

# **HIV EPIDEMIOLOGY IN NEW YORK CITY**



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**<http://www.nyc.gov/html/doh/html/dires/hivepi.shtml>**

**May 9, 2013**  
**NYC HIV Planning Council Needs Assessment Committee**

# Plan for Today

- **HIV surveillance history and procedures**
- **Epidemiologic overview**
- **HIV-related medical care**
- **HIV in subpopulations**
- **Implications**

# HIV Surveillance History & Procedures

# History of HIV/AIDS Reporting in New York City

- **1981:** *MMWR* reports PCP and KS from LA and NYC. AIDS surveillance begins
- **1983:** New York State mandates named AIDS case reporting
- **2000:** New York State implements named reporting of HIV, detectable viral load and low CD4
- **2005:** HIV surveillance expands to include all HIV-related laboratory reports

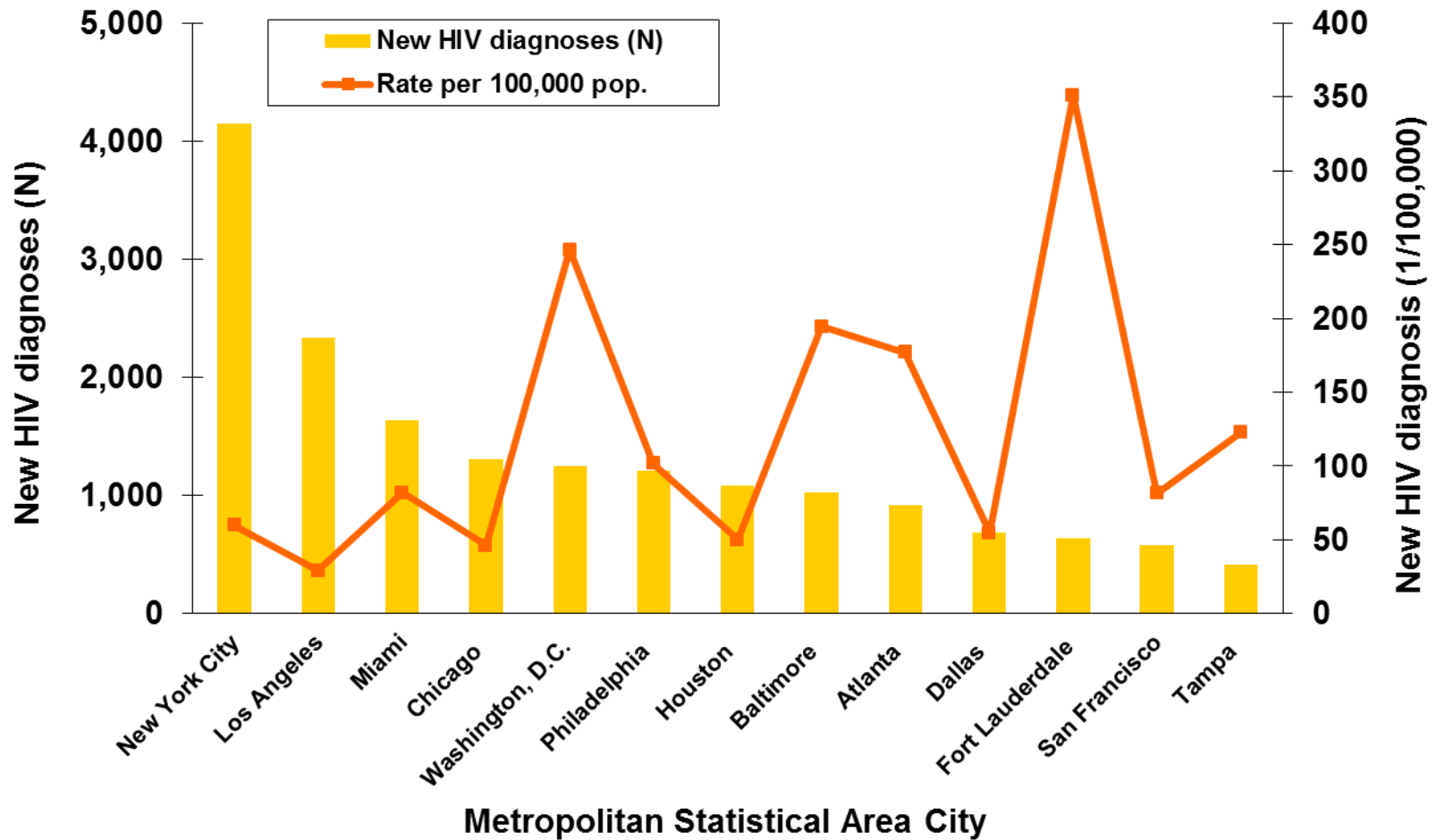
Public health surveillance of the epidemic has been in place for over 30 years and has evolved over time.

# Conducting HIV/AIDS Surveillance

- **Counting diagnoses and deaths**
- **Multiple sources:**
  - **Electronic lab reports**
  - **Medical chart reviews**
  - **Provider reports**
  - **Patient interviews**

