



**Department  
of Health**

# **Sentinel Events: AIDS Mortality**

**HIV-Related vs. Not HIV-Related death as categorized in HIV surveillance**

**March 20, 2017**

# Outline

- Based on NYC DOHMH “Reverse Continuum Work” (Braunstein et al.)
- Difference between HIV-related deaths vs. deaths among people with HIV (PWH)
- Review numbers of HIV-related and other deaths among PWH
- Compare HIV care outcomes and demographics among PWH who died

DECEMBER 1, 2016 | Albany, NY

# Governor Cuomo Announces Series of Groundbreaking New Initiatives to End the AIDS Epidemic in New York State

AIDS

HEALTH

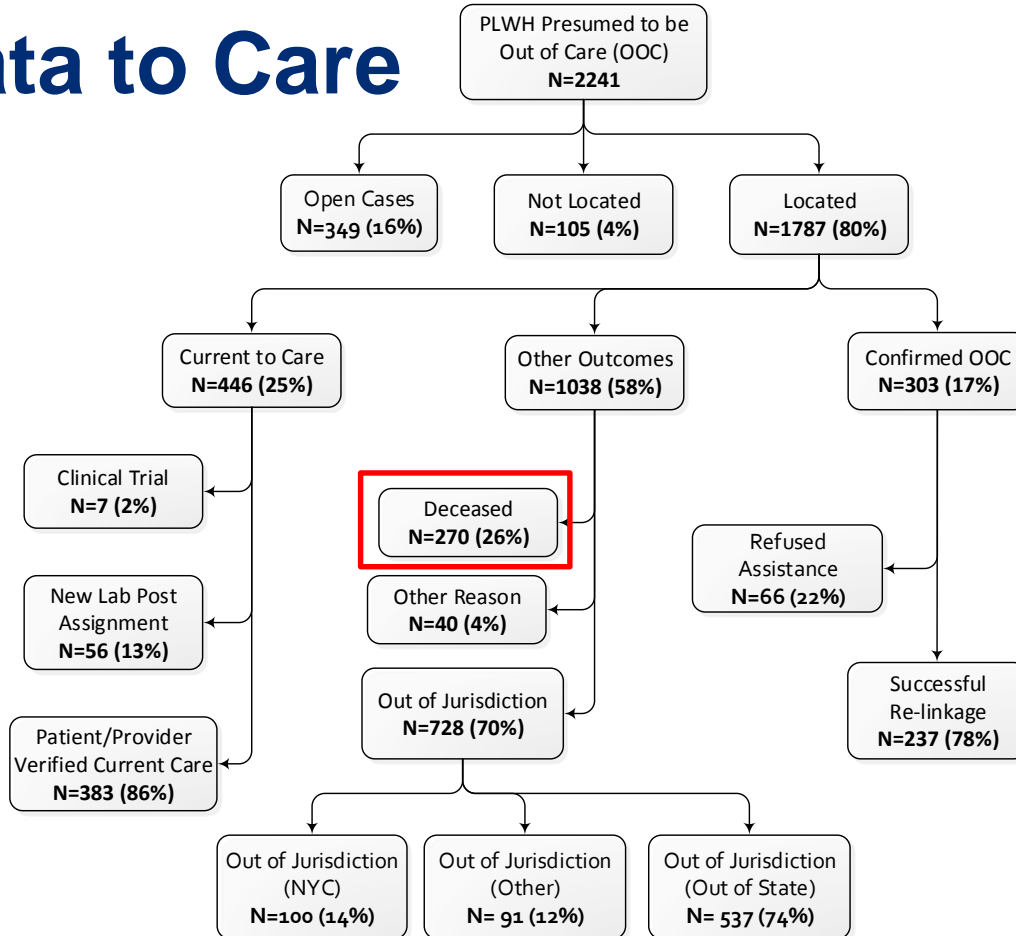
## New Initiatives

The Governor announced a series of new initiatives that will build on the progress under the End the Epidemic blueprint. These proposals include setting a goal of zero AIDS mortality and zero HIV transmission through injection drug use by the end of 2020. Moving toward these goals will involve launching a “sentinel event response,” similar to the project that was used to prevent mother-to-child transmission of HIV. These projects address specific gaps in knowledge deemed critical to helping the State end the epidemic and involve fostering collaborations between researchers and policy makers.

## Data Matches

- BHAE matches whole-state HIV surveillance with three death indices
  - NYS Vital Statistics (quarterly)
  - National Death Index (annually)
  - Social Security Death Master File (annually)

# Data to Care



NYSDOH Data to Care programming yields timely fact of death information.

