

Expanding HIV treatment for couples could significantly reduce global HIV epidemic

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A new study uses a mathematical model to predict the potential impact of expanding treatment to discordant couples on controlling the global HIV epidemic-- in these couples one partner has HIV infection and the other does not. The research conducted at ICAP at Columbia University's Mailman School of Public Health and the Semel Institute of Neuroscience and Human Behavior at University of California in Los Angeles (UCLA) is the first to predict the effect of the expansion of such treatment in couples on the HIV epidemic in certain African countries.

In "Modeling the Impact on the HIV Epidemic of Treating Discordant Couples with [Antiretrovirals](#) to Prevent Transmission," authors Wafaa El-Sadr, MD, MPH, MPA, director of ICAP at the Mailman School, and Brian Coburn, PhD and Sally Blower, PhD at UCLA's Center for Biomedical Modeling, designed a [mathematical model](#) that was able to determine the number of infections prevented as a result of treating discordant couples. They used their model to make predictions for Ghana, Lesotho, Malawi and Rwanda. Full study findings were e-published on October 11, 2011 in the Journal, *AIDS*.

The authors use data for their modeling from a recent clinical study, HPTN 052, that showed that treatment of the HIV infected individuals in couples where the other partner was not HIV infected was successful in reducing transmission by 96 percent. "The findings from the modeling study provide insights into what to expect at a country level of expanding such a prevention strategy", noted Dr. El-Sadr, "Getting information to

countries with regards to what they can expect from scale up of treatment for discordant couples on their epidemics is critical to their decision making".

"The most important aspect of our study is that by using a model to scale up the results of a clinical trial, we were able to predict the effectiveness of the intervention in controlling HIV epidemics," said Dr. Coburn. "It was very exciting to find that this couples-based intervention could be extremely effective." Dr. Blower added, "Our findings are very important as they show the intervention may be very successful in certain countries but not in others. This means we can use our model to identify which specific countries should begin to rollout this intervention."

The authors also demonstrate a practical approach for identifying countries where the expansion of HIV treatment in discordant couples is likely to have a strong effect in terms of preventing further spread of HIV. Such information is of great value as policy makers and public health leaders tackle tough decision in terms of determining their HIV control programs.

Provided by Columbia University

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