Multipurpose Prevention Technologies for Sexual & Reproductive Health

MPTs Available Now and in the Future

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Session Objectives

This session is designed to help you do the following

- Define multipurpose prevention technologies
- Describe existing MPTs in use globally
- Describe the range of MPT delivery systems in development
- Describe the challenges and timeline for MPTs development
Multipurpose Prevention Technologies

- Prevent at least 2 of the following: unintended pregnancy, HIV/AIDS, STIs
- Ensure women’s privacy & autonomy
- Are safe & easily available
- Are designed by women for their specific needs & preferences
Global need, regional priorities
MPTs: Historical Precedents

- H$_2$O + fluoride
- The pill + iron
- Grains + folic acid
## Currently Available MPTs

<table>
<thead>
<tr>
<th>Female Condom</th>
<th>Male Condom</th>
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</thead>
</table>

**Advantage:** Available now

**Disadvantages:** Use rates are low, can be difficult to negotiate
Complex Factors = Many Possibilities

Conditions
- Pregnancy, HSV, HPV, HIV, BV,
- Chlamydia, Gonorrhea, Syphilis, Candida, Trich

Product Types
- Vaginal film, Vaginal tablet, Oral tablet, Vaginal ring, Non-IVR device,
- Vaginal gel, Injectable, Implantable

MPT Product Possibilities

Delivery Methods
- Topical daily, Topical pericoital,
- Systemic sustained, Topical sustained, Oral daily, Oral pericoital

Actions
- HC, Non-HC, Barrier, Pro-biotic,
- Antimicrobial, Antifungal, Antiviral

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Potential MPT Delivery Methods

- Devices
- Vaginal Rings
- Vaginal Tablets
- Vaginal Films
MPTs in the Pipeline

Drug combinations  Drug/device combinations  Multipurpose vaccines  Bacterial therapeutics  Nanoparticles
Single & Multipurpose Vaccines

- Today: Single purpose vaccines (HPV & HBV)
- 20 years: Multivalent vaccines (HSV, HIV, Gonorrhea, Chlamydia, Trichomonas, other STIs)
- Contraceptive vaccines not likely
MPT Product Profile: Working Group Recommendations

MPT PRODUCTS

HIV/STI Prevention

Contraception

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Priorities for 1st Generation MPTs

- “On demand”
  - Used around time of intercourse
  - For women who have intermittent sex or want more direct control over their protection

- Sustained release
  - User-initiated, does not require daily action
  - Should increase adherence and effectiveness
On-Demand Products: Gels, NFDs

**Tenofovir Gel (CONRAD)**
- 1st proof-of-concept vaginal microbicide
- Coitally-dependent
- Confirmation trial underway for 2014

**MZL Combo NFD (Pop Council)**
- MIV-150 + Zinc Acetate + LNG in NFD
- Prevents pregnancy, HIV, HSV-2, HPV
- Up to 24-hrs protection
On-Demand Products: Devices + Active Agents

- **SILCS (PATH, CONRAD, NICHD)**
  - “One size fits most” silicone diaphragm
  - Intended for OTC pregnancy prevention
  - 5-yr shelf life, re-use up to 3 yrs

- **TFV Gel (CONRAD)**
  - SILCS barrier = delivery device
  - Non-hormonal MPT protection: pregnancy, HIV, HSV2 up to 24 hrs
### Sustained Release Devices: Combination Intravaginal Rings

<table>
<thead>
<tr>
<th>30-day MZL Combo (Pop Council)</th>
<th>60-day Dapivirine + LNG (IPM)</th>
<th>90-day TFV + LNG (CONRAD)</th>
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</thead>
<tbody>
<tr>
<td><strong>MIV-150 + Zinc Acetate + LNG</strong></td>
<td><strong>DPV + LNG</strong></td>
<td><strong>TFV + LNG</strong></td>
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<tr>
<td>Demonstrated single-API success</td>
<td>Testing underway, clinical studies 2013</td>
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</tr>
<tr>
<td>Pregnancy, HIV, HSV2</td>
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<td>HIV, HSV2</td>
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MPTs roadmap is not linear
The Initiative for Multipurpose Prevention Technologies
Barriers to progress on MPTs
The time for MPTs is now
Acknowledgments

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Questions?