Preventing unintended pregnancy among young women in Kenya: cohort study to offer contraceptive implants

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International Conference on Family Planning
Dakar, Senegal
December 2, 2011
Background (1)

• Unintended pregnancy common in 18-24 yr. old group
  – 30% to 35% of pregnancies are unintended
• Depo Provera (DMPA) and oral contraceptives are popular
  – 18 million users in sub-Saharan Africa
• Perfect use of DMPA/OC difficult to achieve
  – Perfect use = on time doses, no interruptions
Some obstacles to perfect use

- Commodity stock-outs at public sector clinics
- Cost at pharmacies/private facilities
- Ambivalence toward contraception/pregnancy
- Motivation can wane over time
- Great effort required
- Abstinence episodes → stop using method
- Partner opposition
- Side effects: who wants another dose?
- The FP queue: waiting and embarrassment?
Method Discontinuation

- DMPA and OCs – 40% to 60% stop using within 1 year
- Not always by choice
- Increases risk of unintended pregnancy
Background (2)

- Subdermal contraceptive implants
  - Easier to use, more effective
  - Traditionally...difficult to find
  - Often reserved for high parity, older women
  - Acceptability in younger African population unknown
Study Objectives

- Give young women a choice
- Measure uptake of implants
- Measure discontinuation rates of implant
  - compare to DMPA/OC
- Tally pregnancies over 18 months (given discontinuation, etc.)
  - compare initial implant to initial DMPA/OC
- Isolate and measure role initial method choice has on key outcomes
Study Design

• Prospective cohort study of 396 women
  – followed for 18 months each

• Eligibility criteria:
  – aged 18-24
  – seeking DMPA or oral contraceptives
  – access to cell phone
  – voluntarily consent to participate

• Key exclusion criterion:
  – *a priori*, stated desire for an implant

• Location of study: Lang’ata Health Centre - Nairobi
Recruitment

• Informed choice of method
• For implant acceptors:
  – pre-insertion checklist and voluntary signature
  – Jadelle: 2-rod, 5-year product
• Credited air time to cell phones
• Dates of recruitment: Nov 2008-June 2009
Implant acceptor agreement/checklist

- Variety of contraceptive methods and you can choose.
- Insertion will hurt a bit. Removal probably a bit more.
- The implant will change your menstrual pattern.
- Insertion/removal may bruise your arm, leave small scar.
- Implant lasts 5 years: you need to remember.
- You can have implant removed at any time for any reason.
- I understand and want the implant
Study Outcomes

- Contraceptive discontinuation
  - Any change from initial category: short-acting versus implant
  - Allows switching within short-acting

- Pregnancy
  - Intended and unintended
Follow up

- Scheduled phone calls at 1, 6, 12, and 18 months
- Successful contact:
  - 96% contributed data
  - 86% at 12+ months
  - 82% at 18 months
Data Analysis

• Kaplan-Meier cumulative probability of discontinuation

• Intent-to-treat principles for pregnancy
  – Based on initial method choice
  – Allows direct evaluation of taking different paths to prevent unintended pregnancy

• Hazard ratios, controlling for confounding
Comparing acceptors (1)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>OC (n=39)</th>
<th>DMPA (n=260)</th>
<th>Implant (n=97)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total n=299</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age</td>
<td>22 yr.</td>
<td>22 yr.</td>
<td></td>
</tr>
<tr>
<td>Secondary education</td>
<td>19%</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>% married</td>
<td>86%</td>
<td>84%</td>
<td></td>
</tr>
<tr>
<td>2+ children</td>
<td>39%</td>
<td>42%</td>
<td></td>
</tr>
</tbody>
</table>
Comparing acceptors (2)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>DMPA/OC (n=299)</th>
<th>Implant (n=97)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need 4+ yrs. contraception</td>
<td>47%</td>
<td>65%</td>
</tr>
<tr>
<td>Body needs rest from DMPA</td>
<td>49%</td>
<td>70%</td>
</tr>
<tr>
<td>Some difficulty to return to clinic</td>
<td>48%</td>
<td>65%</td>
</tr>
<tr>
<td>Previous unintended preg.</td>
<td>57%</td>
<td>66%</td>
</tr>
</tbody>
</table>
Cumulative Probability of Discontinuation

- Short-acting
- Implant
- DMPA/OC

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## Hazardous ratios of discontinuation

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Adjusted * Hazard Ratio</th>
<th>95% CI</th>
</tr>
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<tbody>
<tr>
<td>Short-acting vs. implant</td>
<td>2.4</td>
<td>1.4 – 4.0</td>
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</table>

Adjusted for education, ideal timing of next pregnancy (2, 4 and 4+ years), ease of returning to clinic for resupply, opinions on health effects of short-acting hormonal methods.
<table>
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<tr>
<th>Reason</th>
<th>Short-acting Discontinuers (n=195)</th>
<th>Implant Discontinuers (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To get pregnant</td>
<td>4.1</td>
<td>16.7</td>
</tr>
<tr>
<td>Side effects</td>
<td>24.6</td>
<td>61.1</td>
</tr>
<tr>
<td>Abstinence</td>
<td>9.7</td>
<td>0</td>
</tr>
<tr>
<td>Stock-outs, cost, inconvenience</td>
<td>46.2</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>13.9</td>
<td>22.2</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Unintended Pregnancy in Two Groups

Short-acting (DMPA/OC)

0

Implant

0

0 6 12 18

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Total Pregnancies in Two Groups

Short-acting (DMPA/OC) 33

Implant 3
## Hazard Ratio for Pregnancy

Select analysis population:
- wanted 2 years of pregnancy protection
- yet became pregnant within 18 months

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<tr>
<td>Short-acting vs. implant</td>
<td>7.4</td>
<td>1.6 – 34.5</td>
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</table>

Adjusted for education, ideal timing of next pregnancy (2, 4 and 4+ years), ease of returning to clinic for resupply, opinions on health effects of short-acting hormonal methods.
Conclusions

• Many young women intending to use OC/DMPA, opted for an implant instead
• Discontinuation of methods followed a typical pattern
• Discontinuation rates for short-acting methods significantly higher than for the implant
• Clear pregnancy protection from implant relative to alternatives
Research to Practice

• Support initiatives to make implants more widely available
• Offer implants to young women
• Explain all advantages and disadvantages relative to alternatives — including risk of stock-out for DMPA/OC
• Guarantee on-demand removal services