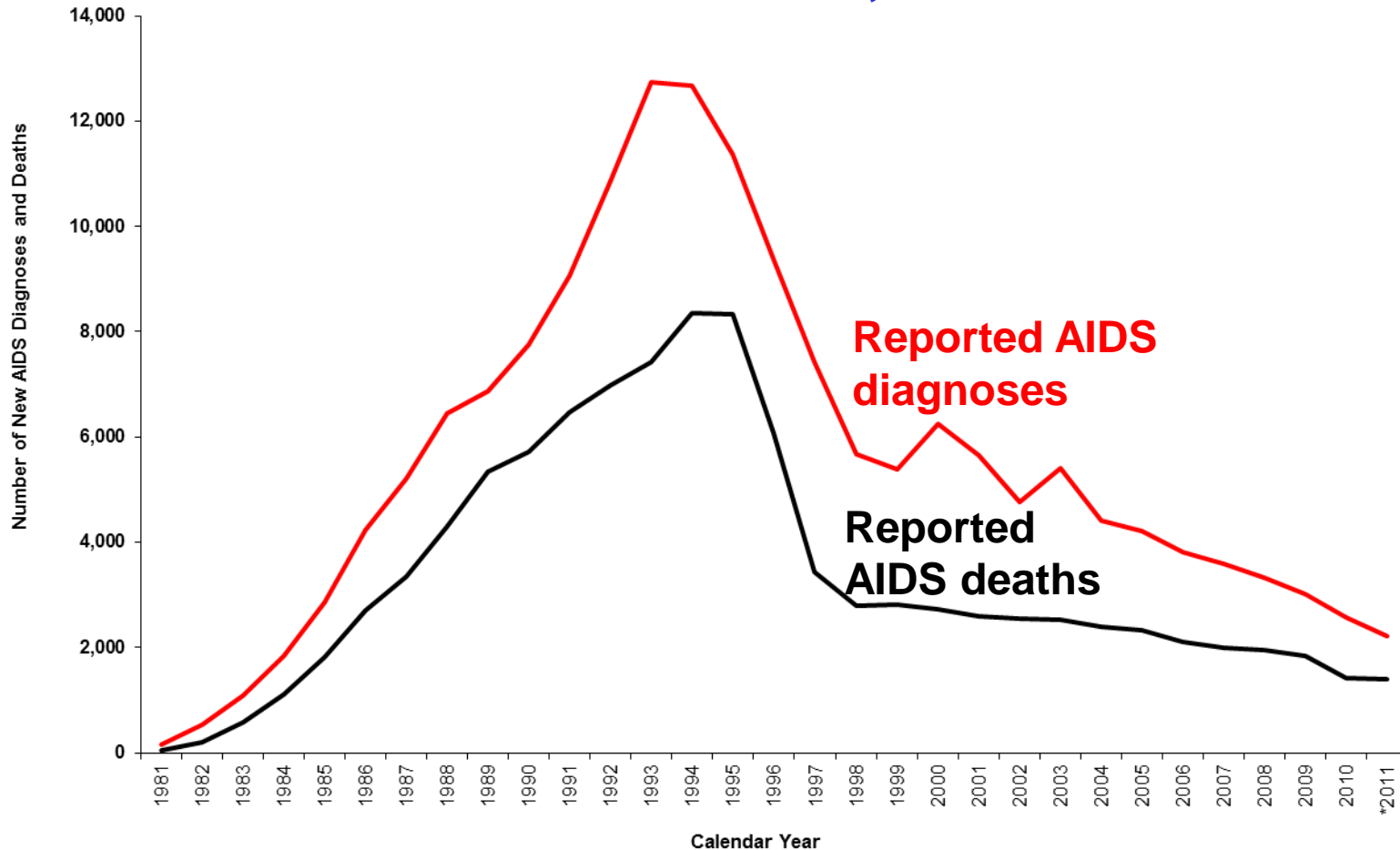
# Epidemiologic Overview

# Number of New HIV Diagnoses and Diagnosis Rates 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.**

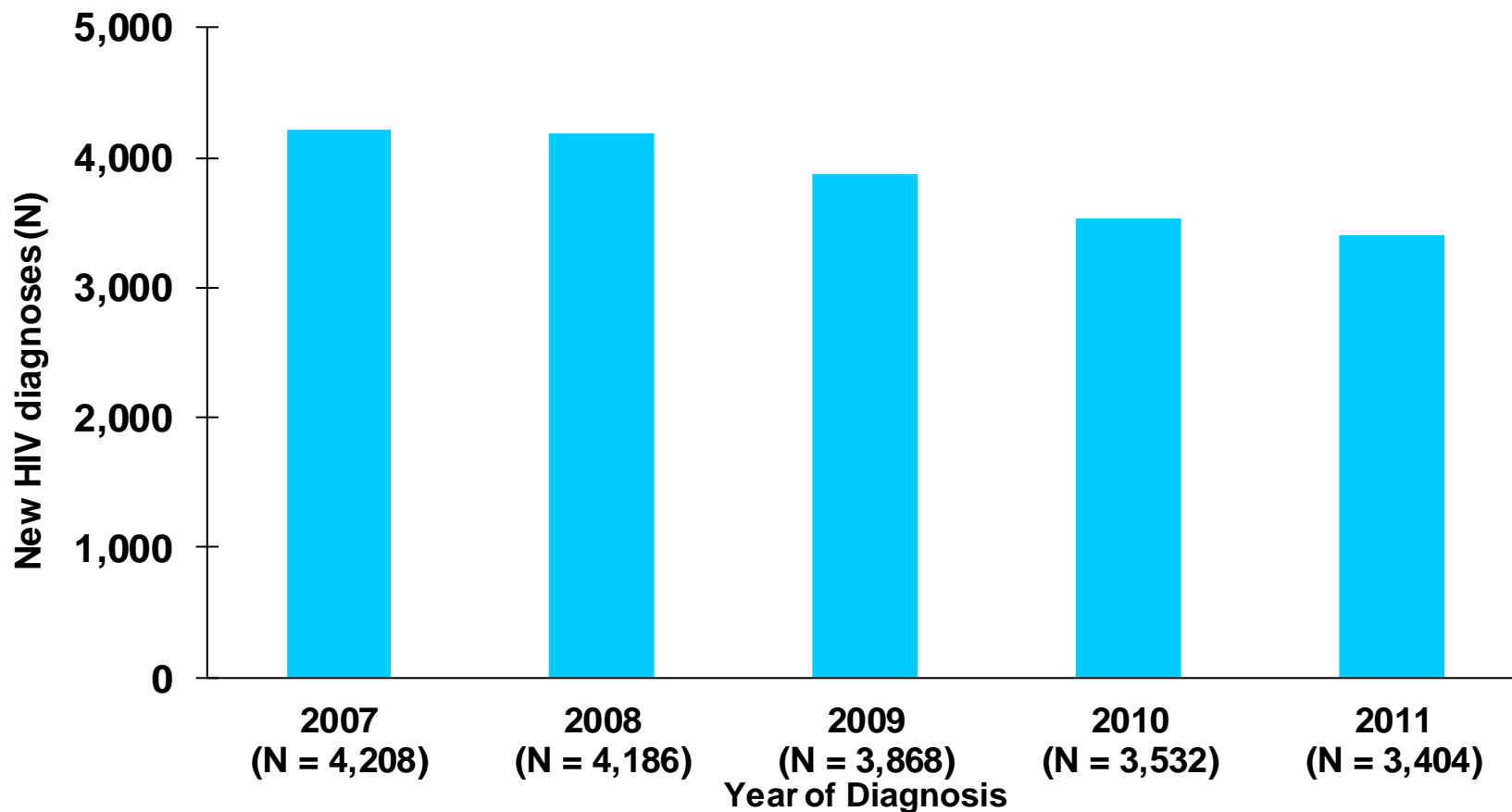
# Reported AIDS Diagnoses and Deaths in NYC, 1981-2011



**AIDS diagnoses and mortality peaked in the mid-1990's in New York City and have been declining since.**



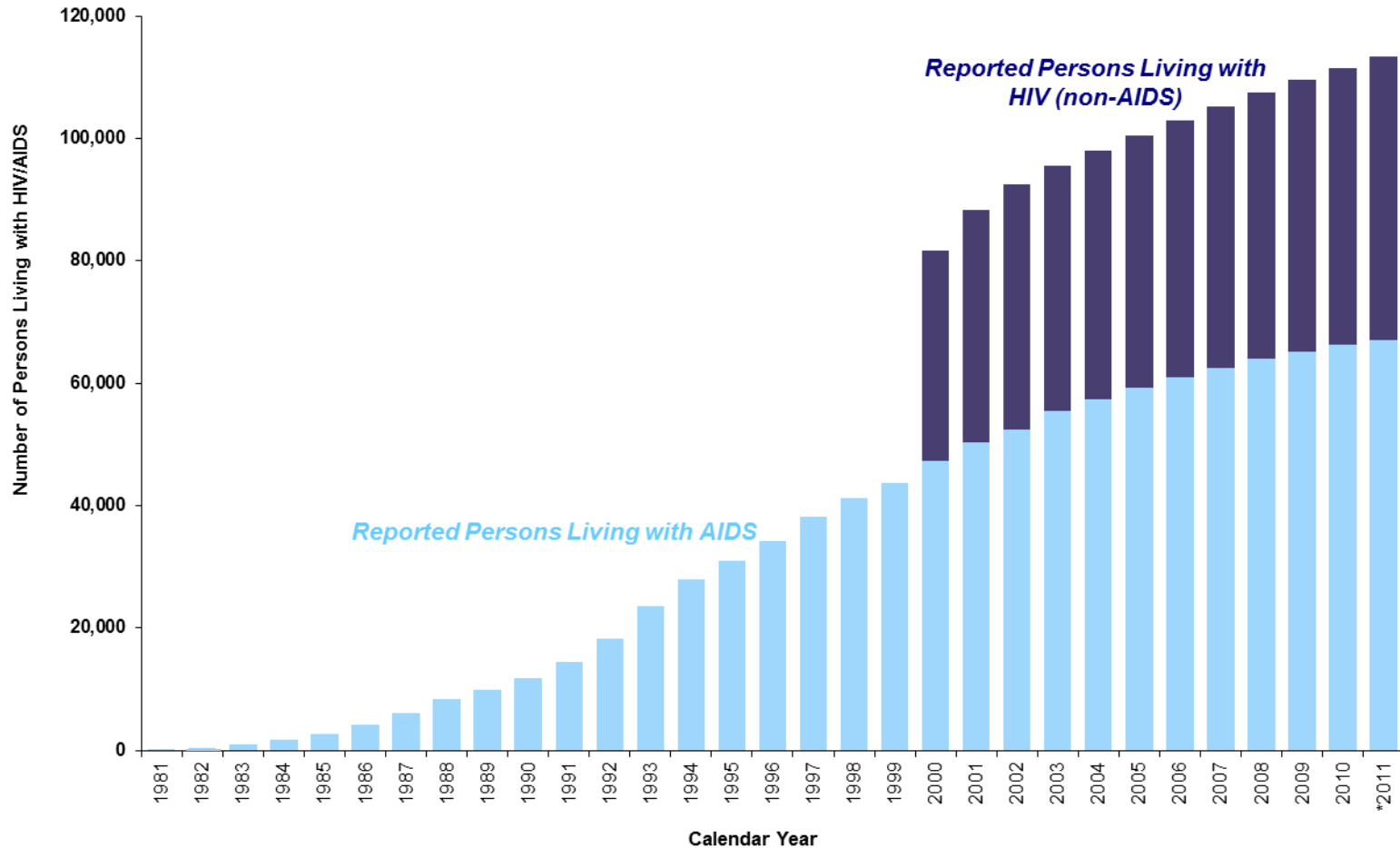
# Number of New HIV Diagnoses and Diagnosis Rates in NYC, 2007-2011



**The number of new HIV diagnoses has been decreasing from 2007 to 2011 but is still over 3,400 each year.**

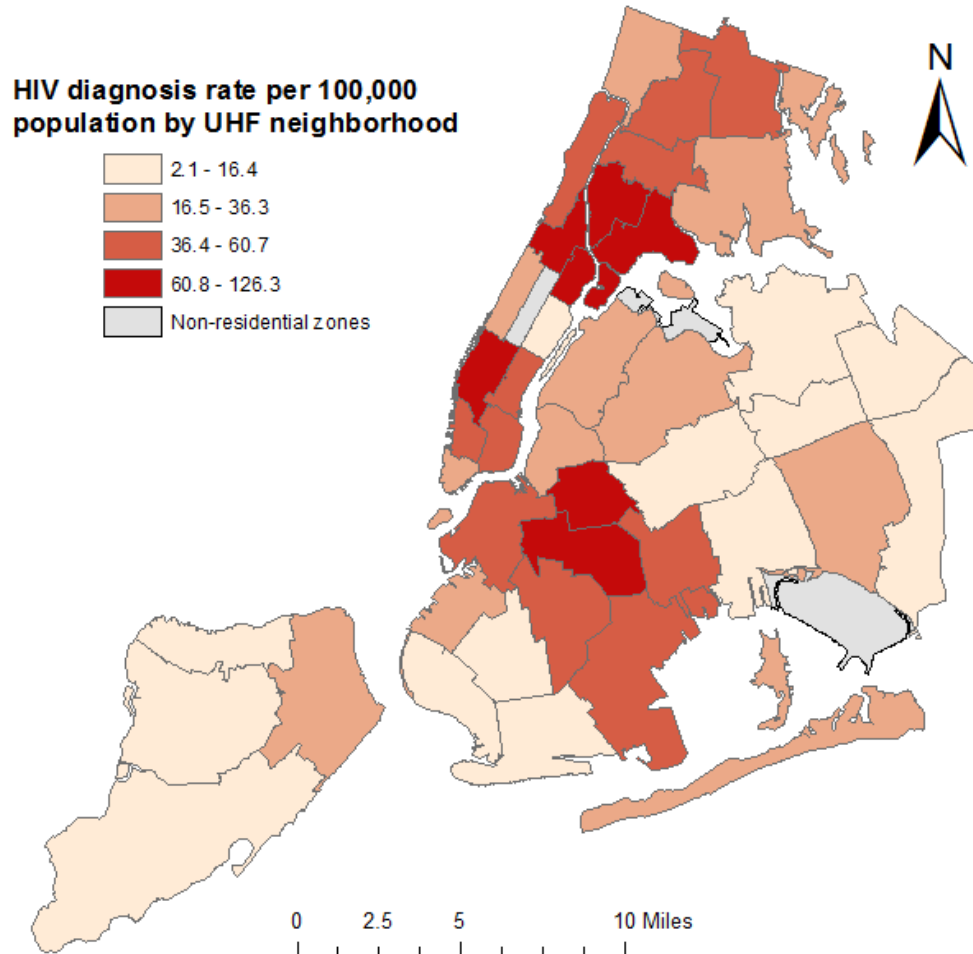
As reported to the New York City Department of Health and Mental Hygiene by September 30, 2012.

