

Scientists call for increased surveillance as study assessing HIV drug resistance shows rising rates in Africa

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New research published online first in the *Lancet* suggests that drug-resistant HIV has been increasing in parts of Sub-Saharan Africa since the roll-out of antiretroviral therapy nearly a decade ago.

"Without continued and increased national and international efforts, rising [HIV drug resistance](#) could jeopardize a decade-long trend of decreasing HIV/AIDS-related illness and death in low- and middle-income countries", warn Silvia Bertagnolio from the WHO, Geneva, and Ravindra Gupta at University College London, UK, who led the research. "Nevertheless, estimated levels, although increasing, are not unexpected in view of the large expansion of antiretroviral [treatment coverage](#) seen in low-income and middle-income countries. In 2011, about 8 million people in these countries received ART, a figure 26 times greater than the number in 2003."

This is the first study to systematically assess the prevalence of HIV [drug resistance](#) in low-income and middle-income countries, where over 90% of people with HIV live and 97% of new infections worldwide are to be found.

After searching systematically for studies over the past 10 years containing data on HIV drug resistance in untreated adults, and using data from the WHO HIV drug resistance surveillance programme, the researchers identified 162 reports and 27 unpublished [datasets](#) including

over 26 000 individuals (aged 15 years or older) from [sub-Saharan Africa](#), Asia, and Latin America. They estimated levels and changes in the prevalence of HIV-1 drug resistance since the scale-up of ART.

Overall, their findings suggest a significant increase in prevalence of drug resistance over time since antiretroviral roll-out in regions of sub Saharan Africa. This rise is mainly driven by non-nucleoside reverse transcriptase inhibitors (NNRTI) resistance in East and [Southern Africa](#).

The most rapid increase in drug resistance occurred in [East Africa](#), at 29% per year, reaching an overall prevalence of 7.4% 8 years after rollout. This was considerably higher than the estimated 14% rise in Southern Africa, where the prevalence of drug resistance reached 3% 6 years after roll out. Rates of resistance for NNRTIs were slightly higher, rising by 36% per year in East Africa and 23% per year in Southern Africa.

Gupta and colleagues noted no change in resistance over time in Latin America and in West and Central Africa, while the heterogeneity between countries in Asia made it impossible for them to assess time trends in this region.

According to the authors, "In view of these findings, urgent action is clearly needed to maximise the long-term effectiveness of available first-line regimens and to enhance population-level resistance surveillance and prevention efforts in national HIV treatment programmes. [This should include] the establishment of robust supply chains to prevent drug stock-outs and treatment interruptions and early identification of individuals failing therapy."

In a linked Comment, Douglas D Richman from the University of California San Diego in the USA says, "Many of these missing resources and capabilities are components of the WHO/UNAIDS Treatment 2.0

goals, which if achieved could avert an additional 10 million deaths by 2025."

More information: www.thelancet.com/journals/lan...
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