

# Why Microbicides for Women?



INTERNATIONAL  
PARTNERSHIP FOR  
MICROBICIDES

Women are at disproportionate risk for HIV—and urgently need new tools they can use to protect their own health. Products called microbicides are being developed as vaginal rings, films and tablets and as rectal and “dual-compartment” gels that could be used both vaginally and rectally to help prevent sexual transmission of HIV. These products are based on the same types of antiretroviral (ARV) drugs already being used successfully to treat and prevent HIV.

## Women and Girls Bear the Burden of the HIV/AIDS Epidemic

- **HIV/AIDS is the world’s leading cause of death in women ages 15-44.**<sup>i</sup> Over half of all adults living with HIV/AIDS are women. The epidemic takes a disproportionate toll in sub-Saharan Africa, where nearly six of every 10 adults living with HIV/AIDS are women.<sup>ii</sup>
- **New HIV infections among women and girls continue at an alarming rate.** Each day, nearly 2,000 women and girls become infected with HIV.<sup>iii</sup> In sub-Saharan Africa, three-quarters of new infections are among girls ages 15-19, and in 2017, nearly 30% of all new infections in South Africa were among young women ages 15-24.<sup>iii,iv</sup>
- **Women are particularly susceptible to HIV.** Heterosexual sex remains the primary mode of HIV transmission in sub-Saharan Africa, and a combination of biology and gender inequities, including gender-based violence, renders women more susceptible to HIV infection than men.

In sub-Saharan Africa, young women ages 15-24 are *twice as likely* to become infected with HIV as young men of the same age.<sup>v</sup>

- **Caregiving for those living with HIV/AIDS often falls to women and girls, limiting their opportunities.**<sup>vi</sup> Many female caregivers have little extra time to earn money, produce food or attend school while

supporting their families. Consequently, these women and girls, along with their families, are more likely to be malnourished, in poor health and impoverished—all factors that further increase susceptibility to HIV infection.



*Reducing maternal mortality is difficult in countries hit hard by HIV, one of the leading causes of death in pregnant women and mothers.*

- **HIV/AIDS is a leading cause of death among pregnant women and mothers.** Women of reproductive age are the most at-risk for HIV infection, and many HIV-positive women in developing countries learn that they are infected only after they become pregnant. Pregnancy exacerbates the symptoms and effects of HIV, and women may be two to four times as likely to become infected during pregnancy and the postpartum period.<sup>vii</sup> In Botswana, more than 52% of maternal deaths from 2000 to 2015 were due to AIDS-related causes.<sup>viii</sup> New prevention tools designed specifically for women would help reduce maternal mortality.

## New Woman-initiated HIV Prevention Options are Urgently Needed

**Current prevention strategies are not doing enough to stop the spread of HIV among women.** Many women are unable to negotiate with their partners to use condoms, or to plan the timing of sex. Even suggesting condom use could put some women at increased risk of violence. In addition, while daily ARV pills called PrEP (or pre-exposure prophylaxis) are also highly effective and being made available in some countries, not all women will be able to use a daily pill. Controlling the epidemic will require a range of options designed to meet women's varying needs, which can change throughout their lives.

**Microbicides could offer women discreet methods to protect their sexual and reproductive health on their own terms.** One microbicide has been found to help reduce women's HIV risk in large clinical trials: the monthly dapivirine vaginal ring. The nonprofit International Partnership for Microbicides (IPM) designed the flexible silicone ring to slowly release the ARV dapivirine. Women insert the ring themselves and replace it each month. The ring is currently under regulatory review for use in developing countries, where women face the highest HIV risk.

**Microbicides that combine an ARV with a contraceptive are also being developed to protect against HIV and unintended pregnancy, a major contributor to maternal mortality.** Together, HIV and maternal mortality are two of the leading risks to women's health worldwide. Among such multipurpose products in development is IPM's three-month ring designed to slowly release dapivirine along with the contraceptive hormone levonorgestrel. Based on encouraging results from a first safety clinical trial, the dapivirine-contraceptive ring entered a second safety trial in 2018, with results expected in 2020.

**Microbicides would complement existing HIV prevention methods.** Microbicides such as the dapivirine ring could be a vital part of a comprehensive HIV prevention toolkit that includes daily oral ARV pills known as pre-exposure prophylaxis, or PrEP, alongside condoms, treatment-as-prevention and male circumcision. Other promising tools in development include injectable and implantable ARV-based products, rectal and dual-compartment gels and vaccines.

**Modeling studies show that a combination approach is needed to end the epidemic—and that microbicides like the dapivirine ring could have a meaningful impact as part of that approach.**

**Meeting the promise of microbicides requires continued support.** Between 2017 and 2018, global investment in overall microbicide research and development fell 12%, from US\$159 million to US\$140 million.<sup>ix</sup> Sustained funding to develop a diverse product pipeline that uses new mechanisms of actions and different formulations is critical to meeting the urgency of the epidemic and staying ahead of the virus. Safe and effective microbicides would help empower women to protect themselves from HIV/AIDS and could help alter the course of the epidemic.

<sup>i</sup> UNAIDS. "Fact sheet: World AIDS Day 2014." 2014.

<sup>ii</sup> UNAIDS. Core epidemiology slides. 2018.

<sup>iii</sup> UNAIDS. "Fact Sheet: 2017 Global HIV Statistics." July 2018.

<sup>iv</sup> UNAIDS. "Global AIDS Update 2018: Miles to Go." 2018.

<sup>v</sup> UNAIDS. "Fact sheet: Adolescents, young people and HIV." 2012.

<sup>vi</sup> Heidari S et al. "Women hold up half the sky – and half the burden of the HIV epidemic." *Journal of the International AIDS Society*, 2013;16: 8608.

<sup>vii</sup> Thomas KA et al. Female HIV acquisition per sex act is elevated in late pregnancy and postpartum. 25th Conference on Retroviruses and Opportunistic Infections (CROI 2018), Boston, abstract no. 45, 2018.

<sup>viii</sup> Alkema L et al. "Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group." *The Lancet*, 2015 Nov 13 [Epub ahead of print].

<sup>ix</sup> Resource Tracking for HIV Prevention R&D Working Group. "HIV Prevention Research & Development Investments, 2018: Investing to End the Epidemic." 2019.