DRUG OVERDOSE DEATHS AMONG PERSONS WITH HIV IN NEW YORK CITY, 2007-2015

Abstract #974

Sarah L. Braunstein[1], Rebekkah S. Robbins[1], Demetre C. Daskalakis[1]

[1]New York City Department of Health and Mental Hygiene (DOHMH), New York City, USA

Contact: Sarah Braunstein
Email: sbraunstein@health.nyc.gov
Phone: 347-396-7760

Background

Preventable deaths, including those due to drug overdose (OD), are a significant public health concern in New York City (NYC). The rate of unintentional drug OD death in NYC increased 143% between 2010 and 2016. Drug OD deaths among persons with HIV (PWH) in NYC have not been described. Care-seeking by PWH presents an opportunity to avert preventable deaths, including OD deaths.

Methods

- Data source: NYC HIV Surveillance Registry, with data reported as of 3/31/17
- Eligibility criteria: PWH who died during 2007-2015 due to an accidental drug OD (AOD) or an intentional OD (IOD), and resided in NYC at death
- OD deaths were classified as AOD if the underlying cause of death was coded as ICD10 code X40-X44, or as IOD if coded as ICD10 code X60-X64
- We measured the trend over time in the age-adjusted rate of OD deaths among NYC PWH; compared the demographics of PWH who died of AOD versus IOD; and constructed an HIV Mortality Reduction Continuum of Care (HMRCC) using CD4 counts and HIV viral load (VL) tests from surveillance to evaluate HIV outcomes in the 12 months prior to death as markers of care-seeking
- Outcomes in the HMRCC included the proportion of patients who were:
  - presumed aware of HIV infection (HIV diagnosis ≥31 days before death)
  - ever linked to care (CD4/VL reported ≥8 days after diagnosis)
  - retained in care (≥2 CD4/VL tests ≥90 days apart)
  - ever prescribed antiretroviral therapy (ART) (95% of retained in care, based on 2013 NYC Medical Monitoring Project)
  - virally suppressed (last VL≤200 cc/mL)

Results

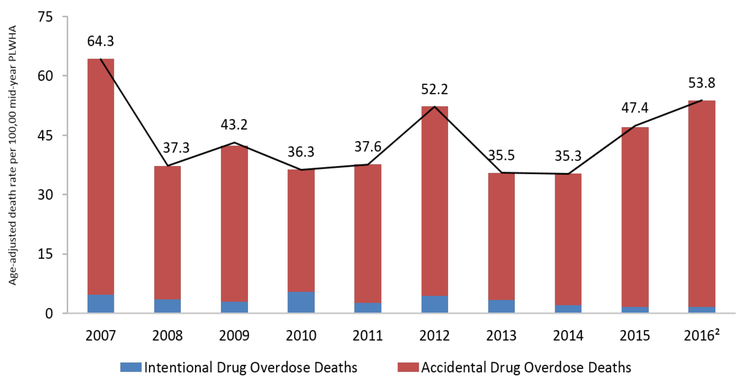
From 2007-2015, 670 PWH died of either AOD or IOD in NYC. While the rate of OD deaths in PWH declined during the full period, from 64.3 per 100,000 in 2007 to 53.8 per 100,000 in 2016, it increased from 2013 (35.5 per 100,000) to 2016 (53.8 per 100,000) (Figure 1).

Decedents during 2007-2015 were predominantly male (70.6%), black (37.3%) or Latino/Hispanic (36.3%), aged 40-59 years (74.1%), and persons with a history of injecting drugs (IDU) (45.4%) (Table 1). Of the total, 626 (93.4%) deaths were classified as AOD and 44 (6.6%) as IOD. AOD decedents were also predominantly male (69.2%), black (39.0%) and Latino/Hispanic (37.9%), aged 40-59 years (75.6%), and IDU (48.2%). However, IOD decedents were nearly all male (90.9%), mostly white (70.5%), older (22.7% aged 60+) and men who have sex with men (MSM) (65.9%). MSM with AOD death were younger and living in lower-poverty areas than IDU with AOD death (Figure 3). MSM with IOD death were mostly white and also living in lower-poverty areas compared with non-MSM with IOD death.

More than three-quarters of both AOD (78%) and IOD (77%) decedents were retained in HIV care in the 12 months prior to death, but more IOD decedents were virally suppressed (72% vs. 50% of AOD decedents) (Figure 4).

Results (Continued)

Figure 1. Age-adjusted[1] death rates among NYC PWH with drug overdose death, 2007-2016



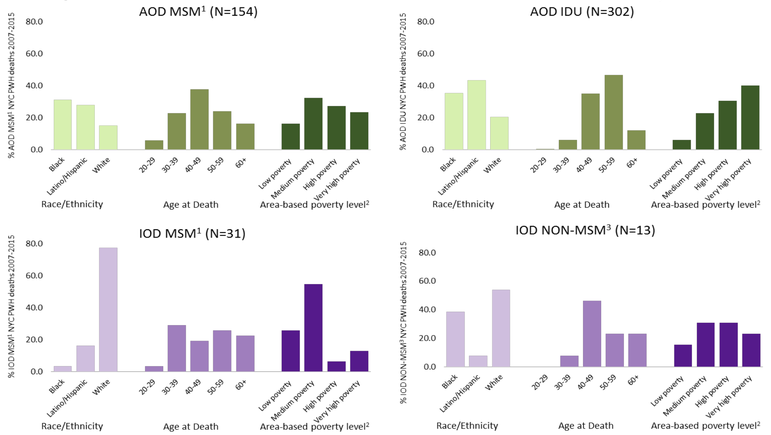
[1]Death rates are age-adjusted to the US 2000 Standard population.
[2]2016 data are preliminary.

