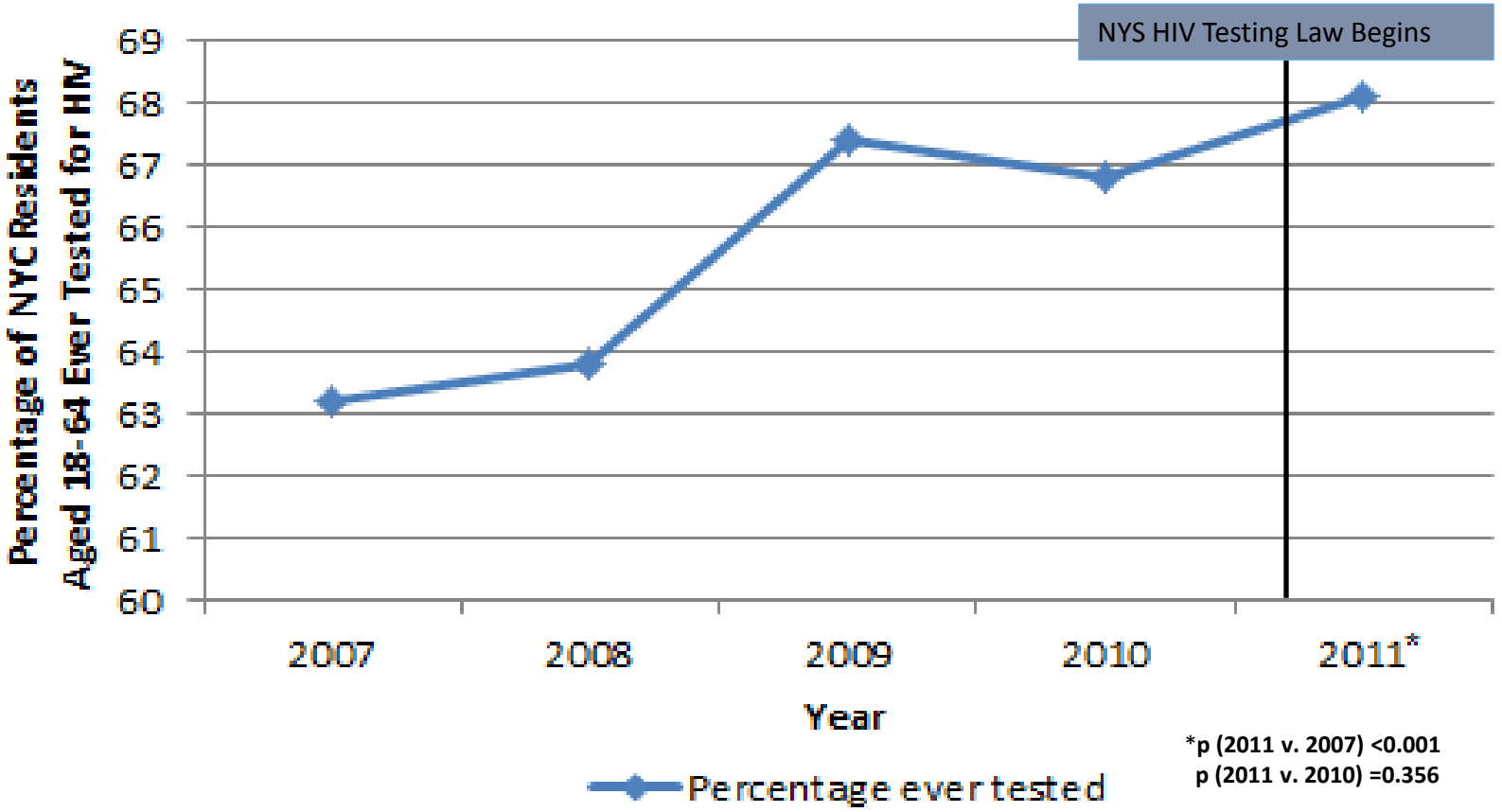
Percent of Patients with HIV Test Results at CHCs and Small Practice Sites By Age (2009-2011 , n=97)



NYC DOHMH, Primary Care Information Project, 2009-2011

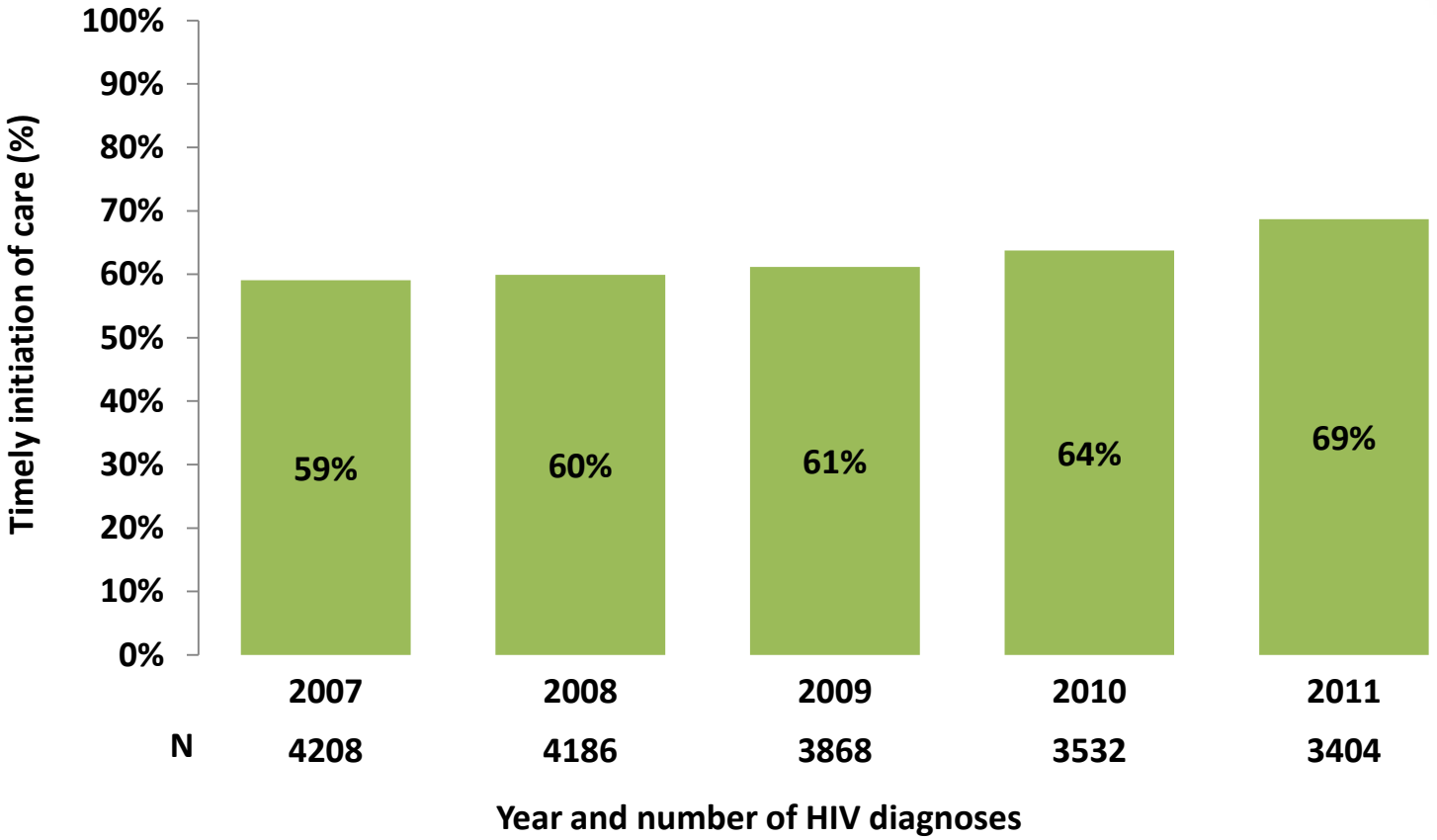
NYS Testing Law: Early Trend

(NYC residents aged 18-64 ever tested for HIV, 2007 to 2011)



New York City Department of Health and Mental Hygiene, Community Health Survey 2007-2011.

Timely Initiation of Care among Persons Newly Diagnosed with HIV in NYC, 2007–2011



The proportion of persons newly diagnosed with HIV with timely initiation of care increased between 2007 and 2011.

CD4 count (or percent) or HIV VL value reported to DOHMH as part of routine surveillance considered to be a proxy for receipt of HIV-related medical care. As reported to the NYC DOHMH by September 30, 2012.

Linkage to Care: Strategies Enhanced by 2011 Rebid (>50 agencies citywide)

- **Deploy Evidence-Based Best Practices to Enhance LTC**
  - Based on Antiretroviral Treatment Access Study (ARTAS)
    - Required ARTAS training—relevant staff
    - Booster training/new staff training biannually
- **Contractual Requirements**
  - Required all funded clinical and non-clinical sites to have a designated linkage navigator
  - Required all funded non-clinical sites to have an MOU with HIV primary care provider
  - Targets realigned with NHAS and CDC goals
  - Payment point for linkage navigation and successful linkage to care within 90 days
  - Required proof of linkage (not referral or agency report)

ARTAS -1 (2001-2003)

- **RCT**
  - Brief, time-limited case management intervention to improve linkage to care among newly diagnosed HIV-infected persons (5 sessions in 90 days or until linkage vs. SOC—referral)
  - 4 sites (n=316)
  - Miami, LA, Baltimore, Atlanta

- **Results**
  - 78% of ARTAS participants attended 1st medical visit within 6 months vs. 60% of SoC group ($p<0.0005$)
  - 64% of ARTAS participants attended 2nd medical visit vs. 49% of SoC group ($p<0.01$)

Gardner LI et al. AIDS Patient Care STDS. 2007. June (21) 6: 418-25.
Craw, JA et al. JAIDS Journal of Acquired Immune Deficiency Syndromes. 15 April 2008. (47): 5. pp.597-606.

