The role and potential impact of multi-indication products in sub-Saharan Africa

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MPTs in sub-Saharan Africa?

- Importance of contraception in the sSA context
- What’s the current state of affairs
  - Patterns of use and non-use of contraceptives
  - HIV
  - STIs
- What would the ideal Target Product Profile look like for the region?
Sub-Saharan Africa lags behind:
Trends in Contraceptive Prevalence in married women (any method)

Source: UNPD
## Impact of Fertility Decline on income 1965-2000
(for E and SC Asia, L America, and SSA, combined)

<table>
<thead>
<tr>
<th></th>
<th>1965</th>
<th>2000 Without fertility decline</th>
<th>2000 With fertility decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population size</td>
<td>2.1b</td>
<td>5.7b</td>
<td>4.1b</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>0.81</td>
<td>0.93</td>
<td>0.60</td>
</tr>
<tr>
<td>Per capita income</td>
<td>$1110</td>
<td>$1685</td>
<td>$2633</td>
</tr>
</tbody>
</table>
Contraception and unintended pregnancies in sSA

Family Planning Use and Unintended Pregnancies
The 60% of women who used a traditional method or no method accounted for 91% of unintended pregnancies in Sub-Saharan Africa in 2008.

Women wanting to avoid a pregnancy (78 million)
- No method: 46%
- Traditional method: 14%
- Modern method: 40%

Unintended pregnancies (17 million)
- No method: 80%
- Traditional method: 11%
- Modern method: 9%

Notes: Modern methods include sterilization (4% of use among women wanting to avoid pregnancy) and reversible methods, such as pills, injectables, IUDs or condoms (36% of use). Traditional methods consist mainly of periodic abstinence and withdrawal.

Facts on investing in Family Planning and Maternal and Newborn Health: UNFPA/Guttmacher Institute 2009
The importance of some reasons for non-use has changed over time.

% of married women aged 15–49 with unmet need

Dominican Republic  Colombia  Peru  Kenya  Ghana  Uganda  Mali  Bolivia
Lack of knowledge  Health/side effects  Opposition

1986–1989

2002–2005
The overall demand for contraception is increasing.

% of married women aged 15–49

- Latin America & Caribbean
  - 1990-1995: 59, 17
  - 2000-2005: 69, 12

- North Africa & West Asia
  - 1990-1995: 54, 14
  - 2000-2005: 60, 10

- South & Southeast Asia
  - 1990-1995: 41, 18
  - 2000-2005: 59, 11

- Sub-Saharan Africa
  - 1990-1995: 14, 26
  - 2000-2005: 20, 24

Legend:
- Blue: Unmet need
- Red: Met need
Trends in contraceptive prevalence (any method) in married women in Middle and West Africa

Median use (2007): 14%

Source: UNPD 2011
Trends in contraceptive prevalence (any method) in married women in East Africa

Median use (2007): 25%

Source: UNPD 2011
Trends in contraceptive prevalence (any method) in married women in Southern Africa

Median use (2007): 51%

Source: UNPD 2011
Method mix: among all married users, % using specific method

Source: UNPD 2011
Method mix: among currently married (CM) and sexually active not married (NM) women, % using specific method

Prevalence (%)

Country and Survey Year

CM NM
Kenya 2008-09

CM NM
Lesotho 2009

CM NM
Malawi 2010

CM NM
Swaziland 2006

CM NM
Tanzania 2010

CM NM
Zambia 2007

Source: Demographic and Health Surveys 2006-1010
Dual Method use:
Condom use at last sexual intercourse, amongst users of injectable contraception

Source: Demographic and Health Surveys 2004-1010
Female condom use

• Increase distribution 11.8 million 2004 to 50 million 2009

• Large-scale FC programmes: South Africa, Ghana, Zimbabwe

• UNFPA intensified Global Initiative to support implementation of FC programmes in > 20 countries
Trends in Maternal Mortality Ratios

MM Ratio reduced by 43 deaths per 100,000 for each 10% point rise in contraception due to decline in high risk pregnancies (Cleland et al 2011; see also Jain 2011)

WHO 2010
HIV in sub-Saharan Africa
HIV prevalence among 15-49 year-old women
Fig. 2.13  Number of people living with HIV, sub-Saharan Africa, 1990-2010
Malawi: CPR and HIV Trends

