# Life Expectancy Among Virally Suppressed Women and Men With HIV in the Bronx, New York, 1997-2021

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**Brandilyn A. Peters**[1], Melissa Fazzari[1], Uriel R. Felsen[1], Heidi E. Jones[2], Mindy Ginsberg[1], David B. Hanna[1], Kathryn Anastos[1]
[1]Albert Einstein College of Medicine, Bronx, NY, USA, [2]City University of New York Graduate School of Public Health and Health Policy (CUNY SPH), New York, NY, USA

## BACKGROUND

- Life expectancy for people with HIV (PWH) has increased dramatically, but disparities remain across sub-populations.
- We aimed to characterize life expectancy over 2 decades by sex and race/ethnicity for virally suppressed PWH in the Bronx, New York – a low-income area with a largely Black and Hispanic population and high proportion of women with HIV.

## METHODS

- Data were obtained from the Einstein-Rockefeller-CUNY CFAR HIV Clinical Cohort Database.
- PWH receiving care in the Montefiore Health System in the Bronx (1/1/1997-12/31/2021) with at least 2 viral load measurements at least 30 days apart and who were virally suppressed ≥1 calendar year were included.
- The period of viral suppression was defined as the earliest date (1997-2021) in a one-year window where at least 80% of all viral load measurements were suppressed (<1000 copies/mL).
- Follow-up started at the beginning of the first year of viral suppression and ended at death (via National Death Index), loss to follow-up, or the end of the analysis window (end of 2022).
- A Poisson regression model with offset for years of follow-up was used to estimate mortality rate ratios and 95% confidence intervals according to time period and age at earliest viral suppression, sex at birth, and race/ethnicity.

**Table 1: Patient characteristics at the time of earliest viral suppression (n=10,308)**

| Characteristic | Percent | Characteristic | Percent |
|---|---|---|---|
| **Year** | | **Race/ethnicity** | |
| 1997-2001 | 20.6 | Black | 43.4 |
| 2002-2006 | 18.6 | Hispanic | 40.1 |
| 2007-2011 | 22.0 | Other/Unknown | 11.2 |
| 2012-2016 | 22.3 | White | 5.2 |
| 2017-2021 | 16.5 | **CD4 count (cells/mm$^3$)** | |
| **Age (years)** | | <200 | 21.3 |
| 18-19 | 1.8 | 200-349 | 20.9 |
| 20-29 | 11.1 | 350-499 | 18.9 |
| 30-39 | 22.6 | ≥500 | 36.5 |
| 40-49 | 31.5 | Unavailable | 2.4 |
| 50-59 | 23.8 | **Insurance** | |
| 60-69 | 7.6 | Commercial | 9.9 |
| 70-79 | 1.5 | Public | 70.8 |
| 80+ | 0.2 | Unknown | 19.3 |
| **Female** | 41.7 | | |

**Among virally suppressed PWH in the Bronx, women and Hispanic people have longer lifespans than comparable men and people in other race/ethnic groups, respectively.**

## METHODS (cont.)

- Expected remaining years of life were estimated based on the Poisson model for a 30-year-old via Chiang's method with bootstrapped 95% confidence intervals.

## RESULTS

- PWH (n=10,308) were followed for an average of 10 years (IQR 4-15), during which 2,813 (27%) died.
- Risk of mortality declined over time, corresponding to a ~10-year increase in life expectancy since the late 1990s.
- Women with HIV had 28% (22-34) lower mortality risk than men with HIV.
- Compared to Black PWH, Hispanic PWH had 20% (12-28) lower mortality risk, while White PWH or those with other/unknown race/ethnicity had higher mortality risk (White: 18% [-1,40]; other/unknown: 51% [32,72]).




**Figure: Estimated remaining years of life with 95% confidence interval for a 30-year-old virally suppressed PWH in the Bronx, NY according to year of earliest viral suppression.**

## RESULTS (cont.)

- Hispanic women with HIV had the highest estimated life expectancy, and men with HIV of other/unknown race/ethnicity had the lowest (50 and 35 years for 30-year-old with earliest viral suppression within 2017-2021, respectively).

**Table 2: Estimated mortality rate ratios in PWH after earliest viral suppression.***

| Characteristic | Group | Mortality rate ratio (95% CI) | P-value |
|---|---|---|---|
| Sex | Female | 0.72 (0.66,0.78) | <0.0001 |
| | Male | Reference | |
| Race/ethnicity | Hispanic | 0.80 (0.72,0.88) | <0.0001 |
| | Other/Unknown | 1.51 (1.32,1.72) | <0.0001 |
| | White | 1.178 (0.99,1.40) | 0.06 |
| | Black | Reference | |

*Based on a multivariable Poisson model for mortality with natural logarithm of years of follow-up time included in the model as an offset variable. Age and year of earliest viral suppression categories were also included in model.

## CONCLUSIONS

- Among virally suppressed PWH in the Bronx, women and Hispanic people have longer lifespans than comparable men and other race/ethnic groups, respectively, consistent with sex and race/ethnic disparities in lifespan in the U.S. among people without HIV.
- Compared with lifespan in the general U.S. population (women, ~80 years; men, ~75 years):
  - Lifespan for virally suppressed Hispanic PWH in the Bronx is similar (women, ~80 years; men, ~75 years)
  - In contrast, lifespan for virally suppressed non-Hispanic PWH in the Bronx (women, ≤77 years; men, ≤72 years) remains lower than the general U.S. population

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## CONTACT INFORMATION

Brandilyn Peters-Samuelson, PhD
Associate Professor
Albert Einstein College of Medicine
brandilyn.peterssamuelson@einsteinmed.edu