ARTAS-II (2004-2007)

- **CDC Demonstration project**
  - 10 urban & rural sites (5 CBOs, 5 state/local DOH sites) , n=646
  - Most were male (73%), Black (70%) and uninsured (65%);
  - median age=35

- **Results**
  - At 6 month follow up, 79% attended 1st medical visit
  - Compare to CDC surveillance estimate= 52%, 2005

- Median # of sessions (before linkage)=2
- Median time spent with each client=6 hrs
- CDC curriculum developed based on ARTAS I and II

Gardner LI et al. AIDS Patient Care STDS. 2007. June (21) 6: 418-25.
Craw, JA et al. JAIDS Journal of Acquired Immune Deficiency Syndromes. 15 April 2008. (47): 5. pp.597-606.

Antiretroviral Treatment Access Study (ARTAS): Evidence-based Linkage

- >50 NYC DOHMH-funded agencies for HIV testing & linkage
- 2011-2012: All agencies identified and named at least one linkage navigator; these navigators took required ARTAS
- December 2012: 210 funded staff have been trained on ARTAS
- ARTAS curriculum now incorporated in HIV Training & Technical Assistance Program (T-TAP)
- ARTAS training required for all new staff that link and as annual booster

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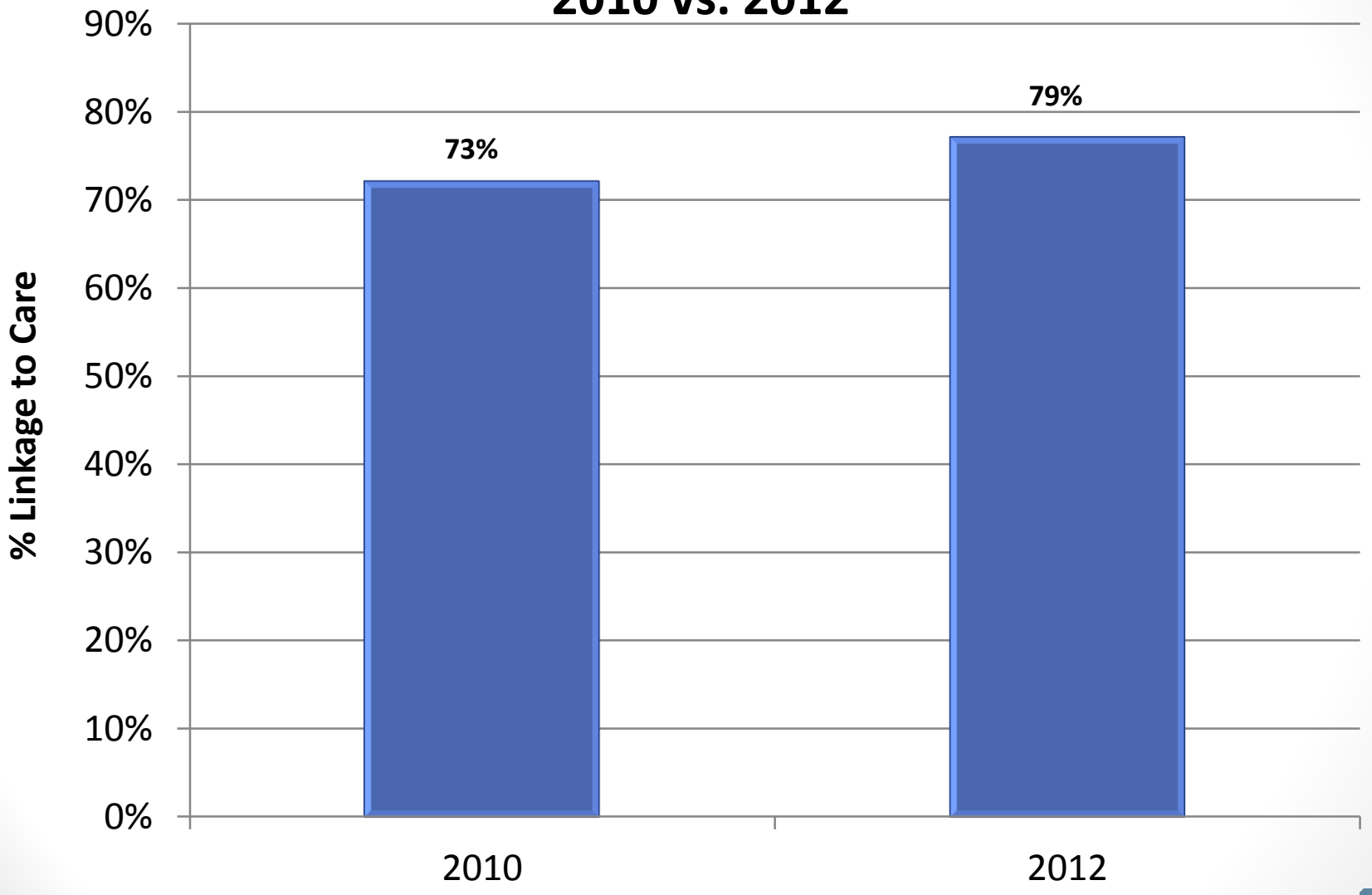
Linkage to Care: DOHMH-funded HIV Testing Prevention Portfolio (% of confirmed positives linked to care by clinical sites) 2010 vs. 2012



NYC DOHMH, Bureau of HIV/AIDS Prevention and Control Program Data, 2010 and 2012

NYC Partner Services in the 21st Century
The FSU: A Modern Field Response

- **2006: NYC DOHMH created the 'Field Services Unit' (FSU)**
  PHAs stationed at 10 hospitals in highest prevalence neighborhoods

- **What does FSU do:**
  - **Conducts face-to-face interviews with HIV-infected NYC residents.**
  - **Helps HIV-infected patients and providers notify and test sex and/or needle-sharing partners.**
  - **Helps HIV-infected patients and partners link to medical care.**
  - **Helps HIV-infected persons avoid transmission to others**

- **By 2013: FSU now serves ALL NYC providers diagnosing >10 newly diagnosed patients per year.**

NYC Health

FSU Data

- In 2011, FSU:
  - interviewed 1,499 HIV-positive individuals (79% new dx)
  - Linked 92% of newly diagnosed persons to care
  - Notified 1,209 partners of potential HIV exposure
  - Tested 598 partners, with a 12% seropositivity
  - Of all persons tested, 285 partners were rapid tested in the field

NYC Health

NYC Partner Services in the 21st Century: RETOOLING FSU

Pilot Activities

- Field-based laptops with registry lookup capability from any site
- INSTI field-based testing (60 second test; no more 20 min wait)
- Blackberries for PHAs (texting to reach partners)
- Provider EMR-direct electronic request for partner services

Care Coordination
Improving Engagement and Adherence

- **NYC funds 28 'Care Coordination Programs'**
  - 16 hospital-based programs
  - 12 community-based programs
- **More than 6,000 unique PLWH (cumulative) 12/09-3/12**
- **Persons at high risk for suboptimal care outcomes**
  - Newly diagnosed, previously lost to care/never in care, irregularly in care, or having current or recent adherence challenges, viral rebound, or resistance.
- **Medical home model with:**
  - return-to-care activities and ongoing outreach
  - assistance with medical and social services
  - patient navigation
  - directly observed therapy (DOT)
  - health promotion/education in home visits

Adapted from Irvine, M. BHIV Grand Rounds. NYC DOHMH. April 8, 2013.

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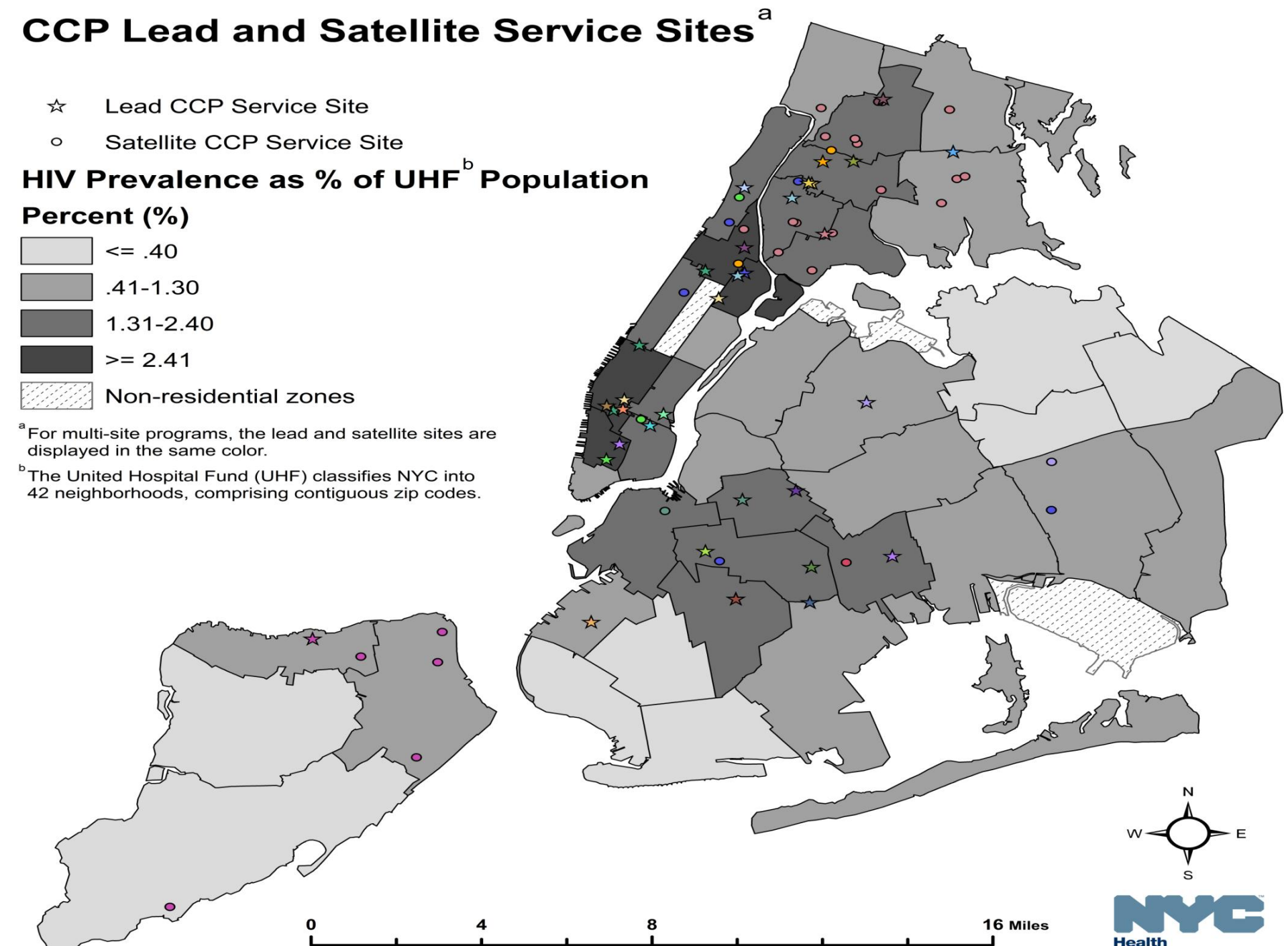
CCP Lead and Satellite Service Sites[a]



