Multipurpose prevention technologies: the vision, the approaches, the challenges

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Multipurpose prevention technologies

Source: Adapted from Initiative for Multipurpose Prevention Technologies
Interlinked HIV/STI risk and unmet need for modern contraception among women

Women want MPTs

83% of women prefer HIV/STI prevention products with contraception vs. HIV/STI prevention alone

Why MPTs?: Addressing stigma challenges

Factors associated with providers’ willingness to prescribe PrEP (n=316)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adj. IRR(^1) (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative attitudes toward AGYW sexuality</td>
<td>0.81 (0.66–0.99)*</td>
</tr>
<tr>
<td>Behavioral disinhibition scale</td>
<td>0.89 (0.79–0.99)*</td>
</tr>
</tbody>
</table>

\(^1\)Adjusted for provider demographics, prior PrEP knowledge, other facility factors (e.g., stockouts)

*p<0.05

Some of us are very critical and judgmental. We just judge someone, ‘Ooh you came again? Last time you had gonorrhea, did you do it again?’

—Service provider, age 32

When the peers of my age see a person taking PrEP, they will think that the person has AIDS or they are very unfaithful hanging out with many partners…I will be considered as a bad person in the community.
—Young woman, age 22, Tanzania

...Personally, I cannot go and tell my father that I am going for PrEP services. He will stop me and ask, ‘who said that you are sick?’
—Young woman, age 20, Tanzania

Why MPTs? Addressing adherence/uptake challenges

- Major concerns emerging from early PrEP studies

  Participants with detectable tenofovir (TDF) in plasma in the FEM-PrEP trial <30%

- Many women more concerned about pregnancy than HIV
- Condoms currently the only dual protection

Why MPTs? Addressing integration challenges

- For the individual, integrated option will be easier and preferred for many
  - Choice/ options essential to address the changing needs along lifespan
- Will require integrated services at the provider level
  - Appropriate recommendations taking into account multiple indications.
- Facility level integration as well
Framework for PrEP introduction: a model?

MPT development/introduction framework

Product development: A focus on choice, convenience and control

Provider administered
- Implants, IUDs

User controlled
- Daily oral tablets
- Intravaginal rings
- Patch
- Films, gels, and inserts

- Long-acting, short-acting, on demand
- Hormonal/non-hormonal contraceptive
- ARV vs non-ARV
- Systemic (absorbed in blood) vs topical
Positive reaction to a variety of products

Interest in using 9 different HIV/STI prevention products (n=558)

- 64% FDI
- 63% Vaginal gel before sex
- 62% Pill before sex
- 58% Vaginal film
- 57% Vaginal gel after sex
- 52% Implant (1 month)
- 51% Intravaginal ring (1 month)
- 51% Daily pill
- 48% Injection (1 month)

MPT Pathway: A Typology

**Indication Combination**
- Pregnancy + HIV
- Pregnancy + STIs (non-HIV)
- STIs + HIV
- Pregnancy + STIs + HIV

**Formulation/Delivery Vehicle**
- Drug + Drug
- Drug + Device

**Active Pharmaceutical Ingredient (API)/Device Status**
- Approved + Approved
- Approved + Experimental
- Experimental + Experimental

**Regulatory Pathway**
# of Indications + # of API/Drug ~ # Years

Source: Martha Brady
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MPT Product Development Database

Multipurpose Prevention Technologies (MPTs) are an innovative class of products that deliver varied combinations of HIV prevention, other STI prevention, and contraception and will improve the lives of women and families worldwide.

This database includes MPT products that are currently in active development. The database outlines detailed product information and can be searched to display products by desired criteria as selected from the drop-down boxes or by entering a keyword in the search box. Click on the product name to access detailed information on each product. Please note there are other MPT candidates not listed that may move forward pending funding. Click here to learn more about the inclusion criteria and information update methodology.

Click on the tables for MPT products in the development pipeline, listed by:

- Indication Combination
- Delivery Method

MPT Database Feedback
Know of an MPT product not included in this database or have updated information for listed products? Let us know here!

Hormonal/Non-Hormonal
- Show All Hormonal Types
- Show All Non-Hormonal Types

Indication
- Show All Indications

Delivery Route
- Show All Delivery Routes

Delivery Method
- Show All Delivery Methods

Development Stage
- Show All Stages

Product Developer
- Show All Developers

Product Sponsor/Funding
- Show All Sponsors

Active Ingredient
- Show All Active Ingredients
Dual prevention pill (DPP)

**Delivery system:** oral pill

**APIs:** Combines 2 approved drugs (Oral contraceptive and HIV PrEP)

**Opportunities:**
- Streamlined regulatory pathway: no efficacy trials required, only bioequivalence
- WHO/CDC guidelines recommend PrEP and combined oral contraceptives prescribed together

**Considerations:**
- Packaging
- Clinical guidance, e.g., missed pills
Emerging insights: Women’s views on DPP

Women perceived the DPP favorably

• Convenience (1 pill for 2 needs, go to only 1 clinic)
• Easy to use (other methods involve pain)
• Condoms not ideal (discomfort, partners do not like, and sex often unplanned)

Concerned about:

• Side effects (physical appearance, depression, and kidney function)
• Stigma/negative treatment from health care providers
• Need to visit clinic to collect pills
• Relationship conflict/lack of support from partner
• Parental approval/support

Source: n = 3 FGDs with 18 women age 16–40 in South Africa
Emerging insights: Provider views of DPP

- See this as an important option for women
- Concerned about reactions from partners/intimate partner violence
- Recommendations for successful roll-out:
  - Women will need counseling as they initiate and to help adhere to the dosing regimen
  - Providers need training and support to manage workload
  - Offer through clinics, but consider getting it out of the health facility to reach more women

Source: n = 17 health care providers in South Africa
Potentially a 2- to 10-fold increase in PrEP usage

Estimated DPP users compared to current PrEP users

- Current PrEP users (women and men)
- Estimated DPP users

Low range conversion estimate: 113,000
Mid-range conversion estimate: 513,000
High range conversion estimate: 1,252,000

EEQ IVR

**Delivery system:** intravaginal ring (IVR)

**APIs:** Combines etonogestrel [ETG] and ethinyl estradiol [EE]) with Q-Griffithsin (Q-GRFT)

**Opportunities:**
- NuvaRing (for ETG / EE) is approved & 20 years on market
- GRFT is a highly potent plant-based HIV inhibitor—non-ARV so less potential for resistance

**Considerations:**
- GRFT in early stages of clinical development
- Optimizing physical characteristics (e.g., to maximize comfort)
- Medical guidance for taking them out
Vaginal insert: GRFT/CG FDI

**Delivery system:** fast-dissolving film/insert (FDI)

**APIs:** Combines Griffithsin (GRFT)—anti-HIV—plus carrageenan (CG)—anti-HSV, HPV

**Opportunities:**
- FDIs are on-demand, portable, inexpensive
- Both plant-based vs ARV

**Considerations:**
- GRFT in early clinical development (1 Phase 1 trial)
- Since on demand, developing with optimal window of effectiveness
Key questions for MPT introduction

• How do we ensure access to a range of products, including MPTs, for people with changing lifetime needs for both HIV / STI prevention and around pregnancy?

• What is the best way to integrate MPTs into different clinical settings? (Implementation science research)

• As products are introduced, how do key socioecological factors (e.g., stigma; partner communications/negotiations) affect their uptake and success?

• What will a cost analysis of MPT delivery vs separate products tell us?

• What will be the most compelling way to market MPTs (e.g., contraception + HIV or HIV + contraception?)
Thank you!

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