# Definitions (1) - Deaths

1. Deaths among PWH – Any HIV-diagnosed person in NYS who is found to have died for any reason.
2. HIV-related deaths – PWH who died due to HIV disease, based on certain ICD-9/10 codes from death certificates (see next slide).

# Definitions (2) – HIV related deaths

- Calculated variable (a “flag”) in eHARS based on the presence of one or more ICD codes:

795.8	Positive serological or viral culture findings for HIV
O98.7	HIV disease complicating pregnancy, childbirth and the puerperium
042	HIV infection with specified conditions
043	HIV infection causing other specified conditions
044	Other HIV infection
B20	HIV disease resulting in infectious and parasitic diseases
B21	HIV disease resulting in malignant neoplasms
B22	HIV disease resulting in other specified diseases
B23	HIV disease resulting in other conditions
B24	Unspecified HIV disease
R75	Laboratory evidence of HIV

- Unknown cause of death – no ICD code recorded.

## Definitions (3) - Care, Suppression and CD4

- **Any care** - viral load, CD4 or genotype resistance test in 15 month period preceding death, excluding 3 months immediately prior to death.
- **Continuous care** - 2 or more tests separated by at least 91 days in 15 month period preceding death, excluding 3 months immediately prior to death.
- **Virally suppressed** - non-detectable viral load or <200 copies/mL; last viral load test in 15 month period preceding death, excluding 3 months immediately prior to death
- **CD4 <200** – last CD4 test level below 200 (or 14%) in 15 month period preceding death, excluding 3 months immediately prior to death.

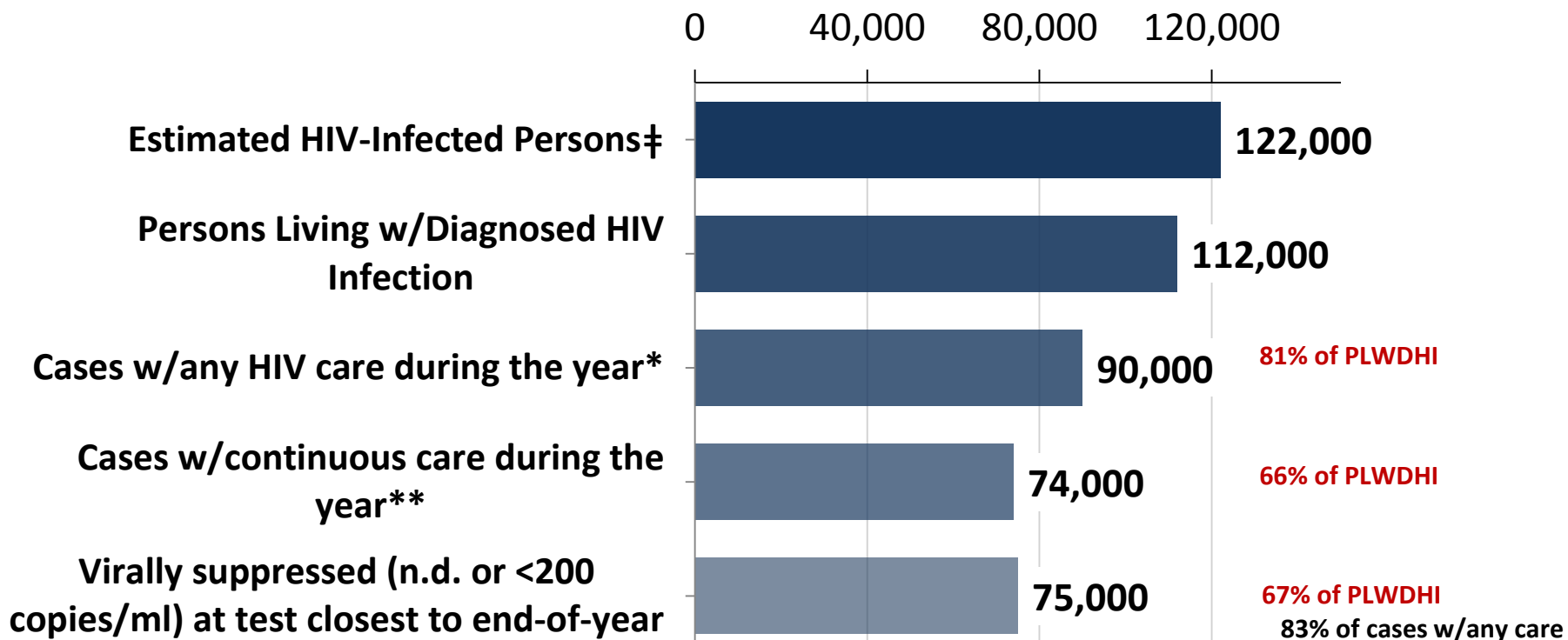
### Notes

- All data from Bureau of HIV/AIDS Epidemiology April 2016 Statewide Analysis File.
- HIV-related vs. Not HIV-related stratifications exclude cases with unknown causes of death (n=307)