Measuring Care Coordination Impact Pre- vs. Post- enrollment

Matched CCP data with NYC HIV Registry:

- **Purpose:** Compare engagement & viral load (VL) suppression 12 months before & after enrollment

- **Outcome Measures:**
  - Engagement in Care **(EiC)**: ≥2 CD4 or VL tests ≥90 days apart, with ≥1 in each half of 12-month period

  - Viral Load Suppression **(VLS)**: VL<400 copies/µL on most recent test in second half of 12-month period.*

** Missing VL in 2nd half of 12 month period was considered equivalent to unsuppressed VL. Adapted from Irvine, M. BHIV Grand Rounds. NYC DOHMH. April 8, 2013.*

Measuring Care Coordination Impact Pre- vs. Post- enrollment

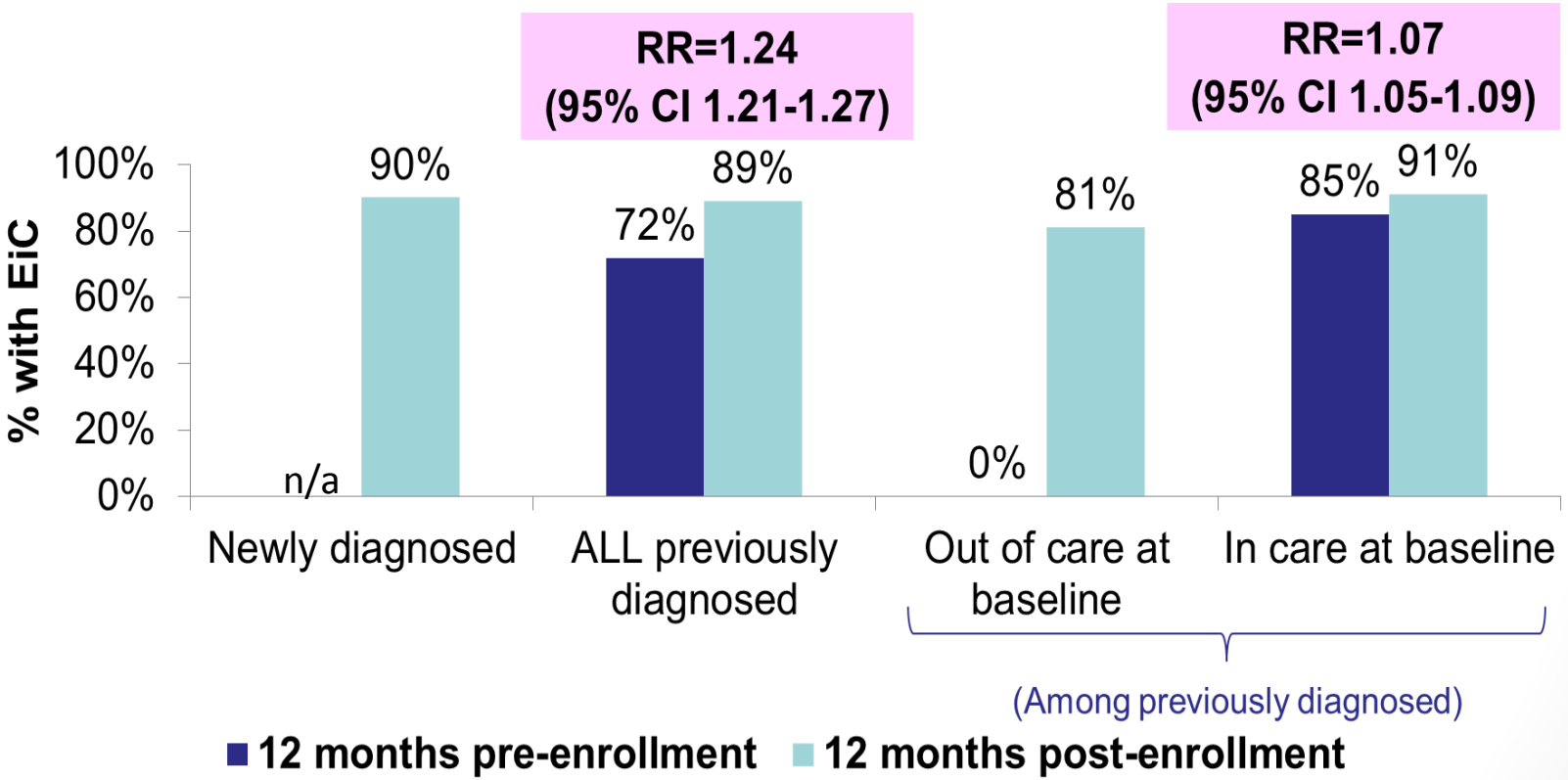
Clients Eligible for Analysis (N=3,663):

- Must be enrolled by 3/31/11, matched to the Registry; alive for at least one year of follow-up.

Key Terms:

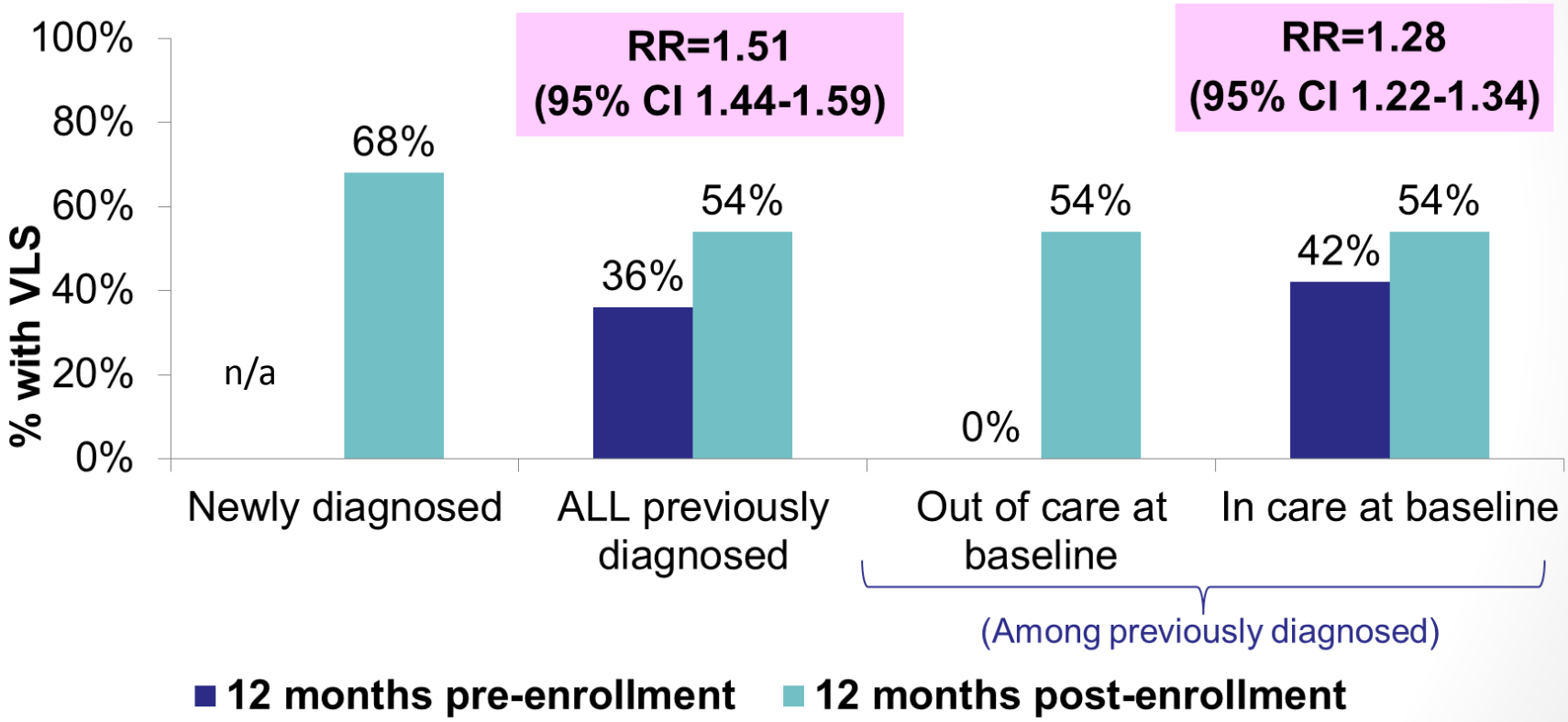
- Newly Diagnosed: HIV diagnosis date in 12 months before enrollment
- In Care (Baseline): Any CD4 or VL test date in 6 months before enrollment (among the previously diagnosed)
- Out of Care (Baseline): No CD4 or VL test date in 6 months before enrollment (among the previously diagnosed)

