Leading Causes of Death Among People with HIV in the US, 2001–2019

Karena Volesky-Avellaneda,[1] Eric A Engels,[1] Qianlai Luo,[1] Meredith S Shiels[1]

[1] Division of Cancer Epidemiology & Genetics, National Cancer Institute, Rockville, Maryland

NATIONAL CANCER INSTITUTE

1054

Key Findings

- The leading causes of death were HIV (51.4% of deaths), cancer (9.1% of deaths) and heart disease (7.6% of deaths)
- PWH had more than 4 times higher risk of death (SMR: 4.44) compared to the general US population during 2001–2019
- SMRs steadily decreased with more recent calendar periods (8.7 during 2001–2004 vs. 2.6 during 2015–2019)

Purpose

To provide an overview of leading causes of death among PWH in the US and compare overall and cause-specific mortality among PWH to the US general population

Methods

- Underlying causes of death among PWH aged ≥20 who died during 2001–2019 were obtained from the HIV/AIDS Cancer Match (HACM) Study
  - HIV registries in the HACM Study capture vital registry data, including cause of death information, from 11 states, DC, and Puerto Rico
- We report the leading causes of death and mortality rates by age group
- To compare the mortality rates of PWH to the general US population, we calculated standardized mortality ratios (SMRs)
  - SMRs were adjusted for sex, age-group, race/ethnicity, calendar year
  - An SMR was not calculated for HIV as it is only a cause of death among PWH

Supported by the NCI Intramural Research Program

Contact: voleskydk@nci.nih.gov

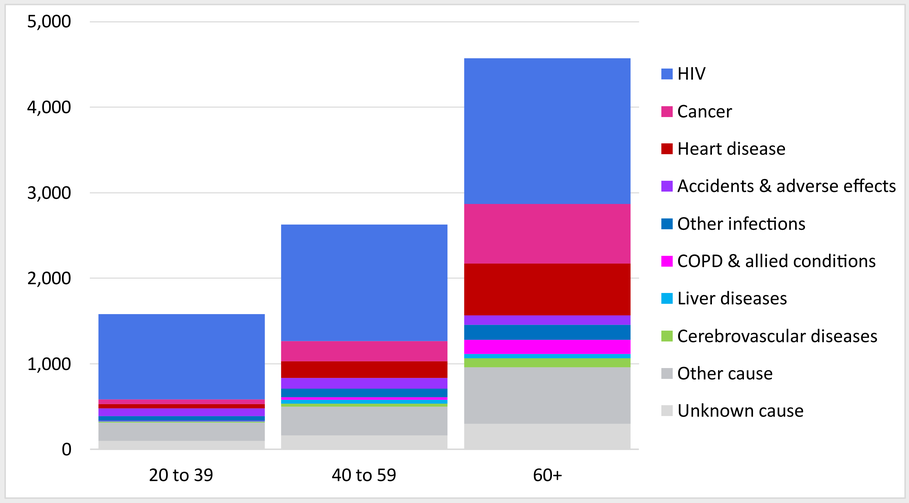
Results

- There were 131,120 deaths among PWH over 5.3 million person-years of follow-up
- Among decedents: 72.2% were male, 61.5% were aged 40–59 years, 51.3% were non-Hispanic Black

Leading causes of death	No. of deaths*	% of deaths
HIV	67,458	51.4
Cancer	11,897	9.1
Heart disease	9,985	7.6
Accidents & adverse effects	5,831	4.4
Other infections**	4,974	3.8
COPD & allied conditions	1,863	1.4
Liver diseases	1,777	1.4
Cerebrovascular diseases	1,696	1.3

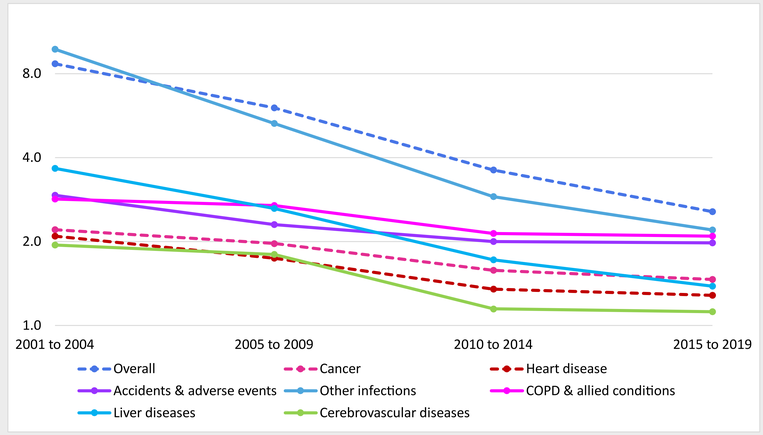
* Additionally, suicide & diabetes (1.2% each), kidney diseases & homicide (1.1% each), other causes (8.8%) & unknown causes (6.2%)
** Includes infections other than HIV, such as influenza, pneumonia, sepsis, etc.

Mortality rates per 100,000 per years among PWH by age group, 2001–2019



Data

SMRs overall and for leading causes of death among PWH, by calendar period



SMRs for overall mortality, by demographics

Demographic	No. of deaths	SMR (95% CI)
Overall	**131,120**	**4.44 (4.42-4.47)**
Sex		
Male	94,655	3.95 (3.92–3.97)
Female	36,465	6.60 (6.53–6.66)
HIV risk group		
MSM	39,105	3.38 (3.35–3.42)
Male PWID	28,337	5.73 (5.66–5.8)
Male other	27,213	3.64 (3.60–3.68)
Female PWID	10,780	11.1 (10.8–11.3)
Female other	25,685	5.64 (5.57–5.71)
Age group, years		
20 to 39	26,778	9.23 (9.12–9.34)
40 to 59	80,574	4.96 (4.93–5.00)
60+	23,768	2.29 (2.26–2.32)
Race and ethnicity		
Hispanic	24,621	1.49 (1.48–1.51)
Non-Hispanic Black	67,304	15.8 (15.6–15.9)
Non-Hispanic White	34,026	4.19 (4.15–4.24)
Other or unknown	5,169	8.16 (7.94–8.39)

Acronyms: COPD chronic obstructive pulmonary disease, PWID persons who inject drugs, SMR standardized mortality ratio

Acknowledgements: The Centers for Disease Control and Prevention, National Program of Cancer Registries, the National Cancer Institute, the State of New Jersey, the State of Maryland, the Maryland Cigarette Restitution Fund, the State of Louisiana, HIV Incidence and Case Surveillance Branch of the Centers for Disease Control and Prevention, National HIV Surveillance Systems, Integrated HIV Surveillance and Prevention Programs for Health Departments, National Center for HIV, Viral Hepatitis, STD, and TB Prevention