5 September 2014 ☼ SOCAP14 ☼ San Francisco, California, USA

Multipurpose Prevention Technologies: Impact Investing for Global Reproductive Health

Panelists:

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Moderator:

Laura Vyda (CAMI/IMPT)

IMPT for Reproductive Health

Bill & Melinda Gates foundation

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World Health Organization

Public Health Institute

CAMI

The Case for MPTs

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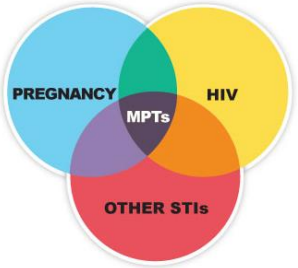
Reproductive Health and Research
World Health Organization

5 September 2014
SOCAP14 – San Francisco, CA

Women's Sexual & Reproductive Health Risks

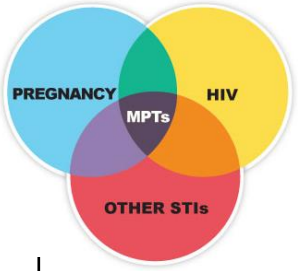


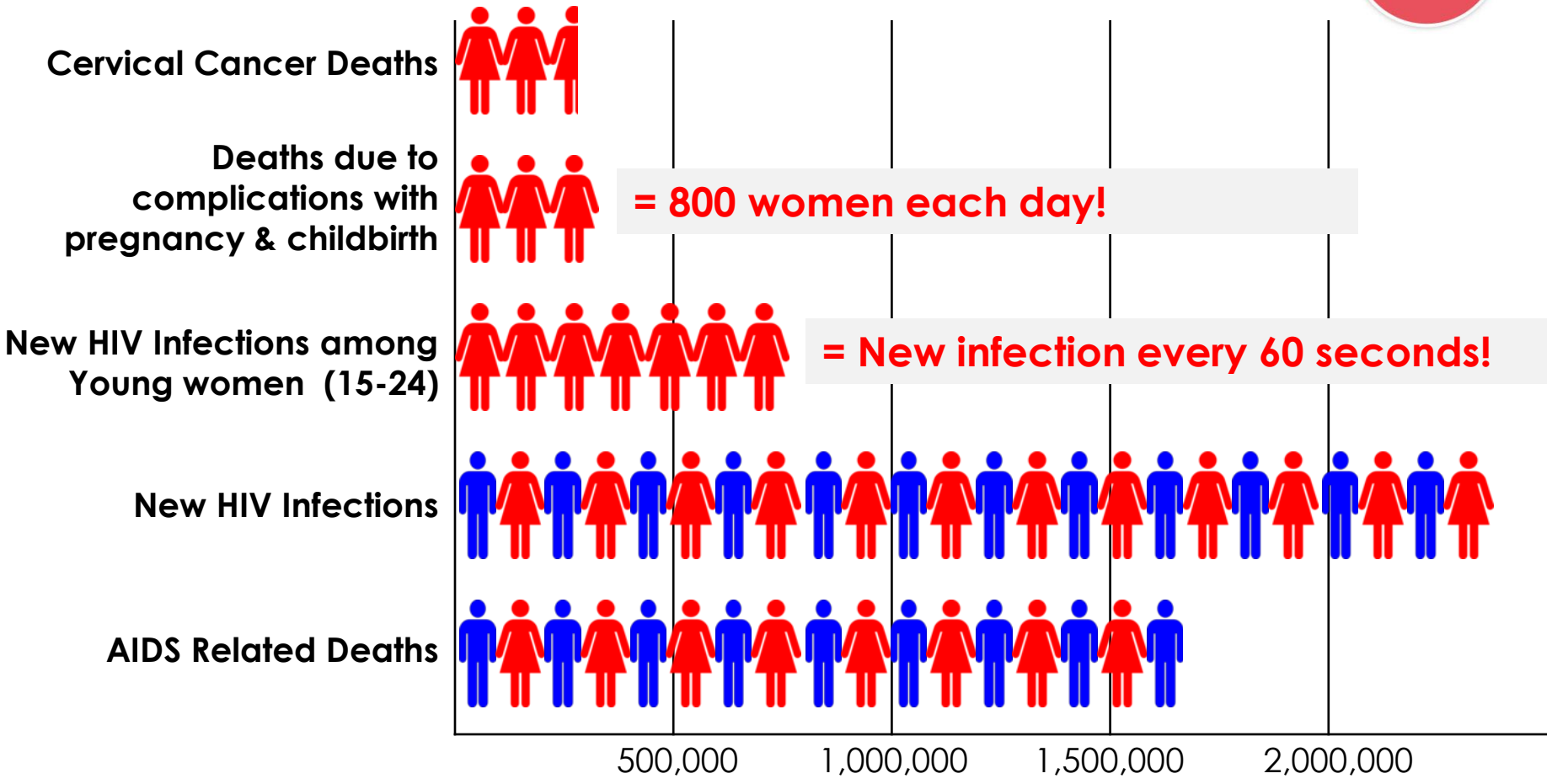
Unintended Pregnancy

HIV

Sexually Transmitted Infections (STIs)

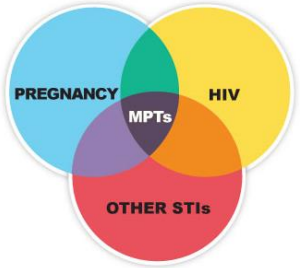
Health Consequences

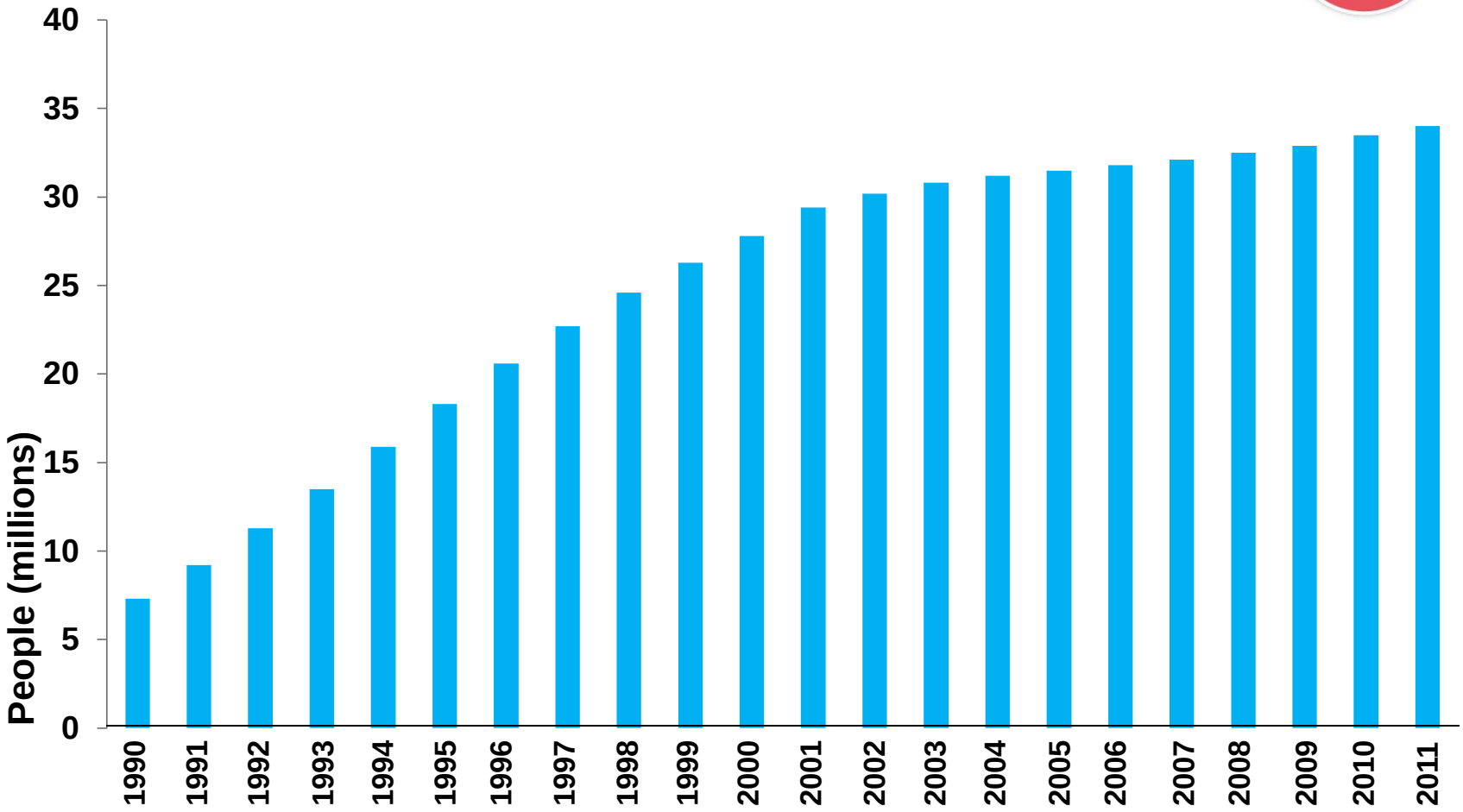




Sources: NIH, UNFPA, UNAIDS

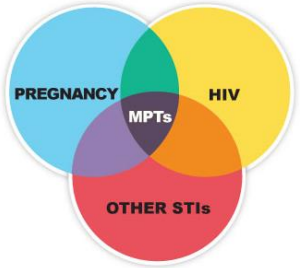
People Living with HIV

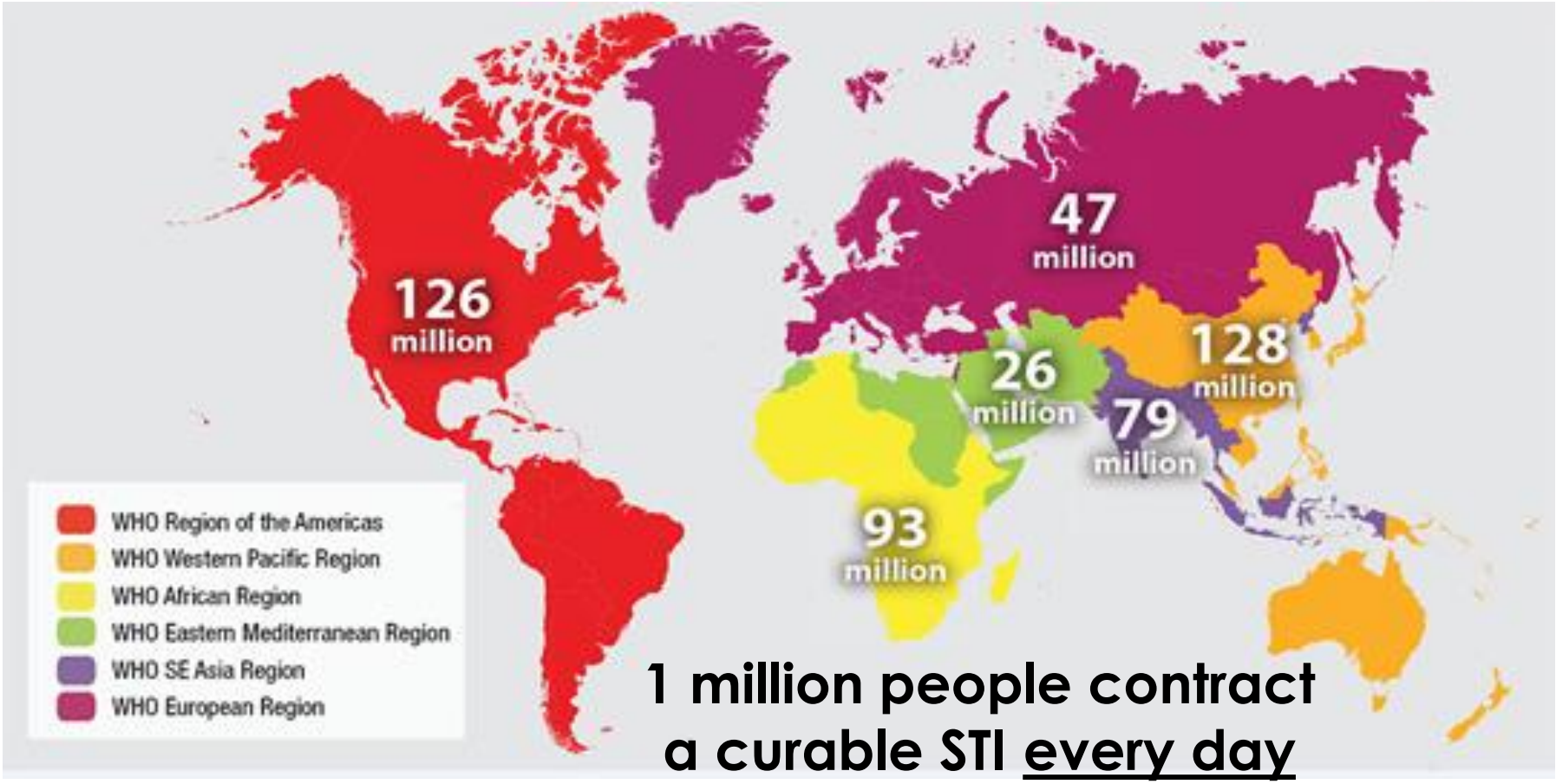




Sources: UNAIDS

Sexually Transmitted Infections

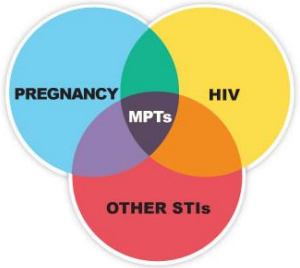




1 million people contract a curable STI <u>every day</u>

Source: WHO

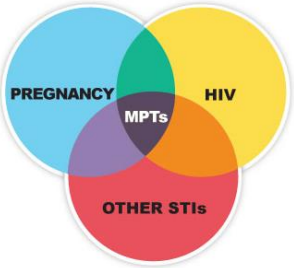
Unmet Need for Contraception



- 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,

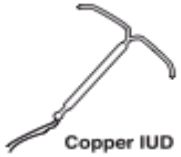
Contraceptive Methods



Implant

Male sterilization

Female sterilization

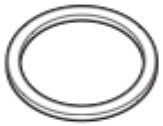

Copper IUD

Mirena IUD

Contraceptive injection

Combined pill and progestin-only pill

Patch


Vaginal ring

Diaphragm & spermicide

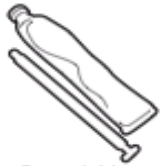
Standard days method

Male condom

Female condom

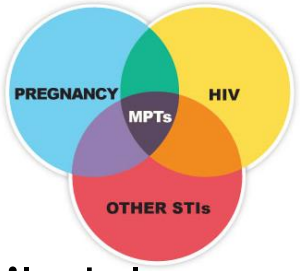
Sponge

Withdrawal

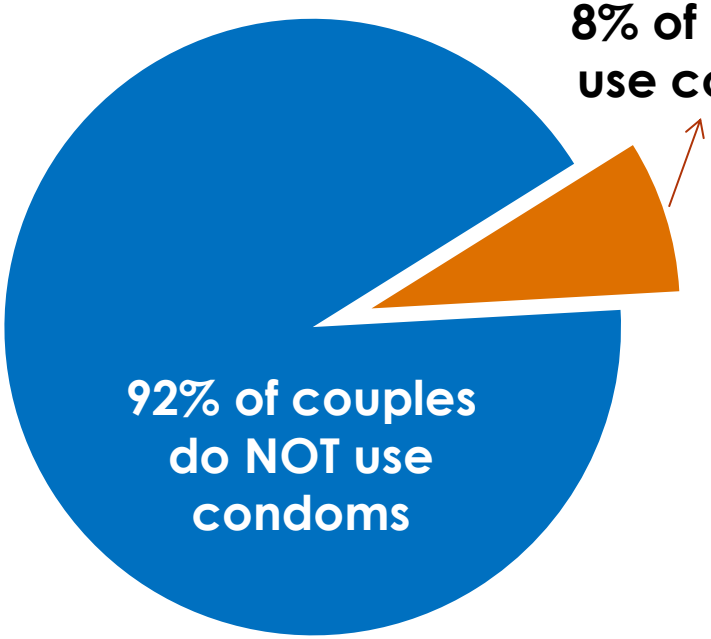

Spermicides