Care Coordination Impact: Improving Engagement



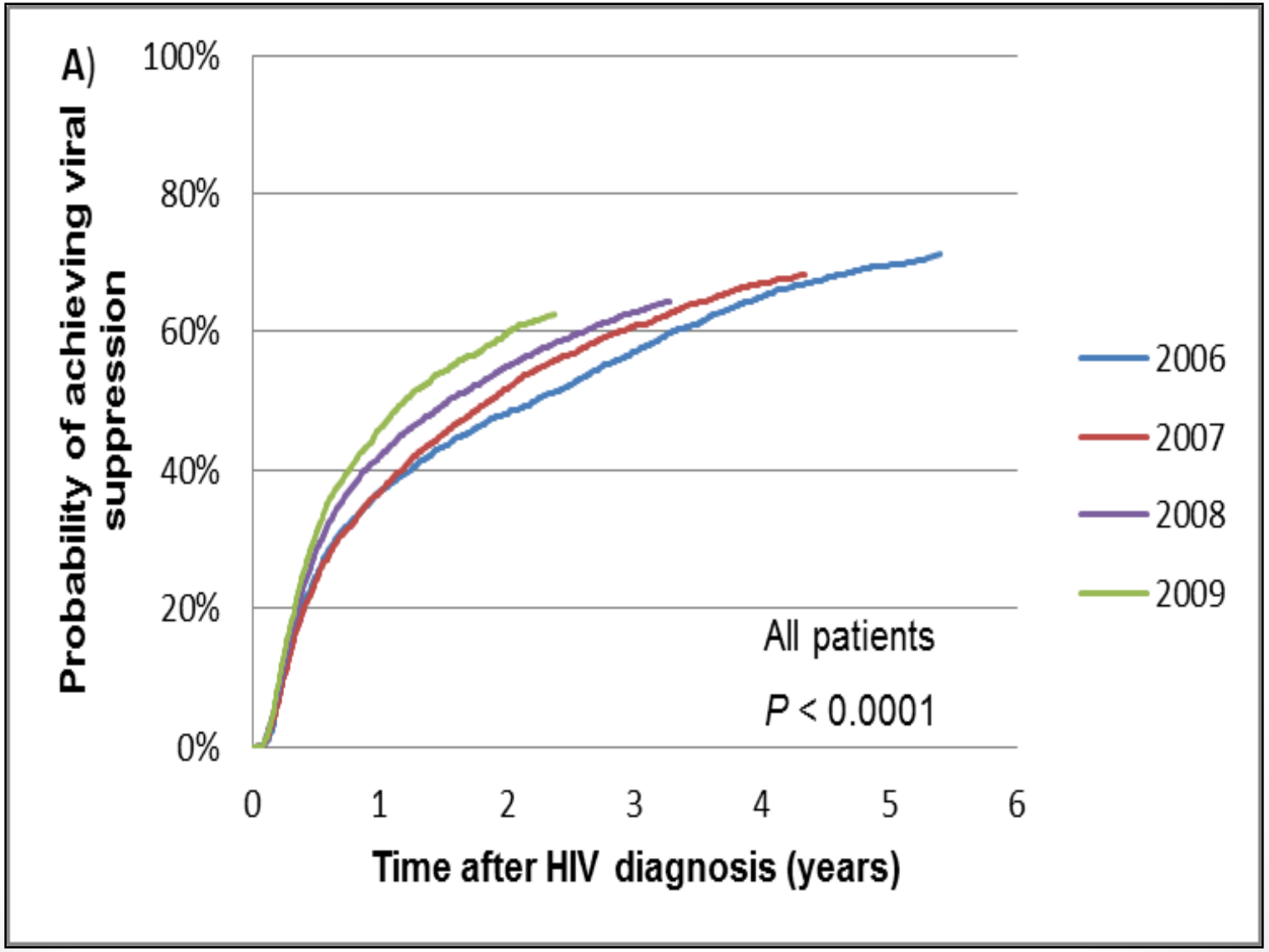
Adapted from Irvine, M. BHIV Grand Rounds. NYC DOHMH. April 8, 2013

Care Coordination Impact: Improving Adherence and VL Suppression



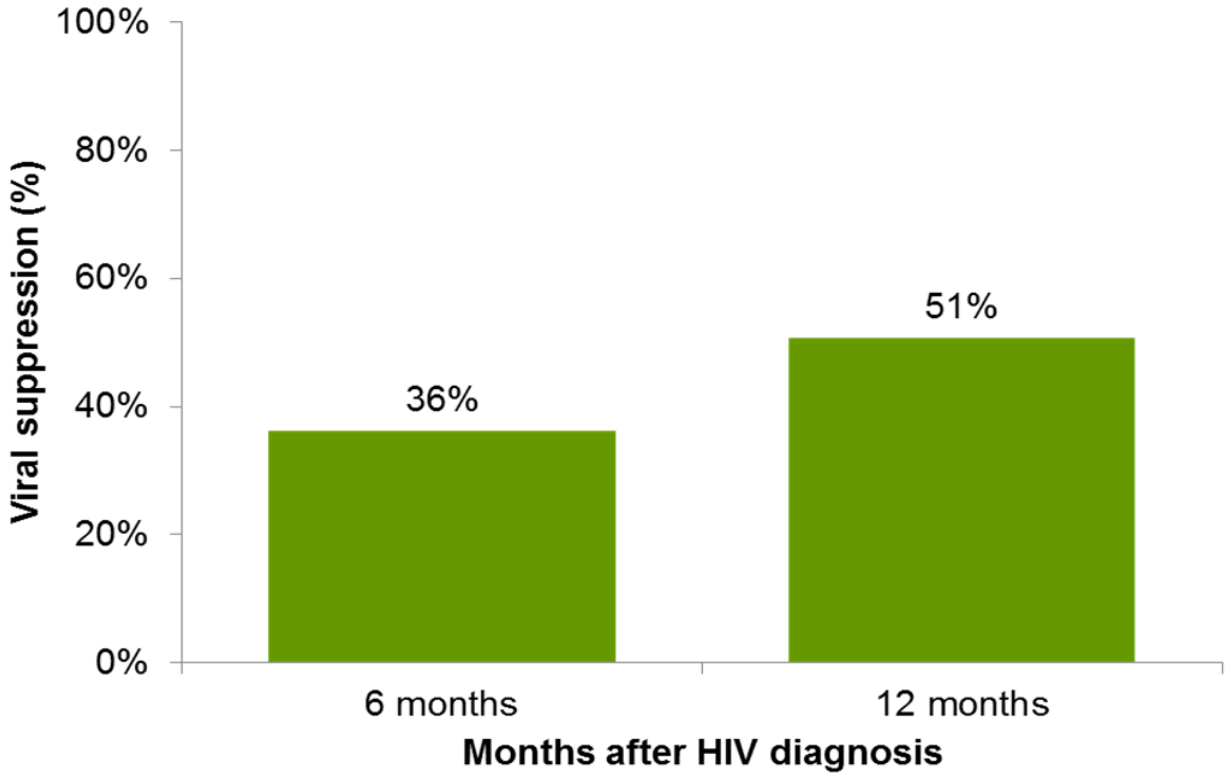
Adapted from Irvine, M. BHIV Grand Rounds. NYC DOHMH. April 8, 2013

Improving VL Suppression Citywide



New York City Department of Health and Mental Hygiene, Bureau of HIV/AIDS Prevention and Control, 2006-2009.

Proportion of persons newly diagnosed with HIV with viral suppression[1] at 6 and 12 months after diagnosis, NYC 2010



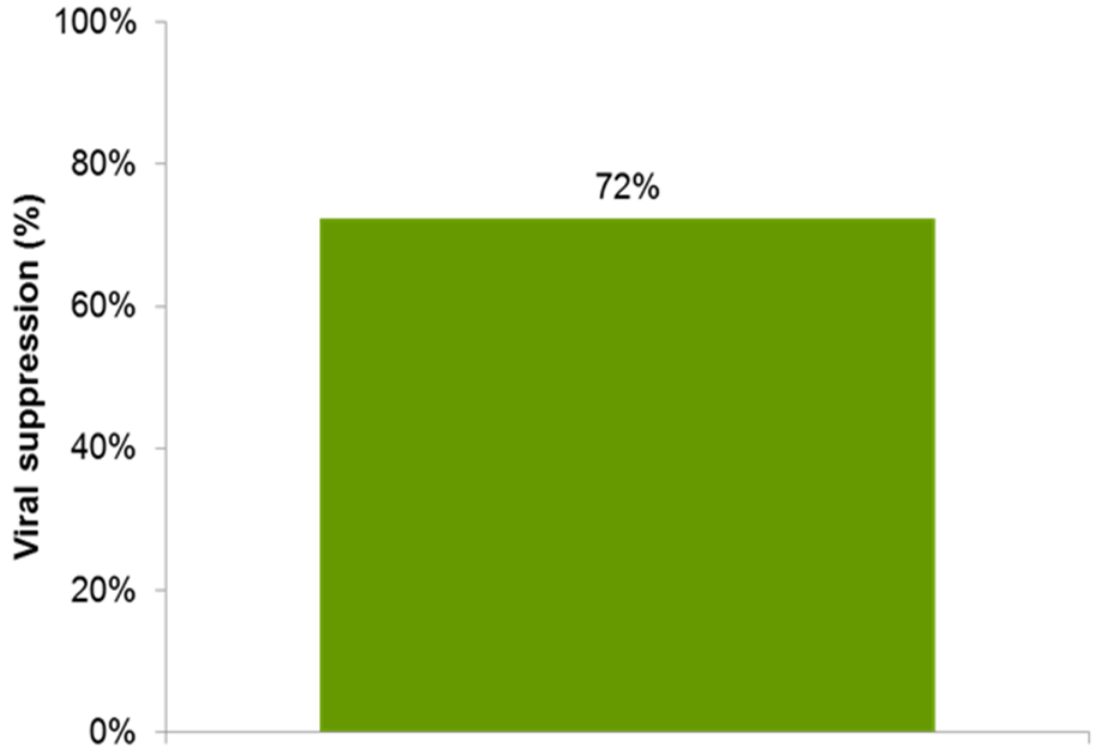
Over half of persons newly diagnosed with HIV in NYC in 2010 were virally suppressed by 12 months after diagnosis.