Data sources: CPR data from Malawi DHS; HIV data from UNAIDS/WHO

CPR: Married women, modern methods
HIV Incidence and Prevalence: ages 15-49, men and women
Pregnancy Intentions & Incidence Study: Prospective Cohort Study of HIV Positive Women on ART in South Africa, Swartz S, Black V et al

- 851 non-pregnant women recruited from 4 WRHI-supported sites between August 2009 – January 2010

n=851 HIV+ Women on ART

- NVP-based n=452
- EFV-based n=353
- PI-based n=46
## Early Study Findings: Condoms & Other Contraceptive Use

<table>
<thead>
<tr>
<th>Contraceptive Use</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent condom use</td>
<td>540 (63.5%)</td>
</tr>
<tr>
<td>Injectables</td>
<td>175 (20.6%)</td>
</tr>
<tr>
<td>Oral contraceptives</td>
<td>45 (5.3%)</td>
</tr>
<tr>
<td>Implants</td>
<td>4 (0.5%)</td>
</tr>
<tr>
<td>IUDs</td>
<td>1 (0.1%)</td>
</tr>
<tr>
<td>Dual (Condoms+HC)</td>
<td>131 (15.4%)</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>631 (74.1%)</td>
</tr>
</tbody>
</table>

### Predictors of consistent condom use:
- ↑ Older age
- ↑ > 1 yr on ART
- ↓ **Hormonal contraceptive use**
- ↓ CD4 <200
- ↓ Partner of unknown HIV-status*

### Predictors of HC use:
- ↑ Younger age
- ↑ Number of living children
- ↓ **Consistent condom use**
- ↓ CD4 <200
STIs in sub-Saharan Africa

Introduction of Syndromic STI Management

Adapted from: STD-RC, NHLS & JHB Metropolitan Council & NIV

* Jan - Jun 2001
### Swaziland: Comparison between 1980 and 2004

<table>
<thead>
<tr>
<th>Condition</th>
<th>1980</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chancroid</td>
<td>44%</td>
<td>1%</td>
</tr>
<tr>
<td>Syphilis</td>
<td>17%</td>
<td>9%</td>
</tr>
<tr>
<td>LGV</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Genital herpes</td>
<td>12%</td>
<td>61%</td>
</tr>
</tbody>
</table>
Age-standardised prevalence of cervical HPV DNA in sexually active women
IARC Multi-centre HPV Prevalence Survey, 1995-2002

<table>
<thead>
<tr>
<th>Country</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>933</td>
</tr>
<tr>
<td>Argentina</td>
<td>908</td>
</tr>
<tr>
<td>India</td>
<td>1940</td>
</tr>
<tr>
<td>Colombia</td>
<td>1981</td>
</tr>
<tr>
<td>China, Yangcheng</td>
<td>671</td>
</tr>
<tr>
<td>Chile</td>
<td>971</td>
</tr>
<tr>
<td>Mexico</td>
<td>1340</td>
</tr>
<tr>
<td>Vietnam, Ho Chi Minh</td>
<td>918</td>
</tr>
<tr>
<td>Korea</td>
<td>870</td>
</tr>
<tr>
<td>Italy, Turin</td>
<td>1013</td>
</tr>
<tr>
<td>Thailand, Lampang</td>
<td>1024</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3299</td>
</tr>
<tr>
<td>Thailand, Songkla</td>
<td>716</td>
</tr>
<tr>
<td>Spain</td>
<td>908</td>
</tr>
<tr>
<td>Vietnam, Hanoi</td>
<td>1007</td>
</tr>
</tbody>
</table>
Bacterial Vaginosis

- 5110 women in Cape Town followed for 36 months, 86 new HIV seroconverters. Nonseroconverting control subjects (n=324).
- BV was diagnosed at enrollment in 20% of seroconverters and 16% of control subjects (OR 1.31 [95% CI, 0.71-2.41])
  

- 31% in 300 woman cohort in Johannesburg

  Palanee T, Biomarkers study ongoing

**Conclusion:** BV is common and is associated with a new HIV infections.
Trichomonas Vaginalis

- To assess prevalence of *Trichomonas* infection among adolescent girls, pregnant women, and commercial sex workers in Ndola, Zambia.
- Cross-sectional study: 460 schoolgirls, 307 pregnant women, and 197 commercial sex workers.
- The prevalence of vaginal infection with *T. vaginalis* was 24.6% among the adolescents, 32.2% among the pregnant women, and 33.2% among the commercial sex workers.