Women who <u>do not use contraception</u> have approximately <u>400 opportunities</u> over the course of their lifetime to get pregnant.

Women need better protection

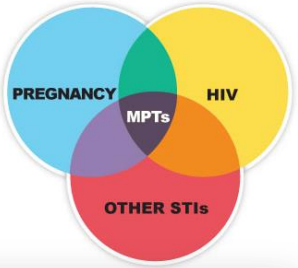


Male & Female Condoms are the only available MPTs

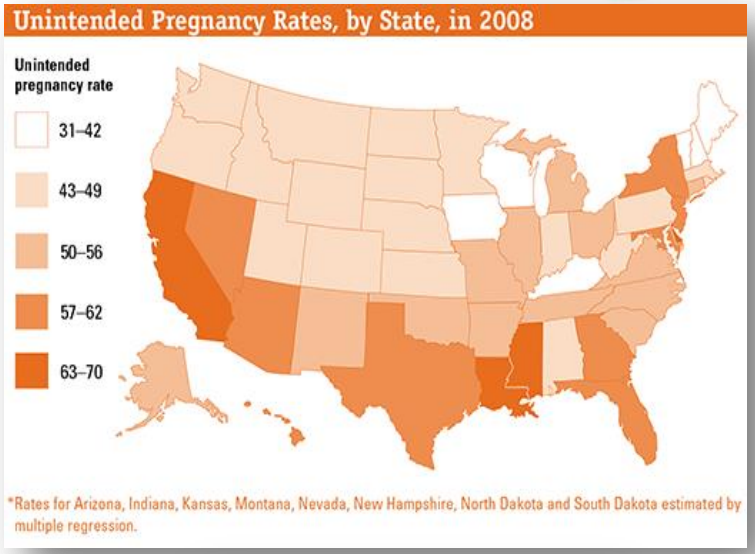


Source: United Nations

In the United States

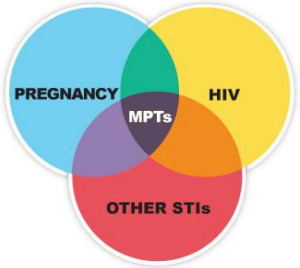


- Nearly **half of all pregnancies** among American women are **unintended.**
- **STIs are the most commonly reported communicable diseases** in the US.
- There are**19.7 million new cases of STIs** each year in the US, half of them among 15-24 year olds.
- An estimated **50,000 new HIV infections** 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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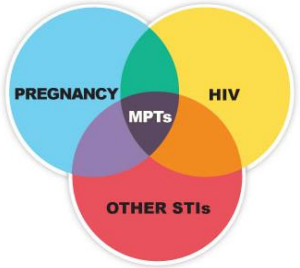
Initiative for Multipurpose Prevention Technologies

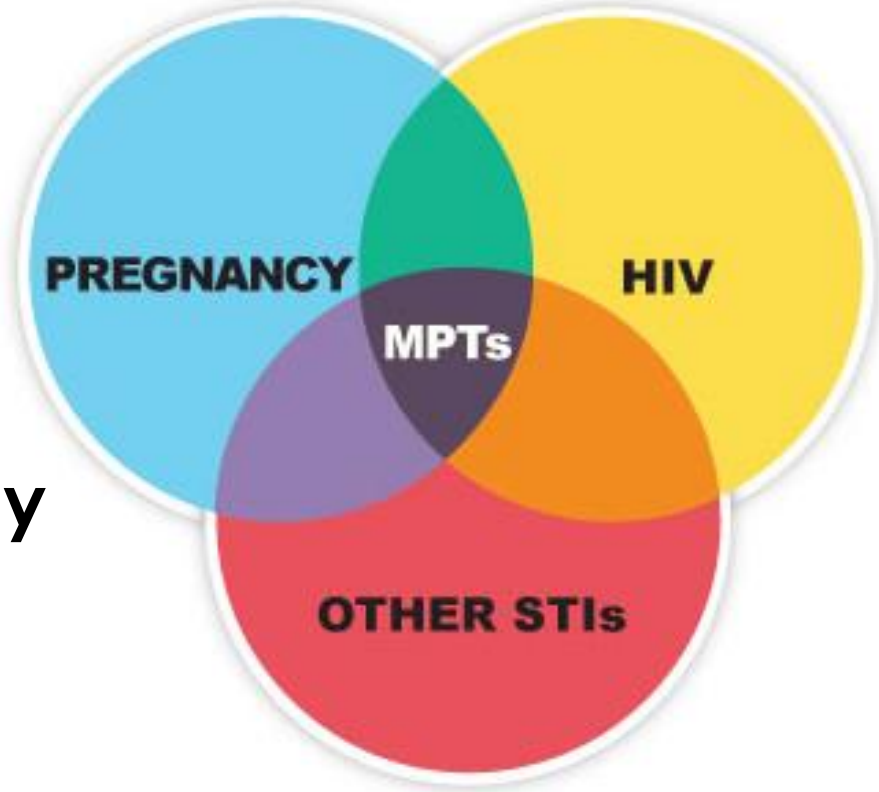


IMPT for Reproductive Health

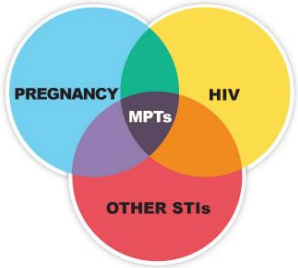
Multipurpose Prevention Technologies

Multipurpose Prevention Technologies **(MPTs)** **<u>combine protection</u>** against:

- **Unintended pregnancy**
- **HIV**
- **STIs**

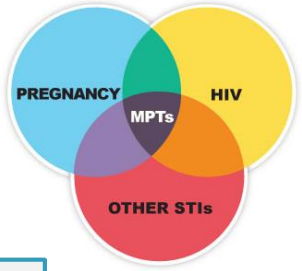


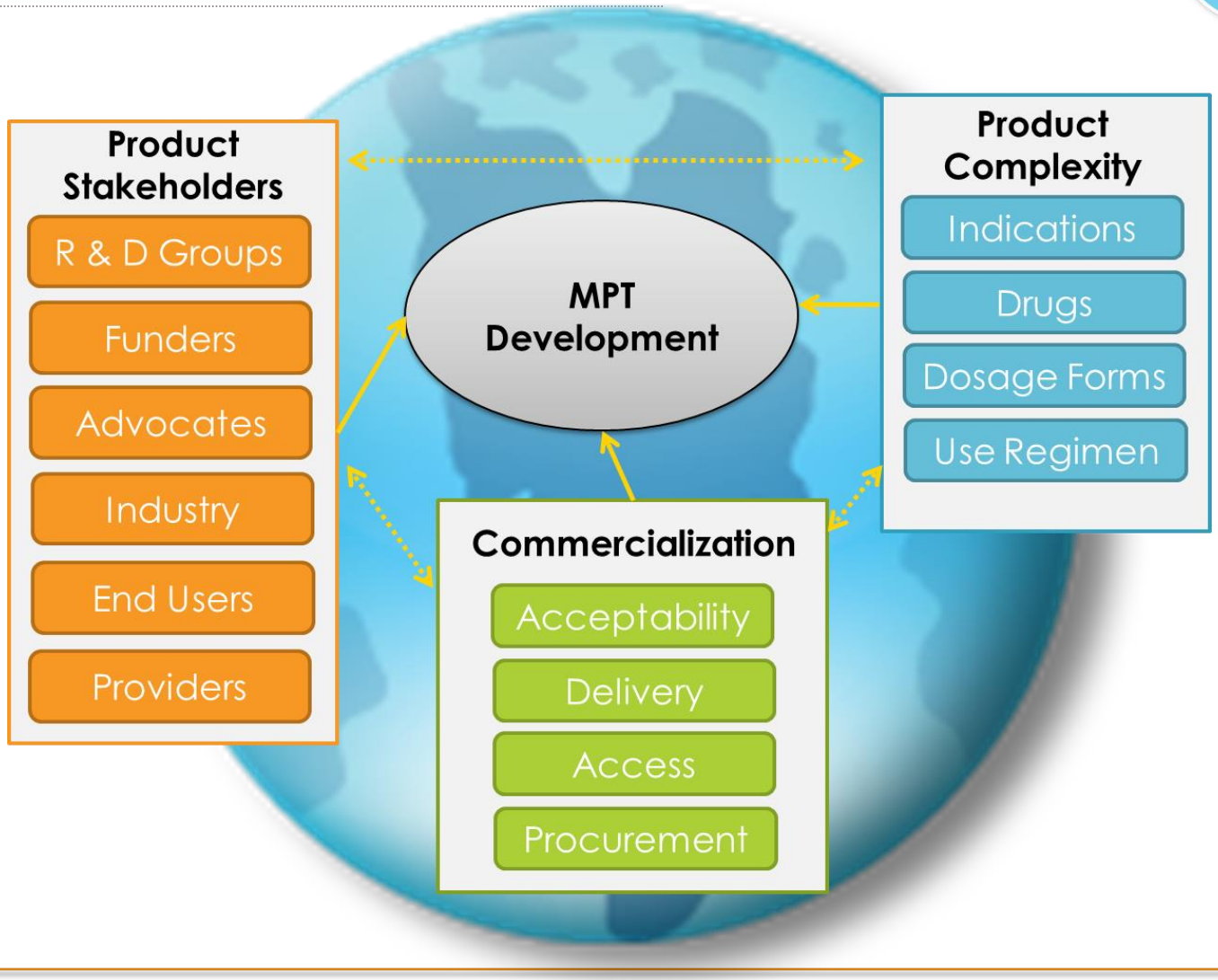
MPTs in the Pipeline



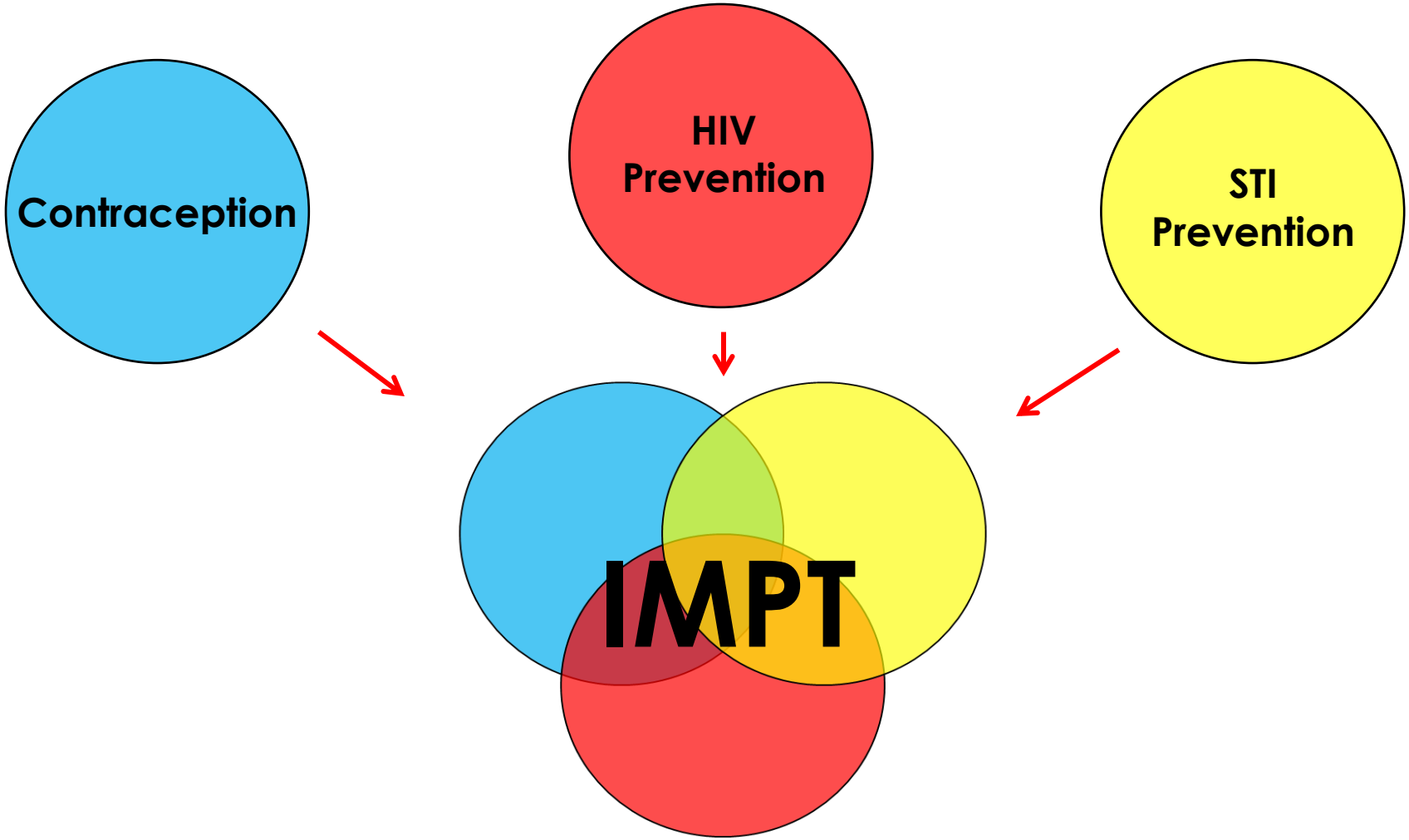
- Drug combinations
- Drug/Device combinations
- Multipurpose injectables
- Bacterial therapeutics
- Nanoparticles