[1] *Viral suppression is defined as viral load < 400 copies/ml. As reported to the NYC DOHMH by September 30, 2011.*

New York City HIV/AIDS Surveillance Slide Sets. New York: New York City Department of Health and Mental Hygiene, 2010. Updated March 2012. Accessed January 10, 2013 at HIV Epidemiology and Field Services Surveillance Slide Sets.

Health

Proportion of PLWHA in 2010 with a CD4 or VL ordered by an NYC provider in 2010 whose last HIV VL result indicated viral suppression[1]



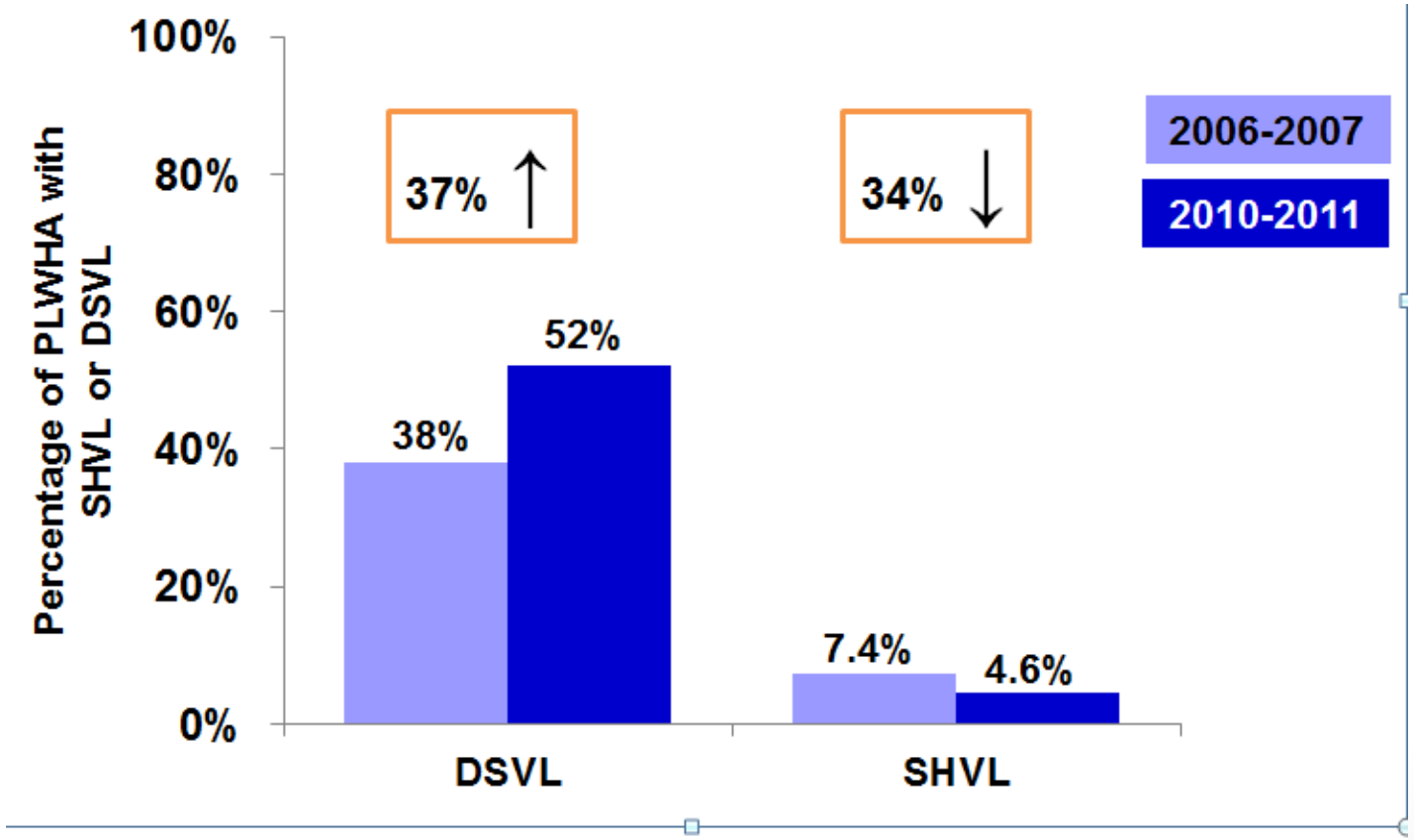
Nearly three-quarters of persons living with HIV/AIDS and under clinical monitoring in NYC in 2010 had an undetectable last viral load.

[1] *Viral suppression is defined as viral load < 400 copies/ml. As reported to the NYC DOHMH by September 30, 2011.*

New York City HIV/AIDS Surveillance Slide Sets. New York: New York City Department of Health and Mental Hygiene, 2010. Updated March 2012. Accessed January 10, 2013 at HIV Epidemiology and Field Services Surveillance Slide Sets.

Health

Use of Registry Data to Identify Improvements in Durable VL Suppression and Sustained High Viral Load



Stadelmann L. et al. CROI 2013. Abstract 1032b. Data as reported to the NYC DOHMH by June 30, 2012.
DSVL: PLWHAs with all VLs≤ 400 copies/ml; SHVL: PLWHA with > 2 consecutive VLs ≥ 100,000.

NYC Treatment Recommendation December 1, 2011

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The New York Times

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Seeing Chance to End Spread of H.I.V., City's Health Chief Pushes Earlier Drug Treatment

By ANEMONA HARTOCOLLIS
Published: November 30, 2011

New York City's health commissioner is pushing an aggressive change in city policy toward H.I.V., recommending that doctors begin to treat it as soon as it is diagnosed.

Related

Times Topic: AIDS / H.I.V.

The commissioner, Dr. Thomas Farley, said Wednesday that he believed that the effort would reduce transmission of H.I.V., the virus that

NYC Health

http://www.nytimes.com/2011/12/01/nyregion/to-stop-aids-nyc-wants-drugs-given-sooner-for-hiv.html?_r=1

3 Months Later…
DHHS Releases Similar Recommendations

March 28, 2012

Revised U.S. Guidelines: HIV Treatment is Recommended for All People Living With HIV

by Tim Horn

Antiretroviral (ARV) therapy is now recommended for all U.S. residents living with HIV, according to revised HIV treatment guidelines released by the U.S. Department of Health and Human Services on March 27, 2012.

Though the guidelines now largely sidestep CD4 cell counts as a major factor to consider when starting therapy, the expert panelists continue to emphasize the importance of individual factors that should be considered by patients and their health care providers in deciding whether the benefits of immediate ARV therapy outweigh the potential risks.

The last iteration of the *Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents*, published in October 2011, clearly recommended treatment for all people living with HIV with CD4 cells below 500. As for those with CD4 cell counts above 500, no definitive recommendation was provided by the panelists, largely due to the split in expert opinion at the time.

The majority of guidelines panelists now believe treatment should be started even when the CD4 cell count is above 500—essentially soon after HIV is diagnosed in all cases.

"The [March 2012] recommendation to initiate therapy at CD4 counts [greater than] 500 cells"—which received a "moderate" (as opposed to a "strong") rating based on expert opinion, not on data from clinical trials or long-term cohort studies—"is based on growing awareness that untreated HIV infection or uncontrolled viremia may be associated with development of many non-AIDS-defining diseases, including cardiovascular disease (CVD), kidney disease, liver disease, neurologic complications, and malignancy; availability of [ARV] regimens that are more effective, more convenient, and better tolerated than earlier [ARV} combinations no longer widely used; and evidence from one observational cohort study that showed survival benefit in patients who started ART when their CD4 counts were [greater than 500]," the guidelines panelists write.

"Tempering the enthusiasm to treat all patients regardless of CD4 count is the absence of randomized data that definitively demonstrate a clear benefit of [ARV therapy] in patients with CD4 count [greater than] 500 and mixed

New Use of Registry Data
NYC HIV 'Care Continuum Dashboards'

What Are CCDs?

- Facility-Level Care Indicators Developed Using Registry Data

Why Develop CCDs?

- So that facilities can measure their own progress toward NHAS Goals

Who is Receiving CCDs?

