

An effective, economic approach to South Africa's HIV epidemic

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A portfolio of interventions used together could dramatically reduce HIV incidence in South Africa, home to the largest epidemic in the world, a new study by Yale researchers has found. The study appears in this month's issue of the Journal of General Internal Medicine.



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The analysis used mathematical modeling to evaluate the potential impact and cost-effectiveness of a range of interventions to combat HIV in South Africa, where an estimated 5.6 million people are currently infected with the virus.

Researchers Elisa F. Long, an assistant professor at Yale School of Management and School of Public Health, and Robert R. Stavert, M.D., of Yale School of Medicine, examined whether a combination of newer biomedical approaches, including voluntary male circumcision, oral pre-exposure prophylaxis, and vaginal microbicide gel - each of which is only modestly effective on its own - along with expanded HIV screening and use of antiretroviral therapy, could effectively slow the spread of the disease if used in tandem.

They found that the portfolio approach has the potential to avert up to two-thirds of new HIV infections in South Africa, reducing the virus' prevalence from a projected 14% to 10% after 10 years and preventing more than 2 million new infections over this time period.

The researchers also concluded that the combination strategy would add a total of 31 million life years to the population and that its implementation would be cost-effective in a setting such as South Africa.

"Our study's aim is to help policymakers better allocate limited HIV resources in a way that maximizes overall health

benefits," said Long. "On their own, these programs may show limited effectiveness, but when used as part of a comprehensive prevention portfolio, they could collectively make a substantial dent in the South African HIV epidemic."

Currently 60% of individuals in need of HIV treatment in South Africa do not receive it. The country has scant resources to fight the HIV epidemic, and each strategy must be measured in terms of cost versus benefit, the authors said.

Although clinical trials have evaluated individual programs, there is limited information about the combined effectiveness of multiple programs. In the absence of such costly multi-intervention clinical trials, mathematical models are used to shed light about the potential impact.

Source: Yale University

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