# Reported Persons Living with HIV/AIDS in NYC, 1981-2011



**There were 113,319 persons diagnosed and reported in New York City and presumed to be living with HIV/AIDS at end of 2011.**

# 2011 HIV Diagnosis Rates



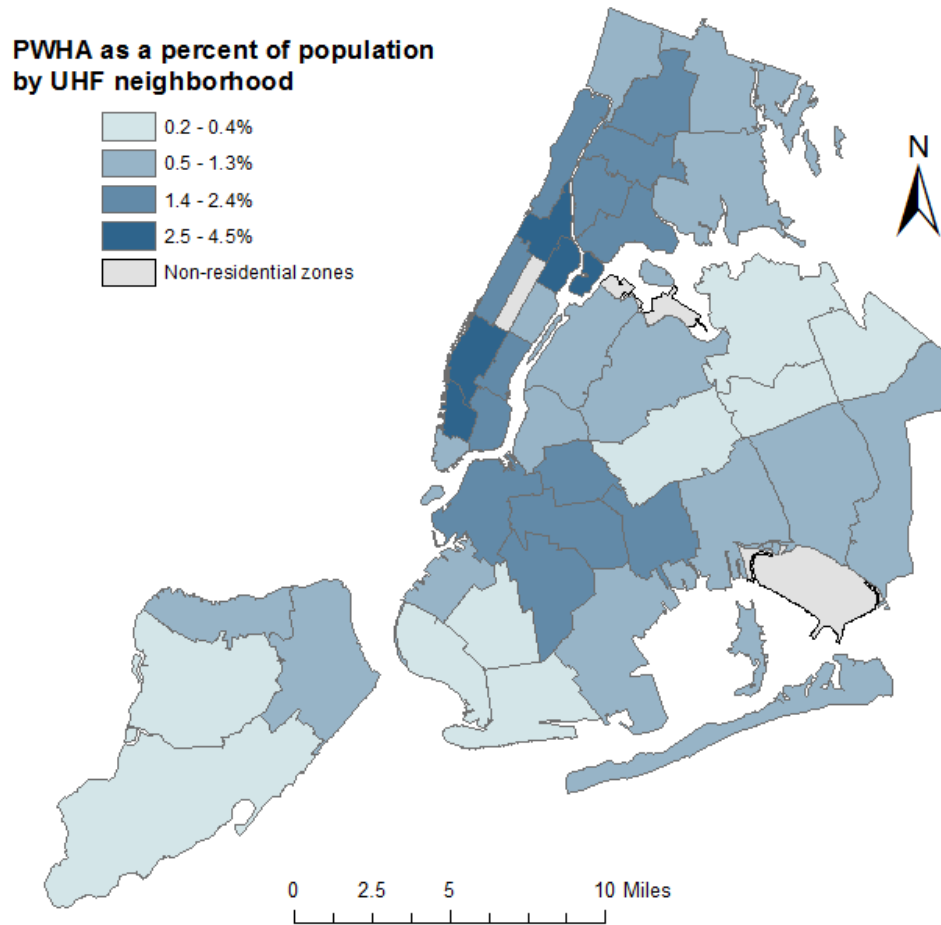
**In 2011, UHF neighborhoods with the highest rates of HIV diagnoses were in the South Bronx, Central Brooklyn, Chelsea-Clinton and Harlem.**

Rates based on 2010 Census population.

UHF boundaries used in this map have been updated from previous maps.

As reported to the New York City Department of Health and Mental Hygiene by September 30, 2012.

# 2011 HIV Prevalence



**In 2011, UHF neighborhoods with the highest proportions of PWHA were in the South Bronx, Central Brooklyn, Chelsea-Clinton and Harlem.**

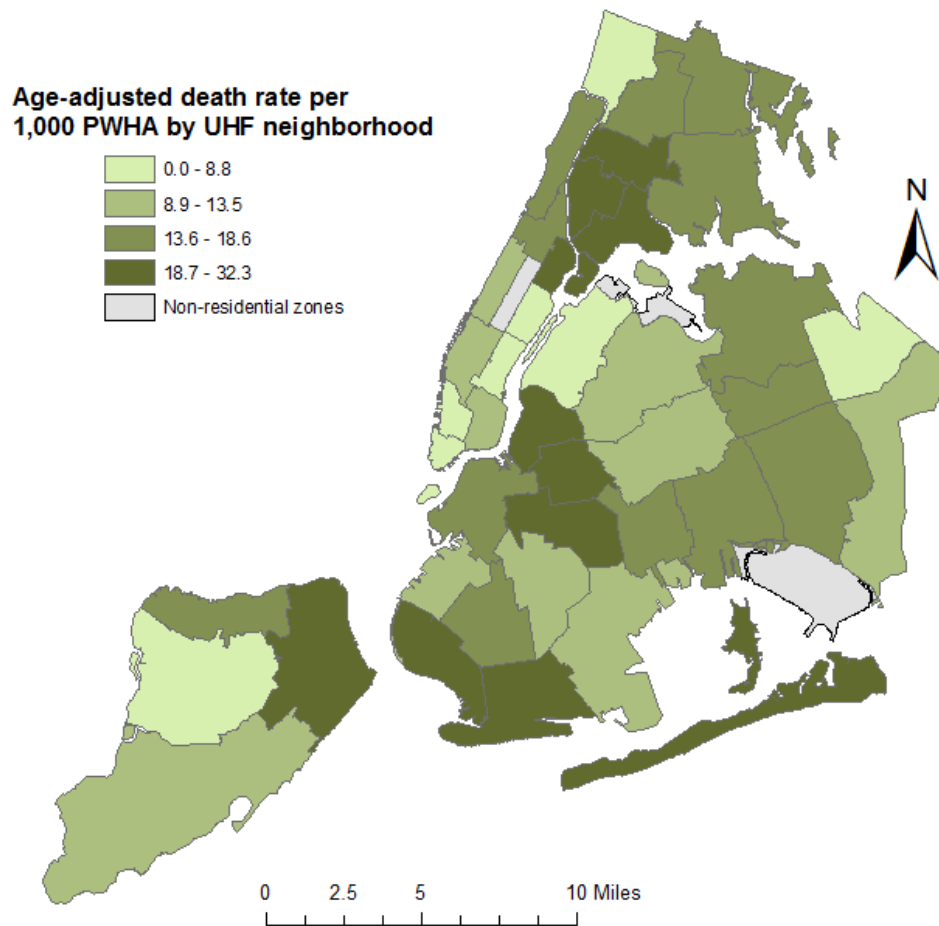
Denominators for prevalence based on 2010 Census population.

UHF boundaries used in this map have been updated from previous maps.

PWHA = Persons With HIV/AIDS alive at any time January 1, 2011 - December 31, 2011.

As reported to the New York City Department of Health and Mental Hygiene by September 30, 2012.

# 2011 Age-adjusted Death Rates



**In 2011, most high-prevalence neighborhoods also had high mortality among PWHA. However, Chelsea-Clinton had the highest prevalence in the city but comparatively low mortality.**

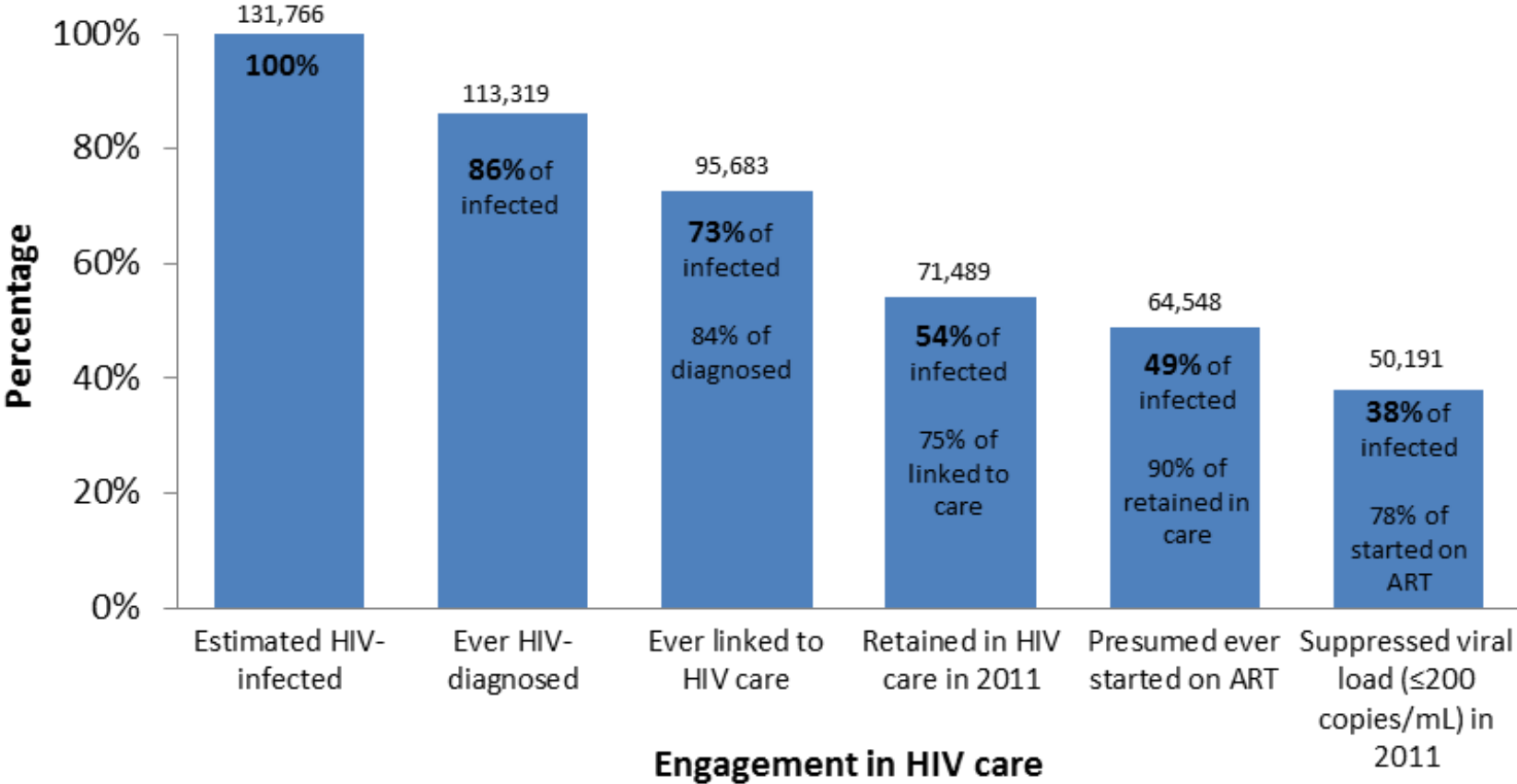
Age-adjusted to citywide population of PWHA in 2011.