# New York State Cascade of HIV Care, 2015

Persons Residing in NYS† at End of 2015



*†Based on most recent address, regardless of where diagnosed. Excludes persons with AIDS with no evidence of care for 5 years and persons with diagnosed HIV (non-AIDS) with no evidence of care for 8 years.*

*‡ 8% were infected and unaware (CDC estimate)*

*\* Any VL, CD4, genotype test during the year; \*\* At least 2 tests, at least 91 days apart*



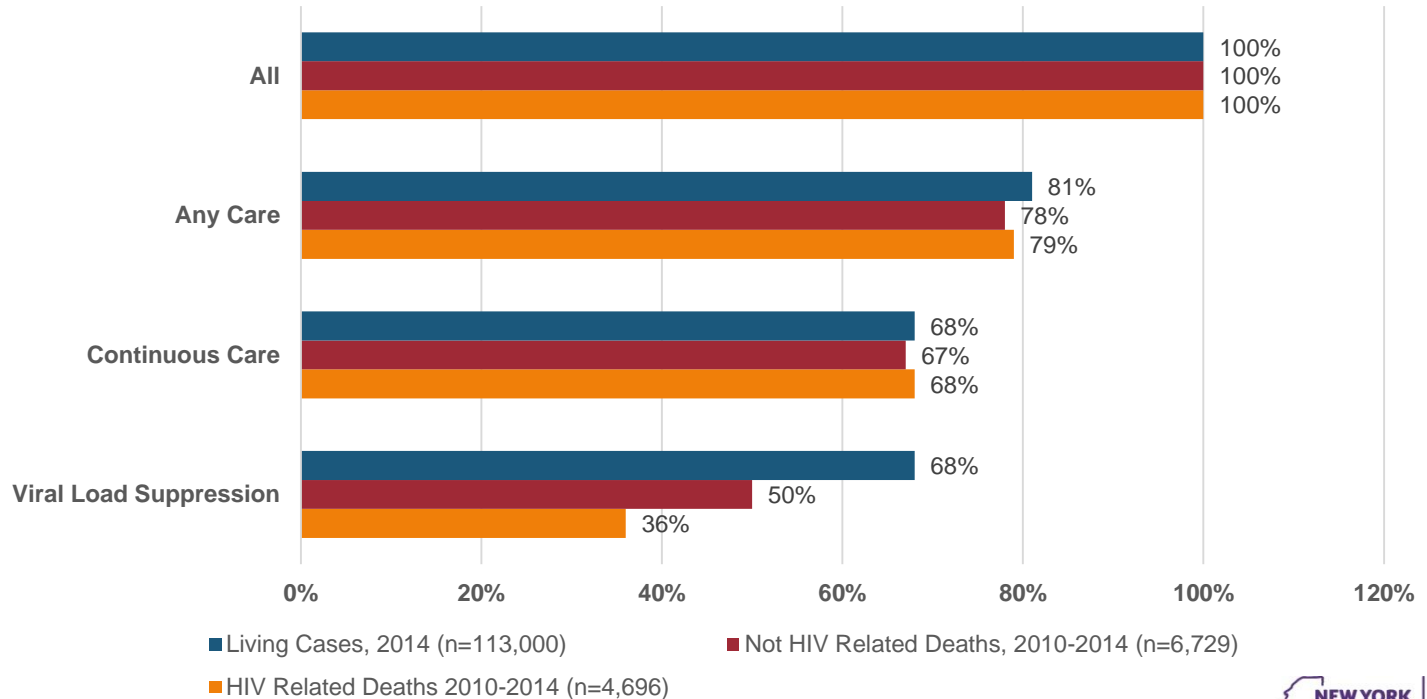
Department of Health

# Mortality Among PWH by HIV Care Outcomes Prior to Death, NYS, 2010 – 2014

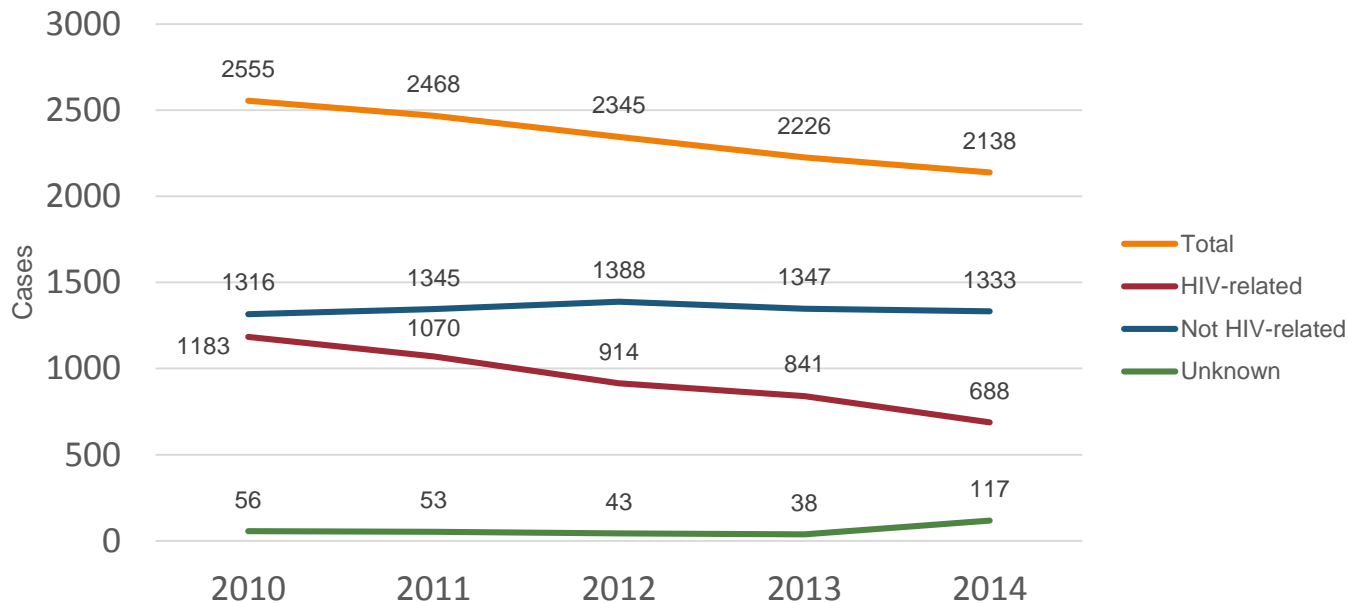
