Multipurpose Prevention Technologies: Impact Investing for Global Reproductive Health

Panelists:
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The Case for MPTs
Manjula Lusti-Narasimhan
Reproductive Health and Research
World Health Organization
Women’s Sexual & Reproductive Health Risks

Unintended Pregnancy
HIV
Sexually Transmitted Infections (STIs)

Women need better protection
Health Consequences

Cervical Cancer Deaths

Deaths due to complications with pregnancy & childbirth

New HIV Infections among Young women (15-24)

New HIV Infections

AIDS Related Deaths

= 800 women each day!

= New infection every 60 seconds!

Sources: NIH, UNFPA, UNAIDS
People Living with HIV

Sources: UNAIDS
Sexually Transmitted Infections

1 million people contract a curable STI every day

Source: WHO
Unmet Need for Contraception

- Close to half of all pregnancies are unintended = 86 million each year.
- 222 million women have an unmet need for contraception.
- Every day close to 800 women die in developing countries from complications due to pregnancy and childbirth.
- 20 million unsafe abortions

Source: WHO
Women who do not use contraception have approximately 400 opportunities over the course of their lifetime to get pregnant.
Women need better protection

Male & Female Condoms are the only available MPTs

92% of couples do NOT use condoms

8% of couples use condoms

Source: United Nations
In the United States

- Nearly **half of all pregnancies** among American women are unintended.

- **STIs** are the most commonly reported communicable diseases in the US.

- There are **19.7 million new cases of STIs** each year in the US, half of them among 15-24 year olds.

- An estimated **50,000 new HIV infections** occur in the U.S. each year, **20% of which occur in women**

*Source: CDC, Guttmacher Institute*
Social Impact of MPTs

- Unintended pregnancy
- STIs
- HIV transmission & acquisition
- Costs associated with infections and treatment
- Abortion
- Maternal morbidity and mortality
- Educational attainment
- Health of women and families
Collective Impact for MPTs

Bethany Young Holt
CAMI Health/IMPT

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SOCAP14 – San Francisco, CA, USA
Initiative for Multipurpose Prevention Technologies

IMPT for Reproductive Health

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Multipurpose Prevention Technologies (MPTs) combine protection against:
• Unintended pregnancy
• HIV
• STIs
MPTs in the Pipeline

- Drug combinations
- Drug/Device combinations
- Multipurpose injectables
- Bacterial therapeutics
- Nanoparticles
The Field is Complex
Collective Impact Approach

- Contraception
- HIV Prevention
- STI Prevention

IMPT
Investing in Innovation

1) Optimizing Investments
2) Increase the Market & Demand for MPTs
3) Scaffold the Product Development Process

MPTs

SOCIAL & FINANCIAL ROI

IMPT for Reproductive Health

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INVESTING IN MULTIPURPOSE PREVENTION TECHNOLOGIES

Trisha Wood Santos

Bill & Melinda Gates Foundation

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Our Goals

HIV
Prevention and treatment

FP
Access in 2020 and beyond

MPTs
Greater efficiencies and effectiveness in addressing unmet needs among women through the development of dual indication products for HIV prevention and contraception
Objectives for MPT Market Research

To understand women in South Africa, Uganda and Nigeria with respect to sexual behavior, contraception, and HIV

To gauge level of acceptability for four potential MPT forms:
1. Vaginal film
2. Vaginal ring
3. Injection
4. Implant

Important note: this is an acceptability study not a forecast or segmentation
Women and HIV Testing Requirements are Acceptable

- 93% of women want an MPT
- 9% HIV only
- 2% Pregnancy only

- 94% of women in Nigeria
- 92% of women in South Africa
- 95% of women in South Africa
- 92% of women in South Africa
- 92% of women in South Africa
- 95% of women in South Africa

How acceptable is having a HIV test before using a dual protection product?

- Overall: 76%
- South Africa: 66%
- Uganda: 89%
- Nigeria: 69%

How acceptable is having a HIV test every three months?

- Overall: 68%
- South Africa: 61%
- Uganda: 81%
- Nigeria: 69%

Q69. Which of the following do you feel is the most of value to you?

Q75. Using the same scale as before, how acceptable would it be to have... Base: All women (n=1722) South Africa (n=519), Uganda (n=691) and Nigeria (n=512)
Acceptability of Potential MPT Forms

WHAT WOULD WOMEN PICK IF ALL 4 MPTS WERE AVAILABLE TO THEM TODAY?

