Contraception: A Review and Update

Jennifer Feirstein, MSPAS, PA-C
Arizona State Association of Physician Assistants
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Faculty Disclosures

• None
Learning Objectives

1. Examine the role of appropriate contraception utilization in improving the public health concern of unintended pregnancies.

2. Describe the appropriate initiation, advantages and risks, and management associated with current contraceptive methods to include, combined hormonal contraception methods, progestin only contraceptive methods, long acting reversible contraception (IUDs and etonogestrel implant), the standard day method, sterilization, and emergency contraception.

3. Discuss the appropriate use of contraceptives in select patient populations, including adolescent, perimenopausal, and obese patients.

4. Recognize special limitations and/or considerations when considering contraceptives in the following settings: amenorrhea, post-partum, post-abortion, switching from another form of contraception.

5. Evaluate unnecessary medical barriers to accessing and successfully utilizing contraception.
Unintended Pregnancies

- About 1/2 of all pregnancies are unintended
- Groups with the largest increase in unintended pregnancy rates (2001-2006)
  - Low education
  - Low income
  - Cohabiting women

*Contraception.* 2011;84(5):478–485
National Survey of Family Growth

• Comparison of 1982 surveys to the 2006-2010 surveys
  – Women more likely to experience unintended births included:
    • Black women
    • Women with low education or income
    • Unmarried women

Reproductive Health Services
In 2006–10, 85.2% of females aged 20–44 years with an advanced degree received reproductive health services in the past 12 months, compared to 66.5% of females with less than a high school education.

Data source: National Survey of Family Growth (NSFG), CDC/NCHS.
Unintended Pregnancies - Consequences

• "Unintended pregnancy can lead to a slew of negative maternal and infant outcomes. Women who were not planning a pregnancy are less likely to have a prenatal visit during the critical first trimester......These women are more apt to continue engaging in behaviors that can be harmful to a pregnancy, such as drinking, smoking, using drugs, and consuming an unbalanced diet that deprives the fetus of vital nutrients. They also tend to have less healthy pregnancies and lower-birth-weight babies."

- Rebekah Gee, MD

Unintended Pregnancies - Consequences

• Increased risk to woman and baby
  – Delays in initiating prenatal care
  – Reduced likelihood of breastfeeding
  – Maternal depression
  – Increased risk of physical violence during pregnancy

From Healthy People 2020
# Unintended Pregnancies

## Table 8. Selected maternal and infant characteristics for births in the 5 years before the interview, by intendedness status of the pregnancy: United States, 2006–2010

<table>
<thead>
<tr>
<th>Intendedness status</th>
<th>Number of births in thousands</th>
<th>First prenatal care visit after first trimester or no care</th>
<th>Smoked cigarettes during pregnancy</th>
<th>Paid for delivery with Medicaid</th>
<th>Did not breastfeed</th>
<th>Low birthweight (less than 2,500 gm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>21,161</td>
<td>12.2 (0.79)</td>
<td>12.2 (0.99)</td>
<td>46.1 (2.05)</td>
<td>30.7 (1.72)</td>
<td>7.9 (0.63)</td>
</tr>
<tr>
<td>Intended</td>
<td>13,303</td>
<td>8.2 (0.78)</td>
<td>9.9 (1.08)</td>
<td>35.2 (2.38)</td>
<td>25.9 (1.82)</td>
<td>7.2 (0.73)</td>
</tr>
<tr>
<td>Total unintended</td>
<td>7,859</td>
<td>19.0 (1.50)</td>
<td>16.1 (1.52)</td>
<td>64.6 (1.90)</td>
<td>39.0 (2.36)</td>
<td>9.0 (1.12)</td>
</tr>
<tr>
<td>Unwanted</td>
<td>2,915</td>
<td>21.2 (2.35)</td>
<td>17.7 (2.31)</td>
<td>65.4 (3.11)</td>
<td>43.7 (3.56)</td>
<td>12.0 (1.99)</td>
</tr>
<tr>
<td>Mistimed²:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 2 years too soon</td>
<td>1,835</td>
<td>16.1 (3.39)</td>
<td>11.9 (3.07)</td>
<td>47.7 (4.24)</td>
<td>25.2 (3.91)</td>
<td>6.0 (2.31)</td>
</tr>
<tr>
<td>2 years or more too soon</td>
<td>2,963</td>
<td>18.7 (2.21)</td>
<td>16.9 (2.45)</td>
<td>75.2 (2.50)</td>
<td>43.7 (3.35)</td>
<td>8.2 (1.23)</td>
</tr>
</tbody>
</table>

¹Includes births with intendedness reported as "don't know."
²Includes births to women for whom length of mistiming cannot be calculated.

SOURCE: CDC/NCHS, National Survey of Family Growth.

Unintended Pregnancies - Consequences

• Increased risk to woman and baby
  – Birth defects and low birth weight
  – More likely to experience poor mental and physical health during childhood
  – Lower educational attainment
  – More behavioral issues in teen years

From Healthy People 2020
Unintended Pregnancies - Consequences

• Teen mothers
  – Less likely to graduate high school or attain GED
  – Earn approximately $3500 less per year
  – Increased reliance on federal aid

• Early fatherhood
  – Lower educational attainment
  – Lower income

From Healthy People 2020
Healthy People 2020 Targets

- Increase proportion of pregnancies that are intended (51-56%)
- Reduce pregnancy despite reversible contraceptive use (12.4-9.9%)
- Reduce pregnancies in adolescents
- Increase adolescents who have never had sexual intercourse

In 2006–10, 78.6% of sexually experienced females aged 15 to 44 years received reproductive health services in the past 12 months. 2006–10: 78.6%; 2020 TARGET: 86.5%; 10.1% increase needed.
Barriers

• Unnecessary screening exams and tests
• Inability to receive contraceptive on same day as the visit
• Difficulty obtaining continued contraceptive supplies

• Adolescents: understanding confidentiality laws

www.guttmacher.org/statecenter/adolescents.html
Reasonable Certainty a Woman is not Pregnant
Reasonable Certainty

• Routine pregnancy testing not necessary

• **HISTORY!**
  - ≤ 7 days after start of normal menses
  - No sexual intercourse since start of last normal menses
  - Has been correctly and consistently using a reliable method of contraception
  - Is ≤ 7 days after spontaneous or induced abortion
  - Is within 4 weeks postpartum
  - Is fully or nearly fully breastfeeding, is amenorrheic, and <6 months postpartum
Reasonable Certainty Unmet

• If no criteria met:
  – Consider EC
  – Can consider UPT/qualitative HCG
Contraceptive Options
Fertility Awareness Based Methods

• Standard Days method
• Two Day Method
• Ovulation Method
Standard Day Method

• Method
  – Avoid unprotected intercourse on days 8-19 of menstrual cycle

• Advantages
  – Reversible
  – All ages
Combined Hormonal Contraception

• Combined Oral Contraceptives
  – various formulations
• Transdermal patch
  – 150 µg norelgestromin/20 µg ethinyl estradiol daily
• Vaginal ring
  – 120 µg etonogestrel/15 µg ethinyl estradiol daily
Combined Hormonal Contraception

• Proper prescribing
  – Can be initiated at any time
  – No back up needed if start in first 5 days of bleed
  – Should prescribe 1 yr supply at initiation and f/u

• Monitoring
  – BP only test prior to starting
  – No routine f/u needed

• Advantages
  – Reversible
  – All ages can use
  – Can be used for extended period with infrequent or no hormone free days

• Limitations
  – Current breast ca, severe HTN or vascular disease, heart disease, migraine with aura, certain liver diseases, smoke ≥15 cigs/day
**Missed pills**

**FIGURE 2. Recommended actions after late or missed combined oral contraceptives**

- **If one hormonal pill is late:**
  - (≤24 hours since a pill should have been taken)
  - Take the late or missed pill as soon as possible.
  - Continue taking the remaining pills at the usual time (even if it means taking two pills on the same day).
  - No additional contraceptive protection is needed.
  - Emergency contraception is not usually needed but can be considered if hormonal pills were missed earlier in the cycle or in the last week of the previous cycle.

- **If one hormonal pill has been missed:**
  - (24 to <48 hours since a pill should have been taken)

- **If two or more consecutive hormonal pills have been missed:**
  - (≥48 hours since a pill should have been taken)
  - Take the most recent missed pill as soon as possible. (Any other missed pills should be discarded.)
  - Continue taking the remaining pills at the usual time (even if it means taking two pills on the same day).
  - Use back-up contraception (e.g., condoms) or avoid sexual intercourse until hormonal pills have been taken for 7 consecutive days.
  - If pills were missed in the last week of hormonal pills (e.g., days 15–21 for 28-day pill packs):
    - **Omit the hormone-free interval by finishing the hormonal pills in the current pack and starting a new pack the next day.**
    - **If unable to start a new pack immediately, use back-up contraception (e.g., condoms) or avoid sexual intercourse until hormonal pills from a new pack have been taken for 7 consecutive days.**
  - Emergency contraception should be considered if hormonal pills were missed during the first week and unprotected sexual intercourse occurred in the previous 5 days.
  - Emergency contraception may also be considered at other times as appropriate.
Progestin Only Contraception

• Progestin Only Pills (POP)
• Progestin Only Injectables
  – DMPA, 150 mg IM
  – DMPA, 104 mg SQ
Progestin Only Pills (POP)

• Proper prescribing
  – Can be initiated at any time
  – No back up needed if start in first 5 days of bleed
  – Should prescribe 1 yr supply at initiation and f/u

• Monitoring
  – None

• Advantages
  – Reversible
  – All ages

• Limitations
  – Current breast ca, certain liver diseases
Missed Pills

• POP = missed if >3 hours
• Vomiting or severe diarrhea within 3 hrs after taking POP; take another, back up x 2 days, consider EC
Progestin Only Injectables

• Proper prescribing
  – Can be initiated at any time
  – No back up needed if start in first 7 days of bleed
  – Repeat injections q 13 weeks

• Monitoring
  – None

• Advantages
  – Reversible
  – All ages, including adolescents

• Limitations
  – Current breast cancer, severe HTN, heart disease, vascular disease, migraine with aura, certain liver diseases
  – Changes in bleeding patterns
Long Acting Reversible Contraception (LARC)

• Intrauterine Devices
  – Copper IUD (Cu-IUD)
  – Levonorgestrel IUD (LNG-IUD)
    • 13.5 mg levonorgestrel
    • 52 mg levonorgestrel

• Etonogestrel Implant
  – single 68 mg rod
IUDs

- Proper prescribing
  - Can be inserted at anytime if reasonably certain not pregnant
  - With Cu-IUD, no back up needed after insertion
  - With LNG-IUD, no back up if inserted within first 7 days of menses

- Monitoring
  - Bimanual exam and cervical inspection
  - STD screening can be done time of insertion
  - No routine f/u needed

- Advantages
  - Long acting
  - Reversible
  - Any age, **including adolescents, parous and nulliparous**

- Limitations
  - Cervical cancer
  - Purulent cervicitis, current chlamydia or gonorrhea or high individual likelihood of STD exposure (partner w/infection)
  - Increased risk spontaneous abortion and preterm delivery if become pregnant
Etonogestrel Implant

- **Proper prescribing**
  - Can be inserted at anytime if reasonably certain not pregnant
  - No back up if inserted within first 5 days of menses

- **Monitoring**
  - None

- **Advantages**
  - Long acting
  - Reversible
  - Any age, including adolescents

- **Limitations**
  - Current breast cancer, certain liver diseases
Emergency Contraception

• Copper IUD

• Emergency Contraceptive Pills
  – Ulipristal acetate (UPA), 30 mg single dose
  – Combined estrogen and progestin in 2 doses
    • 1 dose 100 µg ethinyl estradiol plus 0.5 mg levonorgestrel, repeat in 12 hrs
  – Levonorgestrel
    • 1.5 mg single dose
    • Split dose (1 dose of 0.75 mg, repeat in 12 hours)
Emergency Contraception

• Proper prescribing
  – Cu-IUD: Insert within 5 days or beyond 5 days if it is not > 5 days after ovulation
  – ECPs: ASAP, within 5 days

• Side effects
  – Nausea and Vomiting
    • Pre-tx antiemetic not necessary
Contraception after EC

• Post UPA
  – Any contraceptive can be started immediately
  – Back up x 14 days or until next menses
  – Pregnancy test if no withdrawal bleed within 3 weeks

• Post LNG and combined estrogen/progestin
  – Any contraceptive can be started immediately
  – Back up x 7 days
  – Pregnancy test if no withdrawal bleed within 3 weeks
Sterilization

• Hysteroscopic
• Laparoscopic approach
• Abdominal approach
Sterilization

• <1% failure rate
• Irreversible
• Confirmation of sterility
## Amenorrhea

<table>
<thead>
<tr>
<th>Type of Contraception</th>
<th>When to Start</th>
<th>Abstinence or Back-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCs</td>
<td>Anytime*</td>
<td>x 7 days</td>
</tr>
<tr>
<td>POPs</td>
<td>Anytime*</td>
<td>X 2 days</td>
</tr>
<tr>
<td>Progestin Injectables</td>
<td>Anytime*</td>
<td>X 7 days</td>
</tr>
<tr>
<td>Cu-IUD</td>
<td>Anytime*</td>
<td>None</td>
</tr>
<tr>
<td>LNG-IUD</td>
<td>Anytime*</td>
<td>X 7 days</td>
</tr>
<tr>
<td>Etonogestrel Implant</td>
<td>Anytime*</td>
<td>X 7 days</td>
</tr>
</tbody>
</table>

*reasonably certain patient is not pregnant
**Post-Partum**

<table>
<thead>
<tr>
<th>Type of Contraception</th>
<th>When to Start</th>
<th>Abstinence or Back Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If breastfeeding: 4 weeks PP</td>
<td>None if &lt; 6 mos PP, amenorrheic, breastfeeding</td>
</tr>
<tr>
<td></td>
<td>Not breastfeeding: 3 weeks PP</td>
<td>X 7 days if ≥ 21 days PP, no return of menses OR if menses has returned and has been &gt; 5 days since start of LMP</td>
</tr>
<tr>
<td></td>
<td>4-6 weeks if VTE risk factors</td>
<td></td>
</tr>
<tr>
<td>POPs</td>
<td>Anytime, including immediately PP</td>
<td>None if &lt; 6 mos PP, amenorrheic, breastfeeding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X 2 days if ≥ 21 days PP, no return of menses OR if menses has returned and has been &gt; 5 days since start of LMP</td>
</tr>
</tbody>
</table>
| Progestin Injectables | Anytime, including immediately | None if < 6 mos PP, amenorrheic, breastfeeding  
X 7 days if ≥ 21 days PP, no return of menses OR if menses has returned and has been > 7 days since start of LMP |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu-IUD</td>
<td>Anytime (exclusion puerperal sepsis)</td>
<td>None</td>
</tr>
</tbody>
</table>
| LNG-IUD              | Anytime (exclusion puerperal sepsis) | None if < 6 mos PP, amenorrheic, breastfeeding  
X 7 days if ≥ 21 days PP, no return of menses OR if menses has returned and has been > 7 days since start of LMP |
| Etonogestrel implant | Anytime                          | |


### Post-Abortion

<table>
<thead>
<tr>
<th>Type of Contraception</th>
<th>When to Start</th>
<th>Abstinence or Back Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCs</td>
<td>Can be started within 7 days including immediately after</td>
<td>X 7 days unless started at time of surgical abortion</td>
</tr>
<tr>
<td>POPs</td>
<td>Can be started within 7 days including immediately after</td>
<td>X 2 days unless started at time of surgical abortion</td>
</tr>
<tr>
<td>Progestin Injectables</td>
<td>Anytime, including immediately</td>
<td>X 7 days unless given at time of surgical abortion</td>
</tr>
<tr>
<td>Cu-IUD</td>
<td>Can be inserted within 7 days including immediately after</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>(exclusion septic AB)</td>
<td></td>
</tr>
<tr>
<td>LNG-IUD</td>
<td>Can be inserted within 7 days including immediately after</td>
<td>7 days, unless placed at time of surgical abortion</td>
</tr>
<tr>
<td></td>
<td>(exclusion septic AB)</td>
<td></td>
</tr>
<tr>
<td>Etonogestrel implant</td>
<td>Can be inserted within 7 days including immediately after</td>
<td>7 days, unless placed at time of surgical abortion</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Switching from Another Contraceptive

<table>
<thead>
<tr>
<th>Type of Contraception</th>
<th>When to Start</th>
<th>Abstinence or Back Up</th>
<th>From Cu-IUD</th>
<th>From LNG-IUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHCs</td>
<td>Anytime</td>
<td>X 7 days if &gt; 5 days since LMP</td>
<td>X 7 days If &gt; 5 days since LMP and has been sexually active</td>
<td></td>
</tr>
<tr>
<td>POPs</td>
<td>Anytime</td>
<td>X 2 days if &gt; 5 days since LMP</td>
<td>X 2 days If &gt; 5 days since LMP and has been sexually active</td>
<td></td>
</tr>
<tr>
<td>Progestin Injectable</td>
<td>Anytime</td>
<td>X 7 days if &gt; 7 days since LMP</td>
<td>X 7 days If &gt; 5 days since LMP and has been sexually active</td>
<td></td>
</tr>
<tr>
<td>Contraceptive</td>
<td>Switching from</td>
<td>Time since LMP</td>
<td>Consider ECP if</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Cu-IUD</td>
<td>Anytime, if reasonably certain not pregnant</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LNG-IUD</td>
<td>Anytime*</td>
<td>7 days if &gt; 7 days since LMP</td>
<td>Consider ECP if if &gt; 5 days since LMP and has been sexually active</td>
<td></td>
</tr>
<tr>
<td>Etonogestrel implant</td>
<td>Anytime</td>
<td>7 days if &gt; 5 days since LMP</td>
<td>X 7 days If &gt; 5 days since LMP and has been sexually active</td>
<td></td>
</tr>
</tbody>
</table>
Special Populations
Adolescent Patients

• 42% of 15-19 y/o have had sexual intercourse
• Rarely select effective contraceptive methods
• Continuation rates of 15-24 y/o at 12 months:
  – Patch, 11%
  – DMPA injection, 16%
  – Ring, 30%
  – OCPs, 30%
  – Copper IUD, 72%
  – 80-85% for LARC in women under 20 y/o
Adolescents and LARCs

• ACOG Committee opinion, October 2012
• LARC should be first line recommendation in adolescents
• Post-partum use
  • 20% adolescent mothers give birth again w/in 2 yrs
• Post-abortion use
• Best method for preventing unintended, rapid repeat pregnancy and abortion in young women
Perimenopausal Patients

- ACOG, North American Menopause Society
  - Recommend continued contraceptive use until menopause or age 50-55
  - Risks of advanced maternal age
  - Risks of continued contraception
  - > 45 y/o
    - POPs, implants, LNG-IUD, Cu-IUD safe for use
    - COCs and DMPA probably safe but caution for chronic conditions or other risk factors
Obese Patients

- Higher rates of obesity in certain groups
- Less likely to use effective contraception
- No change in sexual activity
- Obese adolescents
  - Earlier coital debut
  - Higher rates of unprotected intercourse
Obesity and Contraception

• No restrictions on contraception use
  – Oral contraceptives
    • Conflicting studies on effectiveness
    • VTE risk
  – Screening for obesity unnecessary
  – May want baseline weight/BMI
  – Hormonal contraception decreases risk of endometrial hyperplasia and cancer
  – Risks of weight gain (LNG-IUD, DPMA)
Contraception Follow-Up
Contraception Follow up

• Advise f/u any time for side effects, other problems or if want to change method

• At other routine visits
  – Assessment of satisfaction with method
  – Concerns about method use
  – Changes in health status or meds that could affect medical eligibility for continued use of the method
  – Consider assessing weight changes
Contraception Follow up

• Some populations may benefit from more frequent follow up visits
• Frequent patient education
• Assess desire for future childbearing
Barriers

• Unnecessary screening exams and tests
• Inability to receive contraceptive on same day as the visit
• Difficulty obtaining continued contraceptive supplies

• Adolescents: understanding confidentiality laws

www.guttmacher.org/statecenter/adolescents.html
Reasonable Certainty Unmet

• Benefits exceed risks even with uncertainty (except for IUD)
  – Start contraception and then have patient get a pregnancy test in 2-4 weeks
  – IUDs – higher risk of complications such as spontaneous abortion, septic abortion, preterm delivery and chorioamnionitis
References

4. CDC MMWR. US Medical Eligibility Criteria for Contraceptive Use, 2010