2010 - 2014	Total		HIV-Related		Not HIV-Related		Unknown	
	Count	%	Count	%	Count	%	Count	%
<b>Total Deaths</b>	11732	100.0	4696	100.0	6729	100.0	307	100.0
<b>Any Care</b>	9110	77.6	3730	79.4	5247	78.0	133	43.3
<b>Continuous Care</b>	7810	66.5	3183	67.8	4533	67.4	94	30.6
<b>Virally Suppressed</b>	5118	43.6	1708	36.4	3330	49.5	80	26.1
<b>CD4 &lt;200</b>	5129	43.7	2591	55.2	2471	36.7	67	21.8



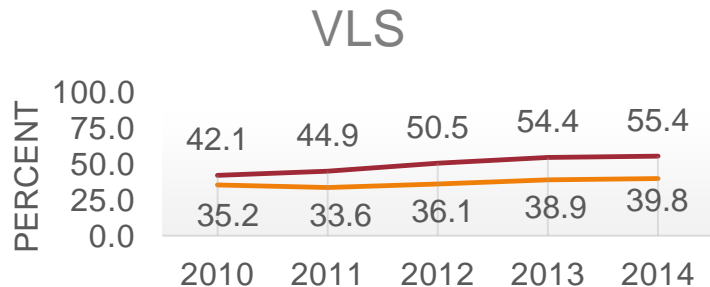
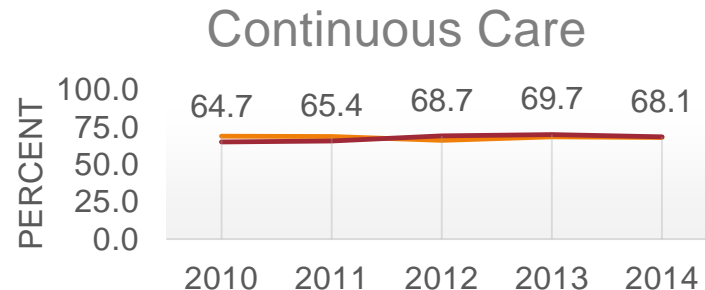
# Care Outcomes Among PWH, NYS, 2010-2014



