

# How can pediatric HIV be eliminated in Zimbabwe?

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Eliminating new infant HIV infections in Zimbabwe will require not only improved access to antiretroviral medications but also support to help HIV-infected mothers continue taking their medication and safely reduce or eliminate breastfeeding, according to an article in the January issue of *PLoS Medicine*. Findings of the report from an international research team should help with the planning of expanded programs to prevent mother-to-child HIV transmission in sub-Saharan Africa and other areas with limited health resources.

"Pediatric [HIV](#) infection has been nearly eliminated in resource-rich settings, such as the U.S. and Europe, through a combination of anti-HIV drugs and avoidance of breastfeeding," says Andrea Ciaranello, MD, MPH, of the Massachusetts General Hospital (MGH) division of Infectious Diseases, lead author of the [PLOS Medicine](#) report. "The [World Health Organization](#) has urged [health programs](#) throughout the world to aim for the same successes, calling for the 'virtual elimination' – defined as reducing transmission risk to less than 5 percent – of mother-to-child HIV transmission.

The authors note that prevention of mother-to-child transmission requires successful completion of a series of steps – including prenatal care, HIV testing and follow-up, and access and adherence to antiviral drug therapy throughout pregnancy and breastfeeding. Maintaining this "cascade of care" can be particularly challenging in resource-poor areas like sub-Saharan Africa, where as much as 90 percent of worldwide mother-to-child transmission takes place. The current study was

designed to evaluate the factors required to meet the WHO goal in Zimbabwe, where 16 percent of pregnant women are HIV infected and most mothers breastfeed their infants, which is one means of viral transmission.

Using a previously validated computer simulation model, the researchers compared the country's current prevention program, which provides three-drug antiretroviral therapy to pregnant women with advanced [HIV infection](#) and a single dose of the antiviral drug nevirapine for all others, with two new antiviral regimens recommended by the WHO in 2010. While the existing Zimbabwean program, which reached more than half the country's HIV-infected pregnant women in 2009, led to a transmission rate of 18 percent, the authors found that rate could be decreased to 14 percent with even greater participation and the use of newer medications. Mother-to-child transmission could be further reduced to 6 to 7 percent – approaching "virtual elimination" – if three goals can be reached: more than 95 percent of infected pregnant women receive the most effective available medications; excellent medication adherence is maintained for both mothers and infants throughout pregnancy and breastfeeding; and breastfeeding is safely reduced or avoided altogether, an achievement that requires access to both adequate infant formula and safe drinking water.

"Ambitious public health targets are critical to spurring major expansions of global health care services, but it is important to understand what it would take to reach these goals," says senior author Kenneth A. Freedberg, MD, MSc, also of the MGH division of [Infectious Diseases](#). "Achieving 'virtual elimination' will require increased access to WHO-recommended medications, dedicated support for long-term medication adherence and safer infant feeding options." Freedberg is a professor of Medicine and Ciaranello is an instructor in Medicine at Harvard [Medical](#) School.

**More information:** Ciaranello AL, Perez F, Keatinge J, Park J-E, Engelsmann B, et al. (2012) What Will It Take to Eliminate Pediatric HIV? Reaching WHO Target Rates of Mother-to-Child HIV Transmission in Zimbabwe: A Model-Based Analysis. PLoS Med 9(1): e1001156. doi:10.1371/journal.pmed.1001156

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