Saving lives with multipurpose prevention technologies for sexual and reproductive health

Bethany Young Holt 1, Maggie Kilbourne-Brook 2, Jessica Cohen 2, Alan Stone 3, Polly Harrison 4, Marianne Callahan 5, Wayne Shields 6, Kevin Whaley 7, Anke Hemmerling 8, Craig Cohen 8, Kathryn Stewart 1, Matthew Reeves 5

On behalf of the

Initiative for Multipurpose Prevention Technologies (IMPT) for Sexual and Reproductive Health

1 CAMI/Public Health Institute & UC Berkeley School of Public Health, Folsom, CA; 2 PATH, Seattle, Washington; 3 MEDSA Ltd., London, England; 4 Alliance for Microbicide Development, Washington, DC; 5 CONRAD, Arlington, VA; 6 Association for Reproductive Health Professionals, Washington, DC; 7 Mapp Biopharmaceutical, San Diego, CA; 8 UC San Francisco Bixby Center, San Francisco, CA

Health Need

Poor sexual and reproductive health is a major impediment to global health and economic development.

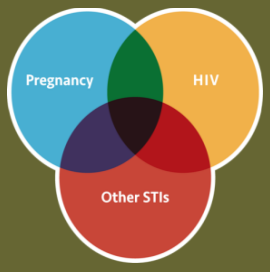
Unintended pregnancy and sexually transmitted infections (STIs) often affect young women and the poor the hardest.

Women's reproductive health is not adequately protected by the prevention technologies currently available.

New prevention technologies that simultaneously address multiple reproductive health risks could save women's lives and reduce the health and economic consequences of unprotected sex.

What are Multipurpose Prevention Technologies (MPTs) for Sexual and Reproductive Health?

Multipurpose prevention technologies (MPTs) are tools that could simultaneously prevent any of the following combinations:



- *Pregnancy + HIV*
- *Pregnancy + other STIs*
- *HIV + other STIs*
- *STI+STI*
- *HIV + Pregnancy+ other STIs*

These types of products would provide an integrated reproductive health solution for women around the world.

Initiative for Multipurpose Prevention Technologies (IMPT)

An international symposium was held in March 2009 to discuss the challenges and opportunities inherent with developing MPTs.

In response, international and domestic reproductive health researchers, health care providers, advocates, product developers, and funding agencies have formed the **Initiative for Multipurpose Prevention Technologies (IMPT) for sexual and reproductive health** to accelerate development, testing, and integration of MPTs into SRH programs.

Portfolio of Possibilities

Advances in science have laid the foundation for the development of new prevention technologies.

Single-indication prevention technologies are being combined to address multiple reproductive health needs.

Multipurpose prevention strategies currently being explored include combinations of devices and drugs, combinations of drugs and vaccines, and entirely novel approaches.

Some examples of these prevention methods include:

Vaginal rings: *Contraceptive vaginal rings could be combined with drugs to also protect from HIV or other STIs.*
Cervical barriers: *A new single-size diaphragm could be used as a delivery system for microbicide gel, or as a controlled-release system for long-term HIV prevention.*
Vaccines: *Combined vaccines that protect against more than one STI may be feasible - such as a vaccine that protects against hepatitis B and HPV.*
Bacterial Therapeutics: *Oral and vaginal administration of probiotics may be useful in preventing and treating bacterial vaginosis, urinarytract infections, HIV, and other infections.*
New delivery systems: *Researchers are investigating new delivery systems. These systems include nanoparticle and bioresponsive gels that can release microbicides under specific physiological conditions.*

The Way Forward

Development of MPTs will face complex challenges in the areas of development, regulatory approval, manufacturing, and commercialization.

What We Must Do

Increase collaboration and resources across disciplines— *Collaboration across scientific disciplines and health and funding sectors is essential.*

Plan deliberately and early—*Rigorous product development, including early-stage user assessments, is needed to ensure technologies are appropriate for end users. Early planning is critical for manufacturability, financing and supply.*

Increase awareness and support— *Engage health professionals, women's health advocates, researchers, donors and others about MPTs. A broad, multidisciplinary cadre of advocates will be critical to raising awareness, building support and mobilizing resources for multipurpose prevention technologies. This will be critical for accelerating access to these technologies among women who need them most.*