# Mortality among PWH, NYS, 2010 – 2014



# HIV Care Outcomes Among PWH Prior to Death, NYS, 2010-2014

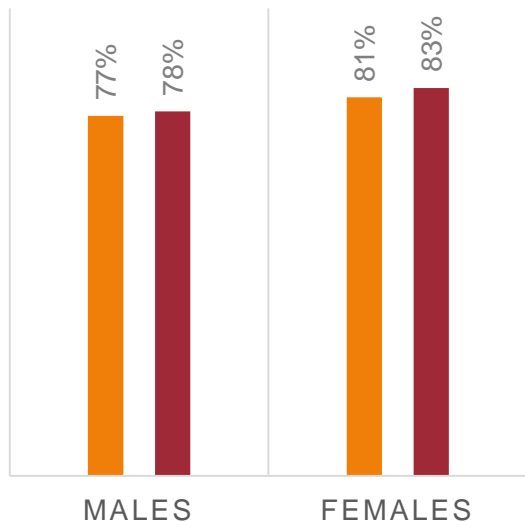


— HIV-related — Not HIV-related

# HIV Care Outcomes Among PWH Prior to Death, NYS, 2010-2014, by sex at birth

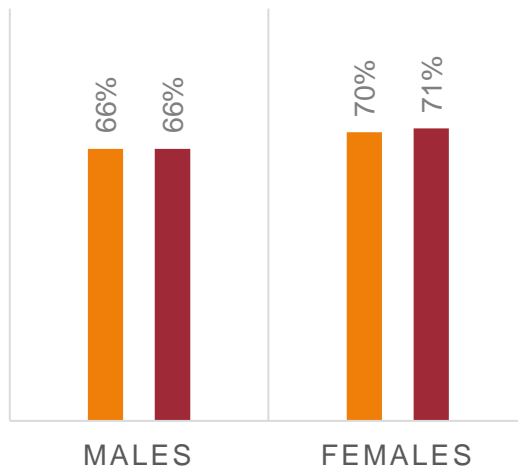
## ANY CARE

■ Not HIV-Related ■ HIV-Related



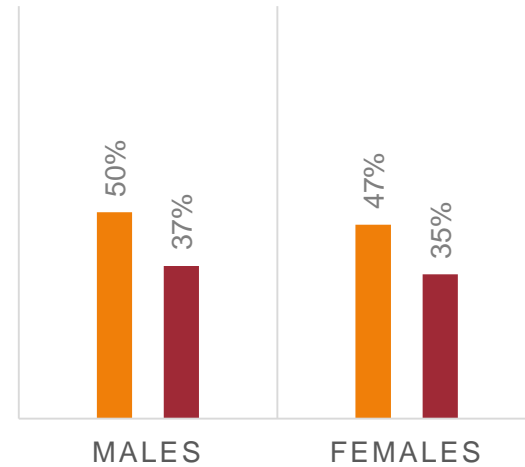
## CONTINUOUS CARE

■ Not HIV-Related ■ HIV-Related



## VIRAL LOAD SUPPRESSION

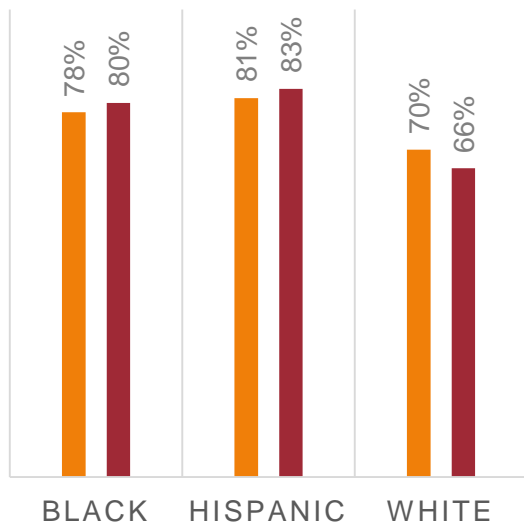
■ Not HIV-Related ■ HIV-Related



# HIV Care Outcomes Among PWH Prior to Death, NYS, 2010-2014, by race/ethnicity

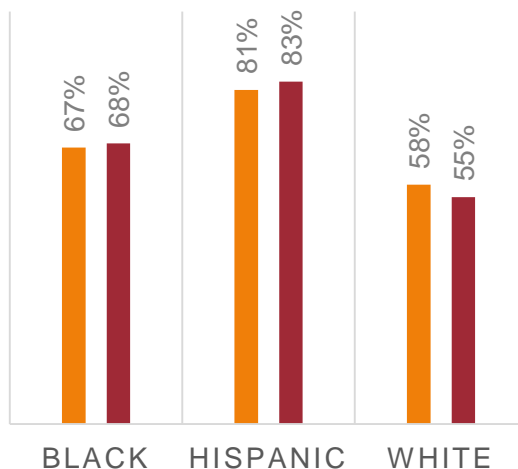
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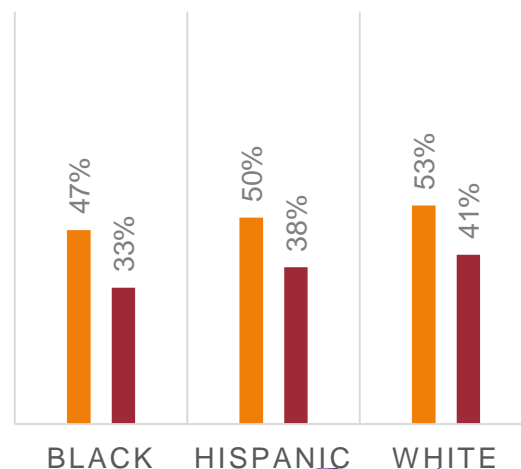
## CONTINUOUS CARE

