The Global Epidemic of Unintended Pregnancies

Impact and Possible Approaches to the Problem

Slide set prepared with the endorsement of the European Society of Contraception and Reproductive Health (ESC) and the International Federation of Gynecology and Obstetrics (FIGO)
Presentation Outline

- Unintended pregnancy: Scope of the global epidemic
- Outcomes of unintended pregnancy
- Adverse impact of unintended pregnancy on women, children, and society
- Factors that contribute to unintended pregnancy
- Possible approaches to the problem including
  - Family planning
  - Hormonal contraception
  - Long-acting reversible contraceptives
Unintended Pregnancies: Scope of the Global Epidemic
Unintended Pregnancy: Definition

An unintended pregnancy is one that occurs at a time that a woman does not want to get pregnant:\n\begin{itemize}
  \item Sooner than she would have desired
  \item When she desired no (or no more) children
\end{itemize}

Globally, Many Pregnancies Are Still Unintended\textsuperscript{1}

Global Data (2008)

<table>
<thead>
<tr>
<th>Region</th>
<th>All Pregnancies (million)</th>
<th>Unintended</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>208.2</td>
<td>41%</td>
</tr>
<tr>
<td>Europe</td>
<td>13.21</td>
<td>44%</td>
</tr>
<tr>
<td>North America</td>
<td>7.2</td>
<td>48%</td>
</tr>
<tr>
<td>Latin America/Caribbean</td>
<td>17.1</td>
<td>58%</td>
</tr>
<tr>
<td>Asia\textsuperscript{a}</td>
<td>118.8</td>
<td>38%</td>
</tr>
<tr>
<td>Africa</td>
<td>49.1</td>
<td>39%</td>
</tr>
<tr>
<td>Oceania</td>
<td>0.9</td>
<td>37%</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Excludes Japan.

Unintended Pregnancy Is a Particular Concern in Adolescents Worldwide\(^1\)

- Around the world, about 16 million girls and women aged 15 to 19 years give birth each year.
  - Most of these pregnancies are unintended.

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Youngest Women Experience the Highest Rate of Unintended Pregnancy

Unintended Pregnancy in the United States (2006)\(^1\)

<table>
<thead>
<tr>
<th>Age, years</th>
<th>Total Pregnancy Rate/1,000 Women</th>
<th>Unintended Pregnancy Rate/1,000 Women</th>
<th>Unintended Pregnancy Rate, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>15–17</td>
<td>42</td>
<td>33</td>
<td>79</td>
</tr>
<tr>
<td>18–19</td>
<td>124</td>
<td>103</td>
<td>83</td>
</tr>
<tr>
<td>20–24</td>
<td>168</td>
<td>107</td>
<td>64</td>
</tr>
<tr>
<td>25–29</td>
<td>174</td>
<td>71</td>
<td>41</td>
</tr>
<tr>
<td>30–34</td>
<td>139</td>
<td>46</td>
<td>33</td>
</tr>
<tr>
<td>35–39</td>
<td>80</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>≥40</td>
<td>21</td>
<td>10</td>
<td>48</td>
</tr>
</tbody>
</table>

Outcomes of Unintended Pregnancies
Most Unintended Pregnancies Worldwide Result in Unplanned Births or Abortions

Outcomes of Unintended Pregnancies (n=86 million) (2008 Global Estimates)¹

![Pie chart showing outcomes of unintended pregnancies: 13% Miscarriage, 38% Unplanned birth, 48% Abortion.]

Consequences of the “Preventable Pandemic”\(^1\) of Unsafe Abortions

**Death**\(^2\)

- 47,000 Women around the world die each year due to unsafe abortions

**Multiple potential complications**\(^3,4\)

- Acute trauma
- Shock
- Organ failure
- Infections
- Future reproductive problems

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Incidence of Unsafe Abortion Generally Highest in Developing Regions

Estimated Annual Incidence per 1,000 Women Aged 15–44 Years

- **World**: 14
- **North America**: None/negligible
- **Latin America/Caribbean**: 31
- **Europe\(^a\)**: 2
- **Africa**: 28
- **Asia\(^a\)**: 11
- **Oceania\(^b\)**: 8

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\(^a\)Eastern Europe 5/1,000 women and Western Europe negligible; \(^b\)Japan, Australia, and New Zealand excluded.

Unintended Pregnancies Expose Women to Unnecessary Health Risks

Maternal mortality

- 358,000 women around the world die each year due to pregnancy-related causes.¹

Maternal morbidity

- For each maternal death, many more women suffer pregnancy-related complications.²

Unintended Pregnancy Affects the Lives of Women and Children

Women
- Adverse impact on psychosocial health, well-being, and quality of life\(^1,2\)
- Less time for other children\(^3\)

Infants
- Risky maternal behaviors that adversely affect them\(^4,5\)
- Increased risk of low-birth-weight infants and preterm delivery\(^4,6\)
- Reduced likelihood of being breastfed\(^7\)

Adolescents at High Risk of Pregnancy and Associated Morbidity/Mortality

- Each year, there are 16 million pregnancies worldwide in women and girls aged 15 to 19 years.¹
  - Most of these are unintended.
- Risk of maternal mortality is highest in girls aged <15 years.²
- Complications of pregnancy and childbirth are the major cause of death in adolescent girls in most developing countries.²

Adverse Impact of Unintended Pregnancy on Society
Direct Medical Costs of Unintended Pregnancy

Estimated Direct Medical Costs of Outcomes of Unintended Pregnancies in the United States (2007)¹

Average Cost/Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Cost, US$</th>
<th>Quantity (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td>2,877</td>
<td>1,364,000</td>
</tr>
<tr>
<td>Induced Abortions</td>
<td>612</td>
<td>1,302,000</td>
</tr>
<tr>
<td>Fetal Losses</td>
<td>612</td>
<td>434,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,609</td>
<td>3,100,000</td>
</tr>
</tbody>
</table>

Total Cost/Outcome

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Cost, US$ (billions)</th>
<th>Quantity (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Births</td>
<td>3,924,228,000</td>
<td>1,364,000</td>
</tr>
<tr>
<td>Induced Abortions</td>
<td>796,824,000</td>
<td>1,302,000</td>
</tr>
<tr>
<td>Fetal Losses</td>
<td>265,608,000</td>
<td>434,000</td>
</tr>
<tr>
<td>Total</td>
<td>4,986,660,000</td>
<td>3,100,000</td>
</tr>
</tbody>
</table>

Cost of Medical Care for Unintended and Intended Pregnancies (Philippines)\(^1\)

Total Costs: 9.3 Billion Pesos (US $214.5 million\(^a\))

- **Intended pregnancy**
- **Unintended pregnancy**
- **Contraceptive services and supplies**

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost (Billion Pesos)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intended pregnancy</td>
<td>3.9 billion</td>
</tr>
<tr>
<td>Unintended pregnancy</td>
<td>3.5 billion</td>
</tr>
<tr>
<td>Contraceptive services and supplies</td>
<td>1.9 billion</td>
</tr>
</tbody>
</table>

\(^a\)Based on an exchange rate of IP=US $0.02306 on 30 November 2011.

Complications of Unsafe Abortions Burden Public Health Systems

Direct medical costs for treating complications\textsuperscript{1,2}

- Hospitalization
- Health care professionals
- Medications
- Blood
- Supplies and equipment

Indirect costs of abortion-related morbidity and mortality\textsuperscript{1,2}

- Loss of productivity
- Adverse impact on children
- Diversion of scarce medical resources

High Direct Medical Costs of Unsafe Abortions \(^1\)

Costs\(^a\) of Care for Each Woman in Pakistan \(^1\)

Abortion Costs

<table>
<thead>
<tr>
<th>Cost, Pakistan Rupees</th>
<th>Total</th>
<th>Procedure</th>
<th>Preabortion Travel/Boarding</th>
<th>Preabortion Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,680</td>
<td>1,320</td>
<td>217</td>
<td>143</td>
</tr>
</tbody>
</table>

Total Complication\(^b\) Costs

<table>
<thead>
<tr>
<th>Cost, Pakistan Rupees</th>
<th>Total</th>
<th>Medicines</th>
<th>Hospitalization</th>
<th>Travel/Board</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4,197</td>
<td>1,320</td>
<td>2,545</td>
<td>332</td>
</tr>
</tbody>
</table>

\(^a\)0.60 Pakistani rupee=US $1 at then current exchange rate; \(^b\)Including vaginal bleeding, uterine perforation, and bowel perforation.

More Government Assistance Required for Delivery in Younger Women

Women Aged 15–44 Years Using Public Funding to Pay for Costs of Birth (N=18,167,000) in the United States

Women Using Public Funding, %

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Women Using Public Funding, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>66</td>
</tr>
<tr>
<td>20–24</td>
<td>54</td>
</tr>
<tr>
<td>25–29</td>
<td>35</td>
</tr>
<tr>
<td>30–44</td>
<td>14</td>
</tr>
</tbody>
</table>

Factors That Contribute to Unintended Pregnancy
Family Planning Services Do Not Meet Current Global Needs

UN Data: Percentage of Women With Unmet Need$^a$ for Family Planning in Most Recent Estimate$^1$

UN=United Nations.

$^a$Women who said they do not want any more children or want to delay having their next child yet are not using contraception as a proportion of all women of reproductive age who are married or in a union.

Majority of Unintended Pregnancies in Developing Countries Occur Among Women Using Traditional or No Contraception

Women Who Want to Avoid Pregnancy
- No method or traditional methods: 26%
- Modern methods: 74%

Women With Unintended Pregnancies
- No method or traditional methods: 18%
- Modern methods: 82%

Multiple Barriers to Effective Use of Contraception$^{1-7}$

Among Health Care Professionals

- Need for education/training
- Supply chain for contraceptives
- Limitations on counseling
- Legal restrictions on contraceptive use

Among Women

- Myths and misperceptions
- Fear of side effects
- Cultural taboos/norms
- Influence of partner
- Limited access/cost
- Underestimate risk of pregnancy
- Human fallibility; poor adherence to method

Unmet Need for Family Planning May Exist Even in Areas of High Contraceptive Prevalence

Distribution of Women Aged 15–44 Years by Current Contraceptive Use (United States, 2006–2008)¹

High contraceptive prevalence rate: 62%

“Current” use defined as method used during the month women were interviewed.

¹Excludes 31% women not using/not at risk.

Poverty and Lack of Education Contribute to Lower Contraceptive Use

UN Data: Women Aged 15–49 Years and Married/In a Union Using a Contraceptive Method in 2 Surveys in Sub-Saharan Africa

UN=United Nations.

Unintended Pregnancy May Result From Contraceptive Method Failure

Cumulative Failures Within First 12 Months of Use (France)

Women Experiencing Failure, %

- Pill: 2.4%
- IUD: 1.1%
- Condom: 3.3%
- Withdrawal: 10.1%
- Spermicide/Sponges: 21.7%
- Fertility Awareness: 7.7%
- All Reversible Methods: 2.9%

(n=2,863 women)

IUD=intrauterine device.

Contraceptives Vary in Effectiveness as Typically Used

**More effective**

- <1 pregnancy per 100 women in 1 year
  - Implant
  - Vasectomy
  - Female sterilization
  - IUC

**6–12 pregnancies per 100 women in 1 year**

- Injectable
- Pills
- Patch
- Ring
- Diaphragm

**Less effective**

- ≥18 pregnancies per 100 women in 1 year
  - Male condom
  - Female condom
  - Sponge
  - Withdrawal
  - Spermicides
  - Fertility awareness-based methods

**How to Make the Method Most Effective**

After procedure, little or nothing to do or remember

- **Vasectomy**: Use another method for first 3 months

**Injectable**: Get repeat injections on time
- **Pills**: Take a pill each day
- **Patch, ring**: Keep in place, change on time
- **Diaphragm**: Use correctly every time you have sex

- **Condoms, sponge, withdrawal, spermicides**: Use correctly every time you have sex
- **Fertility awareness-based methods**: Abstain or use condoms on fertile days. Newest methods (Standard Days Method and Two Day Method) may be the easiest to use and consequently more effective

IUC = intrauterine contraception.

Unintended Pregnancy May Result From Incorrect or Inconsistent Use of Contraceptives

Failures Within First 12 Months of Use (United States)\(^1\)

IUS=intrauterine system; IUD=intrauterine device; OC=oral contraceptive (progestin-only and combined pills).

Unintended Pregnancy Due to Contraceptive Failures Especially Common in Adolescents

Failures Within the First 12 Months of Use¹

<table>
<thead>
<tr>
<th>Survey year</th>
<th>15–19 Years</th>
<th>20–49 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>8.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Malawi</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Philippines</td>
<td>13.1</td>
<td>13.1</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>7.4</td>
<td>6.4</td>
</tr>
<tr>
<td>India</td>
<td>3.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Bolivia</td>
<td>19.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Brazil</td>
<td>7.2</td>
<td>5.5</td>
</tr>
<tr>
<td>Peru</td>
<td>9.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Jordan</td>
<td>13.6</td>
<td>10.3</td>
</tr>
<tr>
<td>Turkey</td>
<td>9.8</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Sub-Saharan Africa

Asia

Latin America

Middle East

Possible Approaches to the Problem: Family Planning Services
UN Millennium Development Goal No. 5: Improve Maternal Health

- Reduce maternal mortality ratio by three-quarters between 1990 and 2015 and achieve universal access to reproductive health by 2015\(^1\)
  - Little progress shown on maternal mortality indicator by 2011\(^2\)

UN=United Nations.

Use of Effective Contraception Projected to Reduce Unsafe Abortions and Complications in Developing Countries

Guttmacher Institute Projections

- 70% Induced abortions (from 35 million to 11 million)
- 73% Unsafe abortions (from 20 million to 5.5 million)
- 73% Women needing medical care for complications of unsafe abortions (from 8.5 million to 2.3 million)
- 66% Safe and legal abortions (from 15 million to 5.1 million)

Family Planning Has Multiple Benefits for Women

- Reducing risk of complications during pregnancy
- Saving lives of women and children
- Reducing risk of sexually transmitted diseases
- Enabling women to prepare for a healthy pregnancy and delivery
- Promoting gender equality/empowerment of women and families
- Reducing poverty and hunger

Family Planning Shown to Provide Health-Economic Benefits

Analysis of Costs of Family Planning vs Costs of Births Paid by Public Sector (United States)¹


Each $1 spent for family planning saved $4.02 in birth costs¹

Costs, US$ (millions)

<table>
<thead>
<tr>
<th>Cost of Family Planning</th>
<th>Costs of Births Averted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,429</td>
<td>5,749</td>
</tr>
</tbody>
</table>

Counseling and Improved Access to Effective Contraception Expected to Reduce Unintended Pregnancies

More Women Avoided Repeat Abortion With LARC¹

LARC=long-acting reversible contraceptive; IUD=intruterine device; HR=hazard ratio.

## Counseling to Raise Awareness of Contraceptive Options

### Options by Timing of Use¹

<table>
<thead>
<tr>
<th>Reversible Contraceptives</th>
<th>Examples¹,²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pericoital</td>
<td>Condoms, spermicides, diaphragms, sponge, cervical caps, withdrawal</td>
</tr>
<tr>
<td>Daily</td>
<td>Oral pills, lactational amenorrhea, fertility awareness</td>
</tr>
<tr>
<td>Every 1–3 weeks</td>
<td>Vaginal ring, skin patch</td>
</tr>
<tr>
<td>Every 1–3 months</td>
<td>Injectables</td>
</tr>
<tr>
<td>Every 3 or more years (long-acting)</td>
<td>Implants, intrauterine devices</td>
</tr>
<tr>
<td>Nonreversible Contraceptives</td>
<td>“Forgettable methods”: Tubal ligation, vasectomy</td>
</tr>
</tbody>
</table>

Possible Approaches to the Problem: Hormonal Contraception
## Comparative Effectiveness of Available Contraceptives

<table>
<thead>
<tr>
<th>Tier</th>
<th>Description</th>
<th>Effectiveness (Pregnancies per 100 women per year)</th>
<th>Examples (Hormonal methods in bold)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Most effective</td>
<td>≤2</td>
<td>Implants, vasectomy, copper IUD, sterilization</td>
</tr>
<tr>
<td>Second</td>
<td>Very effective</td>
<td>3–9</td>
<td>Injectables, oral pills</td>
</tr>
<tr>
<td>Third</td>
<td>Effective</td>
<td>10–20</td>
<td>Condoms, diaphragm, fertility-awareness method</td>
</tr>
<tr>
<td>Fourth</td>
<td>Less effective</td>
<td>21–30</td>
<td>Spermicides</td>
</tr>
</tbody>
</table>

- Hormonal contraceptives provide 1st or 2nd tier effectiveness.

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IUS=intratuterine system; IUD=intruterine device.  
Counseling to Help Women Choose Contraception That Meets Their Needs

- Ultimate goal of counseling: enable women to choose method they feel most comfortable with and will continue using because it fits their lifestyle.\(^1\)
  - Nonuse and ineffective use of widely prescribed methods may indicate women’s dissatisfaction with current choices.\(^2\)

Health Care Professionals Can Help Patients Understand the Benefits/Risks of Hormonal Contraception

1. Providers’ views and counseling strongly influence women’s contraceptive choices.¹

2. Providers can explain the benefits of hormonal contraception.
   - Among the most cost-effective methods for preventing pregnancy¹
   - Duration of use ranges from daily (pills) to multiple years (long-acting reversible contraceptives).²
   - Side effects may be transient and no different from those of placebo.³
   - Various forms to fit women’s needs and support continued use¹

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Counseling to Address Myths/ Misperceptions About Hormonal Contraceptives

Potential Concerns of Women

- Birth defects
- Cancer
- Infertility
- Travel in the body

Possible Approaches to the Problem: Long-Acting Reversible Contraceptives (LARCs)
Available Long-Acting Reversible Contraceptives

<table>
<thead>
<tr>
<th>Type</th>
<th>Duration of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrauterine devices</td>
<td>Replaced in 5 to 10 years</td>
</tr>
<tr>
<td>Injectable contraceptives</td>
<td>Injections repeated every 8 or 12 weeks</td>
</tr>
<tr>
<td>Implants</td>
<td>Replaced in 3 to 5 years</td>
</tr>
</tbody>
</table>

### Broader Use of LARCs May Provide Multiple Benefits

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent of user motivation/adherence</td>
<td>Requires office visits for placement and removal</td>
</tr>
<tr>
<td>Highest effectiveness, continuation, and user satisfaction among hormonal contraceptives</td>
<td>Higher upfront cost than other, shorter-acting hormonal contraceptives</td>
</tr>
<tr>
<td>Do not require frequent visits to obtain more supplies</td>
<td></td>
</tr>
<tr>
<td>Do not involve recurring costs to ensure consistent use</td>
<td></td>
</tr>
<tr>
<td>Highest cost-effectiveness among hormonal contraceptives</td>
<td></td>
</tr>
<tr>
<td>Reversible with rapid return to fertility after removal&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Estrogen-free alternative to COCs</td>
<td></td>
</tr>
</tbody>
</table>

LARC=long-acting reversible contraceptive method that requires administration less than once per cycle or month; COCs=combined oral contraceptives.<sup>1</sup>

<sup>a</sup>Return to fertility may be delayed for up to 1 year after discontinuation of injectable contraceptives.

Introduction to the Contraceptive CHOICE Project in the United States\textsuperscript{1,2}

Objective
To decrease unintended pregnancy by promoting the use of long-acting reversible contraception (LARC) in St. Louis, USA

Methods
Recruited sexually active women who wanted to avoid pregnancy but were not currently using a contraceptive or wanted to start a new reversible method. Counseling was provided to increase awareness of LARC methods. Each participant was provided her contraceptive method of choice at no cost for 3 years.

Data Analyses
Continuation and satisfaction rates for the different methods; pregnancy rates for LARCs vs shorter-acting agents

Contraceptive CHOICE Project in the United States Has Demonstrated That Women Will Choose LARCs Over Other Contraceptive Options

Contraceptive Method Choices After Counseling (N=2,500)\(^1\)

- Long-acting: 67%
- Shorter-acting: 33%

LARC=long-acting reversible contraceptive.
Adolescents in the Contraceptive CHOICE Project in the United States Also Chose LARCs Over Other Contraceptive Options

Contraceptive Method Choice After Counseling in Adolescents Aged 14–20 Years (N=1,054)¹

- Among the 62% (n=658) who chose a LARC method
  - 63% of girls aged 14–17 years chose the implant
  - 71% of girls aged 18–20 years chose the intrauterine device

LARC=long-acting reversible contraceptive.
LARCs Associated With Highest Continuation and Satisfaction Rates at 12 Months in Contraceptive CHOICE Project

Continuation Rates and Satisfaction Levels

LARC=long-acting reversible contraceptive.
LARCs Provide a Cost-Effective Choice for Contraception

Number of Dollars Saved for Each Dollar Spent in the United States

LARC=long-acting reversible contraceptive; IUD=intrauterine device; OC=oral contraceptive.

Health Care Professionals Can Help Reduce Unintended Pregnancies by Increasing Patients’ Access to LARCs

- Provide counseling on all contraceptive options, including LARCs, even to patients who may express an initial preference for a specific method\(^1,2\)
- Encourage LARCs for all appropriate patients, including nulliparous women and adolescents\(^1\)
- Adopt same-day placement protocols\(^1\)
- Avoid unnecessary delays, especially after abortion or miscarriage\(^1\)
- Become familiar with local and national programs that improve affordability of all contraceptive methods, including LARCs\(^1\)

LARC=long-acting reversible contraceptive.
Summary
Unintended Pregnancy: Summary

- Unintended pregnancy continues as a global epidemic.¹
- Most unintended pregnancies lead to unplanned births or abortions.¹
- Multiple consequences to women and society²,³
- Nonuse or inconsistent/incorrect use of modern contraceptives contribute to unintended pregnancy.⁴,⁵
- Potential approaches to the problem include broader use of⁶,⁷
  - Family planning
  - Hormonal contraception
  - Long-acting reversible contraceptives (LARCs)