PWHA = Persons With HIV/AIDS alive at any time January 1, 2011 - December 31, 2011.

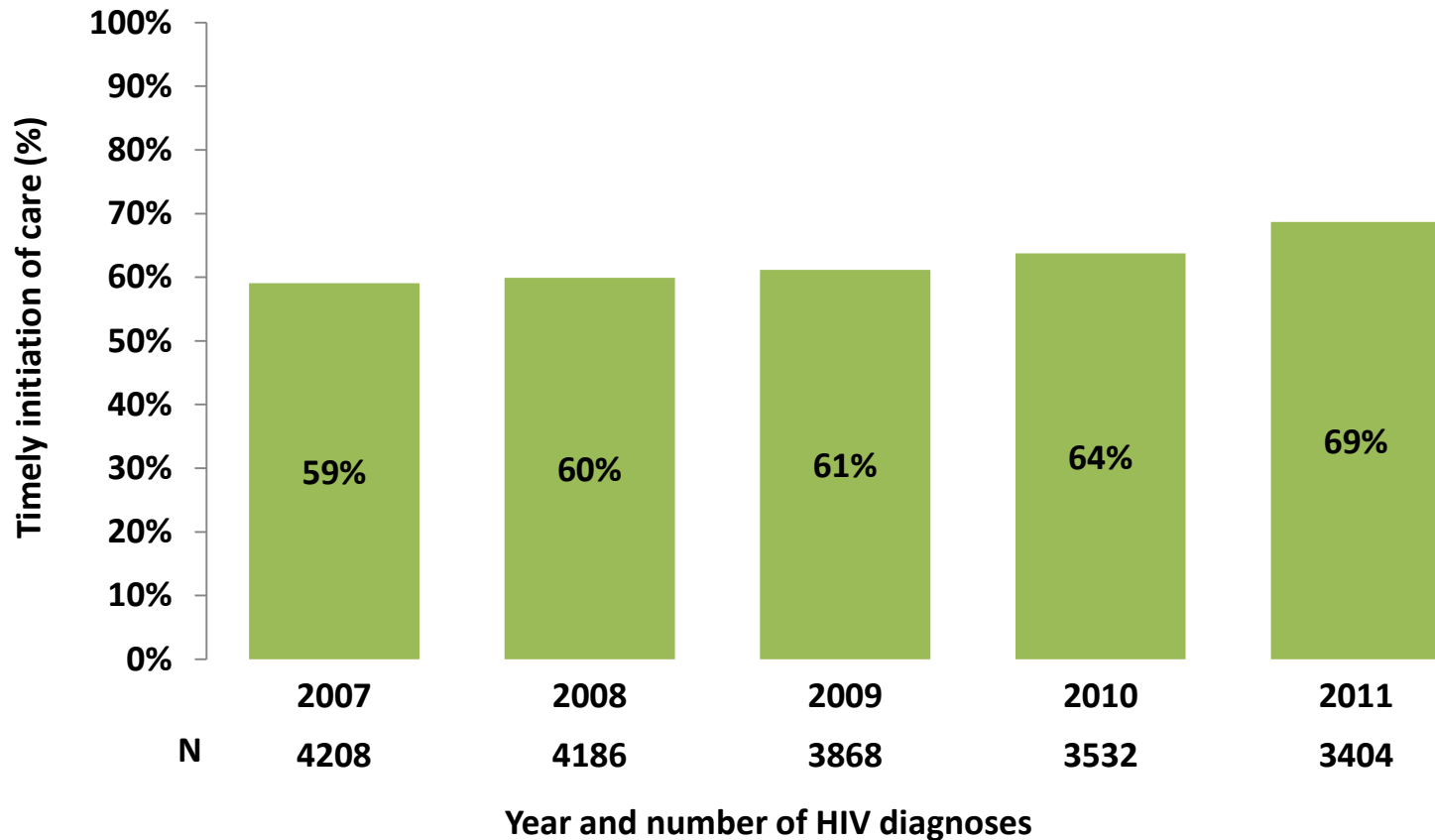
As reported to the New York City Department of Health and Mental Hygiene by September 30, 2012.

# HIV-Related Medical Care

# Number and proportion of persons diagnosed with HIV in New York City engaged in selected stages of the continuum of care at the end of 2011



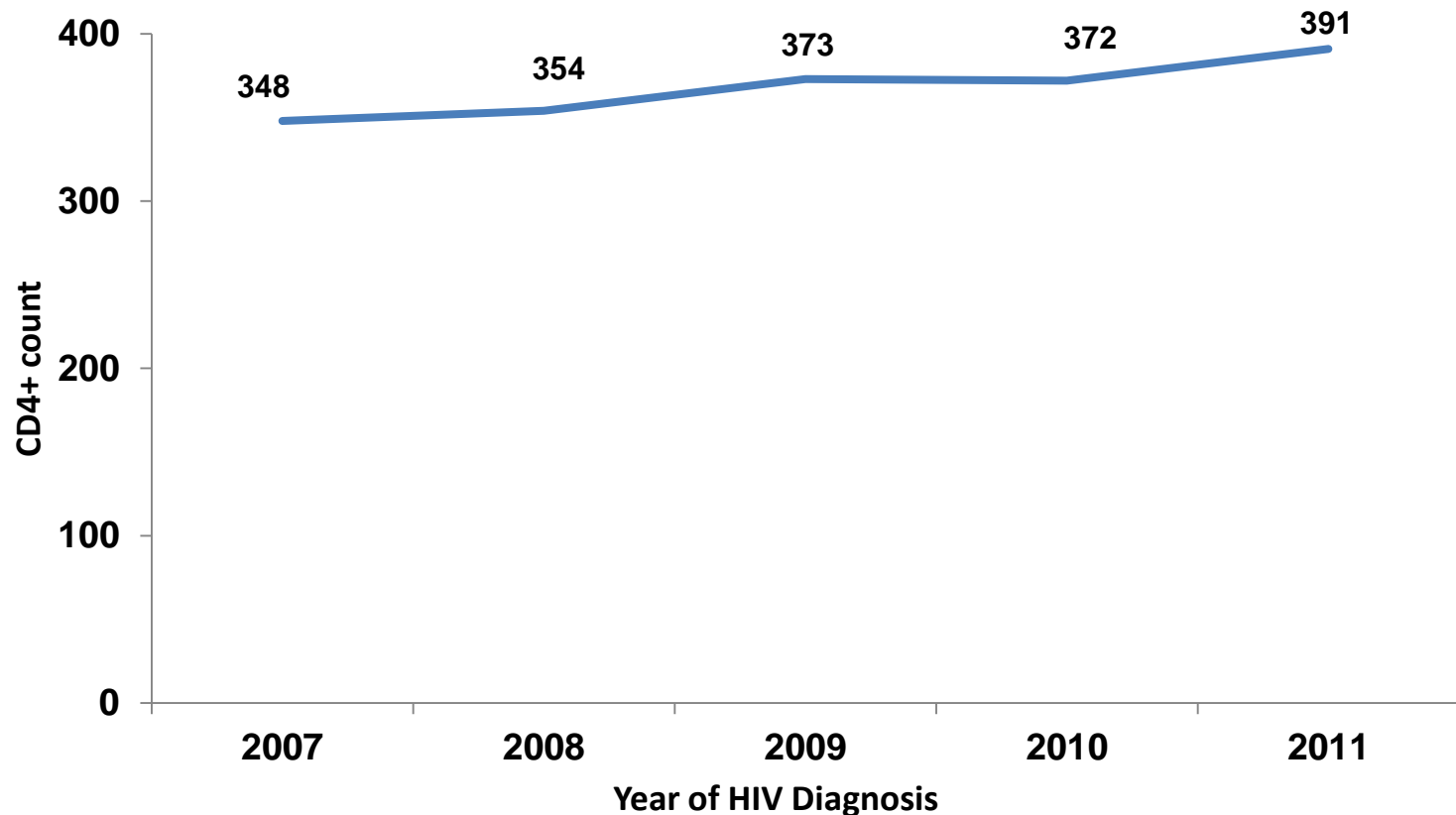
# Timely Initiation of Care among Persons Newly Diagnosed with HIV in NYC, 2007–2011



