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A DETAILED LOOK AT HIV MORTALITY IN KING COUNTY, 2016-2018

Andrea L Martin[1,2], Meena Ramchandani[1,2], Susan E. Buskin[1,2]
[1]University of Washington, Seattle, WA, USA, [2]Public Health–Seattle & King County, Seattle, WA, USA

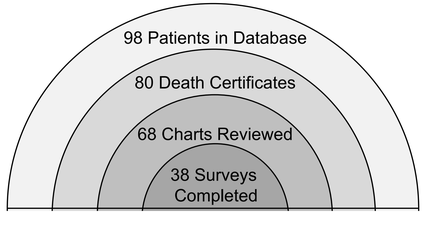
BACKGROUND

- The death rate for People Living With HIV (PLWH) in King County, WA has remained stable over the past five years.
- An increasing number of these deaths are from causes not directly related to HIV.
- Social determinants of health including stigma, poverty and social isolation are often thought to contribute to deaths of PLWH.
- We completed a retrospective review comparing PLWH in King County to HIV decedents in King County from 2016-2018.

METHODS

- Demographic data were abstracted for King County from the National HIV Surveillance System reporting data, including deaths (N=268) and PLWH (N=7,922) 2016-2018.
- In-depth review of HIV decedents from 2017 was performed - assessing cause of death, comorbidities and treatment of comorbidities.
- Providers responsible for patients' HIV care were asked to complete a survey about the decedent and their social determinants of health.
- Data from chart reviews, death certificates and provider surveys were used to categorize cause of death. Provider surveys and chart review took precedence when records conflicted.
- Stigma was determined by provider assessment.
- Groups studied: PLWH in 2016-2018, deaths of PLWH 2016-2018, deaths of PLWH in 2017.

2017 Death Review

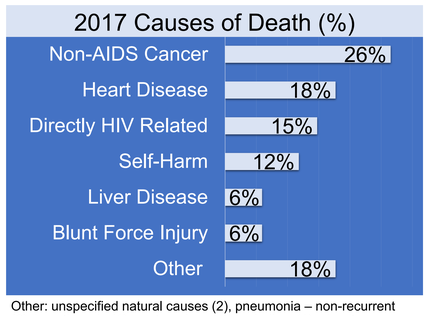


The majority of deaths of people living with HIV in King County are from causes unlikely to be directly related to HIV. To improve preventive care for HIV+ people, care systems should focus on *substance use disorders, mental illness, HCV, and stigma*.

RESULTS

- 34% of decedents had CD4 counts <200 relative to 5% of PLWH; 44% were 60+ years relative to 18% of PLWH; 57% were diagnosed with HIV on or before 2000 relative to 33% of PLWH.
- Decedents were twice as likely as PLWH to have used injection drugs.
- Only 15% of 2017 decedents had a cause of death directly related to HIV.
- 65% of 2017 decedents had a mental health diagnosis.
- 25% of 2017 decedents had HCV, of which 25% were treated - all with a sustained viral response.
- Stigma correlated with higher odds of an HIV related death.

2017 Causes of Death (%)



Other: unspecified natural causes (2), pneumonia – non-recurrent (2), hypothermia (1), acute pulmonary embolism (1), obesity hypoventilation syndrome (1), homicide (1), influenza (1), Alzheimer's (1), GI bleed (1), COPD (1). Based on 68 King County deaths.

People Living with HIV vs. Decedents 2016-2018, King County, WA

		Deaths (N=268)		People Living with HIV (N=7,922)		X^2/ X^2 LT (linear trend) P-Value
		N/Median	% (IQR*)	N	% (IQR)	
Sex at birth	Female	24	9%	986	12%	χ2 P = 0.087
	Male	244	91%	6,936	88%	
Year of HIV diagnosis	Median year (IQR)	1998	(1993-2008)	2005	(1998-2012)	X^2_{LT}:P <0.001
Mode of HIV transmission	MSM*	158	59%	5,312	67%	χ2 P= 0.006
	PWID*	31	12%	319	4%	χ2 P <0.001
	MSM-PWID	31	12%	726	9%	χ2 P =0.182
	Heterosexual	17	6%	787	10%	χ2 P = 0.052
	Other/Unknown	31	12%	778	10%	
Last CD4 (prior to death)	<200	90	34%	426	5%	X^2_{LT}: P = <0.001
	200-499	108	41%	2,214	28%	
	500+	66	25%	5,198	66%	
Last Viral Load	Suppressed (< 200)	208	78%	7,241	92%	χ2 P <0.001
	Unsuppressed 200+	57	22%	634	8%	
Age in years	Median (IQR)	56	(50-64)	48	(38-56)	X^2_{LT}: P = <0.001

*MSM – men who have sex with men; PWID – people who inject drugs; IQR – interquartile range. Univariate analysis.

LIMITATIONS

- Medical records may have missing data, including notes on mental health or HCV treatment, due to care at additional, unknown facilities.
- Findings on HCV and mental health treatment are limited due to small sample size and need to be corroborated by a larger study.
- Stigma was determined by provider assessment of their patients and stigma significance was measured using a Fisher exact test due to small sample size. Further study is needed.
- Reliable data on gender was not available.
- ARV start date was not available for many decedents so was not analyzed as a variable.

CONCLUSIONS

- The increased age of decedents and duration of HIV diagnosis compared to PLWH, taken together with the majority of 2017 deaths not being directly related to HIV is promising; however, low CD4 counts of one third of decedents and an unsuppressed viral load in 22% imply care may be further optimized.
- A two-fold likelihood of decedents having a history of injection drug use suggests that this may be a good PLWH sub-population to serve as the focus to prevent premature mortality.
- The increased odds of an HIV related death when stigma was present indicates the need for continued efforts to destigmatize HIV.
- Further investigation into the suboptimal proportion of 2017 decedents receiving HCV treatment is needed.

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For questions contact: Andrea Martin (she/her), alm8@uw.edu