Despite progress against HIV/AIDS, women continue to face persistently high infection rates, particularly in sub-Saharan Africa. Women urgently need new options that meet their different prevention needs, which can also change throughout their lives.

**Offering Women Hope**

IPM’s monthly dapivirine ring could fill an important gap with a long-acting prevention method for women who are unable or choose not to consistently use higher-efficacy products like daily oral PrEP.

**Dapivirine Ring Research: Efficacy, Safety, Acceptability**

**Efficacy:** Two Phase III studies found that the monthly dapivirine ring reduced women's risk of HIV-1 infection with no safety concerns with long-term use.

- The Ring Study, led by IPM, found that the ring reduced overall risk by 35%, and ASPIRE, led by the US National Institutes of Health-funded Microbicide Trials Network (MTN), found that the ring reduced overall risk by 27%.
- Together, the two studies evaluated monthly use of the ring in nearly 4,600 women ages 18-45 in Malawi, South Africa, Uganda and Zimbabwe.

**OLE results:** Two subsequent open-label extension (OLE) studies, DREAM and HOPE, showed increased ring use compared to the Phase IIIs, and modeling data suggested greater risk reduction—by over 50% across both OLEs. That’s an encouraging trend we hope to see continue in additional planned research.

**Safety:** In addition to the Phase III and OLE studies, over 40 safety studies of different dapivirine formulations (oral treatment, gel, film and ring) support the ring’s strong safety profile.

**Acceptability:** Nearly all women in two IPM acceptability studies in Africa found the ring to be acceptable and expressed interest in using it if proven effective. Many women in the Phase III studies reported forgetting the ring was in place and that neither they nor their partner could feel it during sex.
Potential Public Health Impact
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 it. Controlling the epidemic will require a comprehensive prevention portfolio that includes condoms, PrEP and TasP, woman-centered products like rings, and methods being developed such as injectables, implants and vaccines.

Long-acting and Discreet
The dapivirine ring marks the first time a vaginal ring has been shown to deliver an ARV for HIV prevention. If approved, the ring would offer women the first long-acting tool they could use discreetly, on their own terms, to reduce their HIV risk.

Ring Technology: Slow-release and locally-acting
Vaginal rings provide controlled release of drugs over extended periods of time. IPM’s ring is a novel formulation made of flexible silicone with 25mg of the ARV drug dapivirine dispersed uniformly throughout its matrix (56mm outer diameter, 7.7mm cross-sectional diameter). The ring slowly delivers the drug directly to the site of potential infection over a month, with low absorption elsewhere in the body, which could help minimize side effects.

Active Ingredient: Dapivirine
Dapivirine belongs to the same class of ARVs used to successfully treat HIV/AIDS and prevent mother-to-child transmission. Known as a non-nucleoside reverse transcriptase inhibitor, it works by blocking HIV from replicating inside a healthy cell.

A Product of Partnership
IPM pioneered the ring’s development through public-private partnerships that brought scientific ingenuity, political will and financial resources to bear at every phase of product development.

The ring got its start in 2004, when IPM obtained a royalty-free license from Janssen Pharmaceutical Companies of Johnson & Johnson to develop dapivirine as a microbicide for women. That license expanded in 2014 to an exclusive worldwide rights agreement that ensures any dapivirine product will be made available at low cost in resource-limited setting.

IPM took the ring from concept through EMA review in cooperation with governments, foundations, researchers, industry, advocates and communities. It will require that same level of collaboration to finance and coordinate the ring’s introduction, where it is approved for use.

Follow-on Products: Building on the Monthly Ring
IPM is also developing longer-acting rings that could reduce annual costs, including a three-month dapivirine ring, and a three-month ring designed to simultaneously address two risks—HIV and unintended pregnancy.