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

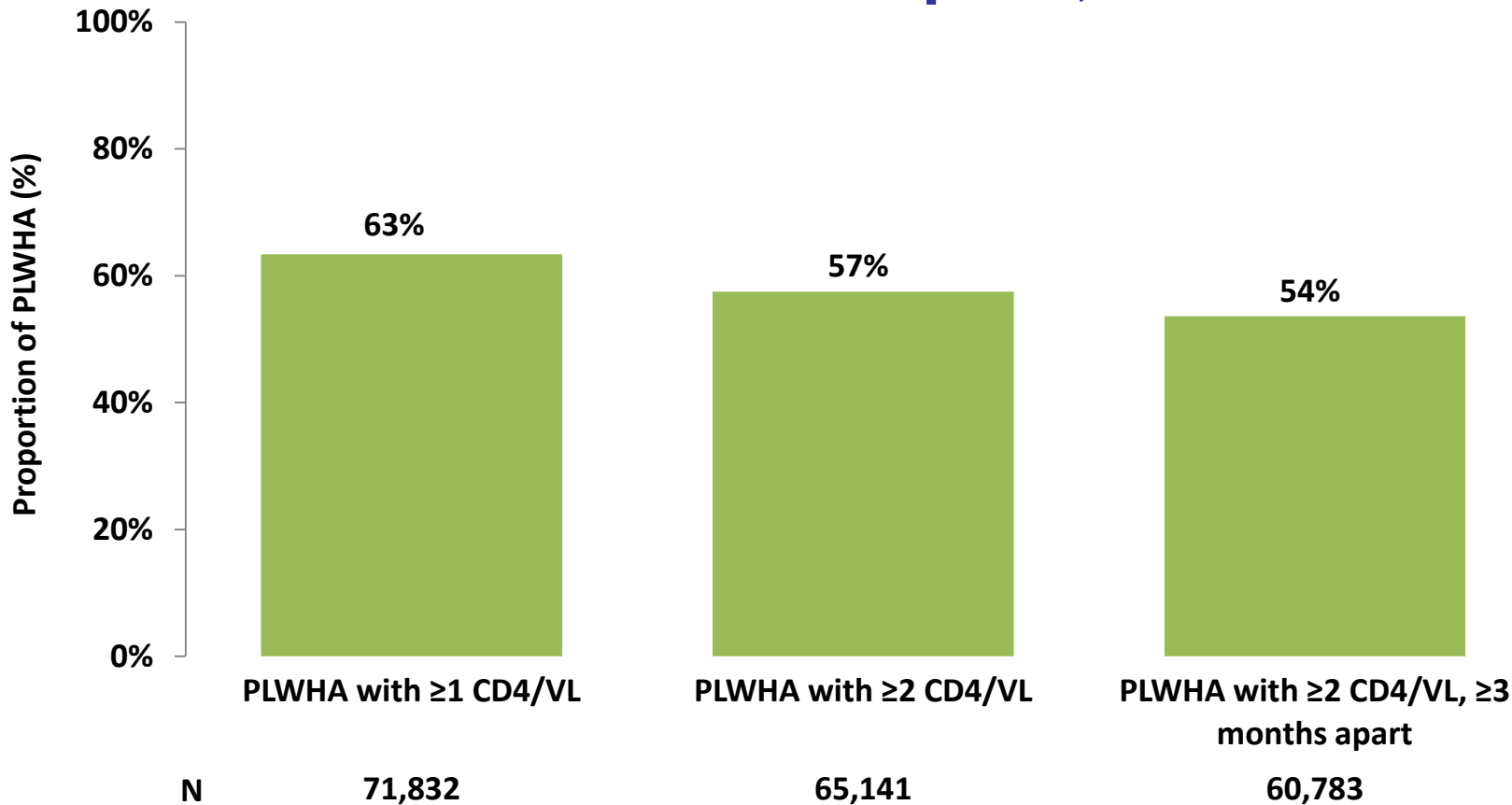


# Median CD4 Count at Diagnosis<sup>1</sup> among Persons Newly Diagnosed with HIV in NYC, 2007–2011



**Median CD4 count at HIV diagnosis in NYC increased from 2007 to 2011.**

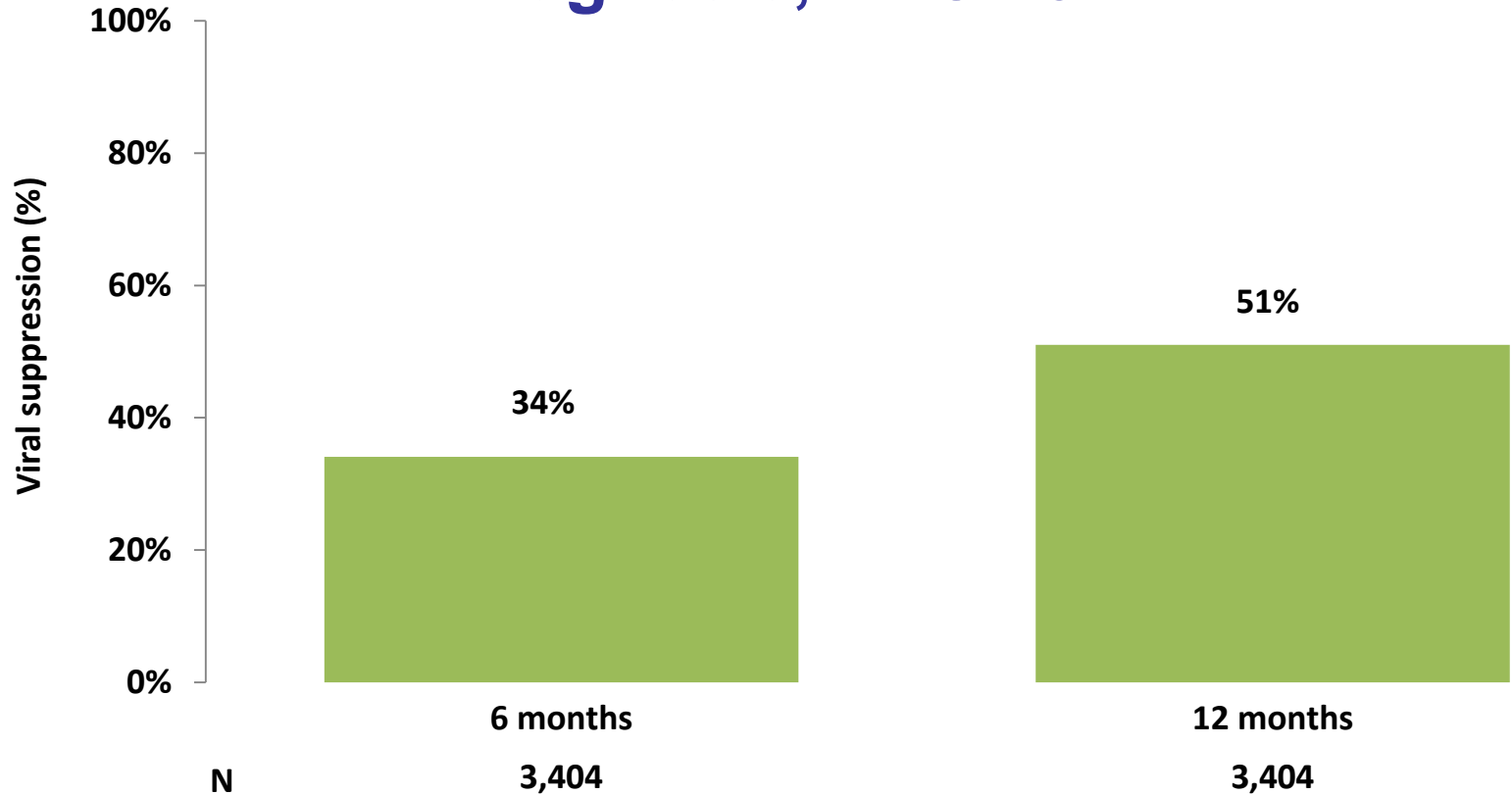
# Proportion of PLWHA in 2011 with $\geq 2$ CD4 or VL Tests Ordered by an NYC Provider in 2011, at Least 3 Months Apart<sup>1</sup>, NYC



**Over half of persons living with HIV/AIDS in 2011 in NYC had at least 2 CD4 or VL tests, at least 3 months apart, in 2011.**

<sup>1</sup>PLWHA are considered by the Human Resources Service Administration (HRSA) to be retained in continuous medical care if they have  $\geq 2$  medical visits at least 90 days apart within a 12-month period. As reported to the NYC DOHMH by September 30, 2012.

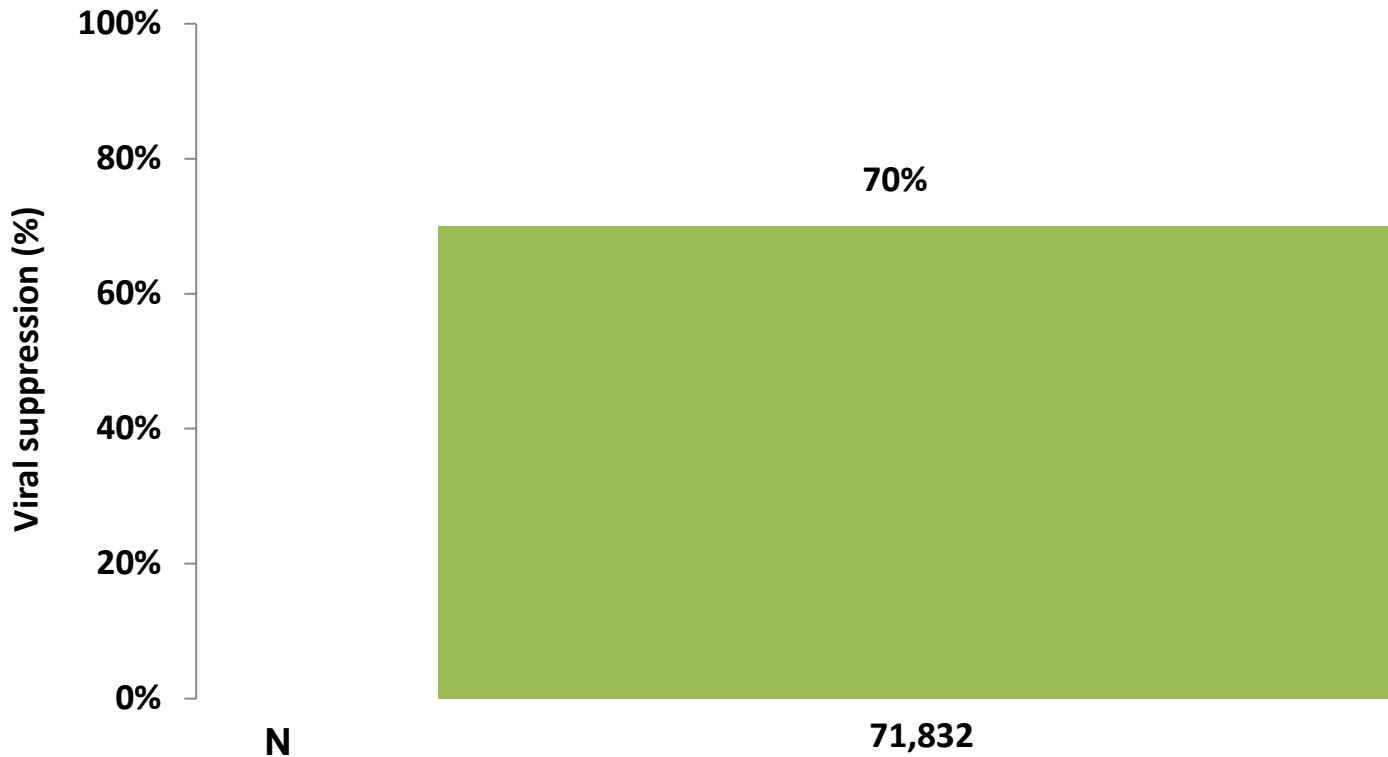
# Proportion of Persons Newly Diagnosed with HIV with Viral Suppression<sup>1</sup> at 6 and 12 Months After Diagnosis, NYC 2011



**Over half of persons newly diagnosed with HIV in NYC in 2011 were virally suppressed by 12 months after diagnosis.**

<sup>1</sup>Viral suppression is defined as viral load  $\leq 200$  copies/mL. As reported to the NYC DOHMH by September 30, 2012.