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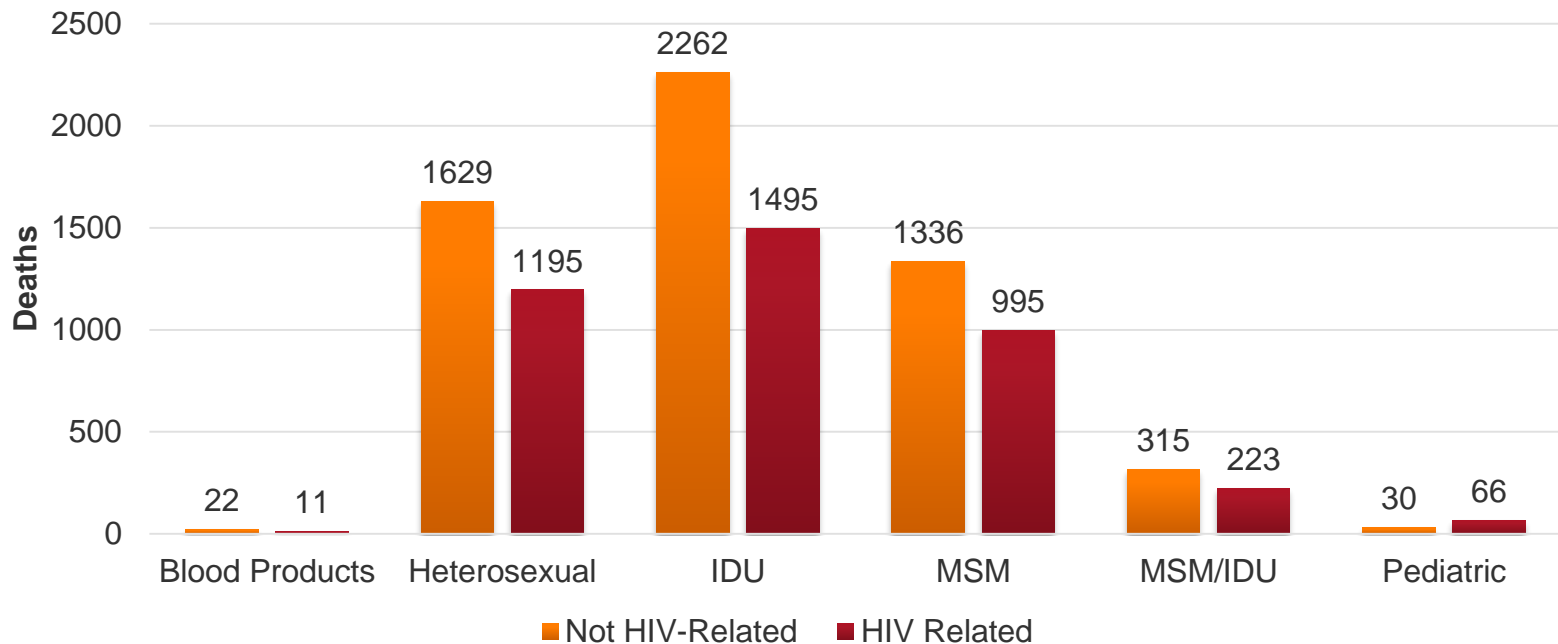