The Field is Complex

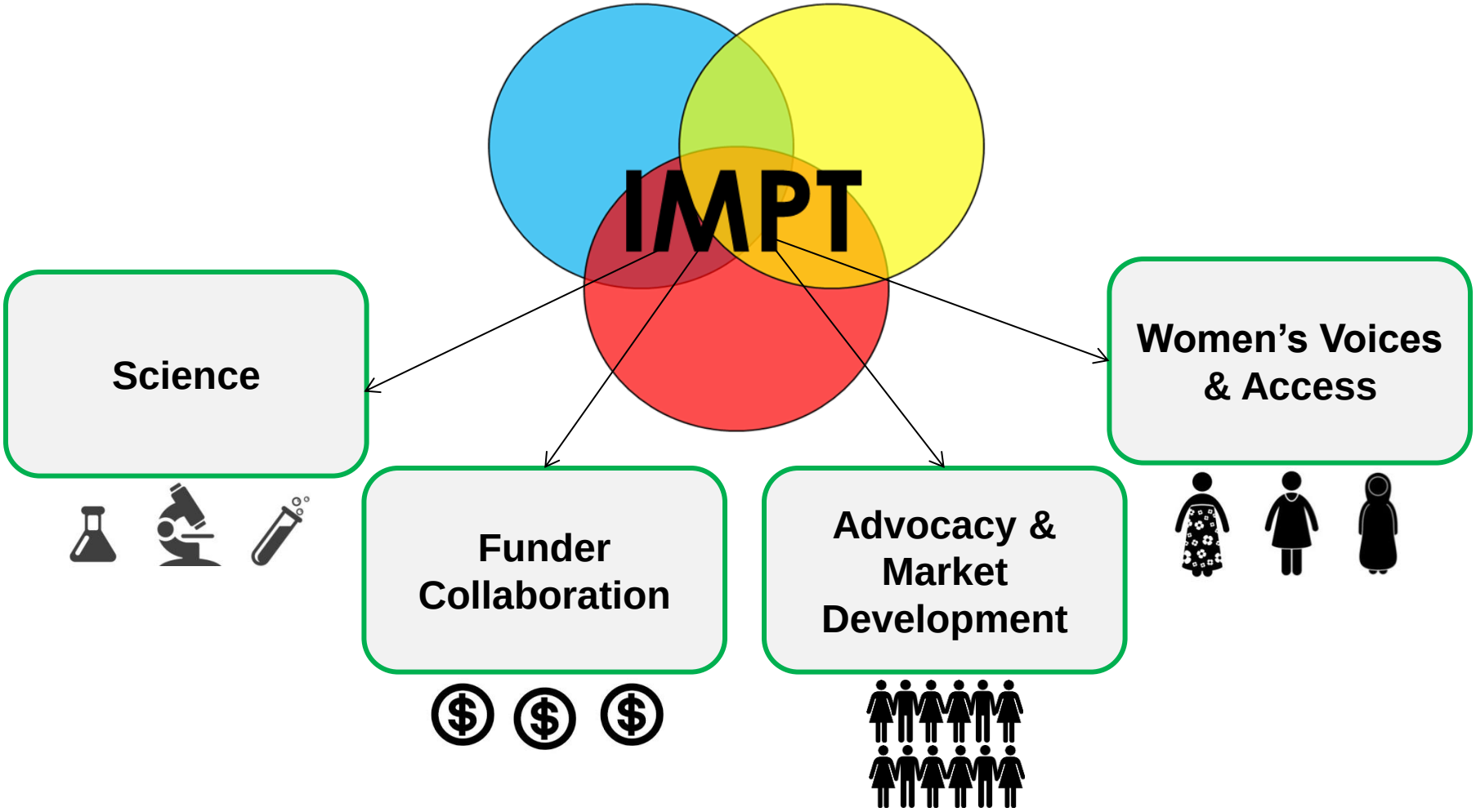




Collective Impact Approach



Collective Impact Approach



Investing in Innovation

1) Optimizing Investments

2) Increase the Market & Demand for MPTs

3) Scaffold the Product Development Process

MPTs

IMPT for Reproductive Health

SOCIAL & FINANCIAL ROI

INVESTING IN MULTIPURPOSE PREVENTION TECHNOLOGIES

Trisha Wood Santos

Bill & Melinda Gates Foundation

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5 September 2014 – San Francisco, CA

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Our Goals

HIV

Prevention and treatment

FP

Access in 2020 and beyond

MPTs

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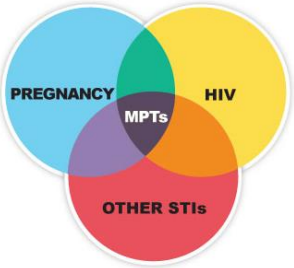
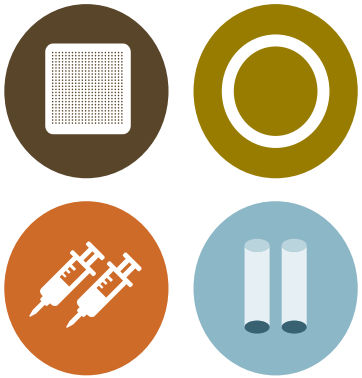
Greater efficiencies and effectiveness in addressing unmet needs among women through the development of dual indication products for HIV prevention and contraception

Objectives for MPT Market Research





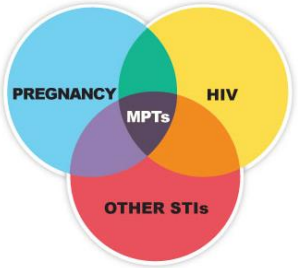
To understand women in South Africa, Uganda and Nigeria with respect to sexual behavior, contraception, and HIV

To gauge level of acceptability for four potential MPT forms:

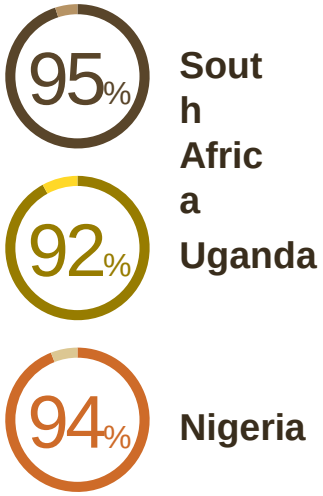
1. Vaginal film
2. Vaginal ring
3. Injection
4. Implant

Important note: this is an acceptability study not a forecast or segmentation

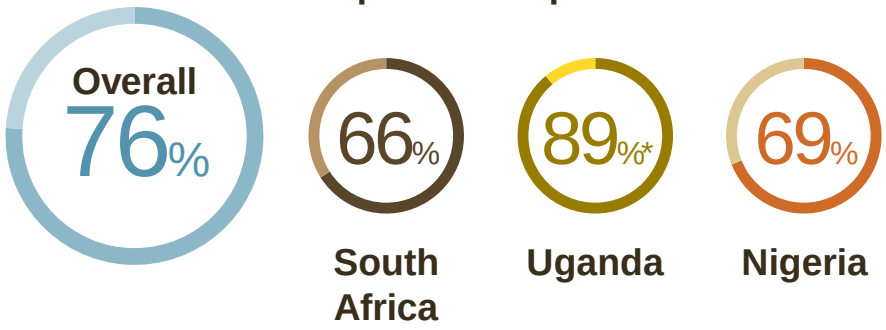
Concept of MPT Resonates with Most Women and HIV Testing Requirements are Acceptable



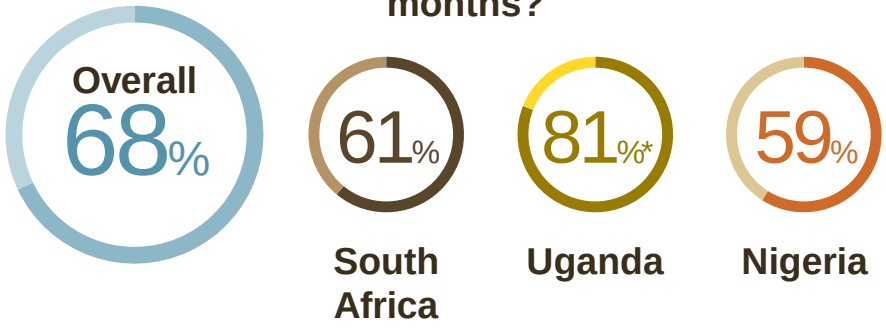
- 4% HIV only
- 2% Pregnancy only



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

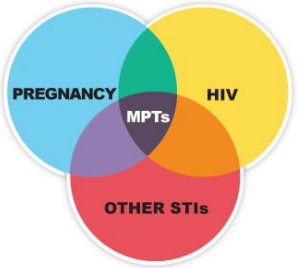


How acceptable is having a HIV test every three months?