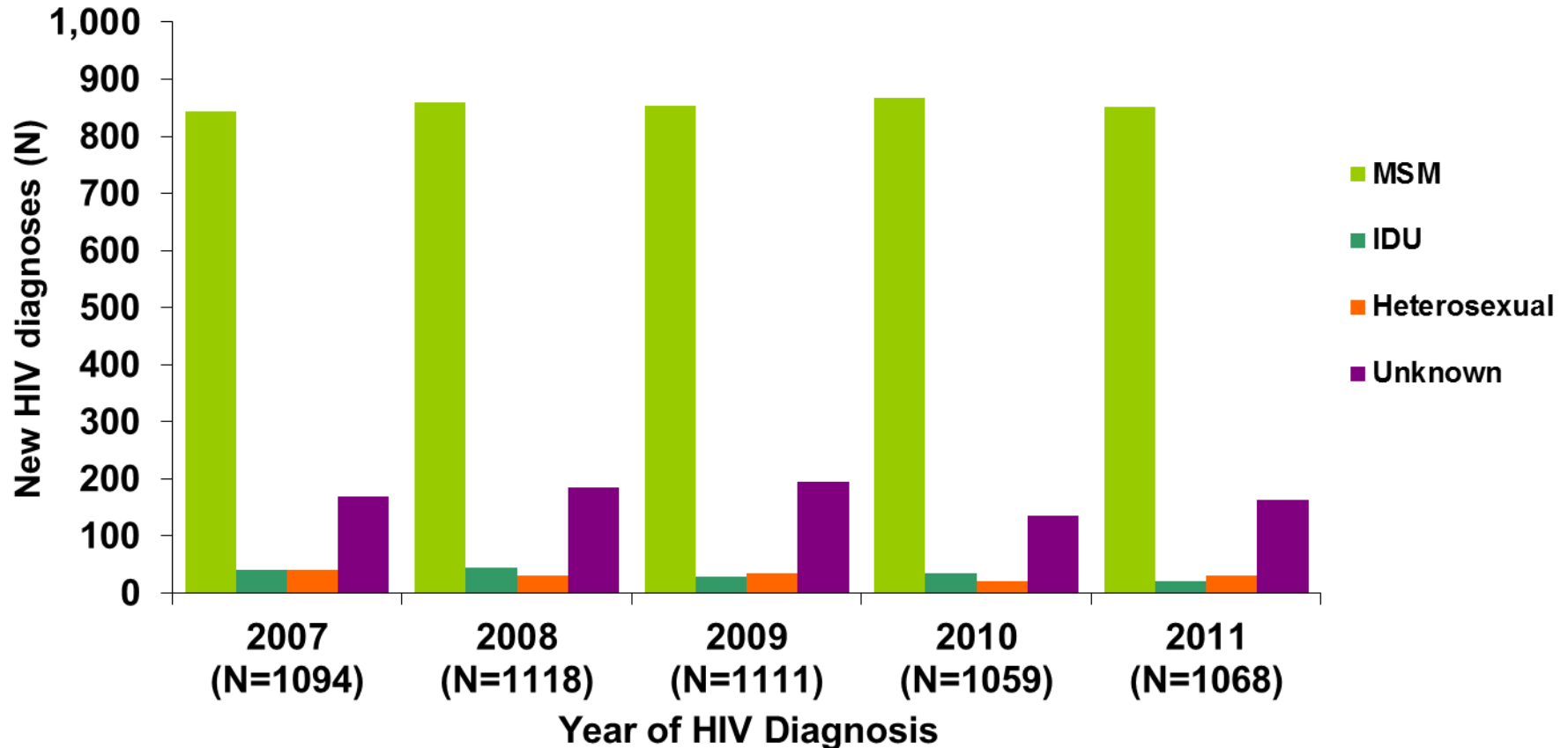
# Proportion of PLWHA in 2011 with a CD4 or VL Test Ordered by an NYC Provider in 2011 whose Last HIV VL Result Indicated Viral Suppression<sup>1</sup>



**Nearly three-quarters of persons living with HIV/AIDS and under clinical monitoring in NYC in 2011 had an undetectable last viral load.**

