Insertions and Removals of IUDs and Contraceptive Implants: Fundamentals

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Heather Paladine, MD, FAAFP
Carrie Pierce, MD
Martha Simmons, MD
Julie Johnston, MD, FAAFP
Patricia Chico, MD
Sarah McNeil, MD
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Linda Prine, MD, FAAFP

Professor of Family Medicine Mount Sinai School of Medicine, Mount Sinai Downtown Residency in Urban Family Practice and Harlem Residency in Family Medicine, Director of Women's Health, Institute for Family Health

Dr. Prine has been teaching for 24 years and won the Teacher of the year award in 2014 from the New York State Academy of Family Physicians and the Rashbaum Award given by Physicians for Reproductive Health and the Mentoring award from the Society for Family Planning. She is a founder of the AAFP Member Interest Group in Reproductive Health. Through her presentations at Assembly, she hopes to offer resources that will help attendees enhance their practice of evidence-based reproductive health care.
Patricia Chico, MD

Family Physician, Lead Physician, Esperanza Health Center - Marquette Clinic, Chicago, IL; Chair, American Academy of Family Physicians Reproductive Health Member Interest Group; Illinois Academy of Family Physician National Conference of Constituency Leaders Delegate for Women's Constituency; National Health Service Corps Student to Service Scholar.

Dr. Chico is a graduate of the University of Illinois College of Medicine at Chicago, where she also completed her family medicine residency. She practices full-spectrum family medicine at a school-based Federally Qualified Health Center on Chicago's southwest side. A native of a nearby Chicago neighborhood, Dr. Chico is excited to serve a diverse community of undocumented Latino immigrants and African-Americans. She is passionate about women's health and provides patient-centered family planning and maternity care. She enjoys teaching medical students and residents rotating on the labor and delivery ward at St. Anthony Hospital. She has presented posters at multiple national conferences and has published articles on reproductive health. She believes that family medicine's most critical challenge is creating and sustaining a diverse workforce and administration that reflects and represents the patients it serves.
Sarah McNeil, MD

Faculty, Contra Costa Family Medicine Residency, Martinez, California; Assistant Clinical Faculty, University of California, San Francisco (UCSF); Medical Director, Training in Early Abortion for Comprehensive Healthcare, Oakland, California.

Dr. McNeil is a graduate of Dartmouth College’s Geisel School of Medicine in Hanover, New Hampshire. She completed her family medicine residency at Contra Costa Regional Medical Center in Martinez, California, where she served as chief resident. She also completed the UCSF Faculty Development Fellowship. At the Contra Costa Family Medicine Residency, Dr. McNeil leads the reproductive health curriculum, staffs labor and delivery, precepts residents in the family medicine clinic, and attends at the urgent care clinic. She is active in reproductive health advocacy work, serving as the Contra Costa-Alameda delegate to the California Academy of Family Physicians and co-chair of the Reproductive Health Member Interest Group of the American Academy of Family Physicians.
Julie Johnston, MD, FAAFP

Medical Director, Health Quarters, Lawrence, Massachusetts; Faculty, Lawrence Family Medicine Residency, Lawrence.

Dr. Johnston is a graduate of Brown University's Alpert Medical School in Providence, Rhode Island. She completed her residency at Lawrence Family Medicine Residency and advocacy training with the Physicians for Reproductive Health Leadership Training Academy. She is the medical director for Health Quarters, a Title X reproductive health clinic system. She serves as faculty at the Lawrence Family Medicine Residency, coordinating the women's health rotation and the women's health area of concentration. Dr. Johnston's areas of interest include the empowerment of women, reproductive health access, immediate postpartum long-acting reversible contraception provision, and political action. She has additional leadership roles at the state level, including serving as the family medicine representative on the Massachusetts Department of Public Health Perinatal Advisory Committee and Postpartum Depression Legislative Commission.
Heather Paladine, MD, MEd, FAAFP

Family Physician; Director/Director of Women's Health, New York Presbyterian-Columbia University Medical Center Residency Program; Assistant Professor of Medicine, Center for Family and Community Medicine, Columbia University Medical Center

Dr. Paladine lives and practices full-spectrum family medicine in Manhattan, New York, where she supervises residents and medical students, and treats a predominantly Latino, low-income patient population. She focuses in women's health, including maternity care and reproductive health. In addition to her work as a physician, Dr. Paladine mentors residents and medical students as a preceptor in clinic and hospital environments. She is the Educator of the Year, 2017, for the New York State Academy of Family Physicians and serves as their chair of the Public Health Commission. She believes that the United States needs a health care system based on primary care, and that the public must learn more about family medicine to pave the way.
Carrie Pierce, MD

Faculty, Cascades East Family Medicine Residency, Klamath Falls, Oregon.

Dr. Pierce is a graduate of Rush Medical College in Chicago, Illinois. She completed her residency at the University of Illinois-Chicago Advocate Illinois Masonic Medical Center Family Medicine Residency and a reproductive health care and advocacy fellowship at the Reproductive Health Access Project in New York, New York. Dr. Pierce enjoys practicing the full scope of family medicine, from newborns to geriatric patients. Her passion is reproductive health care, helping women and families plan when and whether to have children, and subsequently helping them have the healthiest pregnancies and babies possible. She co-chairs the Society of Teachers of Family Medicine’s Group on Women’s Health.
Martha Simmons, MD

Faculty, Harlem Residency in Family Practice, NYC

Dr. Simmons is a family doctor who practices full spectrum family medicine with a focus in women's health and family planning at an FQHC in Harlem New York. She completed her residency training at the University of Pennsylvania and subsequently moved to New York for a position as a women's health and advocacy fellow with Reproductive Health Access Project. After completion of this one year fellowship, she joined the faculty at the Harlem Residency in Family Medicine which is affiliated with Mt. Sinai. She is the secretary of the Reproductive Health Care Member Interest Group of the American Academy of Family Physicians
Learning Objectives

1. Become comfortable handling the instruments and devices associated with IUD and implant insertions and removals.
2. Develop strategies for implementation of practice changes needed in order to offer LARC in their office settings.
3. Counsel women about LARC in a non-biased, non-judgmental format, providing evidence-based information in a way that builds trust through shared decision making regarding contraceptive choices.
Goals

1. List the indications and contraindications to LARC use
2. Describe the pros and cons of hormonal vs. non-hormonal IUD use
3. Explain the role of higher efficacy, non-user dependent contraceptive methods like the IUD and the implant in the prevention of unintended pregnancy
Contraceptive Users in the United States

- 62 million women of childbearing age in US.
- 43 million are sexually active and do not want to become pregnant.
- 62% reproductive-age women use some form of contraception.
- 6 million pregnancies per year.

http://www.ndrf.org/Reference.htm

Guttmacher Institute
Nearly Half of Pregnancies in the United States are Unintended.

Approximately 6 million pregnancies per year


Why do Unintended Pregnancies Happen?

3.1 million unintended pregnancies, by women’s contraceptive use during month of conception

Guttmacher 2010
## One Year Failure Rates

<table>
<thead>
<tr>
<th>Effectiveness</th>
<th>Birth Control Type</th>
<th>Typical-Use Pregnancy Rate</th>
<th>Perfect-Use Rate</th>
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<tbody>
<tr>
<td>Ineffective</td>
<td>Chance</td>
<td>85%</td>
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<tr>
<td>Less Effective</td>
<td>Condoms</td>
<td>18%</td>
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<td>More Effective</td>
<td>Pill, patch, ring</td>
<td>9%</td>
<td>0.2-0.3%</td>
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<td>Highly Effective</td>
<td>IUDs</td>
<td>0.2-0.8%</td>
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<td>Injectable (Depo)</td>
<td>6%</td>
<td>0.2%</td>
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<td>Implant/Sterilization</td>
<td>0.1-0.3%</td>
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Why do Unintended Pregnancies Happen?

3.1 million unintended pregnancies, by women's contraceptive use during month of conception

Nonuse, 52%
Inconsistent or incorrect use, 43%
Consistent use, method failed, 5%
# Summary Chart of U.S. Medical Eligibility Criteria for Contraceptive Use

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<thead>
<tr>
<th>Condition</th>
<th>Sub-Condition</th>
<th>Co-HRT</th>
<th>LNG-IUD</th>
<th>Implant</th>
<th>DMPA</th>
<th>POP</th>
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Case: Shani

- 21 years old
- Postpartum 4 weeks
- Asking about tubal sterilization because she’s not good at pills
Sterilization by Education

- If graduated college, 13% had tubal ligation
- If some college, 29% had BTL
- If graduated HS, 42% had BTL
- If no HS graduation, 55% had BTL

National Survey of Family Growth, 2004
Young Women and Sterilization

- 20% of women selecting sterilization at age 30 years or younger later express regret.

What about an IUD for Shani?

- Lower discontinuation rates in postpartum women
- As early as 4 weeks postpartum endorsed by CDC
- Immediate postpartum now covered by most insurances and evidence-based
- Non-patient-dependent method enhances adherence

Ultimate goal: Patient-centered

- If, after all the information, she still wants sterilization, we need to honor her decision
Copper IUD
ParaGard

Levonorgestrel IUDs
Skyla  Kyleena  Mirena

Liletta

http://www.viewpoints.com/ParaGard-Copper-IUD-Birth-Control-reviews
http://www.womenshealthspecialists.org/our-services/birth-control/IUD
http://pipeline.ctiexchange.org/products/liletta-ing-ius
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<th>Levonorgestrel 52 mg IUD (Mirena)</th>
<th>Levonorgestrel 18.5 mg IUD (Kyleena)</th>
<th>Levonorgestrel 13.5 mg (Skyla)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No hormones</td>
<td>• Progestin treats menorrhagia, anemia</td>
<td>• Marketed for nulliparous women</td>
<td>• No evidence yet for menorrhagia, anemia</td>
</tr>
<tr>
<td>• Menses continues, slightly heavier</td>
<td>• Causes amenorrhea</td>
<td>• FDA approved for 5 years, no further testing as of yet</td>
<td>• Good for 3 years</td>
</tr>
<tr>
<td>• Long lasting: 10 years (12 evidence-based)</td>
<td>• 5 years FDA for Mirena (7 evidence-based)</td>
<td>• Liletta FDA says 3 years (5 years evidence-based)</td>
<td>• Most women still get menses with it</td>
</tr>
</tbody>
</table>
Copper-releasing IUD (ParaGuard): 380 mm² copper exposed on plastic T base

- Interferes with sperm motility.
- Causes spermicidal foreign-body reaction.
- Alters uterine environment, “hostile” to sperm.

Rivera, R The mechanism of action of hormonal contraceptives and intrauterine contraceptive devices
American Journal of Obstetrics & Gynecology 181(5): 1263-1269
Mechanism of Action: Levonorgestrel IUDs

- Hormone-releasing IUD - levonorgestrel on its arms and stem released at decreasing rate with time
  - Thickens cervical mucus (acting as a sperm barrier)
  - Thins uterine lining.
  - Partial inhibition of ovulation.
  - Presence of plastic alone may have some efficacy

Case: Maggie

- 35 years old
- Heavy smoker
## CDC Categories of Safety

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Method can be used without restriction</td>
</tr>
<tr>
<td>2</td>
<td>Advantages generally outweigh theoretical or proven risks</td>
</tr>
<tr>
<td>3</td>
<td>Method not usually recommended unless other, more appropriate methods are not available or not acceptable</td>
</tr>
<tr>
<td>4</td>
<td>Method not to be used</td>
</tr>
</tbody>
</table>
Concerns With Maggie…
and evidence for safety

• Age
  – **No restriction** for IUD or Implant
  – CDC category “2” for women <20
    • Consider expulsion risk and baseline STI risk

• Smoking: regardless of amount
  – **No restriction** for any IUD
CDC Contraindications to IUD Use

- Pregnancy
- Uterine infection
- Unexplained vaginal bleeding ***
- Cervical or endometrial cancer (awaiting treatment) ***
- Breast cancer (Progestin IUD only)
- Trophoblastic disease that has persisted w/ high hCG or malignancy
- Current PID or STD ***
- Pelvic Tuberculosis

*** Initiation is category 4, continuation is category 2
Case: Krystal

- 24 years old
- G2P1
- History of Chlamydia as a teen
Sexually Transmitted Infections and Pelvic Inflammatory Disease

• IUDs do not increase rates of STIs
  – Screen for STIs at IUD insertion
  – Do not remove IUD for STI treatment
  – No need for antibiotic prophylaxis at IUD insertion

• Tiny PID risk transiently higher for 20 days after IUD insertion, then back to baseline population levels
  – Even lower PID rates with good insertion technique and low baseline STI rate
  – Modern IUD strings do not facilitate ascent of infection
  – Do not remove IUD for initial PID treatment
Sexually Transmitted Infections

- Current PID or current gonorrhea or chlamydia is “4” for insertion.
- PID, gc, chlamydia is a “2” for continuation.
- Trichomonas and Bacterial Vaginosis are a “2” for insertion.
- HIV infected or clinically well on ARV: “1”
- Very high risk for STI or HIV, not well: “2”
Case: Kerry

- 18 years old
- Type 1 DM
- G0P0
Medical Eligibility

- Progestin IUD or implant does not alter glycemic control in patients with type 1 diabetes, does not affect blood pressure
- Copper IUD is approved for almost all medical conditions: cardiovascular disease, hypertension, migraines, smoking, lipid disorders, diabetes…


CDC Medical eligibility criteria for contraceptive use 2016
Case: Tammy

- 35 years old
- Very heavy periods
- Anemia
LNG 52 mg IUD - Side Effects

- Spotting, bleeding, and cramping: Increased in first 3 months
- Amenorrhea common
- Expulsion: 2-12% in 1st yr
- Perforation: <.01% at time of insertion
- Headaches, acne, mastalgia: < 3% in 1st months

LNG 52 mg IUD – Medical Advantages

- Cramps & menorrhagia improve.
- 90% decrease in overall blood loss.
- Decreases number of invasive treatments for DUB, fibroids.
- Decreases risk of ectopic pregnancy.
- May protect against endometrial cancer, STIs.
- Decreases perimenopausal symptoms.
LNG 13.5 mg

• Only 6% have amenorrhea after one year

• No evidence that lower dose means less progestin side effects

• 50% of failures were ectopic pregnancies

The Medical Letter Mar 2013 Vol 55; 1412
Noncontraceptive Benefits of the LNG 52 mg IUD

- Treatment of menorrhagia, including in women with uterine fibroids and adenomyosis.
- Treatment of pain in women with endometriosis.
- Prevention of endometrial hyperplasia in perimenopausal women using estrogen therapy.
- Prevention of endometrial proliferation and polyps in breast cancer survivors taking tamoxifen.
Questions about IUDs

Must IUDs be inserted during menses?

Can the IUD be used as emergency contraception?
Pamela

Has had an IUD for 2 years
Positive pregnancy test
You can feel the strings
IUD and Ectopic Risk

- Ectopic pregnancy rate is the same in IUD users as in the general population, not higher
- Pregnancy rate in IUD users is very low
- 1 out of 2-3 pregnancies in IUD users will be ectopic

URGENT NEED FOR AN ULTRASOUND TO LOCATE THE PREGNANCY!
Jennifer

• 22 years old
• Her mother just got a PE so she wants something other than pills
Mechanism of action - etonogestrel implant

• Hormone-releasing implant (Nexplanon)
• Inhibits ovulation
• Thins endometrium
• Thickens cervical mucous
Contraindications to implant

- Absolute contraindications (MEC 4)
  - Breast cancer, active or < 5 yrs ago
  - Pregnancy
  - Allergy

- Relative contraindications (MEC 3)
  - History of breast cancer > 5 yrs ago
  - Severe liver disease
  - Ischemic heart disease or history of CVA
  - Unexplained vaginal bleeding suspicious for serious cause
  - SLE + antiphospholipid antibodies
Advantages of etonogestrel implant

- High efficacy
- No need for pelvic exam (teens like this)
- Relatively simple insertion
- Decreased pain with dysmenorrhea and endometriosis
- Just as effective in obesity\(^1\)
Side effects

• At insertion - bleeding, infection, bruising
• Irregular and unpredictable bleeding\(^1\)
  – ~15% of patients remove implant by 1 yr\(^2\)
• Emotional lability, headaches, acne < 2\%\(^1\)
Timing of insertion - Quick Start

- < 7 days from LMP - insert today, backup for 1 week
- > 7 days from LMP and unprotected sex since then - insert today if pt desires, use backup for 1 week, repeat urine hcg in 2 weeks
Nexplanon Insertion:

- Measure 8-10 cm above medial epicondyle
- Mark that spot and spot 4 cm proximal
- Inject lidocaine with epi along track between spots
Nexplanon insertion
Insertion/removal challenges

• Insertion
  – Insensitivity to anesthesia

• Removal
  – Deep insertion/Intramuscular placement
  – Migration
  – Broken device
Troubleshooting IUD Issues

• Bleeding pattern problems
  – NSAIDs or OCPs plus time

• Pain problems
  – NSAIDs plus time (check placement w USN)

• String issues
  – Leave long (can always shorten), cut at right angle, tuck behind cervix
## Challenges With Insertions

<table>
<thead>
<tr>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discomfort/difficulty with speculum placement</td>
</tr>
<tr>
<td>Visualizing the cervix</td>
</tr>
<tr>
<td>Extreme uterine position/uterine distortion</td>
</tr>
<tr>
<td>Prior C-sections</td>
</tr>
<tr>
<td>Tight cervical os</td>
</tr>
<tr>
<td>Patient faints</td>
</tr>
<tr>
<td>Perforation</td>
</tr>
</tbody>
</table>
Positions of the Uterus

1. Anteflexed
2. Anteverted
3. Mid Position
4. Retroverted
5. Retroflexed

Figure 2-5. Uterine position.
Tips

- Use as short a speculum as possible
- Give lidocaine 2-3 cc prior to tenaculum
- Put traction on the tenaculum to straighten out the uterus
- Very gently advance the sound, letting it follow the smooth surface of the canal
Sound vs Sound w/ Dilation
Os finders
Challenges: Removal

<table>
<thead>
<tr>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can’t See Strings</td>
</tr>
<tr>
<td>Embedded IUD</td>
</tr>
<tr>
<td>Malpositioned IUD</td>
</tr>
</tbody>
</table>
IUDs Move After Insertion

- IUDs move up/down uterus after insertion (Shimoni et al, 2014)

- Watchful waiting is a reasonable option

- Can repeat ultrasound in 3 months to re-assess position
Ultrasound

To confirm IUD in place if patient returns with concerns

(Prabhakaran & Chuang, 2011)
Take-Home Messages

- You can do this!
- LARC is good for your patients
- The risks are minimal
- The benefits are enormous
Resources

We train and support clinicians to make reproductive health care accessible to everyone.

WE FOCUS ON THREE KEY AREAS

- Abortion
- Contraception
- Miscarriage
<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
<th>Additional Considerations</th>
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<tbody>
<tr>
<td>Z30.014</td>
<td>Encounter for initial prescription of intrauterine contraceptive device</td>
<td>Excludes1</td>
</tr>
<tr>
<td>Z30.017</td>
<td>Encounter for initial prescription of implantable subdermal contraceptive</td>
<td></td>
</tr>
<tr>
<td>Z30.430</td>
<td>Encounter for insertion of intrauterine contraceptive device</td>
<td></td>
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<tr>
<td>Z30.431</td>
<td>Encounter for routine checking of intrauterine contraceptive device</td>
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<tr>
<td>Z30.432</td>
<td>Encounter for removal of intrauterine contraceptive device</td>
<td></td>
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<tr>
<td>Z30.433</td>
<td>Encounter for removal and reinsertion of intrauterine contraceptive device</td>
<td>Encounter for replacement of intrauterine contraceptive device</td>
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<tr>
<td>Z30.46</td>
<td>Encounter for surveillance of implantable subdermal contraceptive</td>
<td>Encounter for checking, reinsertion or removal of implantable subdermal contraceptive</td>
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<tr>
<td>Z97.5</td>
<td>Presence of (intrauterine) contraceptive device</td>
<td>Excludes1</td>
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1. Excludes checking, reinsertion or removal of implantable subdermal contraceptive (Z30.46)
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>58300</td>
<td>Insertion of intrauterine device (IUD)</td>
</tr>
<tr>
<td>58301</td>
<td>Removal of intrauterine device (IUD)</td>
</tr>
<tr>
<td>J7297</td>
<td>LNG-releasing IUD (Liletta), 52 mg</td>
</tr>
<tr>
<td>J7298</td>
<td>LNG-releasing IUD (Mirena), 52 mg</td>
</tr>
<tr>
<td>J7300</td>
<td>Copper IUD (Paragard)</td>
</tr>
<tr>
<td>J7301</td>
<td>LNG-releasing IUD (Skyla), 13.5 mg</td>
</tr>
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</table>
### IMPLANT Billing codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>11981</td>
<td>Insertion, non-biodegradable drug delivery implant</td>
</tr>
<tr>
<td>11982</td>
<td>Removal, non-biodegradable drug delivery implant</td>
</tr>
<tr>
<td>11983</td>
<td>Removal with reinsertion non-biodegradable drug delivery implant</td>
</tr>
<tr>
<td>J7307</td>
<td>Etonogestrel (contraceptive) implant system, including implant and supplies (use for Implanon and Nexplanon)</td>
</tr>
</tbody>
</table>
Contact Info for Presenters

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- Carrie Pierce  piercar@ohsu.edu
- Martha Simmons  martha.simmons@gmail.com
References and Resources

• Hatcher et al, Contraceptive Technology 2011
• Managing Contraception – book online @ www.managingcontraception.org
• CDC Medical Eligibility Criteria for Contraceptive Use
• Association of Reproductive Health Professionals www.arhp.org
• Alan Guttmacher Institute  www.agi-usa.org
• www.contraceptiononline.org
• Planned Parenthood www.plannedparenthood.org
• The Cochrane Collaboration www.cochrane.org
• www.Not-2-Late.com
• Reproductive Health Access Project www.reproductiveaccess.org