Table 1. Characteristics of NYC PWH with drug overdose death, 2007-2015

	Total[1]		Type of drug overdose (OD)[2]					
			Accidental OD			Intentional OD		
	N	Col%	N	Col%	Row%	N	Col%	Row%
Total	**670**	**100.0**	**626**	**100.0**	**93.4**	**44**	**100.0**	**6.6**
Gender[3]								
Male	473	70.6	433	69.2	91.5	40	90.9	8.5
Female	197	29.4	193	30.8	98.0	4	9.1	2.0
Race/Ethnicity								
Black	250	37.3	244	39.0	97.6	6	13.6	2.4
Latino/Hispanic	243	36.3	237	37.9	97.5	6	13.6	2.5
White	170	25.4	139	22.2	81.8	31	70.5	18.2
Other[4]	7	1.0	6	1.0	85.7	1	2.3	14.3
Age group at death (years)								
0 - 19	0	0.0	0	0.0	0.0	0	0.0	0.0
20 - 29	16	2.4	15	2.4	93.8	1	2.3	6.3
30 - 39	83	12.4	73	11.7	88.0	10	22.7	12.0
40 - 49	253	37.8	241	38.5	95.3	12	27.3	4.7
50 - 59	243	36.3	232	37.1	95.5	11	25.0	4.5
60+	75	11.2	65	10.4	86.7	10	22.7	13.3
Transmission risk[5]								
Men who have sex with men (MSM)	131	19.6	102	16.3	77.9	29	65.9	22.1
Injection drug use history (IDU)	304	45.4	302	48.2	99.3	2	4.5	0.7
MSM-IDU	54	8.1	52	8.3	96.3	2	4.5	3.7
Heterosexual contact	82	12.2	77	12.3	93.9	5	11.4	6.1
Other/Unknown	99	14.8	93	14.9	93.9	6	13.6	6.1

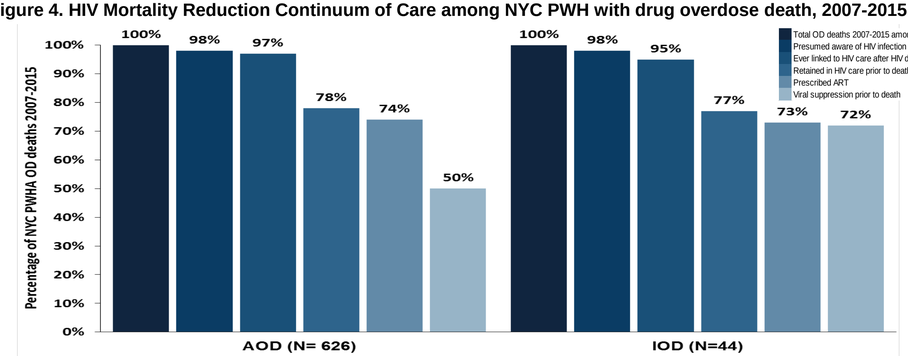
[1]Includes people with HIV/AIDS who were living in New York City at death and whose underlying cause of death was drug overdose (OD), as indicated by ICD10 codes X40-44 and X60-64.
[2]Accidental OD includes deaths with ICD10 codes X40-X64 listed as underlying cause of death and intentional OD includes deaths with ICD10 codes X60-64 listed as underlying cause of death.
[3]Transgender men are included in the male category and transgender women are included in the female category.
[4]Other race/ethnicity includes Asian/Pacific Islander, Native American, and Multiracial categories.
[5]"Heterosexual contact" includes people who had heterosexual sex with a person they know to be HIV-infected, an injection drug user, or a person who has received blood products. For females only, also includes history of sex work, 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. "Other/Unknown" includes people identified as transgender by self-report, diagnosing provider, or medical chart review with sexual contact reported and negative history of injection drug use; people who received treatment for hemophilia; people who received a transfusion or transplant; children with a non-perinatal transmission risk; and people with an unknown transmission risk.

Figure 3. Comparison of NYC MSM and IDU/non-MSM PWH with AOD vs. IOD deaths, 2007-2015



[1]MSM includes MSM also reporting injection drug use history.
[2]Area-based poverty based on NYC ZIP code of residence at death: "Low poverty" ZIPs have <10% of population living below Federal Poverty Line; "Medium poverty" 10-<20%; "High poverty" 20-<30%; "Very high poverty" ≥30%.
[3]Non-MSM includes persons assigned to IDU, Heterosexual, or Unknown transmission risk categories.
Asian/Pacific Islander (API) and Multiracial categories not shown due to small numbers. There were a total of 5 API and 1 Multiracial AOD deaths; and a total of 1 API and 0 Multiracial IOD deaths.

Figure 4. HIV Mortality Reduction Continuum of Care among NYC PWH with drug overdose death, 2007-2015



Strengths and Limitations

- Analysis used population-level data on deaths and cause of death among NYC PWH.
- Use of laboratory tests from surveillance to measure retention in care could under- or over-estimate actual HIV care.
- Analysis limited to persons living in and/or accessing care in NYC; care outside NYC not captured.
- Misclassification of COD on death certificates is possible. However, the NYC Office of the Medical Examiner conducts autopsy and toxicology on all OD deaths to confirm cause, and so misclassification should be limited.

Conclusions

- The rate of drug OD deaths among NYC PWH is increasing, mirroring citywide trends.
- The majority of drug OD deaths among PWH were classified as accidental; however, we found important demographic differences between persons with AOD death vs. IOD.
- PWH with OD deaths in this period had high retention in HIV care in the year prior to death. This suggests missed opportunities for engaging at-risk persons in OD prevention and risk-reduction services.
- The HIV Mortality Reduction Continuum of Care is a useful framework for evaluating pre-death care outcomes among PWH with preventable deaths, including OD deaths, and for identifying opportunities for intervention.