- Pilot: Spring, 2012 (9 facilities, convenience sample)—acceptable
- First Dissemination: December 12, 2012 to 21 high volume facilities in NYC (each with >1,000 'in care' & HHC facilities)
- Strategy: Biannual dissemination starting 2013

Communications Strategy:

- Letter from Assistant Commissioner, CCDs and FAQs sent to:
  - Hospital/Facility Chief Executive Officer
  - Hospital/Facility Chief Medical Officer
  - Hopital/Facility HIV Medical Director

Adapted from Sabharwal , C. BHIV Grand Rounds. NYC DOHMH. April 18, 2013

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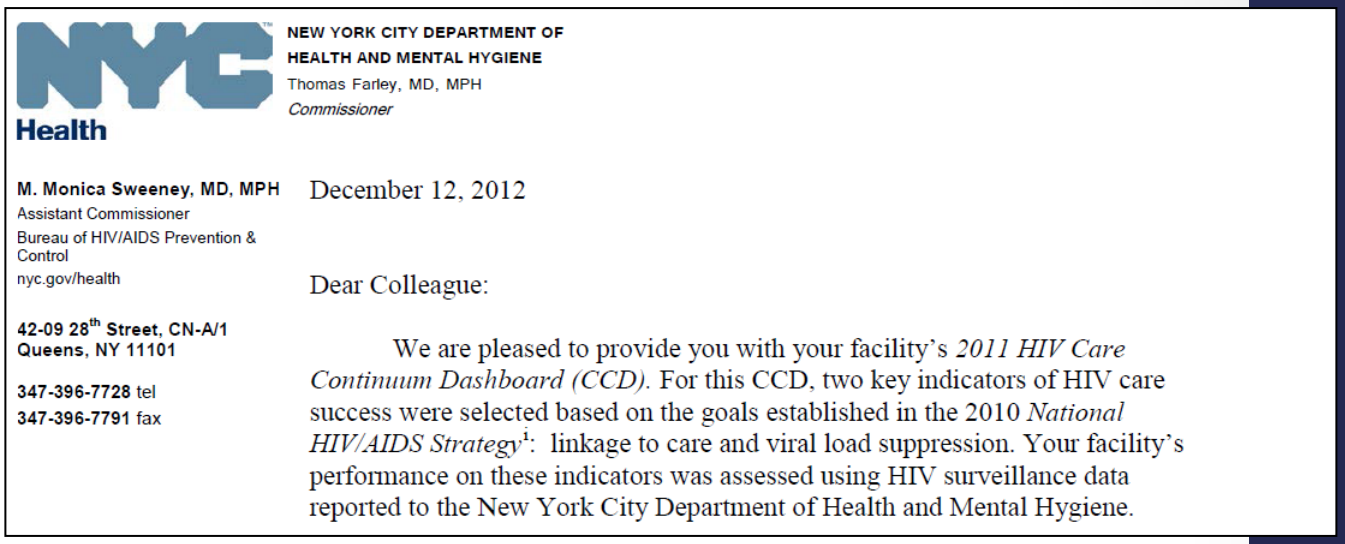
NYC HIV Care Continuum Dashboards



NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
Thomas Farley, MD, MPH
Commissioner

M. Monica Sweeney, MD, MPH
Assistant Commissioner
Bureau of HIV/AIDS Prevention & Control
nyc.gov/health

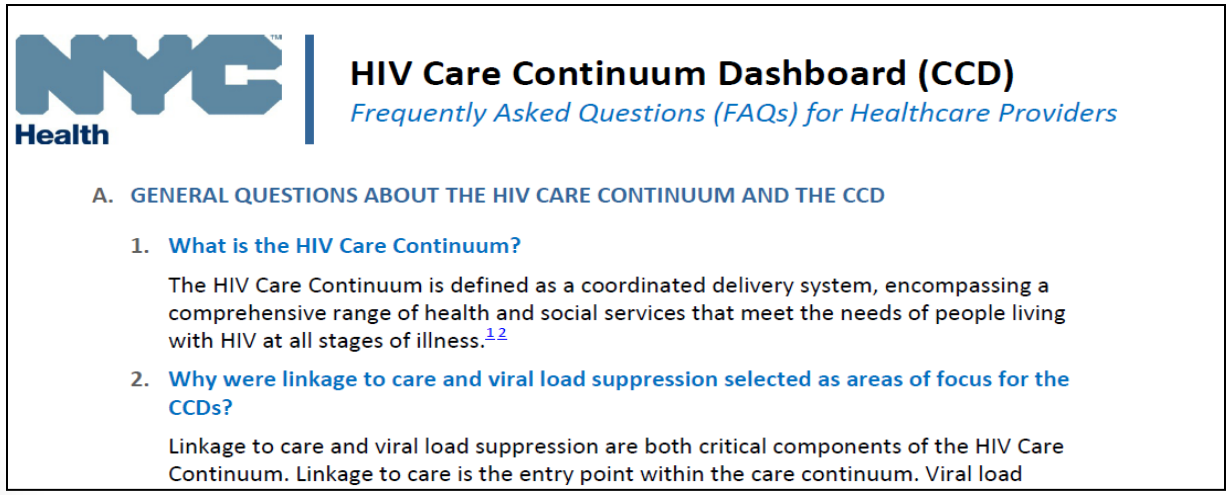
42-09 28th Street, CN-A/1
Queens, NY 11101

347-396-7728 tel
347-396-7791 fax

December 12, 2012

Dear Colleague:

We are pleased to provide you with your facility's *2011 HIV Care Continuum Dashboard (CCD)*. For this CCD, two key indicators of HIV care success were selected based on the goals established in the 2010 *National HIV/AIDS Strategy*[1]: linkage to care and viral load suppression. Your facility's performance on these indicators was assessed using HIV surveillance data reported to the New York City Department of Health and Mental Hygiene.



HIV Care Continuum Dashboard (CCD)

Frequently Asked Questions (FAQs) for Healthcare Providers

A. GENERAL QUESTIONS ABOUT THE HIV CARE CONTINUUM AND THE CCD

1. **What is the HIV Care Continuum?**

   The HIV Care Continuum is defined as a coordinated delivery system, encompassing a comprehensive range of health and social services that meet the needs of people living with HIV at all stages of illness.[1,2]

2. **Why were linkage to care and viral load suppression selected as areas of focus for the CCDs?**

   Linkage to care and viral load suppression are both critical components of the HIV Care Continuum. Linkage to care is the entry point within the care continuum. Viral load

NYC HIV 'Care Continuum Dashboards' Indicators

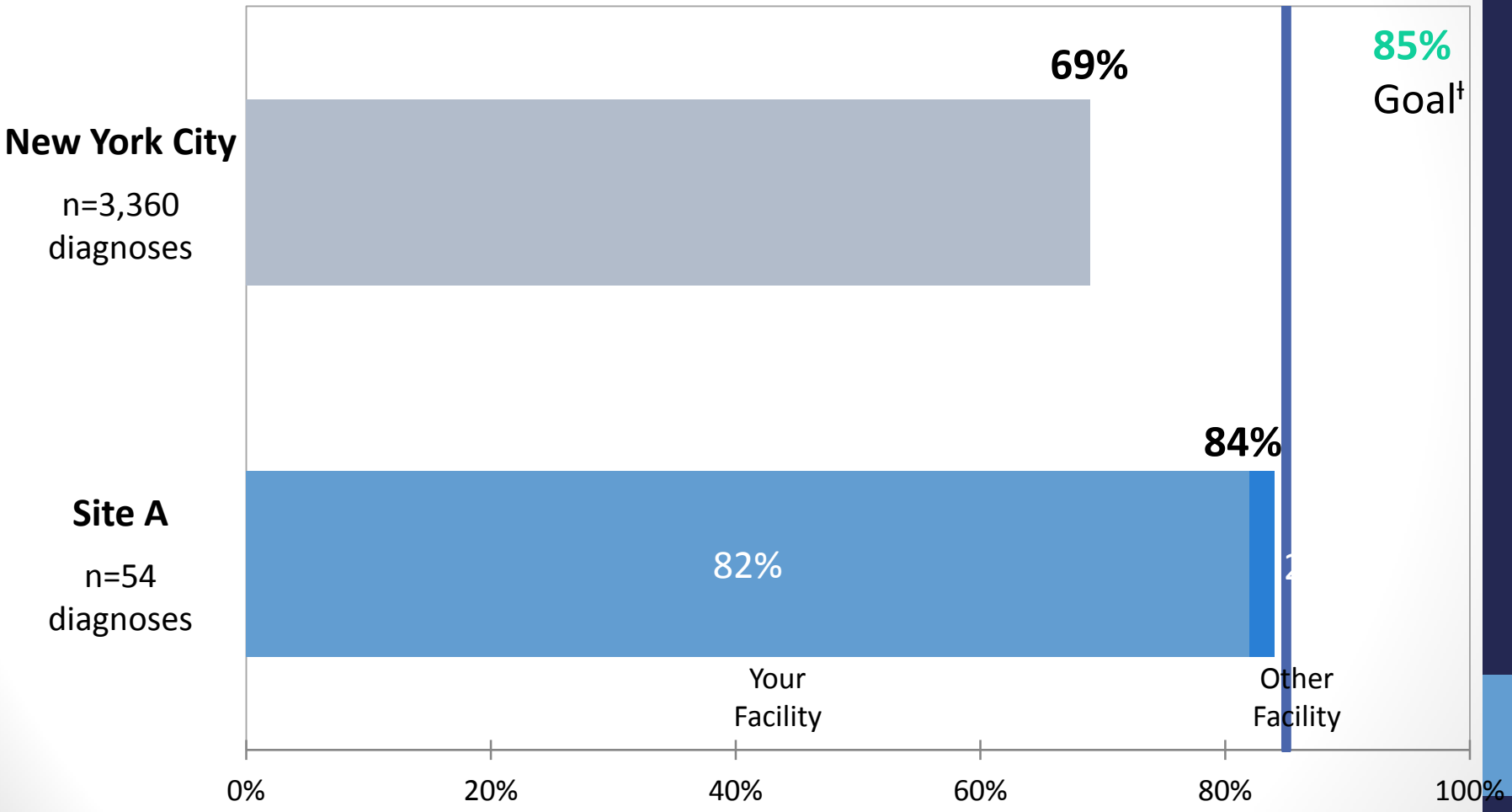
Final Indicators	Definitions
Timely Linkage to Care of Newly Diagnosed Patients	CD4 or VL within 3 months of HIV diagnosis, following a 7 day lag (8-91 days) at "your" facility and "other" NYC facility ÷ All persons diagnosed with HIV at that particular facility within the calendar year as per the Registry
Viral Suppression Among Patients in Care	Most recent HIV RNA <400 copies/mL ÷ 2 HIV lab reports (CD4 or VL) ≥ 90 days apart (HRSA definition) at that particular facility within the calendar year as per the Registry