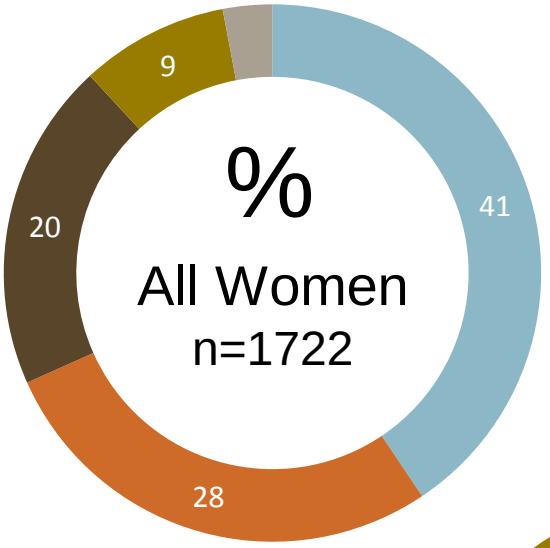
Q69. Which of the following do you feel is the most of value to you? Q75. Using the same scale as before, how acceptable would it be to have …Base: All women (n=1722) South Africa (n=519), Uganda (n=691) and Nigeria (n=512)

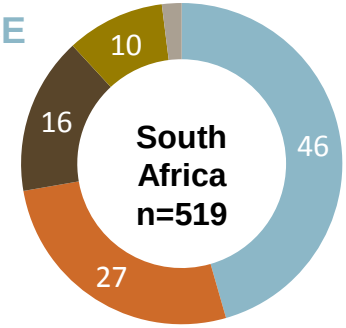
Acceptability of Potential MPT Forms

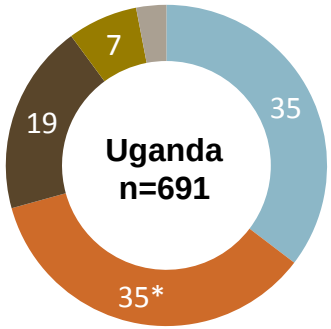


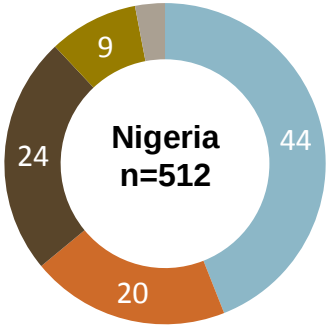
WHAT WOULD WOMEN PICK IF ALL 4 MPTS WERE AVAILABLE TO THEM TODAY?

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





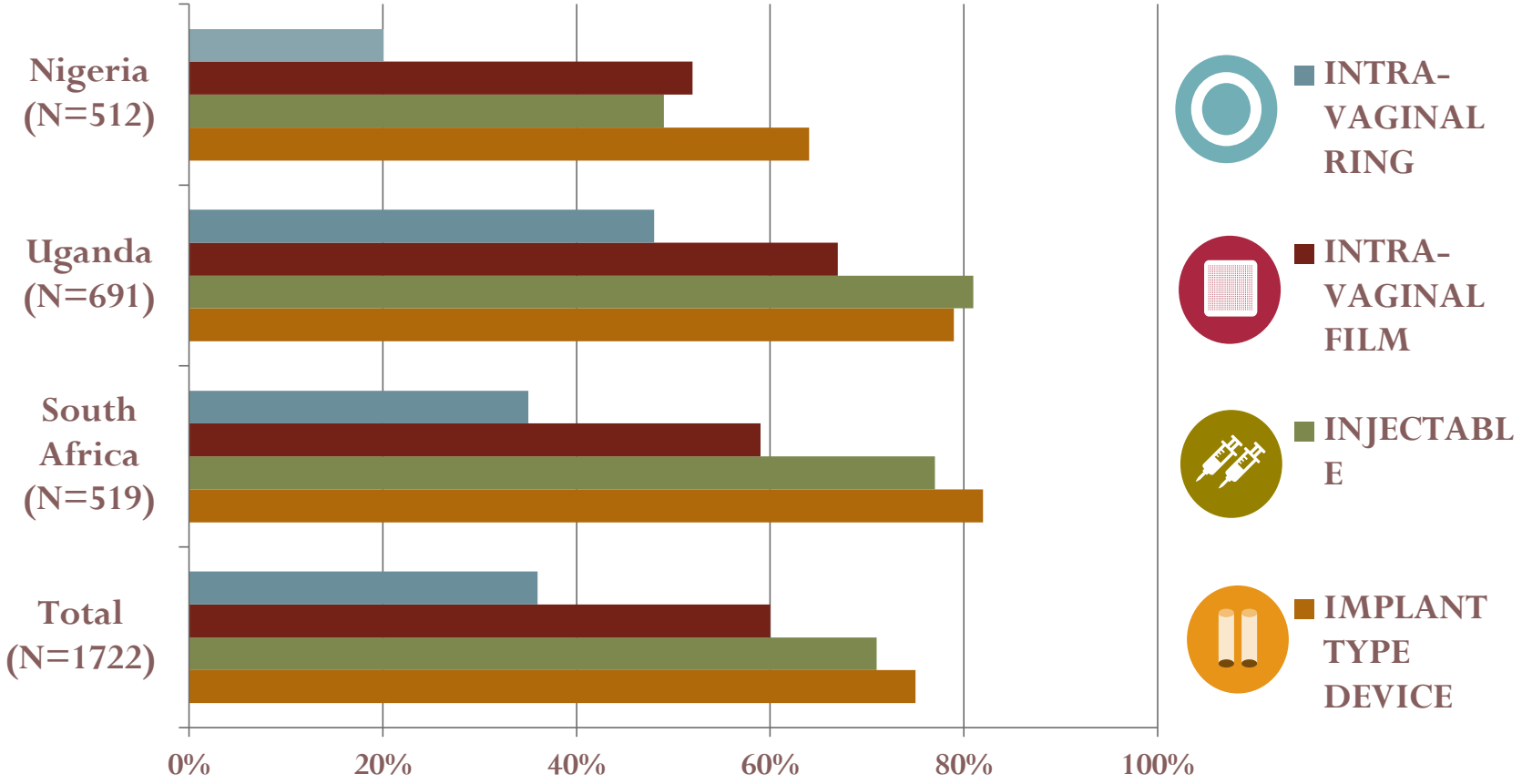




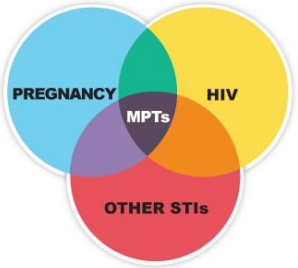
Q67. Which one, if any, would you use if all were available today to you? Base: All women (n=1722) South Africa (n=519), Uganda (n=691) and Nigeria (n=512)

