

New community-based approach to testing and treating HIV improves health in East Africa

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Diane Havlir, MD and Jane Kabami, MPH survey a community health fair as part of the SEARCH study in Western Uganda. Credit: Tamara Clark

A new community-based model to treat HIV and other health conditions in rural East Africa led to 20 percent fewer HIV deaths, reduced the incidence of HIV and tuberculosis (TB), and improved control of

hypertension and diabetes, according to results presented today at the 22nd International AIDS Conference (AIDS 2018) in Amsterdam.

The results are the latest from the Sustainable East Africa Research in Community Health (SEARCH) study, an ongoing trial in which whole communities are randomized either to the intervention or to a control group. The trial includes more than 350,000 adults and children in rural Kenya and Uganda to evaluate the effect of a "test-and-treat" strategy on HIV, community [health](#), and economic outcomes.

Nearly two million people are infected with HIV each year, and a million die from AIDS-related complications. Despite the wide availability of effective treatments, of the 37 million people living with HIV worldwide, only 22 million are receiving treatment. This gap exists largely because health workers in developing countries still often struggle to reach HIV-infected individuals. Many people are unaware of their infection, have limited access to care, or fall out of care.

"The challenge is finding those who are not yet in care, and tailoring approaches to engage and keep them in care," said Diane Havlir, MD, chief of the University of California, San Francisco's Division of HIV, Infectious Diseases and Global Medicine and principal investigator of SEARCH.

In 2014, the Joint United Nations Programme on HIV/AIDS (UNAIDS) launched the "90-90-90" campaign, a call for 90 percent of people with HIV to know their status, 90 percent of all people diagnosed with HIV to receive antiretroviral therapy (ART), and 90 percent of people on ART to be virally suppressed. Viral suppression is the reduction of HIV in a patient's blood to an undetectable level, which prevents it from being sexually transmitted. If met, the UNAIDS goals would result in 73 percent of people living with HIV being virally suppressed. Globally, only 47 percent of those living with HIV are virally suppressed, well

below the target.

In 2015, the World Health Organization issued a recommendation to treat all HIV-positive individuals with ART, regardless of their CD4+ T-cell count. Before that, patients had to wait until these immune cells, which are destroyed by HIV, fell below a certain level.

To work toward the UN goals, SEARCH investigators designed a new approach that offered comprehensive health care, including immediate treatment for anyone diagnosed with HIV—to reduce new HIV infections and to improve community health.

"We aim to pave the path to HIV elimination through the entry point of improving community health," said Havlir, also professor of medicine at UCSF.

In rural Uganda and Kenya—where HIV is endemic—additional barriers to HIV care exist, including stigma and practical limitations to care, such as long wait times for appointments. The SEARCH team wanted to provide respectful care that was attentive to their patients' desire for privacy. So they provided care for a variety of health conditions, along with HIV testing and treatment, at health fairs that were accessible to villagers and had flexible hours. They supplemented the health fairs, which were not billed as being specific to HIV, with home-based HIV testing for those who could not attend.

Thirty-two rural communities in Uganda and Kenya—including 150,395 people who were 15 years old or older—were randomly assigned to either the intervention group, which received HIV testing and treatment as well as screening for other health conditions, or the control group, which received HIV testing at baseline, followed by referral, if appropriate, to the standard HIV treatment available in their country.

In intervention communities, the SEARCH team held annual two-week mobile community health fairs that included health education; screenings for HIV and diseases like hypertension, diabetes, and tuberculosis; and immediate care or referral for any health problems.

After three years, improvements in community health were significant. Deaths among people living with HIV in the intervention communities were 20 percent lower than in communities receiving HIV standard care. New TB cases among HIV-infected people also fell by 59 percent in the intervention community, while hypertension control improved by 26 percent.

"These findings suggest that a multi-disease community approach to testing and treating HIV can have a broad impact on overall community health extending beyond HIV to mortality, TB, and other important non-communicable diseases," said UCSF's Edwin Charlebois, MPH, PhD, professor of medicine and vice-chair of the study.

HIV outcomes were also significantly affected. At the start of the study, investigators tested 90 percent of the population for HIV in both the intervention and control communities. Of those, 43 percent were virally suppressed before the intervention. After three years, 80 percent of people living with HIV in intervention communities were virally suppressed (surpassing the "90-90-90" target of 73 percent by 2020), compared to 68 percent in communities that received standard HIV care.

After three years, new cases of HIV infection declined by 32 percent in intervention communities. But even though the people in intervention communities had a 12 percent higher rate of viral suppression, people in both groups were equally likely to become infected with HIV. This may be due to the success of the health fairs at baseline, which provided HIV testing and referral to care for all participants, and the expanded eligibility of ART for those in standard care, as implemented by national

guidelines early in the study.

The study results suggest a novel and promising path in the continuing fight to eliminate HIV, and "may have a profound impact on how we test and treat large populations in East Africa," said Moses Kamya, MBChB, MMed, MPH, PhD, study co-principal investigator from the Infectious Diseases Research Collaboration (IDRC) and Makerere University in Uganda. "It will guide our global effort to end AIDS and to improve [community health](#)."

Havlir and team continue to collect data for the second phase of SEARCH that is developing strategies for implementing pre-exposure prophylaxis, or PrEP, to prevent HIV acquisition in uninfected persons.

Provided by University of California, San Francisco

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