Adapted from Sabharwal, C. BHIV Grand Rounds. NYC DOHMH. April 18, 2013

HIV Care Continuum Dashboard, 2011

Site A

Timely* Linkage to Care of Newly Diagnosed Patients, 2011



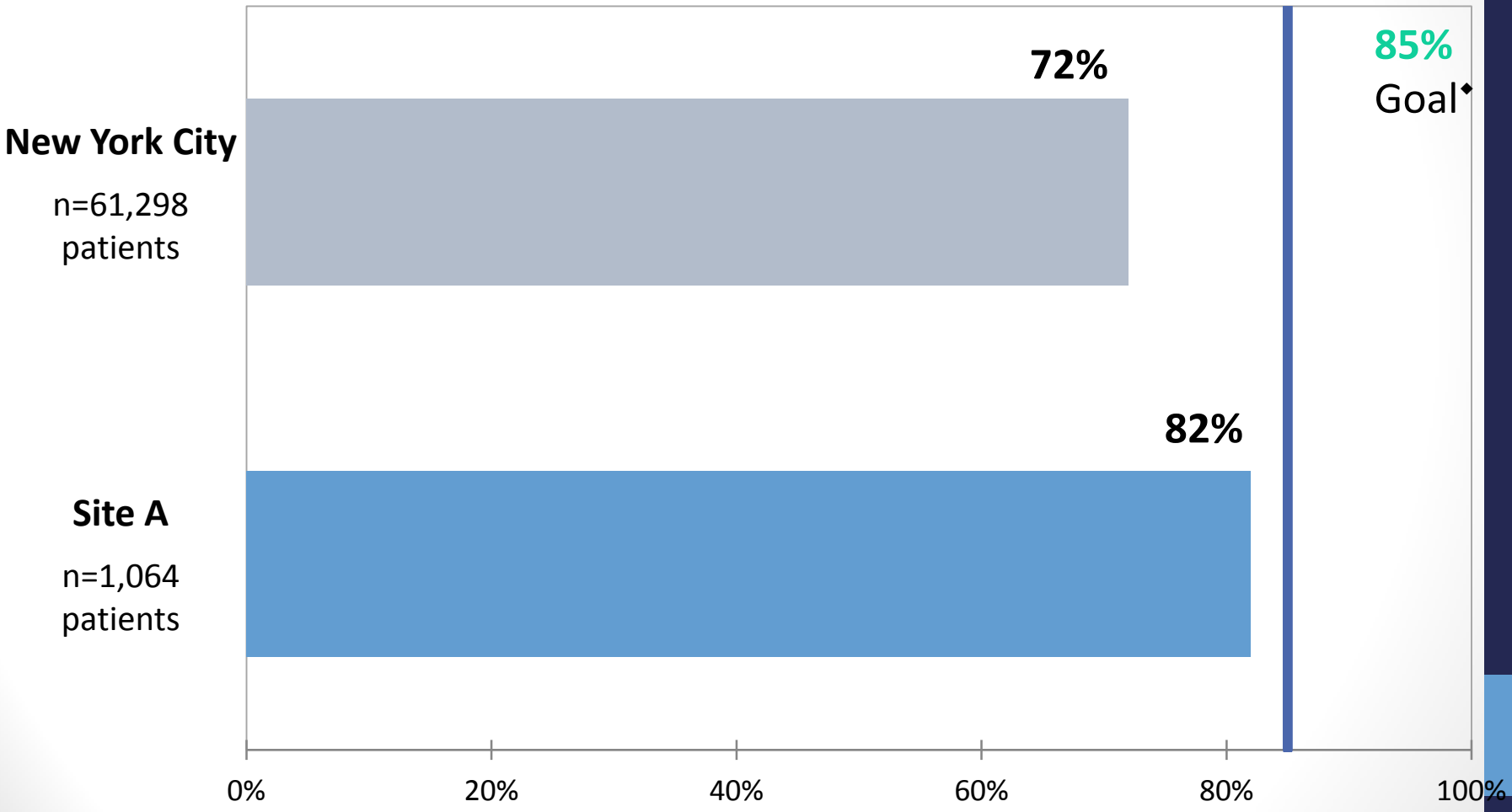
* Linked to care within 3 months of diagnosis

† National HIV/AIDS Strategy goal

HIV Care Continuum Dashboard, 2011

Site A

Viral Load Suppression among Patients in Care‡, 2011



‡ "In care" based on the Health Resources and Services Administration definition of retention: 2 labs (CD4 or viral load) at least 90 days apart within 12 months

◆ Local New York City goal

Summary

Core Cascade Approaches in NYC

- Evidence-based and seek to optimize combination strategies
- Seek to maximize scale: focusing on systems, policy and population approaches
- Deploy enhanced uses of registry data, as allowable by law
- Maximize new technologies

Linkage to Care

- 2010 legislation requires active linkage
- Maximizing contractual incentives to reward timely linkage
- Broadly expanding DOHMH Field Services Unit to all diagnosing providers
- Modernizing/automate provider reporting & PS requests (via EHR)
- Leveraging evidence-based strategies, such as ARTAS

Retention, Adherence and VL Suppression (Care Outcomes)

- Care Coordination citywide (demonstrating improved outcomes)
- Early treatment recommendation—monitored at site level by new CCDs
- Partnership with all key stakeholders to advance new strategies

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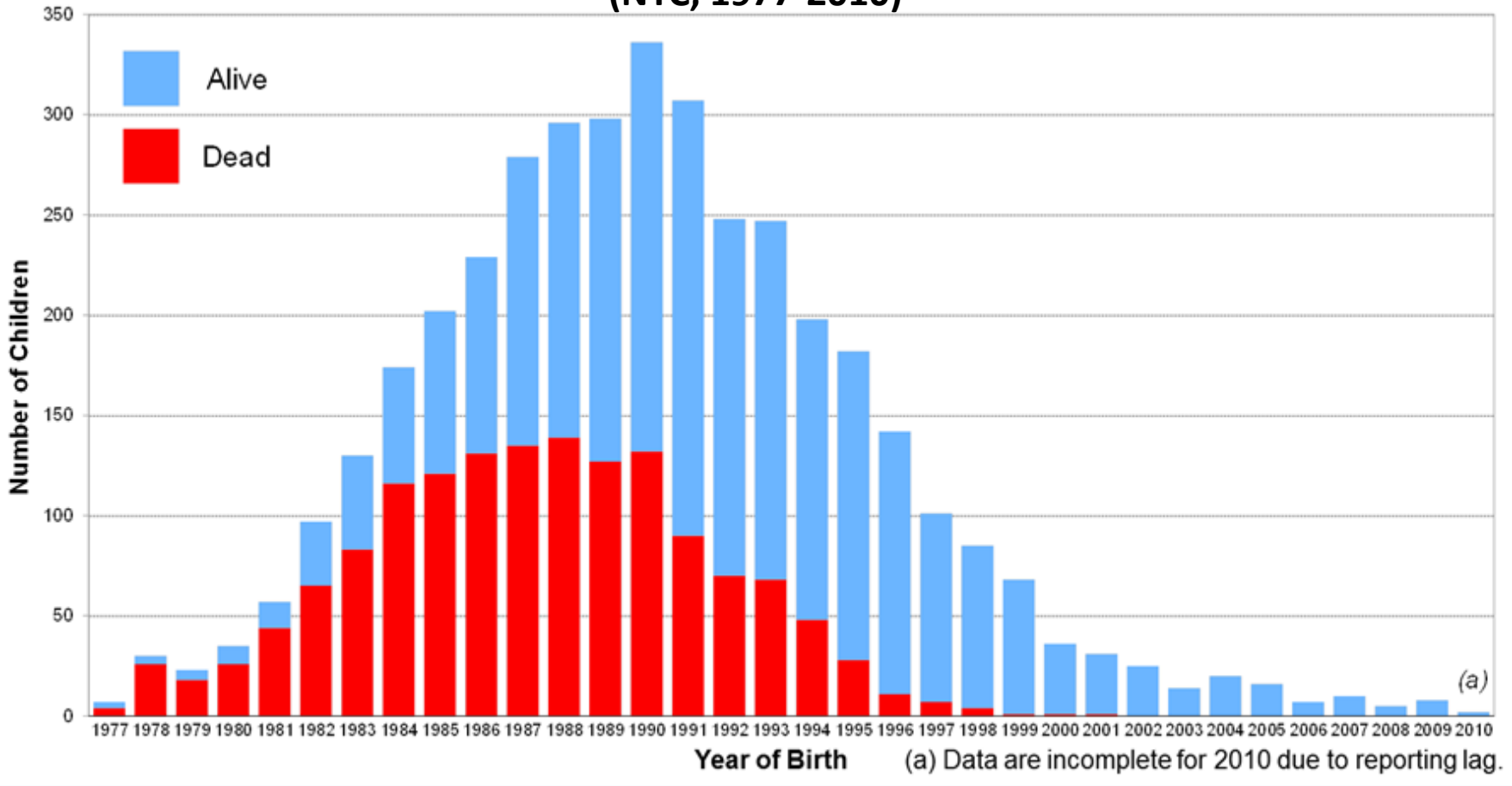
We have done it before…

Perinatally HIV-infected Children (n=3,945) by Year of Birth and Vital Status (NYC, 1977-2010)



The number of HIV-infected infants born each year decreased dramatically from the peak in 1990. This coincides with the use of perinatal prevention measures. 91% were born in NYC.

