

Researchers Report Surprising AIDS-Treatment Benefits, Prevention Strategy in Epidemic Regions of Africa

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Two teams of researchers at UC San Diego and other U.S. and African universities and the World Bank have documented significant spillover benefits of a drug therapy to combat AIDS symptoms and a novel prevention strategy that focuses on girls in Sub-Saharan Africa, an area with two-thirds of the world's HIV infections.

A recently published paper in *Public Economics* documents a dramatic "Lazarus effect" in AIDS-affected households in rural Kenya when infirmed members received anti-retroviral therapy (ART). The study found that not only did the health of those treated improve, but the households also began to accumulate livestock and other assets and they increased their investments in the education of their children.

"Most successful AIDS relief initiatives have been lopsided in their focus on anti-retroviral therapy, but behavioral dimensions of the epidemic are equally significant," said Joshua Graff-Zivin, co-author of the study and associate professor of economics at UC San Diego's School of International Relations and Pacific Studies (IR/PS). "Anti-retroviral therapy may be achieving much more far-reaching impacts than just the medical benefits, and anti-retroviral therapy may help the continent escape a much broader set of behavioral poverty traps that would otherwise arise from stratospheric HIV-prevalence rates."

The study was supported by a partnership of the U.S. Agency for International Development. Graff-Zivin worked with Harsha Thirumurthy, assistant professor of health economics at the University of North Carolina, and Markus Goldstein, a senior economist at the World Bank. The team showed that when affected members of rural Kenyan households received the drug therapy, a range of household investment indicators suddenly improved. In addition, children's nutritional status went up and their school attendance increased more than 20 percent within six months after treatment was initiated for the adult patient.

"This Lazarus effect, whereby those who had expected a swift decline and death are granted a new lease on life by treatment, suggests that without effective anti-retroviral treatment, the epidemic may be having pervasive negative effects on people's willingness to think long-term and to invest for the future," Graff-Zivin said. "This study shows that effective treatment yields significant economic dividends such as improved capital investment. Based on our latest field research we also think anti-retroviral therapy enhances environmental stewardship and a host of other positive effects as households switch from a sense of hopelessness to planning for their long-term futures."

In a separate study conducted in the southern African nation of Malawi and recently published in *Health Economics*, researchers found that providing small monthly cash payments to girls significantly reduced sexual activity, teen pregnancy and marriage. New results from a series of working papers report that the prevalence of HIV and Herpes is also significantly reduced by the intervention. In order to continue receiving the money as part of the study, the girls were required to remain in school as part of a "conditional cash transfer" program.

Two dramatically positive results were measured:

About 18 months after the program began, HIV prevalence among the participating schoolgirls was 60 percent lower than the control group (1.2 percent vs. 3.0 percent).

The prevalence of Herpes Simplex Virus type 2, the common cause of genital herpes, was more than 75 percent lower among the girls participating in the study compared to a control group (0.7 percent vs. 3.0 percent).

"This study was the first rigorously estimated evidence that a behavioral intervention may have meaningful effects on the trajectory of the HIV epidemic," said Craig McIntosh, a co-author of the study and associate professor of economics at IR/PS. "Similar programs in Mexico, Brazil and Nicaragua have demonstrated efficacy in improving school enrollment, learning or labor-market outcomes, but we suspected that the conditional-cash-transfer approach could also have a strong impact on the health of girls living in an epicenter of HIV infections." The conditional-cash-transfer program virtually eliminated sexual relationships between teen-age girls and men over 25. "This is very important because this approach greatly reduces HIV transmission from an older demographic group to a younger one, which could lead to the epidemic burning itself out," McIntosh said. "This study shows how the lives of girls can be improved, vulnerable households can be protected, and spread of the HIV epidemic can be significantly slowed."

The study was supported by the Global Development Network and the Bill and Melinda Gates Foundation. The research team included McIntosh; Sarah Baird, an assistant professor of global health at George Washington University; Ephraim Chirwa, associate professor of economics at the University of Malawi, and Berk Özler, an economist with the World Bank.

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