Expanding Choices: A look into the Population Council's Multipurpose Prevention Technology (MPT) Product Pipeline

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WHO WE ARE

The Population Council conducts rigorous research and delivers solutions to improve lives around the world.

Big ideas supported by evidence: It’s our model for global change.
WHAT WE DO

We conduct research and deliver solutions to drive progress in three high-impact areas.

REPRODUCTIVE HEALTH
Advancing reproductive health and enabling couples to plan their families.

HIV/AIDS
Helping people avoid HIV infection and access life-saving treatment and services.

POVERTY, GENDER & YOUTH
Empowering all people, especially young girls, to lead successful and productive lives.
DEVELOPING BIOMEDICAL INNOVATIONS

• Non-profit R&D entity
• Partners with pharmaceutical companies to manufacture and market products, securing public sector pricing
• 5 FDA-approved products reaching 170 million, or one in five women using modern contraception

CHOICE, CONVENIENCE AND CONTROL
Share.Learn.Shape Global Internet Survey

1. Do women prefer a contraceptive MPT versus a method only for HIV/STI prevention?
2. Which characteristics are most important in a method?
3. Which products are women interested in using?
   - On-demand: gel before sex, gel after sex, fast dissolve vaginal insert (FDI), vaginal film, pill before sex
   - Long-acting, provider initiated: implant, injectable
   - Long-term, user-initiated: daily pill, intravaginal ring (IVR)
4. What different clusters of women exist based on prevention needs and preferences?
### Survey Results

- **94%** interested in at least 1 product
- High interest in all products – on-demand and long-acting methods
- **83%** prefer cMPT
- **#1** reason for NOT wanting to use an MPT: side effects (43%)

### Interest in using 9 different formulations

<table>
<thead>
<tr>
<th>Formulation</th>
<th>Interest (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>64</td>
</tr>
<tr>
<td>Vaginal gel before sex</td>
<td>63</td>
</tr>
<tr>
<td>Pill before sex</td>
<td>62</td>
</tr>
<tr>
<td>Vaginal film</td>
<td>58</td>
</tr>
<tr>
<td>Vaginal gel after sex</td>
<td>57</td>
</tr>
<tr>
<td>Implant (1 month)</td>
<td>52</td>
</tr>
<tr>
<td>IVR (1 month)</td>
<td>51</td>
</tr>
<tr>
<td>Daily pill</td>
<td>51</td>
</tr>
<tr>
<td>Injection (1 month)</td>
<td>48</td>
</tr>
</tbody>
</table>
## Predictors of Interest

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Odds Ratio (95% CI)</th>
<th>Characteristics</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has used female condoms for contraception</td>
<td>11.6 (1.5, 87.7)</td>
<td>Has used implant for contraception</td>
<td>3.9 (1.9, 8.1)</td>
</tr>
<tr>
<td>Interested in cMPT</td>
<td>3.0 (1.6, 5.8)</td>
<td>Has used injectable for contraception</td>
<td>2.3 (1.5, 3.7)</td>
</tr>
<tr>
<td>Has used withdrawal for contraception</td>
<td>2.8 (1.4, 5.6)</td>
<td>Did not finish high school vs. finished high school</td>
<td>2.0 (1.1, 3.6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aged 18-24 vs 25+</td>
<td>2.0 (1.2, 3.4)</td>
</tr>
</tbody>
</table>
Expanding the Method Mix

Reproductive Health Program

HIV and AIDS Program

- ARV and non-ARV-based products
- HIV/STI protection and HIV/STI/unintended pregnancy protection
- Multiple drug delivery systems
## OUR MPT PIPELINE

<table>
<thead>
<tr>
<th>BASIC RESEARCH</th>
<th>CLINICAL RESEARCH &amp; DEVELOPMENT</th>
</tr>
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<tbody>
<tr>
<td></td>
<td><strong>Pre-clinical</strong></td>
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<tr>
<td><strong>PC-1005</strong></td>
<td>MIV-150/zinc acetate/carrageenan ring, douche</td>
</tr>
<tr>
<td><strong>PC-6500</strong></td>
<td>Griffithsin/carrageenan ring, fast-dissolving insert</td>
</tr>
<tr>
<td><strong>Mechanisms of HIV/STI disease transmission &amp; progression</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Effect of sex hormones and other STIs on HIV transmission</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Truvada/levonorgestrel/ethinyl estradiol</strong></td>
<td></td>
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</tbody>
</table>
MPTs: PC-1005 (ARV-based)

- **MIV-150, zinc acetate, and carrageenan**
  - Broad-spectrum antiviral activity against HIV, HSV-2 and HPV in preclinical animal models
  - For rectal and vaginal use
  - In Phase I testing
    - PC-558 vaginal trial completed; once daily dosing for 14 days
      - Gel was well tolerated
      - Low systemic levels of MIV-150 were observed; plasma zinc levels were unchanged
      - CVLs had anti-HIV and anti-HPV activity
    - MTN-037 rectal trial ongoing
      - Escalating dose study: 4 ml to 32 mL
  - Exploring other delivery systems
    - Vaginal rings
    - Rectal or vaginal douche
• **Griffithsin (GRFT) and carrageenan**
  - Broad-spectrum antiviral activity against HIV, HSV-2 and HPV in preclinical animal models
  - For vaginal use
  - In Phase I testing
    - PC-728 vaginal trial completed; once daily dosing for 14 days
    - Gel was well tolerated
    - No GRFT was detected in plasma
    - CVLs had anti-HIV activity in cell-based assay and cervical explants
  - Exploring other delivery systems
    - Vaginal rings
    - Fast dissolving insert (FDI)
FDIs are poised for a Phase 1 clinical trial:

- Good handling properties and stability under accelerated temperature and humidity conditions
- Disintegrated completely in the macaque vaginal lumen
- Are safe (no pH changes or inflammation)
- Rapidly deliver therapeutic levels of GRFT and CC
- Significantly protected animals from SHIV, HSV-2 and HPV infections
GRFT/CG FDI in Animal Models


Contraceptive MPTs

- **Truvada + combined oral contraceptive**
  - Combines the proven PrEP efficacy of Truvada with the established pregnancy protection of oral contraceptives
  - Compressed development timeline and regulatory submission

- **GRFT + non-hormonal female contraceptive**
  - On-demand product for women who choose a hormone-free method of contraception
  - Early pre-clinical stage
LET US KNOW WHAT YOU THINK

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