New York City finds gaps in the HIV cascade of care linked to reduced survival

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- 60% of HIV-positive people in New York City who died had not been virally suppressed through treatment.
- Rates of viral suppression lowest among women, young people, black and Hispanic people, as well as people in low-income neighbourhoods.
- Researchers call for programs to link HIV-positive people to treatment and care, and to support taking medication every day.

Researchers in Canada and other high-income countries estimate that many HIV-positive people who are diagnosed shortly after infection, begin taking treatment (ART) and maintain regular visits to their doctor(s) are likely to have a near-normal life span.

Going from being diagnosed with HIV to achieving and maintaining an undetectable viral load involves many steps —such as getting into care, receiving an offer of ART, taking treatment every day as directed and keeping regular clinic and laboratory appointments. The entire process has several names: the HIV care continuum, the HIV cascade of care or, simply, the cascade.

Studies in high-income countries/regions have found that there are gaps between each stage of the cascade, whereby not everyone moves from one stage to the next. Bridging these gaps is vital if people are to have better health and realize the long-term survival benefit of ART.

Researchers in New York City have sifted through health-related information collected from tens of thousands of HIV-positive people between 2007 and 2013 to assess their passage through the cascade of care. The researchers focused on people who died and examined data from at least one year before their death. They found gaps in the cascade of care for a large proportion of people who died. For instance, only 40% of people who died had an undetectable viral load in the year prior to their death. Furthermore, nearly half of the deaths that occurred were from HIV-related causes, suggesting a large degree of immunological dysfunction. All of this is suggestive of one or more of the following issues having played some role in the deaths of participants:

- co-existing health issues
- barriers to accessing HIV care and treatment
- poor adherence to ART

The New York City study underscores that gaps in the HIV cascade of care continue to occur even in high-income countries. The study’s findings are disappointing but the researchers said that their results “should be used to inspire and support novel strategies to better support the progress of people engaged in care through the latter stages of the care continuum to [achieve and maintain] viral suppression.”

Hopefully this study will also inspire other cities and regions to assess their care cascades and commit to intervening to close any gaps found.

Study details
During the study period researchers analysed data from 11,187 HIV-positive people who died. The average profile of these people in the year prior to their death was as follows:

- 68% men, 32% women
- major ethno-racial groups: black – 52%, Hispanic – 35%, white – 12%
- the vast majority of deaths occurred in people who were older than 40 years
- main routes of infection: sharing equipment for injecting drugs – 36%; condomless sex between men – 17%; condomless sex between men and women – 18% (Note: In a large proportion of cases—more than 25% —researchers were not sure how participants became infected.)

The study researchers defined “viral suppression” as having a viral load test result of 200 copies/mL (or lower), as this was the lower limit of quantification for the majority of tests done throughout the study (New York Department of Health and Mental Hygiene, personal communication).

Results—Gaps in the care cascade

The researchers found gaps at each stage of the cascade, as follows:

- 98% of people diagnosed with HIV were referred to care
- 80% remained in care
- 66% were offered ART
- 40% ever achieved viral suppression

This latter finding is noteworthy and shows that the majority (60%) of people who died did not have a suppressed viral load in the year before they died. Such people were more likely to die from complications related to HIV infection than people who had a suppressed viral load. Furthermore, participants who died from HIV-related causes tended to have a lower CD4+ cell count (143 cells/mm$^3$) than participants who died from causes unrelated to HIV (308 cells/mm$^3$).

Different populations

According to researchers, there was a roughly similar distribution of different populations (gay and bisexual men, drug users, ethno-racial groups) at the initial stages of the cascade. However, in the latter stages of the cascade, there were what researchers termed “more pronounced differences” among populations when it came to the proportion with viral suppression:

- Higher rates of viral suppression were seen among men (35%) than among women (30%); and among white people (42%) than among black people (32%) or Hispanic people (33%).

Older people had higher rates of viral suppression than younger people. This should not be surprising, as studies have found that this is generally the case in high-income countries.

Income and viral suppression

Although researchers did not have access to individual income data, they were able to assess the average income of neighbourhoods and note where participants resided (because of access to postal codes). The researchers found that rates of viral suppression were lowest among people from low income neighbourhoods.

An unmet need

In 2013, according to the researchers, 64% of all HIV-positive people in New York City had a suppressed viral load. However, only 40% of people who died between 2007 and 2013 had a suppressed viral load. The researchers said that this finding “underscores the need—and opportunity—for more effective clinical management and provision of supportive services to persons with unsuppressed HIV viral load.” The researchers said that their findings suggest that “comorbidities, psychological and/or structural barriers to treatment adherence may be more prevalent in [HIV-positive people] at risk of death.”

The researchers called for the development of interventions that “seek to improve and promote” the long-term and
ongoing connection with HIV medical care to reduce death rates. They also called for implementing programs that help remind and/or assist people to take ART every day.

The study by the New York City researchers is important, as it documents that gaps in the HIV cascade of care continue to occur. In some cases, these gaps lead to tragic results. If the full survival benefit of ART is to be realized, more attention needs to be paid to all stages of the care cascade. These results should encourage health policy planners and clinics in New York City as well as in other cities and regions to intensify efforts to map the flow of people through the HIV care cascade and apply interventions to help them stay in care, on ART and healthy. Although such interventions cost money, researchers in British Columbia and the United States have found that over the long-term such interventions save more money than they cost.

**Resources**

**ART and survival**

- Impressive gains in survival for older people with HIV but still less than general population - *CATIE News*
- What reduces survival 10 years after starting ART in North America and Europe? - *TreatmentUpdate 217*
- Challenges in achieving a longer life - *TreatmentUpdate 214*
- Longer life expectancy for HIV-positive people in North America - *TreatmentUpdate 200*
- Exploring factors linked to longer survival among ART users - *TreatmentUpdate 200*
- Long-term HIV infection and health-related quality of life - *CATIE News*
- Swiss researchers investigate drug use and its impact on health and survival - *CATIE News*

**Adherence**

- A nurse-led adherence intervention for HIV works and saves money - *CATIE News*
- B.C. study finds women need help sticking to treatment - *CATIE News*

**HIV cascade of care**

- B.C. finds HIV testing and treatment programs save money - *CATIE News*
- Going beyond current ideas about the cascade of HIV care - *CATIE News*
- Progress on Ontario’s HIV care cascade - *CATIE News*
- Alberta—Reducing deaths by strengthening the HIV Treatment Cascade - *CATIE News*
- Gaps in British Columbia’s HIV treatment cascade - *CATIE News*
- The HIV treatment cascade – patching the leaks to improve HIV prevention - *Prevention in Focus*
- U.S study finds some barriers to prescribing HIV treatment - *CATIE News*
- The Engagement Cascade - *The Positive Side*
- 90–90–90 - An ambitious treatment target to help end the AIDS epidemic - *UNAIDS*
- Canada’s progress towards global HIV testing, care and treatment goals - *CATIE News*

—Sean R. Hosein

REFERENCE:

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