

# New HIV program increased viral suppression, decreased new infections in Botswana

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In Botswana, an intervention in 15 communities to test for and treat HIV infection in all adult residents was effective in increasing population

viral suppression to very high levels (meaning that the virus becomes undetectable and can't be transmitted while patients are taking effective treatment), according to a new study led by researchers from Harvard T.H. Chan School of Public Health and the Botswana-Harvard AIDS Institute Partnership, and collaborators at several other institutions. The intervention likely also contributed to a nearly one-third reduction in the incidence of HIV infection in participating communities.

"Using approaches that are feasible in most settings, we achieved levels of HIV diagnosis, treatment, and [viral suppression](#) that are among the highest levels reported globally," said senior author Shahin Lockman, associate professor in the Department of Immunology and Infectious Diseases. "These high rates of treatment coverage are a testimony to the long-standing commitment that Botswana has shown to tackling HIV. We also believe that our approaches and findings are highly relevant for other countries."

The study will be published online July 18 in the *New England Journal of Medicine*.

HIV prevalence in Botswana is high, despite efforts by the government to increase access to testing, treatment, and preventive services. In 2017, an estimated 23% of adults had HIV. Combination [antiretroviral therapy](#) (ART) can essentially eliminate the risk of HIV transmission from a person who adheres to treatment and who has an undetectable viral load.

For the current study, researchers analyzed data from 23,401 people in the Ya Tsie Botswana Prevention Project, a randomized trial in 30 rural and semiurban communities (with a total population of approximately 180,000). From 2013 to 2018, 15 communities received an intervention that included universal HIV testing and counseling, support for accessing care, expanded and more rapid ART initiation, and increased access to male circumcision services (which lowers the risk of acquiring HIV). A

[control group](#) of 15 communities received standard HIV testing and treatment.

By the end of the study period, in the intervention group, the proportion of persons living with HIV who had a suppressed viral load increased from 70% to 88%, while the proportion in the standard care group increased from 75% to 83%. The population level of viral suppression in the intervention group is among the highest to be reported globally. Incidence of HIV infection in the intervention group was 31% lower than incidence in the standard care group, which is borderline statistically significant.

Among the methods tried during the intervention, male circumcision uptake was relatively low and was hence likely the least significant, according to the researchers. The successful HIV testing campaigns in homes and mobile venues, along with support for linkage to care, both contributed to the very high ART initiation and viral suppression achieved. According to the researchers, these efforts in turn likely led to the nearly one-third reduction in the rate of new HIV infections in the intervention communities.

"Universal HIV testing and treatment can contribute substantially toward improving health and reducing the rate of new HIV infections in the community," said Lockman. "This reduction, if sustained over time, will help us achieve the UNAIDS target of 90% reduction in the rate of new HIV infections by 2030."

**More information:** *New England Journal of Medicine* (2019). [DOI: 10.1056/NEJMoa1812281](https://doi.org/10.1056/NEJMoa1812281)

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