MPT Acceptability if Only 1 Form Available

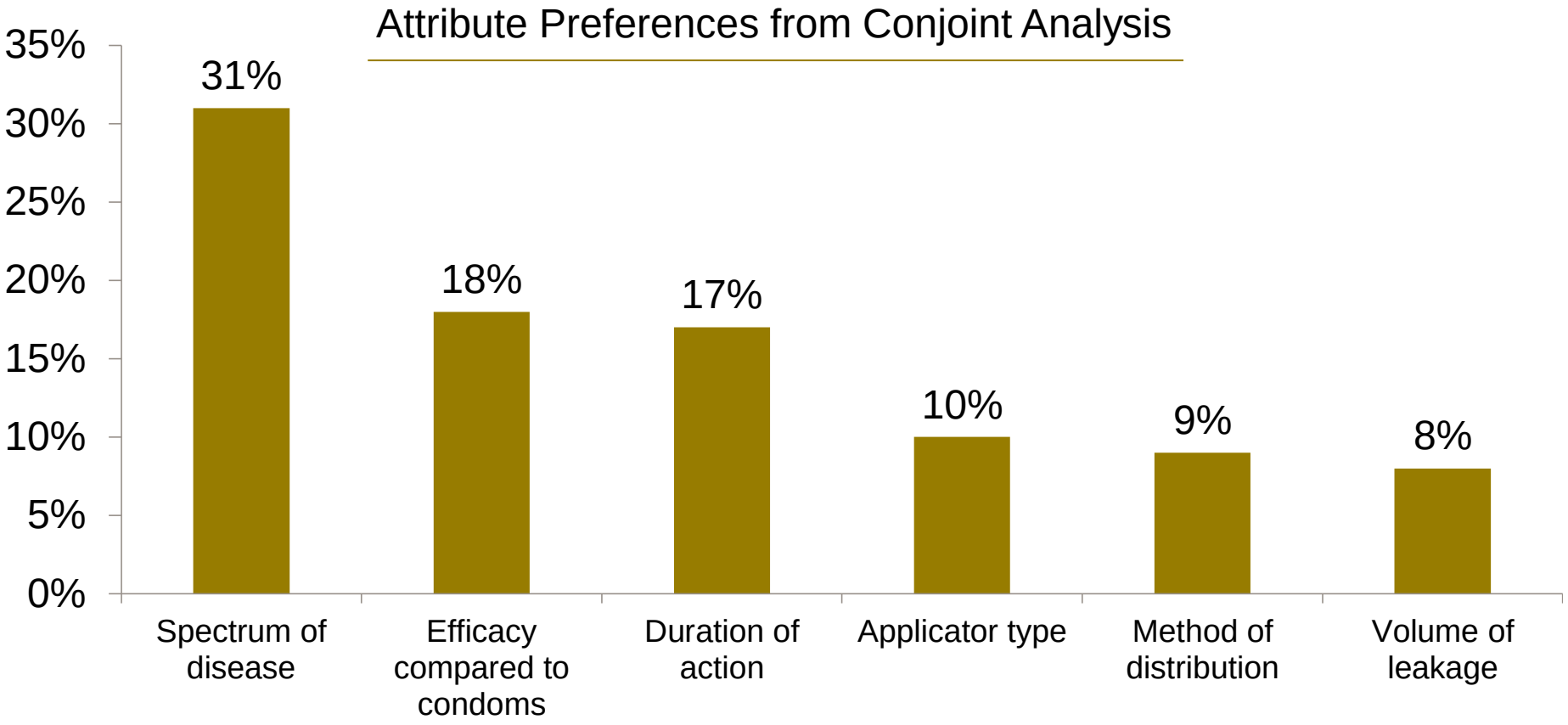
HOW MANY WOMEN WOULD PICK EACH MPT IF IT WERE THE ONLY MPT AVAILABLE?



Acceptability of MPT Microbicide in US

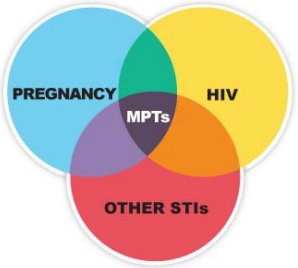


AMONG YOUNG WOMEN IN N. CALIFORNIA

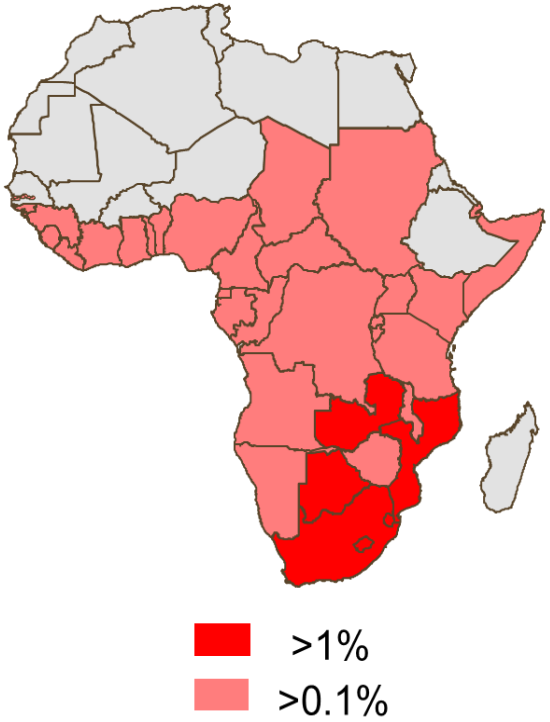


Source: Young Holt, B., et al. Microbicide Preference Among Young Women in California. *Journal of Women's Health*, 15(3), 2006.

The Case for MPTs: Large Market Potential

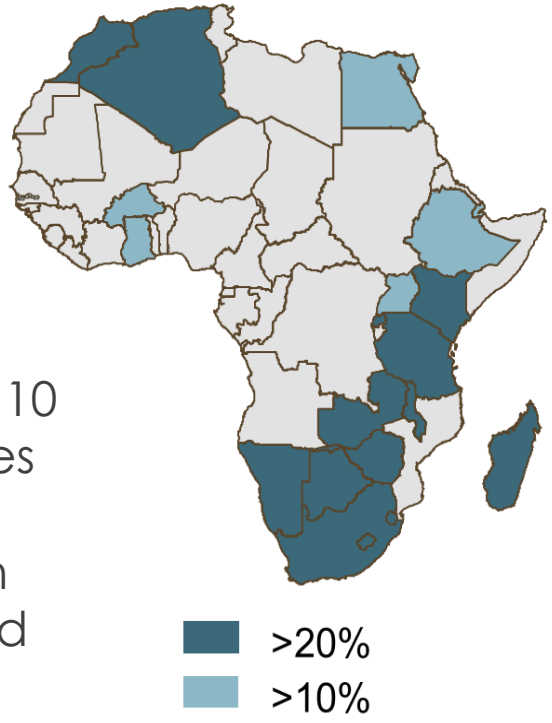


Annual HIV incidence[1]



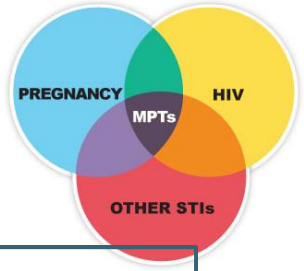
Over 30 million women living in 10 high risk countries in sub-Saharan Africa; 20 million with unmet need for FP

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

The Case for MPTs: ROI

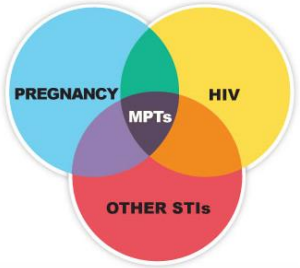


HIV Prevention	80% coverage of medical male circumcision in 14 African countries	> 3 million HIV infections averted > US$16 billion savings in future health care costs
FP	120 million more women use contraceptives between 2012 and 2020 2-year spacing between pregnancies For every US$1 invested in FP services	> 200,000 fewer deaths in pregnancy and childbirth and ~3 million fewer deaths in infants < 1 year[1] 13% decrease in child deaths < 5 years[2] $2-$6 social sector savings in SSA and $13 in Asia[2]

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

2 USAID, *Achieving the MDGs: The Contribution of fulfilling the unmet need for family planning*, Washington DC: Futures Group International, 2006.