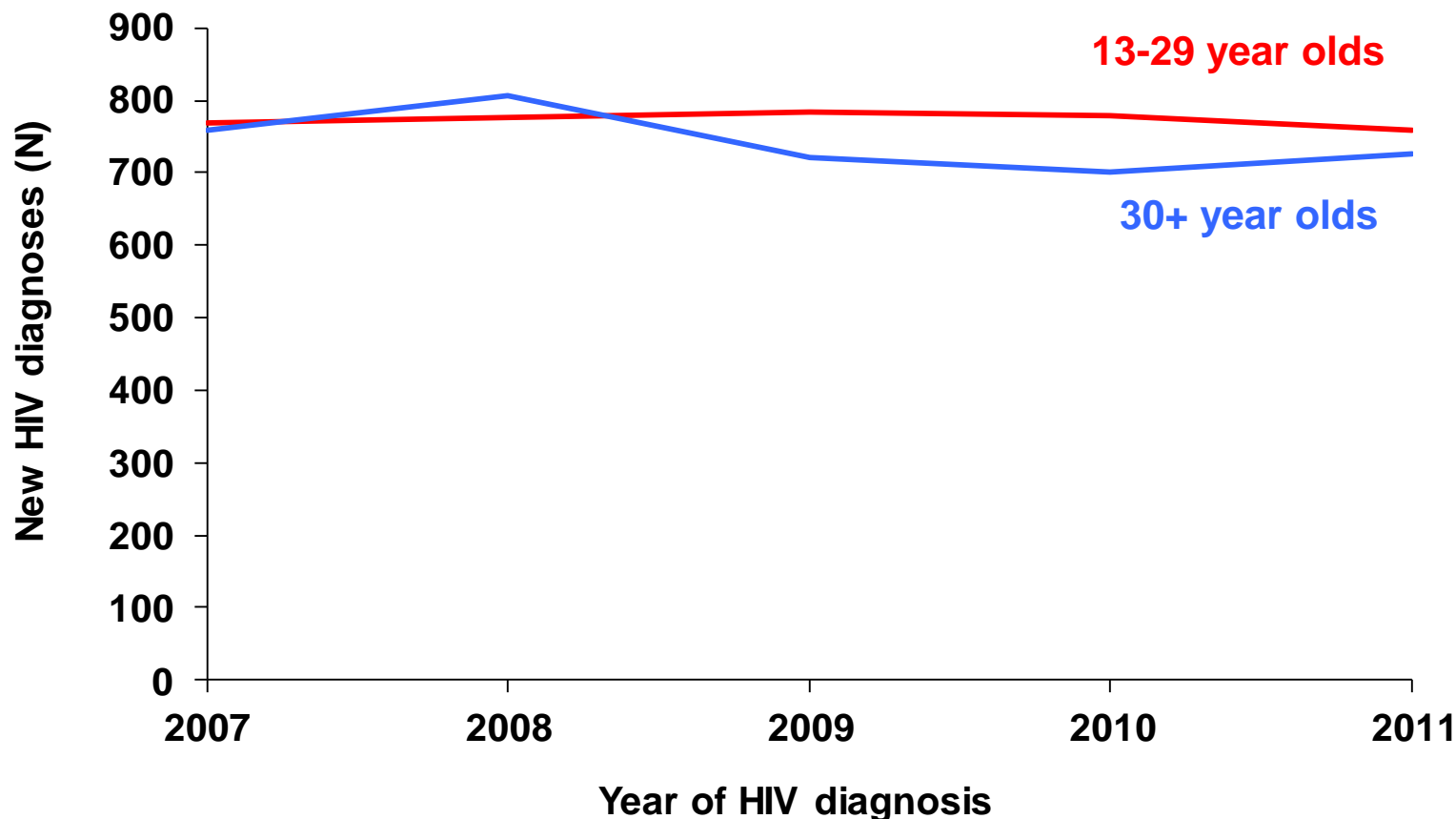
# HIV in Subpopulations

# Number of New HIV Diagnoses among Males 13-29 by Transmission Risk Category in NYC, 2007-2011



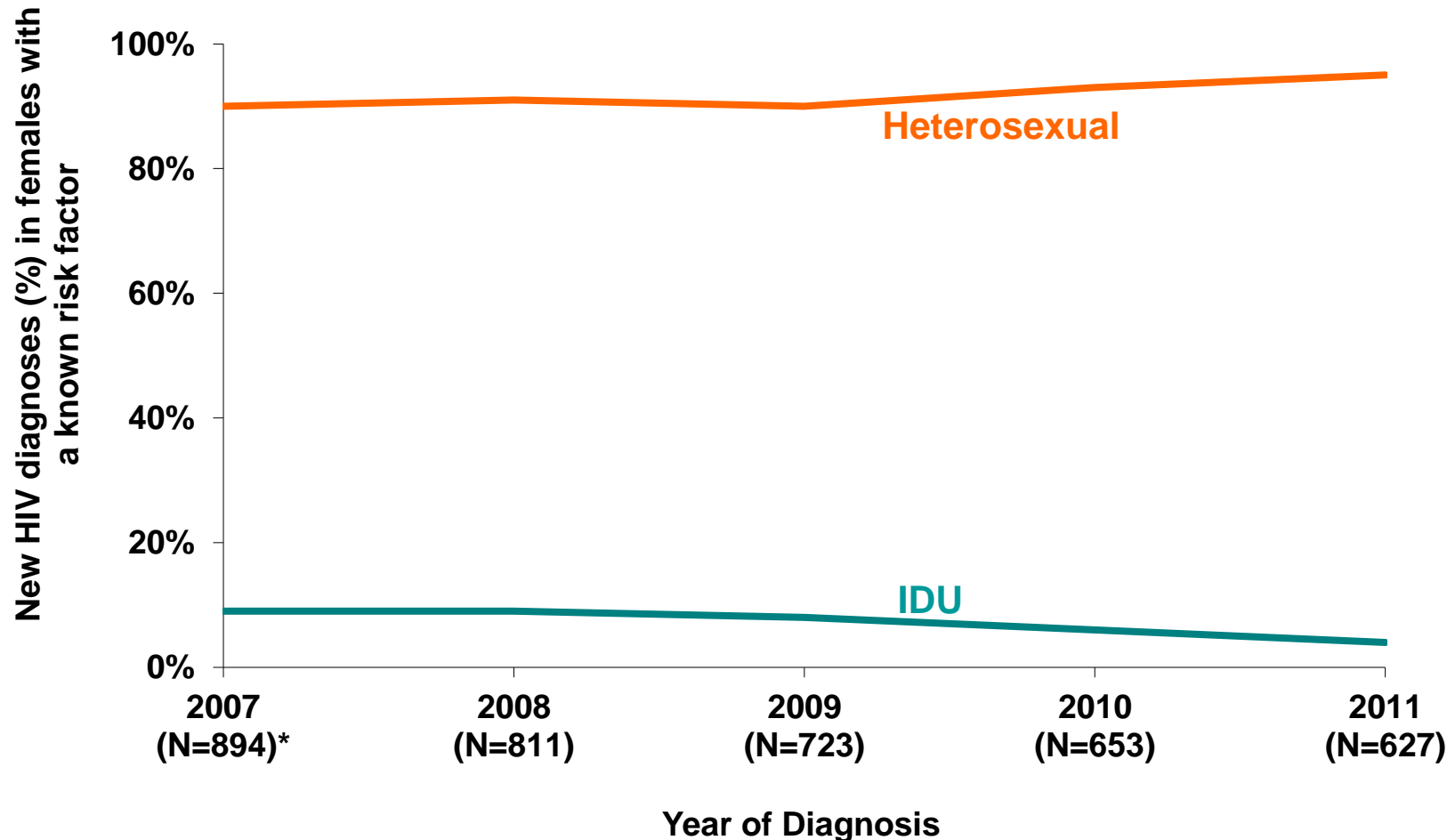
**84% of newly diagnosed persons 13-29 in 2011 were male. The number of new HIV diagnoses among males aged 13-29 with MSM risk was consistently higher than other transmission risk categories during 2007-2011.**

# Number of New HIV (Non-AIDS) Diagnoses among MSM by Age in NYC, 2007-2011



**Since 2009, the number of new HIV diagnoses among young men aged 13-29 has been higher than among men aged 30+.**

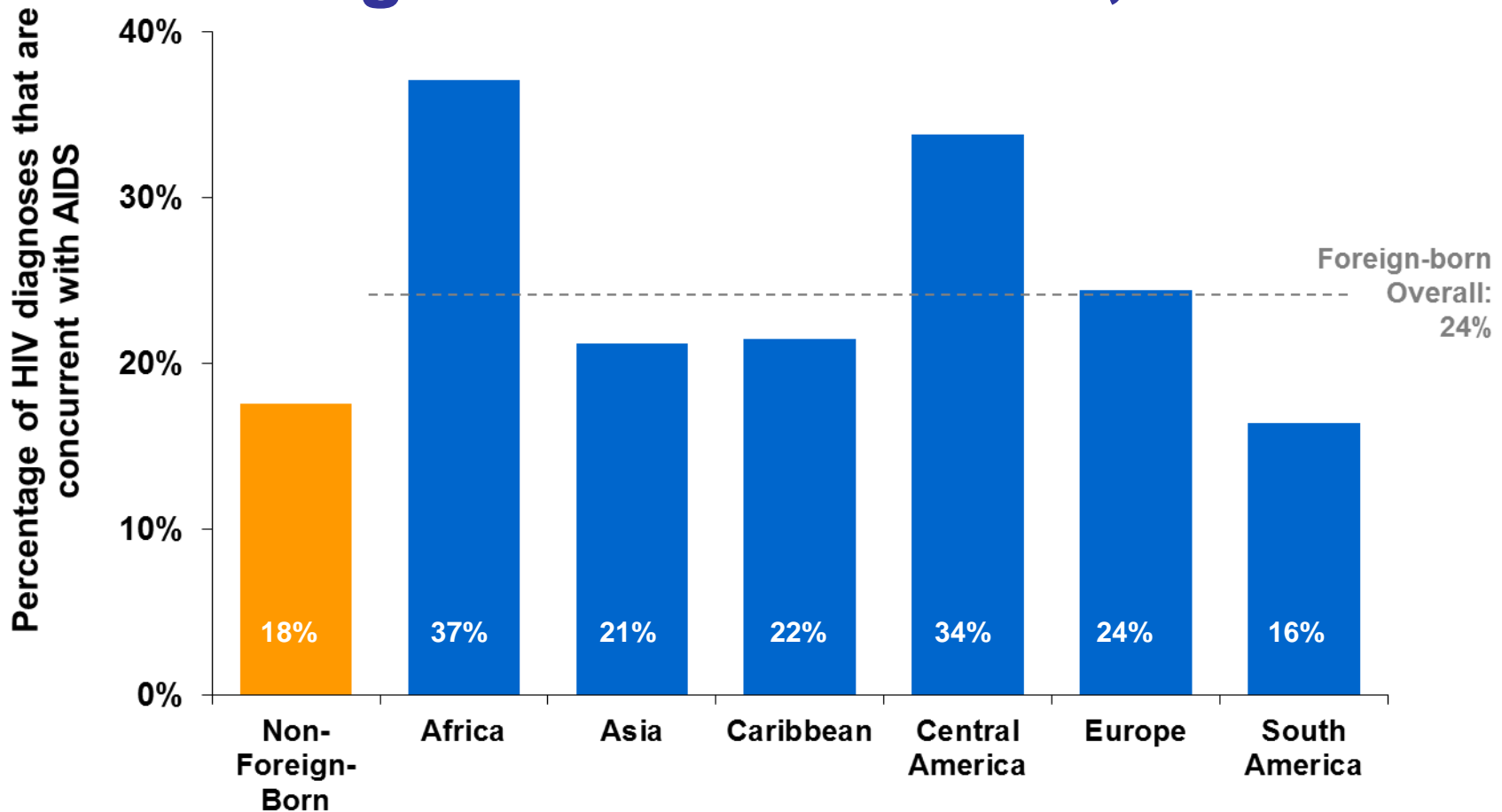
# Percentage of New HIV Diagnoses among Females by Transmission Risk in NYC, 2007-2011



**In 2011, 95% of new HIV diagnoses among females with known risk were attributed to heterosexual transmission.**



# Concurrent Diagnosis<sup>1</sup> of HIV/AIDS by Region of Birth\* in NYC, 2011



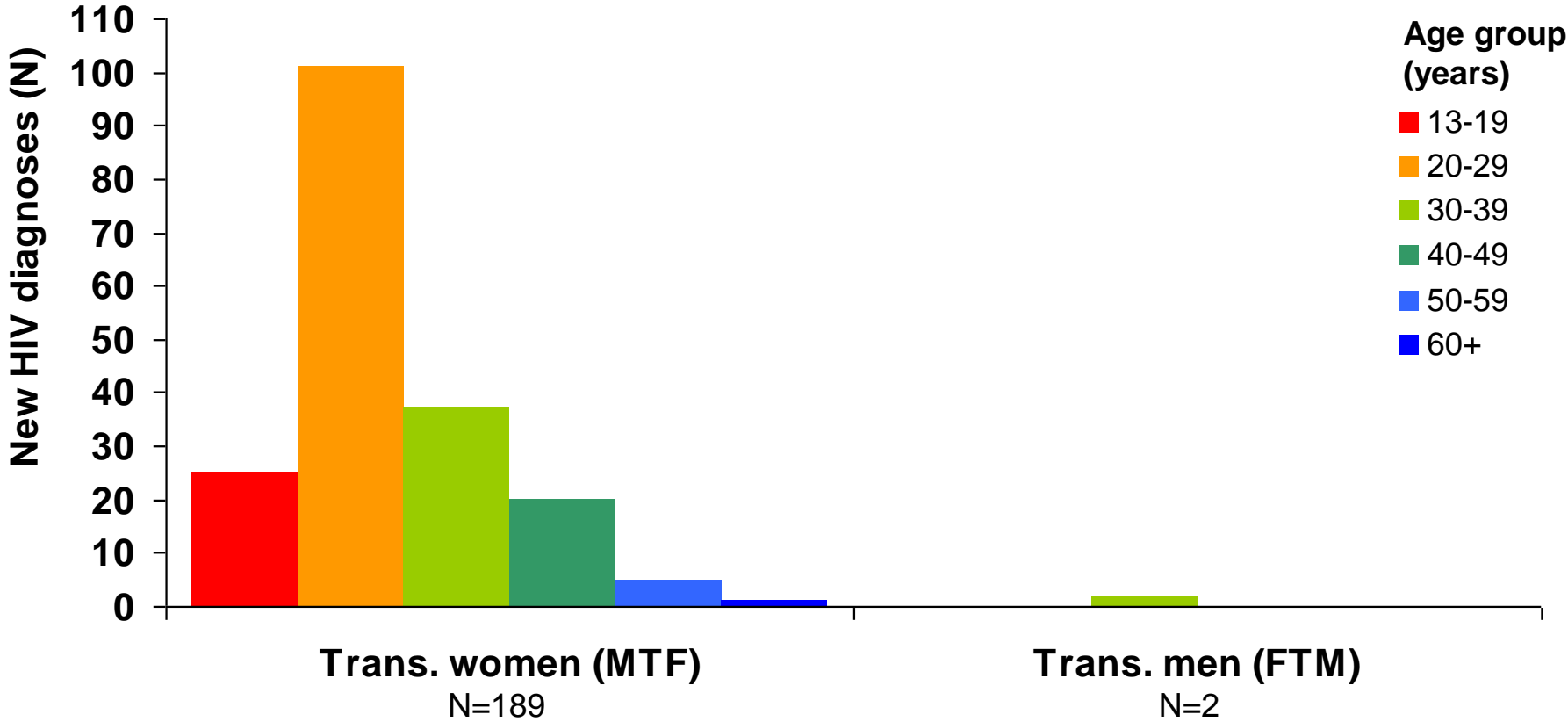
**Foreign-born New Yorkers from every region were more frequently diagnosed concurrently with HIV and AIDS than the non-foreign-born.**

<sup>1</sup>AIDS diagnosis within 31 days of HIV diagnosis.

