What are multipurpose prevention technologies—and why do we need them?

Globally, unsafe sex is the second-largest cause of illness, disability, and death. Unintended pregnancy and sexually transmitted infections (STIs) typically affect the most disadvantaged groups—especially young women, adolescents, and the poor—the hardest. They place a heavy burden on economies throughout the world.

Multipurpose prevention technologies are tools that prevent unintended pregnancy; STIs, including HIV; and/or other reproductive tract infections (RTIs). Also referred to as “combination” or “dual” technologies, these types of products provide an integrated reproductive health solution for women around the world.

A critical investment

Research has shown that multipurpose technologies save time and reduce costs. Like combined vaccines for childhood diseases, they could offer cost savings, diminish the frequency of health provider visits, and increase overall health benefits. Multipurpose prevention technologies would bring significant savings to constrained health care and system budgets.

Current explorations

Today, male and female condoms and behavior change interventions are the only multipurpose prevention tools at our disposal. These interventions have been successful in some settings, but they are not sustainable for all relationships. For this reason, new approaches to multipurpose prevention are being explored. Examples include combinations of devices and drugs, combinations of drugs or vaccines, and other novel approaches, including:

• A one-size cervical barrier that delivers an HIV-preventing microbicide. The device could potentially prevent pregnancy, HIV, and other pathogens.
• A vaginal ring technology that simultaneously prevents HIV and herpes simplex virus. This technology could be especially appealing to women at risk of either infection who want to have children.
• Combined vaccines that provide protection against human papillomavirus and hepatitis B virus. Vaccines that protect against each of these infections are manufactured through similar processes, delivered on similar immunization schedules, and approved for co-administration.
• New delivery systems for microbicides, such as nanoparticles and bioresponsive gels. These systems could eventually be combined with antimicrobial agents to provide a dual defense against pathogens.

The inherent challenges

These technologies will face particularly complex development challenges. The global health community will need to create a new paradigm to reach this goal. We will need to think differently about product development and the connections between disciplines. Perseverance, collaboration, and resources—both technical and financial—will be needed to reach this ambitious goal.
Recommendations

The following recommendations will help the global health community accelerate access to the benefits that these technologies can bring to women and communities around the world.

1. Increase collaboration and resources across disciplines.

A greater level of collaboration is needed to bring this new class of products forward. Scientists, developers, and advocates must draw on relevant research findings from across disciplines. Researchers will need to work with end users and health providers to respond to stakeholders’ needs. Nongovernmental organizations, funders, industry groups, and regulatory authorities will need to work together to address regulatory approvals, manufacturability, supply, and plans for market access. Product developers and funders will need to work together to move promising ideas from concept to broad, widespread use.

2. Plan deliberately and early.

To ensure efficient and effective research and development, researchers and developers must use systematic evaluation and rigorous product-development planning and implementation processes. For example, we will need to develop:

- Early-stage assessments to clarify a product’s potential role and appropriateness.
- Reviews of feasibility, sources of supply, and manufacturability.
- Clear go/no-go decisions for safety, efficacy, acceptability and cost-effectiveness.
- User evaluations to incorporate the needs of end users, health care providers, and other stakeholders.
- Market research and business and financial analysis plans.
- Public-private partnerships to ensure product supply and financing.

3. Increase awareness and support for multipurpose prevention technologies.

Stakeholders must raise awareness, build support, and mainstream the concept of multipurpose prevention. By building a cadre of stakeholders across disciplines, for example, the global health community can foster a new generation of researchers, developers, advocates, providers, and policymakers who will incorporate multipurpose prevention options into health programs.

Central to this effort is the urgent need to mobilize resources. Proponents must secure the resources, skills, and support required for every phase of product development and introduction, from discovery and clinical trials to regulatory approvals and commercialization. To build momentum, it will be critical to communicate progress, which will likely include strengthened collaboration across sectors, new multidisciplinary approaches, greater cost efficiencies, and accelerated impact.