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

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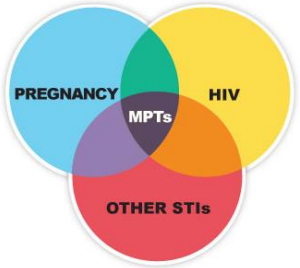
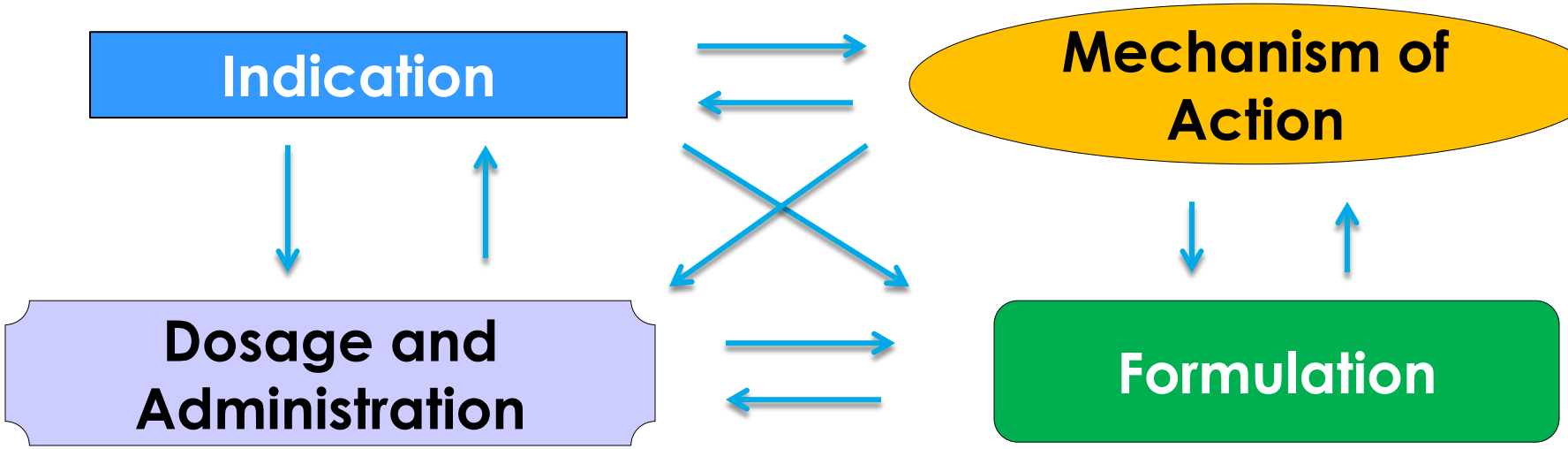
NWJ Group/CAMI

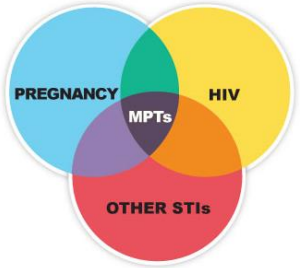
SOCAP14
5 September 2014 - San Francisco, CA

Complexity of Developing MPTs

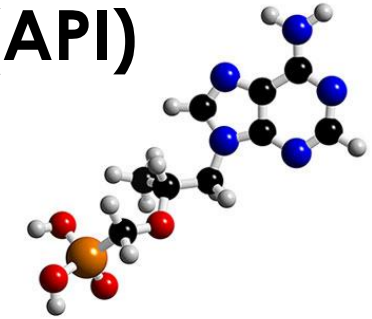




API Options



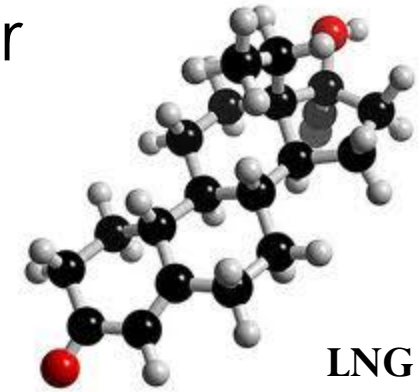
Active Pharmaceutical Ingredient (API)



Tenofovir

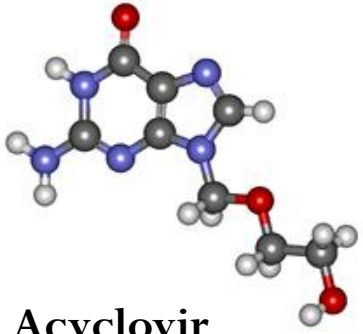
1) ARV for HIV Prevention

2) Hormone based contraceptives for pregnancy



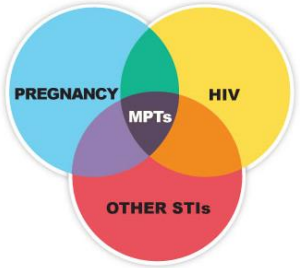
LNG

3) STI-specific agents



Acyclovir

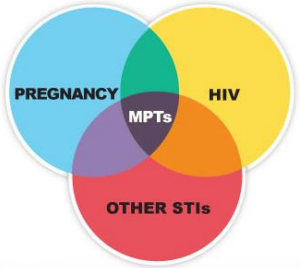
MPT Product Deliver Strategies



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

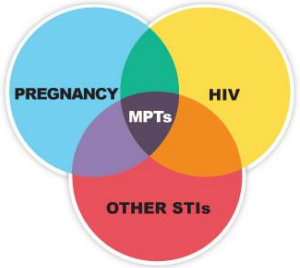


Contraception + HIV & STI Prevention	Contraception + HIV Prevention	Contraception + STI Prevention	HIV + STI Prevention

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

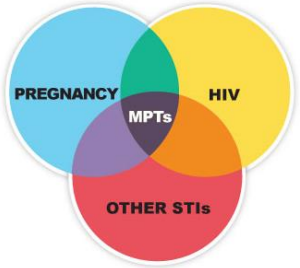
Funding Organizations

Governments
e.g., USAID, NIH, EU
Foundations
Private Equity

Development Organizations

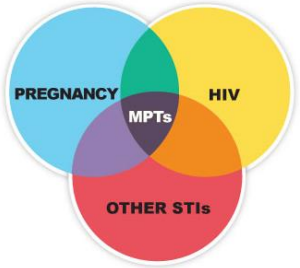
PDPs:
e.g., IPM, CONRAD
Biotechs:
e.g., DDS, API, etc
Pharma:
e.g., HIV, Women's Health, etc

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

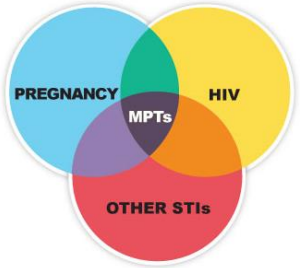
Summary



- 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?

Acknowledgements



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- Mary Wohlford Foundation
- USAID
- World Health Organization
- The generous support from individual donors like you!

Thank You!

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