**Conclusion:** TV is common in Ndola, Zambia.
## Summary of STI prevalence in Nyanza, 2009-2010

<table>
<thead>
<tr>
<th>STI</th>
<th>Prevalence (%)</th>
<th>Setting</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>HIV</td>
<td>13.9</td>
<td>11.4</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>15.3</td>
<td>12.0</td>
<td>17.7</td>
</tr>
<tr>
<td></td>
<td>15.4</td>
<td>10.2</td>
<td>20.5</td>
</tr>
<tr>
<td>HPV</td>
<td>22.2</td>
<td>21.3</td>
<td>23.2</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>51.1</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>57.2</td>
<td>-</td>
</tr>
<tr>
<td>HSV-2</td>
<td>40.0</td>
<td>53.0</td>
<td>25.8</td>
</tr>
<tr>
<td></td>
<td>53.0</td>
<td>38.0</td>
<td>65.0</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>58</td>
<td>-</td>
</tr>
<tr>
<td>Chlamydia trachomatis</td>
<td>-</td>
<td>3.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>5.0</td>
<td>-</td>
</tr>
<tr>
<td>Syphilis</td>
<td>-</td>
<td>9.5</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Neisseria gonorrhoea</td>
<td>-</td>
<td>1.2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Trichomonas vaginalis</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>
Unmet contraceptive need, increasing demand, changing reasons for non-use, changing method mix towards HCs especially injectables, injectable progestins and HIV acquisition?

Increasing use of condoms at last sex by younger women, condoms use still driven by contraceptive desire, limited access to FCs but acceptable

HIV plateauing but still very high especially in young women, contraception not significant part of PMTCT or ARV services

Pattern of STIs changing, influenced by HIV and introduction of syndromic management, with HSV2, HPV, TV and BV being common and associated with HIV
Target Product Profile for MPTs in Africa

• Different needs for different countries, and for married and unmarried women
• Products required for HIV negative and HIV positive women
• Contraception and HIV prevention
• Contraception and STI prevention: HSV2, BV, TV, HPV
• STI and HIV prevention: for women wanting pregnancy
• Indication that combination barrier method/vaginal product may be acceptable
• Injectables and pills very acceptable
• More research on injectable progestins and HIV acquisition
Priority for MPTs in sub-Saharan Africa: Programmatic action that could set the scene

• Increase contraceptive uptake by:
  – Expand method mix and move towards lower dose hormonal products (HIV acquisition with injectable progestins?)
  – Increase contraception uptake by giving greater attention to populations where gap between fertility desires and contraceptive practice is greatest
  – Include counseling and education to clarify health concerns and side effects of methods

• Integrate contraceptive and HIV services:
  – PMTCT for +ve and –ve women
  – ARV services
  – HCT in family planning

• Expand introduction of female condoms
Thank You

- John Cleland
- Ellen Crabtree
- Melanie Pleaner
- Elizabeth Bukusi
- Charlotte Watts
- Thes Palanee
Historically, health interventions in LMICs have seen slow uptake and low coverage.

Source: Guy Stallworthy, Gates Foundation
STIs identified in patients with GUD in Botswana from 1993 to 2002

*In 1993 a study was done by the National AIDS Control Program in Botswana in collaboration with the STD Research Unit, South African Institute for Medical Research, Johannesburg among 108 GUD patients.*
Where does high HIV prevalence coincide with high use of injectable hormonal contraceptives?

**HIV prevalence among 15-49 year-old women***

*Adult HIV prevalence given for China.

**Injectable hormonal contraceptive use among 15-49 year-old women**

**The overlap between use of injectables and HIV prevalence**

HIV: ‘high’ = > 1%; IHC: ‘high’ = upper quartile.

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From: AR Butler, JA Smith, D Stanton, TB Hallett. The global impact of an interaction between injectable hormonal contraception and HIV risk (subm.).