## VIRAL LOAD SUPPRESSION

■ Not HIV-Related ■ HIV-Related



# Mortality among PWH, NYS, 2010 – 2014, by risk

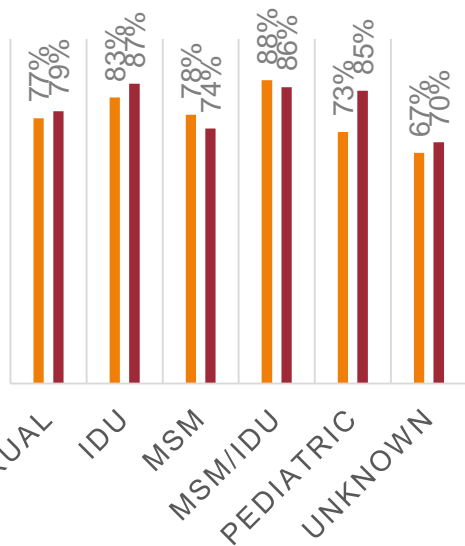




# HIV Care Outcomes Among PWH Prior to Death, NYS, 2010-2014, by risk

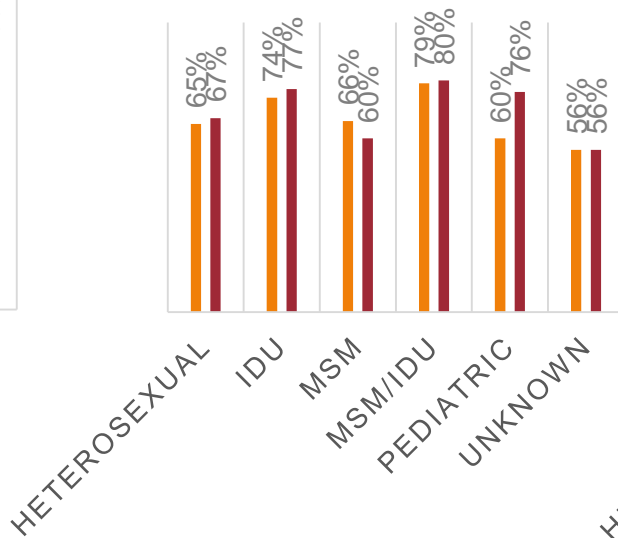
## ANY CARE

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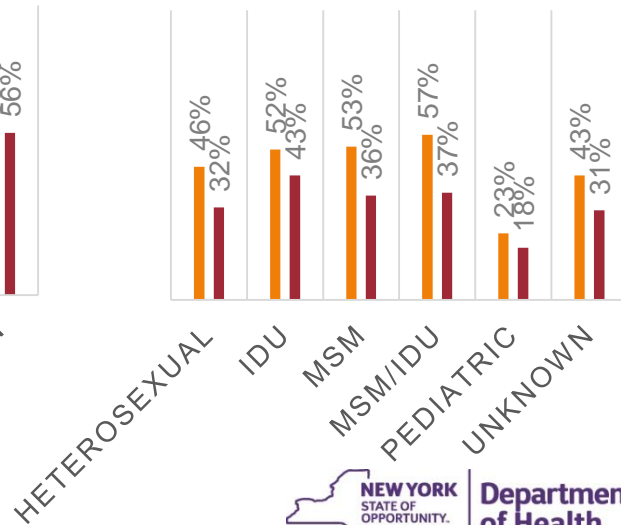
## CONTINUOUS CARE

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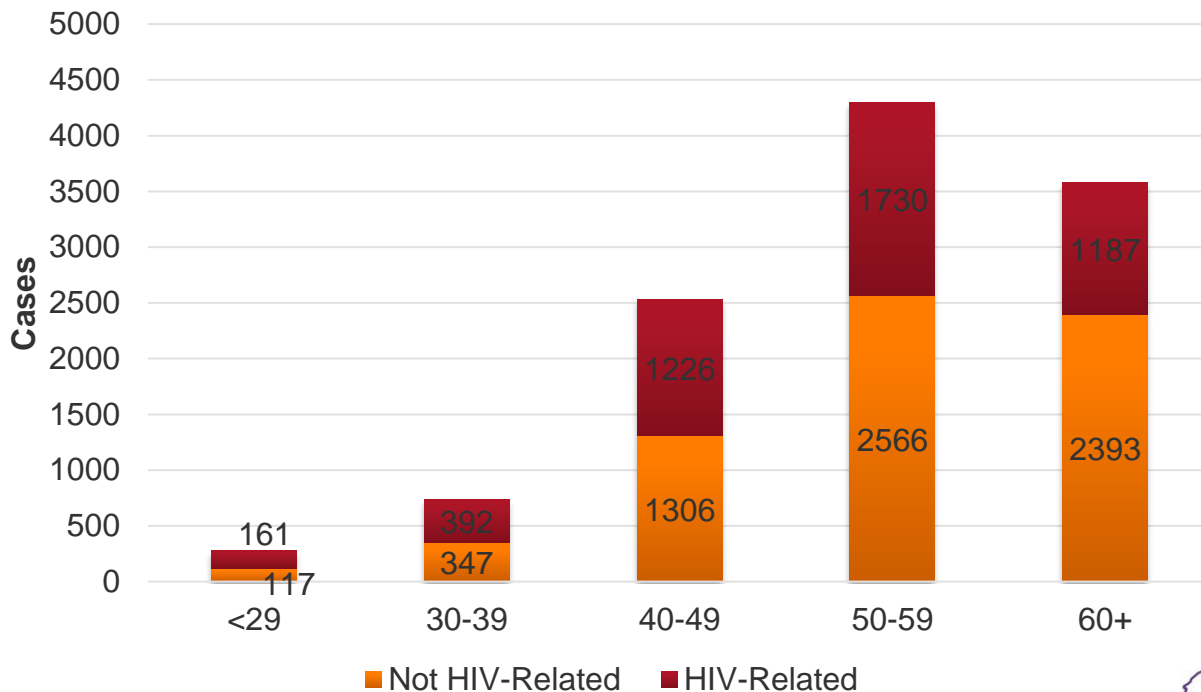