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NYC Health

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Jay Varma
BHIV Program Staff

NYC COMMUNITY
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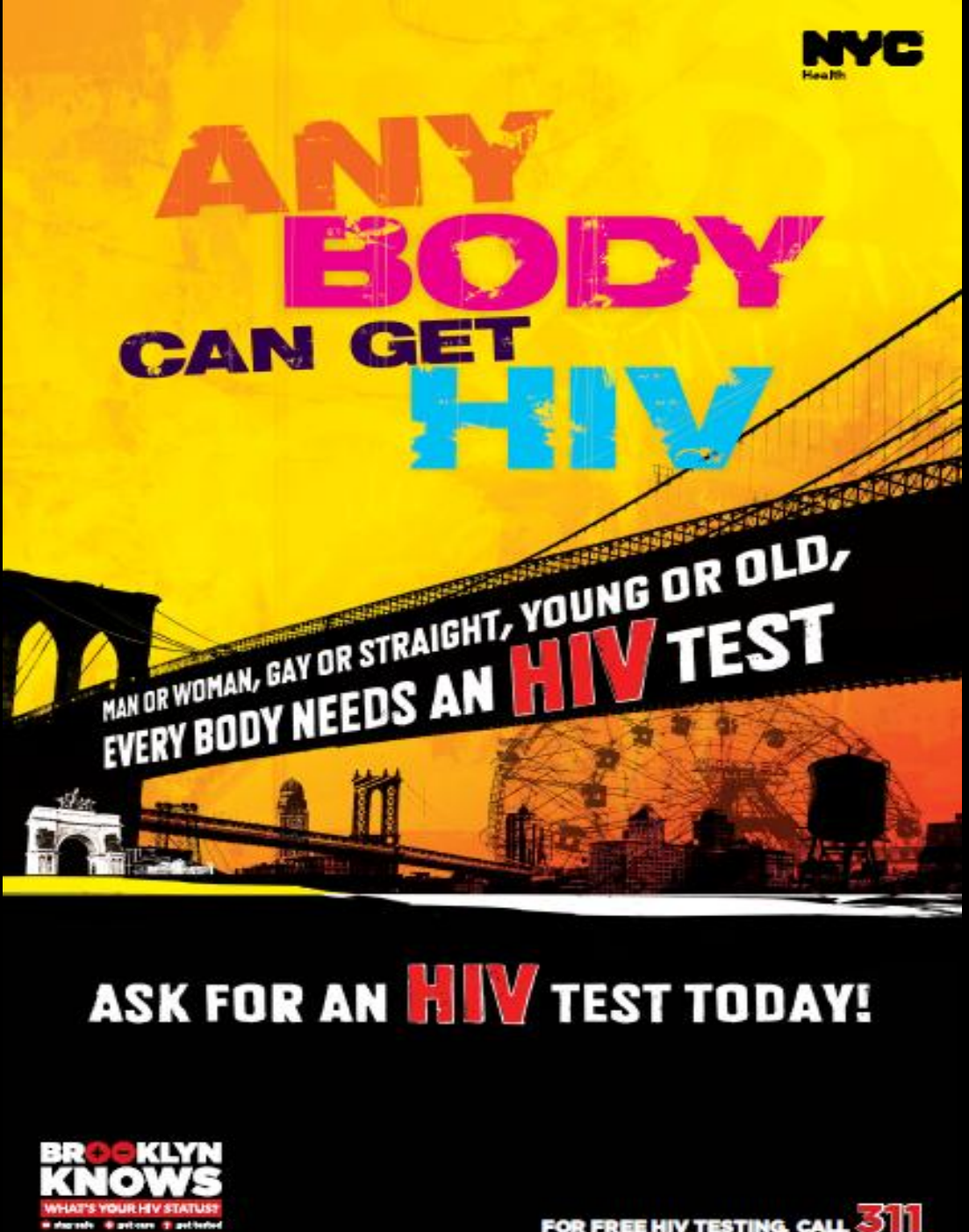
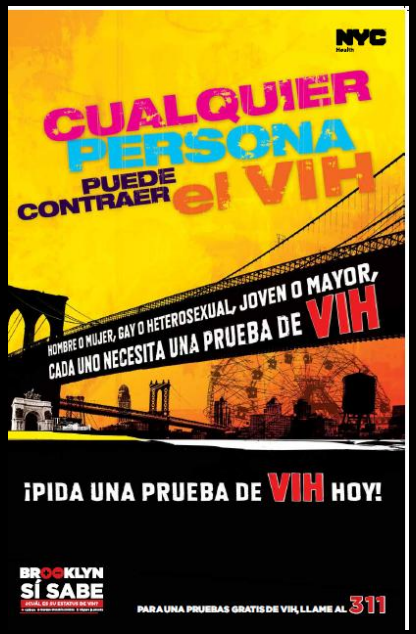

NYC
Health
ANY BODY CAN GET HIV
MAN OR WOMAN, GAY OR STRAIGHT, YOUNG OR OLD,
EVERY BODY NEEDS AN HIV TEST
ASK FOR AN HIV TEST TODAY!
BROOKLYN KNOWS
WHAT'S YOUR HIV STATUS?
FOR FREE HIV TESTING, CALL 311

Thank You

NEW YORK KNOWS

WHAT'S YOUR HIV STATUS?

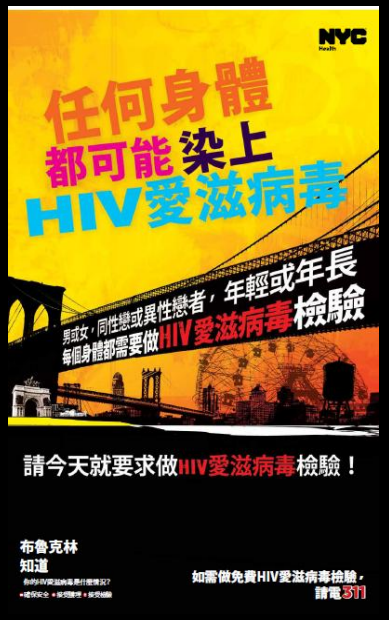
stay safe · get care · get tested



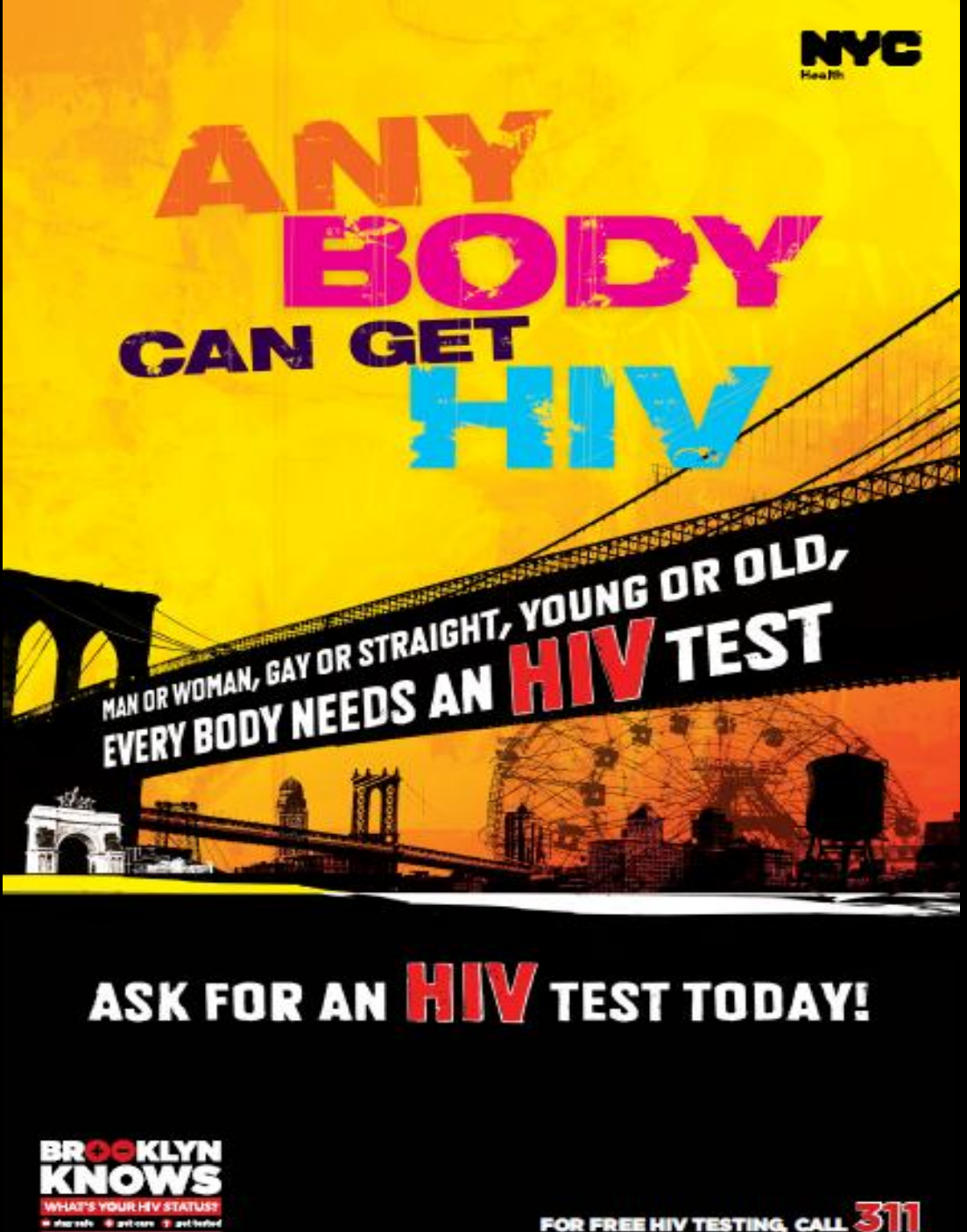
Spanish

Haitian Creole

Russian



Chinese



Extra Slides

HIV/AIDS Surveillance in NYC

- **1981:** MMWR reports PCP and KS from Los Angeles and NYC. AIDS surveillance begins
- **1983:** New York State mandates named AIDS case reporting through an emergency amendment to section 24.1 of the state sanitary code
- **1998:** New York State mandates named HIV reporting through Public Health Law Article 21 Title III
- **June 1, 2000:** New York State implements reporting of HIV, detectable viral load and CD4<500
- **June 1, 2005:** New York State issues emergency regulations mandating reporting of *all* viral load and CD4 values