\*Middle East not shown because of small numbers. Among 14 Middle-East-born persons newly diagnosed with HIV in NYC in 2010-2011 combined, 7% were diagnosed concurrently with AIDS.

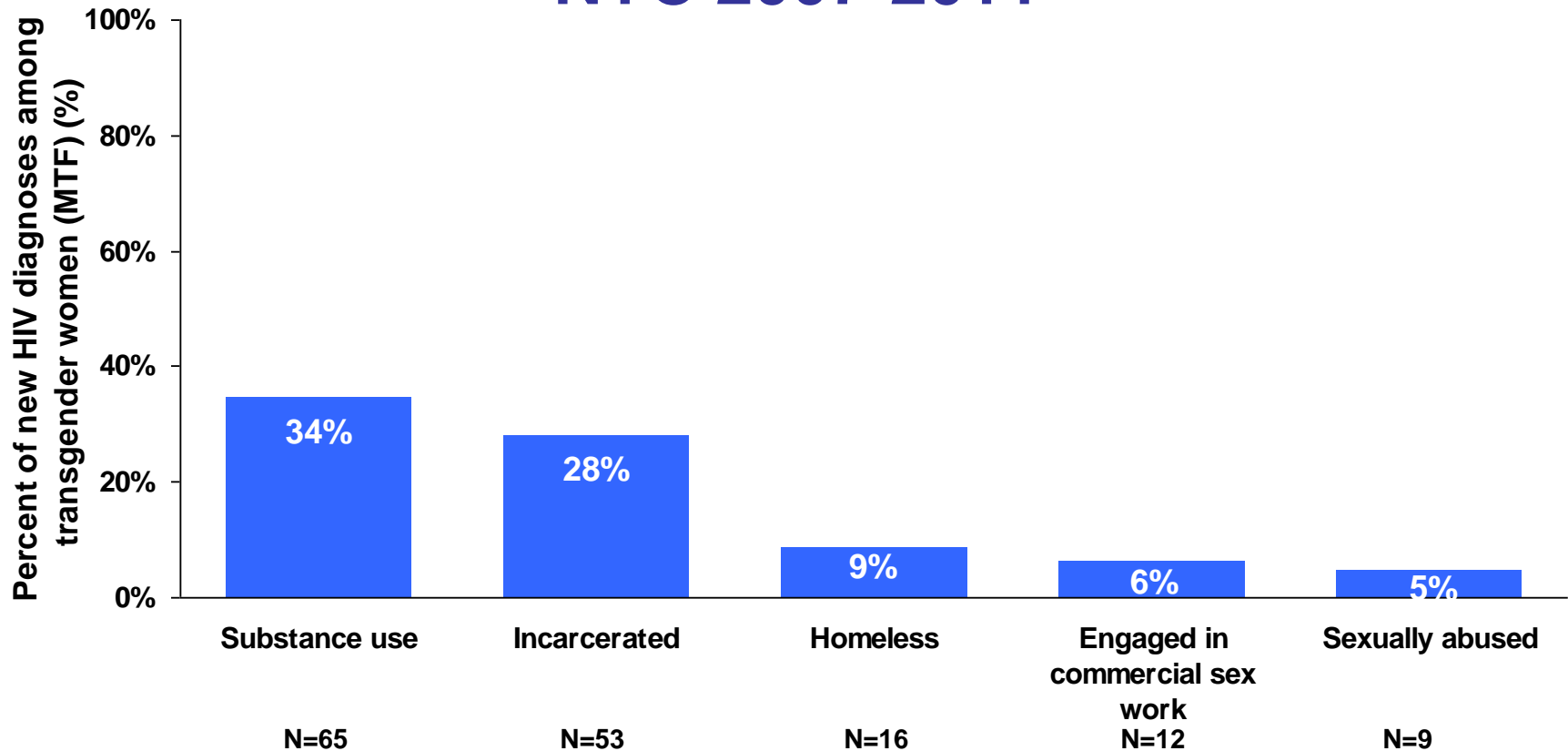
As reported to the New York City Department of Health and Mental Hygiene by September 30, 2012.

# Number of New HIV Diagnoses among Transgender Persons by Gender Identity and Age at Diagnosis, NYC 2007-2011



Newly diagnosed transgender women (MTF) were predominantly in their 20s. Transgender men (FTM) were in their 30s.

# Additional Characteristics\* of Transgender Women (MTF) Newly Diagnosed with HIV, NYC 2007-2011



**Among newly diagnosed transgender women (MTF), 51% had documentation in their medical record or by their provider of a history of at least one of the characteristics presented above, compared with 31% of non-transgender persons (not shown).**

\* All characteristics are from any time, e.g., ever incarcerated, and rely on this information being documented by the medical provider. As reported to the New York City Department of Health and Mental Hygiene by September 30, 2012.

# HIV and STDs

- **Coinfection with an(other) STD is common among persons with HIV**
- **STD diagnosis was reported in year of HIV diagnosis for 7% of 2005 and 13% of 2009 NYC HIV diagnoses**
- **39% of 2005 coinfections and 53% of 2009 coinfections were joint diagnoses (within same calendar month), suggesting improved adherence to dual HIV/STD screening recommendations**

# Implications

# Implications

- **Changing epidemic citywide**
  - HIV diagnoses declining modestly or stable in nearly all groups
  - AIDS diagnoses and deaths declining
  - Population of PLWHA still increasing
- **NYC and US focus on treatment as prevention**
  - Encourage testing (Bronx Knows, Brooklyn Knows, NYS HIV testing law since Sept. 2010)
  - Promote timely linkage to HIV medical care and other forms of support after diagnosis
  - Recommend treatment be offered to all persons with HIV (since Mar. 2012) to improve health and suppress virus, thereby reducing transmission
  - New applications for surveillance data to monitor National HIV/AIDS Strategy goals and other outcomes

**Thank you.**



# Appendix

## Technical notes (1)

- Data presented by borough exclude persons with unknown residence or living outside of NYC. The proximity of HIV-infected New Yorkers to HIV medical care providers with offices outside of NYC may account for differences in care initiation by borough. Because the HIV Epidemiology and Field Services Program does not receive HIV laboratory reports from providers located outside of NYC, receipt of HIV-related medical care may be underestimated for NYC residents receiving care from providers outside of NYC, and for former NYC residents who have re-located permanently to another jurisdiction where they live and receive care.
- Newly diagnosed persons who die during the follow-up period (e.g., within 3 months from diagnosis for linkage analyses) are included in the denominator.
- Heterosexual risk includes persons who had heterosexual sex with an HIV-infected person, an injection drug user, or a person who has received blood products. For females only, heterosexual risk also includes history of prostitution, multiple sex partners, sexually transmitted disease, crack/cocaine use, sex with a bisexual male, probable heterosexual transmission as noted in medical chart, or sex with a male and negative history of injection drug use.
- Unless otherwise noted, numbers and percents are rounded to the nearest whole number or nearest tenth.
- As noted throughout, the analyses summarized in this slide set utilized CD4 and viral load tests reported to surveillance as proxies for the receipt of HIV-related medical care. Because CD4 and viral load tests are a proxy rather than direct measure of the receipt of HIV-related medical care, some patients may be misclassified as having received HIV-related medical care when they did not, and vice versa. Furthermore, the validity of CD4 and viral load tests as a proxy for HIV-related medical care may vary during the lifetime of a PLWHA.



# Appendix

## Technical notes (2)

- Technical notes and definitions for slides on the “continuum of care”:
  - “Estimated HIV-infected”: equal to the number of persons diagnosed with and presumed living with HIV in NYC at the end of 2011 (PLWHA), divided by the estimated proportion of all HIV-infected persons in NYC who have been diagnosed. An emergency room serosurvey established this proportion as 86%. Source: *Eavey JJ, Torian LV, Jablonsky A, Nickerson JE, Fettig JF, Leider J, Calderon Y. Undiagnosed HIV Infection in a New York City Emergency Room: Results of a Blinded Serosurvey, December 2009-January 2010. 19<sup>th</sup> International AIDS Conference, 2012, Washington, DC. Abstract# TUPE282.*
  - “HIV diagnosed”: PLWHA as of 12/31/2011, per surveillance case reporting.
  - “Ever linked to HIV care”: Any viral load (VL) or CD4 count drawn in the years 2001-2011 and received after HIV diagnosis following a 7-day lag, and reported to DOHMH HIV surveillance.
  - “Retained in HIV care in 2011”: VL or CD4 count or CD4 percent drawn in 2011, and reported to DOHMH HIV surveillance.
  - “Presumed ever started on ART”: Suppressed VL ( $\leq 200$  copies/mL) reported to DOHMH HIV surveillance at any point from 2001-2011.
  - “Suppressed viral load in 2011”: Most recent VL drawn in 2011 and reported to NYC DOHMH HIV surveillance was  $\leq 200$  copies/mL.