- INTRA-VAGINAL FILM
- INTRA-VAGINAL RING
- INJECTABLE
- IMPLANT TYPE DEVICE
- NONE

% All Women
n=1722

South Africa
n=519

Uganda
n=691

Nigeria
n=512

Q67. Which one, if any, would you use if all were available today to you? Base: All women (n=1722) South Africa (n=519), Uganda (n=691) and Nigeria (n=512)
MPT Acceptability if Only 1 Form Available

HOW MANY WOMEN WOULD PICK EACH MPT IF IT WERE THE ONLY MPT AVAILABLE?

- **Nigeria (N=512)**
  - Intra-vaginal Ring
  - Intra-vaginal Film
  - Injectable
  - Implant Type Device

- **Uganda (N=691)**
  - Intra-vaginal Ring
  - Intra-vaginal Film
  - Injectable
  - Implant Type Device

- **South Africa (N=519)**
  - Intra-vaginal Ring
  - Intra-vaginal Film
  - Injectable
  - Implant Type Device

- **Total (N=1722)**
  - Intra-vaginal Ring
  - Intra-vaginal Film
  - Injectable
  - Implant Type Device
Acceptability of MPT Microbicide in US

AMONG YOUNG WOMEN IN N. CALIFORNIA

Attribute Preferences from Conjoint Analysis

The Case for MPTs:
Large Market Potential

Annual HIV incidence\(^1\)

Over 30 million women living in 10 high risk countries in sub-Saharan Africa; 20 million with unmet need for FP

Hormonal contraceptive prevalence\(^2\)

1. Incidence among adults 15-49, estimated for 2009
2. Hormonal contraceptive prevalence calculated as % of women in survey population (varies by country but typically married women 15-49, sometimes married or in a union 15-49) using injectables, pills, or implants; data from most recent survey available as of 2010
Note: Only 11 countries outside of Africa have HIV incidence greater than 0.1% per year; none have greater than 1% per year
Source: UNAIDS Global Report 2010; UN Population Division World Contraceptive Use 2010

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The Case for MPTs: ROI

HIV Prevention

- 80% coverage of medical male circumcision in 14 African countries

> 3 million HIV infections averted
> US$16 billion savings in future health care costs

FP

- 120 million more women use contraceptives between 2012 and 2020
- 2-year spacing between pregnancies

> 200,000 fewer deaths in pregnancy and childbirth and
> ~3 million fewer deaths in infants < 1 year

For every US$1 invested in FP services

13% decrease in child deaths < 5 years

$2-$6 social sector savings in SSA and $13 in Asia

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1 Family Planning Summit 2012, Technical Note: Data sources and met
Conclusions

- No one MPT will meet the needs of all
- Add HIV and/or STI prevention to contraceptives
- Known product forms are most acceptable
- On-demand products may work for some women
- New product forms will require additional efforts to increase awareness and demand
- The potential social and financial return for MPTs is great
Technical Primer on MPT Products and their Development

Joseph Romano

NWJ Group/CAMI

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Complexity of Developing MPTs

Indication

Dosage and Administration

Mechanism of Action

Formulation

Complexity of Developing MPTs

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API Options

Active Pharmaceutical Ingredient (API)

1) ARV for HIV Prevention

2) Hormone based contraceptives for pregnancy

3) STI-specific agents

- Tenofovir
- LNG
- Acyclovir
MPT Product Deliver Strategies

1. Delivery and configuration strategies
   a. Co-administered
   b. Co-packaged
   c. Co-formulated

2. Targeted dosage forms: Suite of Products
   a. Achieve maximum population coverage
   b. Accommodate end user preferences which change over time/life situation
A Suite of Products Needed

- Contraception + HIV & STI Prevention
- Contraception + HIV Prevention
- Contraception + STI Prevention
- HIV + STI Prevention
Priority Dosage Forms

1) Sustained Release:
   • i.e., Vaginal Rings

2) Long Acting Injectable

3) “On-Demand” (pericoital)
   • E.g., Gels, Films, Tablets, etc.
MPT Development

**Development Partners**
- Pharma
- Biotechs
- Academic Groups
- CMO’s
- NGO’s
- Procurement Orgs

**Funding Organizations**
- Governments
  - e.g., USAID, NIH, EU
- Foundations
- Private Equity

**Development Organizations**
- PDPs:
  - e.g., IPM, CONRAD
- Biotechs:
  - e.g., DDS, API, etc
- Pharma:
  - e.g., HIV, Women’s Health, etc

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Benefits of MPT Development

- New drug technologies by class and by mechanism of action
- Co-formulation technology for other indications
- Long acting drug delivery technologies for chronic conditions or challenging populations
Summary

MPT product development is early stage, but real

Supported by diverse and meaningful funding sources

Involves new technology and pharmaceutical innovations

Partner based field: merging of assets and mitigation of risks
Questions?
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