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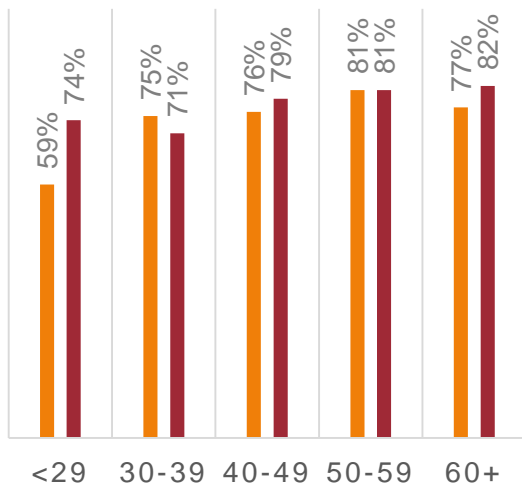
# Mortality among PWH, NYS, 2010–2014, by age at death



# HIV Care Outcomes Among PWH Prior to Death, NYS, 2010-2014, by age at death

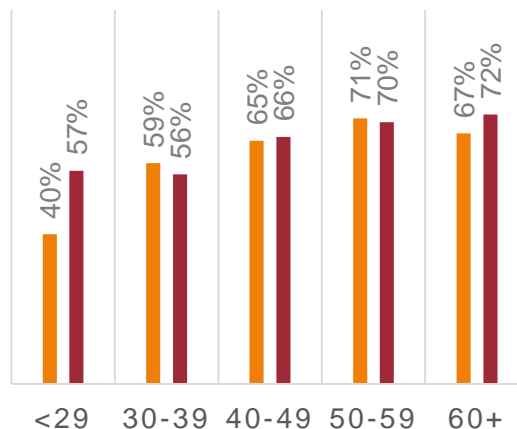
## ANY CARE

Not HIV-Related HIV-Related



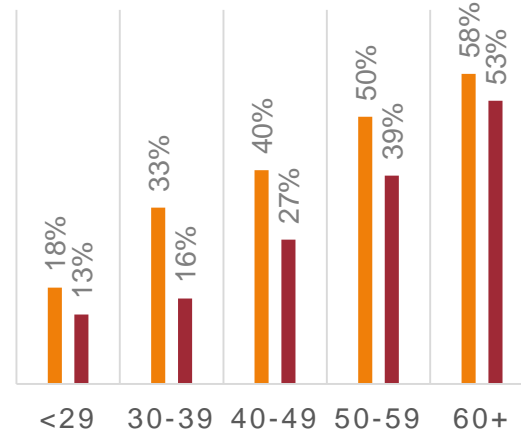
## CONTINUOUS CARE

Not HIV-Related HIV-Related



## VIRAL SUPPRESSION

Not HIV-Related HIV-Related



# Limitations of surveillance data for AIDS

## Mortality Sentinel Event activities

- Lack of descriptive information about contributory factors that we know affect mortality (possibly addressed through matches) but...
- “Sentinel event” focus vs. timing of matches
- Complexities of vital statistics data
- Suspected lack of standardization in Cause of Death (COD) coding among providers

# Discussion

- HIV-related deaths characterized by lower viral load suppression rates compared to Not HIV-related deaths
- This gives us relative confidence in accuracy of the “HIV-related death” variable in surveillance
- Receipt of care (any care, retention) outcomes lower for White PWH who die compared to Blacks and Hispanics, but higher VLS
- By age, equal proportion die of HIV-related vs. not HIV-related, except among 50+ where a greater proportion die of not HIV-related
- IDU make up 13% of cases in NYS, but 33% of deaths (HIV-related and non)

# Thank you

- Sarah Braunstein
- Lucia Torian
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