

Further advances in HIV prevention, treatment and cure from PLOS Medicine's special issue

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This week, guest editors Steven G. Deeks of the University of California San Francisco, USA; Sharon Lewin of the Peter Doherty Institute of Infection and Immunity, University of Melbourne and Royal Melbourne Hospital, Australia; and Linda-Gail Bekker of the Desmond Tutu HIV Centre, University of Cape Town, South Africa sum up *PLOS Medicine's* special issue on Advances in HIV Prevention, Treatment and Cure in an Editorial published to coincide with World AIDS Day on December 1. While it may appear that "the goal of ending the epidemic is in our grasp", they caution that "the remarkable progress, activism, resources, ingenuity and sheer fortitude that have brought us this far will be needed in at least equal measure to take us to the end."

In an accompanying Perspective, Chris Beyrer and colleagues discuss the growing HIV epidemic in the Russian Federation, where the available prevention measures have failed to stem an increase in HIV infections, particularly in people who inject drugs and men who have sex with men. The authors note that "The continuous growth of the Russian HIV epidemic is a failure of public policy and practice" and warn of the serious consequences of neglecting this epidemic. In a Research Article addressing issues of HIV prevention in India, Sunil Solomon and colleagues present a large study using respondent-driven sampling to identify people with HIV and hepatitis C virus infection in key populations. With global targets seeking to bring about swift progress in bringing the HIV epidemic under control, this method appears promising

as a way to efficiently identify people with treatable virus infections.

Continuing the theme of early identification of infection so as to ensure prompt treatment initiation and limit further virus transmission, Katrina Ortblad and colleagues report in their Research Article on a cluster-randomized controlled trial of delivery models for HIV self-testing among female sex workers in Uganda. In one delivery model, peer educators directly provided the HIV self-test to [female sex workers](#); in the other model, the peer educators gave the sex workers a coupon that could be exchanged for an HIV self-test at a healthcare facility. Participants in both HIV self-testing arms were significantly more likely to test and re-test for HIV, compared to the standard of care arm. The direct provision delivery model was more effective than passively offering the HIV self-tests for collection at healthcare facilities. The authors conclude that "self-testing can play an important role in supporting interventions that require frequent HIV testing."

In an epidemiological study, Jacob Bor and colleagues studied a large cohort of more than 11,000 people who entered HIV care in South Africa in 2011-2012, when eligibility for antiretroviral treatment was dependent on CD4 cell count. The authors found that patients eligible for immediate antiretroviral treatment had a significantly greater retention in care than those narrowly failing the eligibility criteria. These findings support the current WHO recommendations to provide antiretroviral therapy regardless of CD4 count, and the authors highlight that "the real-world benefits of extending ART eligibility to all patients ... may be larger than previously thought."

Though of great interest, curing HIV infection has been very rarely achieved, to date. In a further research paper, Andrew Badley and colleagues describe the case of a person with HIV who underwent an allogeneic stem cell transplant as treatment for acute lymphoblastic leukaemia, and report analyses of virus sequence and tissue distribution

throughout the process. Although the patient's HIV reservoir was diminished by treatment, viral rebound was observed to have occurred after a prolonged period (288 days) without antiretroviral therapy. These findings should be valuable in guiding further attempts to cure HIV infection using stem cell transplantation and other methods.

More information: Deeks SG, Lewin SR, Bekker L-G (2017) The end of HIV: Still a very long way to go, but progress continues. *PLoS Med* 14(11): e1002466. doi.org/10.1371/journal.pmed.1002466

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