

# Causes of death shifting in people with HIV

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HIV-positive adults in high income countries face a substantially reduced risk of death from AIDS-related causes, cardiovascular disease, and liver disease compared with a decade ago, according to a large international study published in *The Lancet*.

The study which involved nearly 50 000 HIV-positive adults receiving care and [antiretroviral therapy](#) (ART) at more than 200 clinics across Europe, USA, and Australia found that overall [death](#) rates have almost halved since 1999, while deaths due to AIDS-related causes and cardiovascular disease have declined by around 65% and liver-related deaths by more than 50%.

Although deaths from most causes declined over the study period, there was no reduction in death rates from non-AIDS cancers which remained stable over time (1.6 deaths per 1000 years 1999-2000 to 2.1 in 2009-2011). Non-AIDS cancers are now the leading cause of non-AIDS deaths in people with HIV, accounting for 23% of all deaths.

Using data from the Data collection on Adverse events of anti-HIV Drugs (D:A:D) study, the researchers looked at trends in underlying causes of death in people with HIV between 1999 and 2011, who were followed-up for a median of 6 years.

Of the 3909 deaths that occurred over the study period, around 29% of individuals died from an AIDS-related cause, which remains the most common cause of death. Cancers (15%; mainly lung cancer) were the most frequent causes of non-AIDS deaths, followed by liver disease

(13%; mainly due to hepatitis), and cardiovascular disease (11%).

Mortality decreased from about 17.5 deaths per 1000 person-years in 1999–2000 to 9.1 deaths per 1000 years in 2009–2011—a drop of around 50%. Similar decreases in deaths related to AIDS (5.9 deaths per 1000 person-years to 2.0), liver disease (2.7 to 0.9), and cardiovascular disease (1.8 to 0.9) were also seen. The proportion of all deaths due to AIDS (34% to 23%) and [liver disease](#) (16% to 10%) declined over the decade, while the proportion of deaths due to cardiovascular disease remained constant at 10%.

The researchers note that substantially reduced [death rates](#) from liver and [cardiovascular disease](#) cannot be fully explained by changes in patient demographics or improvements in viral suppression or CD4 count, and might result from the better management of traditional risk factors such as smoking, alcohol use, and hepatitis, or the use of less toxic ART regimens.

They conclude by calling for further research to gain a clearer understanding of why the risk of dying from a non-AIDS cancer remains high and to assess the effect of specific antiretroviral drugs on non-AIDS cancer rates.

According to study leader Dr Colette Smith from University College London in the UK, "These recent reductions in rates of AIDS-related deaths are linked with continued improvement in CD4 count and provide further evidence of the substantial net benefits of ART. But despite these positive results, AIDS-related disease remains the leading cause of death in this population. Continued efforts to ensure good ART adherence and to diagnose more individuals at an earlier stage before the development of severe immunodeficiency are important to ensure that the low death rate from AIDS is sustained and potentially decreased even further."

Writing in a linked Comment, Steven Deeks and Peter Hunt from the University of California in San Francisco, USA, say, "The benefits of ART are unquestioned, and their beneficial effect on the HIV epidemic continues to grow. Still, clear limitations exist because many patients are not accessing treatment, and some problems persist even in those on ART, including a higher than expected risk of non-AIDS cancers and other morbidities. Finally, it needs to be emphasised that we are still early in the ART era. In the absence of a cure, most patients will need to continue on ART for decades. Continued monitoring for unexpected consequences of treatment will be needed indefinitely."

**More information:** The study appears in a special issue of *The Lancet* published ahead of AIDS 2014, the 20th international AIDS conference of the IAS, taking place in Melbourne, Australia, from 20-25 July, 2014: [www.thelancet.com/journals/lan ... \(14\)60604-8/abstract](http://www.thelancet.com/journals/lan... (14)60604-8/abstract)

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