IUDs and Implants: Improving Access Among Adolescents

Nishant Shah, MD, MPH
Session objectives

• Describe effectiveness, side effects, and benefits of highly effective methods

• Explain public health implications of increased access to highly effective methods in the U.S.

• Identify common misinformation about IUDs and implants

• Describe counseling approaches designed to support clients in making informed and completely voluntary choices about contraception
Beyond the Pill

A program of the Bixby Center for Global Reproductive Health at the University of California, San Francisco (UCSF) School of Medicine

beyondthepill.ucsf.edu
Group agreements for today

• Be respectful of others; we may not always agree
• Honor risk-taking
• Share the stage

… And have fun!
Better birth control education reduces unintended pregnancies.

Forty sites in our national study

Twenty randomly selected clinics received the training and 20 control clinics offered standard care.
Ours was the first randomized clinic intervention to successfully help teens and young women aged 18-25 prevent accidental pregnancies.
A role for more effective contraceptives

What percent of US: Pregnancies among women under age 20 are unintended?

75%

Ethical Guidelines

Ensuring ACCESS

Ensuring CHOICE

Historical Context

• The US has a long history of coercive reproductive practices targeting vulnerable communities.

• This history may impact the way that some individuals and communities perceive family planning.

“I don’t want something inside of me.”

Higgins, et al. AJPH, 2016
Thorburn & Bogart. Women & Health, 2005
A patient-centered approach

• The quality of interpersonal care is associated with clinical outcomes related to contraceptive use.

• A patient-centered approach leads to better patient satisfaction and adherence.

• Provider-driven counseling associated with lower satisfaction and method discontinuation.

Dehlendorf, C. et. al. AJOG. 2016
Youth-Friendly LARC Services

- Non-directive counseling is key
- Ensure confidentiality (i.e. billing considerations)
- Offer free or low-cost contraception
- Offer on-site and same-day placement when possible
LARC causes distinct bleeding pattern changes

ParaGard: spotting first 6 months, bleeding may be heavier or longer

LNG-IUDs: spotting first 6 months, then lighter

~ 10% - 30% stop having period

Nexplanon: unpredictable bleeding and spotting, overall lighter,

~20% stop having period

Effective counseling improves patient satisfaction

Patients starting LARC are more satisfied if they receive "a lot of information" about possible bleeding pattern changes.

Three take home points about integrating LARC methods

1. Most women can use LARC methods, all deserve to know about them

2. Keep client’s priorities at forefront during counseling

3. Clients can stop using LARC any time they desire
LARC and Reproductive Justice

- Clients should have basic information about and access to the full-range of contraceptive methods

- Clients have the right to choose (or not choose) any given method of birth control, *free of persuasion*

- Clients have the right to have a LARC method removed at any time, without undue resistance from their provider

An update on Long-Acting, Reversible Contraception (LARC)
How do LARCs fit within the broader range of methods?
Copper T 380a intrauterine device, ParaGard®

- Works for at least 12 years
- Nearly 100% effective
- Only highly effective non-hormonal method

Copper IUD is the most effective emergency contraceptive (EC)

- Nearly 100% effective as EC
- More effective than EC pills for longer
- Effective for patients >165 lbs.
- Provides ongoing contraception… No back-up needed!

ECP loses efficacy with increased BMI

Copper T IUD remains nearly 100% effective for these patients

Glasier A et al. Contraception. 2011. 20
Emergency Contraception (EC) Types

IUD

EC Pills

Progestin (LNG)
“Plan B”

Ulipristal Acetate (UPA)
“Ella”
What % of sexually active women in the US have ever used EC?

a. 4 %
b. 18 %
c. 40 %
d. 65 %

NSFG, Data Brief No. 209, July 2015
What % of sexually active women in the US have ever used EC?

- 18% (up from 4% in 2002)
- Still low considering nearly half of US pregnancies are unintended
- EC has the potential to reduce unintended pregnancy after an episode of unprotected intercourse

NSFG, Data Brief No. 209, July 2015
Levonorgestrel-releasing IUDs, Mirena®, Liletta®, Skyla®, & Kyleena®

- Works for at least:
  - Liletta & Mirena 4-7 years*,
  - Kyleena 5 years,
  - Skyla 3 years,
- Nearly 100% effective
- Low-dose progestin, no estrogen
- Range of non-contraceptive benefits

### Hormonal Composition of IUDs

<table>
<thead>
<tr>
<th>IUD</th>
<th>FDA approval</th>
<th>Evidence-based duration</th>
<th>Total hormones</th>
<th>Daily hormones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paragard®</td>
<td>10 years</td>
<td>12 years*</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Mirena®</td>
<td>5 years</td>
<td>7 years**</td>
<td>52 mg LNG</td>
<td>20 - 14 mcg/day</td>
</tr>
<tr>
<td>Liletta®</td>
<td>4 years</td>
<td>7 years***</td>
<td>52 mg LNG</td>
<td>20 – 10 mcg/day</td>
</tr>
<tr>
<td>Kyleena®</td>
<td>5 years</td>
<td></td>
<td>19.5 mg LNG</td>
<td>15 - 7 mcg/day</td>
</tr>
<tr>
<td>Skyla®</td>
<td>3 years</td>
<td></td>
<td>13.5 mg LNG</td>
<td>14 – 5 mcg/day</td>
</tr>
</tbody>
</table>

***McNicholas C, *AJOG* 2017
**Wu JP, *Contraception* 2014
IUD Mechanism of Action

Primary: prevention of fertilization
- Decreasing sperm motility and capacitation
- Decreasing sperm and egg survival

Secondary (LNG IUDs)
- Thickening of cervical mucous

IUDs are not an abortifacient (won't disrupt implanted pregnancy)
- Tubal flush studies find no fertilized eggs
- No transient elevations in hCG
- IUD users have low rates of intrauterine and ectopic pregnancies
IUDs reduce overall risk of ectopic pregnancy, increase proportion

Chance of ectopic is:

- 1 in 50 for non-IUD users
- 1 in 16 for Cu IUD
- 1 in 2 for LNG-IUS

Estimated ectopic pregnancy rate per 1,000 women in first year of use

References:
IUD Removal is quick and easy
Single-rod etonogestrel (ENG) implant, Nexplanon®

- Works for 3-5 years
- Nearly 100% effective
- Prevents ovulation, thickens cervical mucus
  - Low-dose progestin, no estrogen
  - No effect on bone density
  - Now radio-opaque

McNicholas AJOG 2017.
FDA label for Nexplanon. Revised 7/2014.
Is Nexplanon difficult to remove, as Norplant was?

No, the average removal procedure takes less than 4 minutes

https://vimeo.com/145221377

UpstreamUSA Implant Removal Pop Out Technique
Safety and Benefits of LARC

- Can be used by a wide variety of clients, including those with medical conditions
- Rapidly reversible
- Improves chances of healthy birth spacing
- Can be used privately
LARC methods are most effective

Number of women pregnant in 1 year out of 1,000

Trussell J. Contraception 2011.
Why is LARC so effective?

Users don’t have to take action for method effectiveness

- No monthly re-supply
- No interruption of contraceptive use
- Reduced need to access health care

Inconsistent use of pills is the norm

Electronic pill dispensers show high rates of inconsistent use

Potter L et al. