

MATRIX

A USAID Project to Advance the Research and Development of Innovative HIV Prevention Products for Women

About MATRIX

- MATRIX is a five-year, \$125 million cooperative agreement funded by the U.S. Agency for International Development (USAID) in 2021. MATRIX is being implemented by Magee-Womens Research Institute (MWRI) in close collaboration with 19 partner organizations from North America and Africa. Leading the project is Sharon Hillier, Ph.D., of MWRI and the University of Pittsburgh, USA, with Thesla Palanee-Phillips, Ph.D., from the Wits Reproductive Health and HIV Institute (Wits RHI) and University of Witwatersrand, South Africa, serving as deputy director.
- The mission of MATRIX is to expedite the research and development of a range of HIV prevention products for women that are **acceptable, affordable, scalable** and **deliverable** in the settings where they are needed most.
- Collectively, MATRIX's partner organizations have expertise across multiple fields, including drug formulation, drug delivery and product development; clinical trials design and implementation; human-centered design and socio-behavioral research; market strategy and business case development; capacity strengthening; and stakeholder engagement.



How is MATRIX unique?

- A key feature of MATRIX is its focus on being responsive to end-user and stakeholder feedback during the earliest stages of product development to inform decisions about product design and the overall research agenda.
- While most early-phase clinical trials of new HIV prevention products are typically conducted in the United States or Europe, MATRIX intends to see that these kinds of studies are also conducted in sub-Saharan Africa to gain important insight into the safety and acceptability of new products in the populations that are most important.
- Through its North-South partnerships, MATRIX aims to recognize and strengthen the research and development capacity of African investigators to facilitate full and sustainable ownership of this work into the future.

The MATRIX Product Pipeline

- The current MATRIX pipeline consists of six products, including implants and injectables designed to protect against HIV for six months to one year; short-acting and on-demand vaginal products meant to be used around the time of sex; and other non-systemic vaginal products designed to provide protection from one to three months at a time. Products include new formulations of existing methods, such as a vaginal film containing dapivirine that over the course of a month continuously releases drug as it slowly dissolves, and two longer-acting cabotegravir-based products – small implantable pellets and an injection given under the skin as opposed to deep into the muscle. The pipeline also includes products containing novel agents, such as a fast-dissolving insert with its active ingredient (Griffithsin) derived from seaweed; and a multipurpose (MPT) vaginal ring that contains a non-antiretroviral (non-ARV) molecule that acts against HIV (as well as HSV and HPV) and a non-hormonal contraceptive that inhibits the movement of sperm and the sperm's ability to penetrate and fertilize eggs.
- MATRIX intends to implement three clinical trials in 2023 at its partner trial sites in Kenya, South Africa and Zimbabwe, including MATRIX-001, a Phase 1 study that will evaluate the safety and acceptability of a fast-dissolving vaginal insert containing tenofovir alafenamide (TAF) and elvitegravir (EVG) as well as how and where the drugs are taken up in the body. MATRIX-001 is the first study of the TAF/EVG insert, which is designed to protect against both HIV and HSV, to enroll women in sub-Saharan Africa.

■ ■ ■



USAID
FROM THE AMERICAN PEOPLE

MATRIX
Advancing R&D of Innovative
HIV Prevention Products for Women

MATRIX was established through the generous support of the American people through the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and the U.S. Agency for International Development (USAID).