

Multi-disease health fairs, 'test and treat' help E. African communities achieve HIV goals

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A SEARCH health educator in Kisoro, Uganda, sings about the need to be tested for HIV and start ART. Credit: NIAID

People living with HIV in rural East African communities that hosted annual community health campaigns initiated antiretroviral therapy (ART) earlier and had higher levels of overall survival and [viral suppression](#) than communities receiving standard HIV care, according to study data presented today at a press conference at the 22nd International AIDS Conference (AIDS 2018) in Amsterdam. Communities with annual multi-disease health fairs, which delivered patient-centered, streamlined HIV care, also had fewer cases of tuberculosis (TB), better control of hypertension and approximately 30 percent fewer new HIV cases during the last year of the study compared to the first year. The study, known as Sustainable East Africa Research in Community Health (SEARCH), is supported by the President's Emergency Plan for AIDS Relief (PEPFAR) and the National Institutes of Health (NIH).

SEARCH investigators randomly assigned 32 rural [communities](#) in Uganda and Kenya to receive either a multi-faceted intervention that integrated universal HIV testing and treatment into annual health screenings for multiple conditions or standard HIV care at HIV clinics, which consisted of baseline community-wide HIV testing and treatment with ART in accordance with national guidelines. In 2015, while the study was taking place, national guidelines in Uganda and Kenya shifted from a recommendation that individuals begin ART when CD4+ T cell levels—an indicator of immune system health—dipped below a certain threshold to a recommendation that all individuals living with HIV begin ART at the time of diagnosis.

In communities randomized to receive the intervention, the SEARCH team held annual community health campaigns, which began with a census and then engaged community members through two-week health fairs. Participants received health education; screenings for HIV, hypertension, diabetes, and TB; and prompt care for any health conditions detected, including providing immediate ART for those who

tested positive for HIV.

At the end of the three-year study, rates of deaths from any cause among people living with HIV in the intervention communities were 21 percent lower than in communities receiving standard care. People living with HIV in communities that received the intervention also experienced 59 percent fewer new TB cases compared with the standard care communities. TB, a bacterial infection that affects the lungs, is a leading cause of death among people living with HIV across the globe and is particularly endemic in East Africa.

Prior to the study, investigators found that nearly half of individuals living with HIV in the 32 rural communities in Uganda and Kenya were virally suppressed—consistent use of daily ART had reduced their HIV blood levels to undetectable by standard tests. HIV suppression both benefits the health of those living with HIV and [prevents sexual transmission](#) of the virus. At the end of the three-year study, 80 percent of people living with HIV in communities randomized to the intervention were virally suppressed compared to 68 percent in communities that received standard HIV care.

"We know that the ability of antiretroviral therapy to suppress HIV to undetectable levels is not only life-saving for individuals, but also prevents sexual transmission of the virus," said Anthony S. Fauci, M.D., director of the National Institute of Allergy and Infectious Diseases, part of NIH. "Innovative implementation of antiretroviral therapy through community health initiatives may be one way to save lives and change the trajectories of even the most ingrained epidemics."

The SEARCH study outcomes exceeded international HIV testing and treatment goals set by UNAIDS, which call for 90 percent of people living with HIV to be diagnosed, 90 percent of those diagnosed to be on ART, and 90 percent of those in treatment to be virally suppressed by

2020. If met, the 90-90-90 targets would result in 73 percent of people living with HIV being virally suppressed. At the start of the study, the SEARCH team tested about 90 percent of the population in communities set to receive either the intervention or standard care. Through repeated annual testing in intervention communities, more than 95 percent of the population received an HIV test. Those diagnosed through community health campaigns were more likely to start ART, and viral suppression increased dramatically among individuals taking ART in all communities. In intervention communities, population-level viral suppression was 80 percent, surpassing the 90-90-90 target of 73 percent. Standard care communities approached the target with 68 percent of community members living with HIV virally suppressed. The reduction in HIV infections over the course of the study was similar between intervention and standard care communities.

"Our team hypothesized that partnering with communities to deliver patient-centered care for a range of common diseases, including but not exclusively HIV, would reduce new HIV infections and improve community health," said Diane Havlir, M.D., principal investigator of SEARCH, at the University of California, San Francisco.

Investigators found that annual [community health](#) campaigns and streamlined care delivery also had a positive impact on the burden of diseases other than HIV. Patient-centered [health](#) care in the intervention communities led to better control of hypertension and diabetes. Investigators observed 16 percent fewer cases of uncontrolled hypertension in intervention communities compared with standard care communities, where uncontrolled hypertension was common.

While men and youth have participated at lower rates in HIV testing and treatment programs in Sub-Saharan Africa, the SEARCH model resulted in 74 percent of men living with HIV in intervention communities achieving viral suppression by the end of the study. However, youth

between the ages of 15 and 24 living with HIV were nearly 20 percent less likely to be virally suppressed compared with community members over age 24. Investigators also found that about two thirds of all study participants who acquired HIV during the study period were women, but that in Western Uganda, a higher proportion of people who acquired HIV during the study were young, single men of low social and economic status.

These findings comprise the results of the first phase of SEARCH; Dr. Havlir and her colleagues continue to collect data for the second phase of the study, known as SEARCH Phase II, which is applying machine-learning to help develop strategies for implementing [pre-exposure prophylaxis, or PrEP](#) , in the same communities. Phase II will investigate whether targeted roll-out of PrEP can reduce new HIV infections.

SEARCH is led by Dr. Havlir and by co-principal investigators Moses Kamya, M.B.Ch.B., Ph.D., at Makerere University in Uganda, and Maya Petersen, M.D., Ph.D., at the University of California, Berkeley. More information about the study [Sustainable East Africa Research in Community Health \(SEARCH\)](#) is available on ClinicalTrials.gov under identifier NCT01864603.

More information: D Havlir, *et al.* SEARCH community cluster randomized study of HIV "test and treat" using multi-disease approach and streamlined care in rural Uganda and Kenya. 22nd International AIDS Conference, Amsterdam (2018).

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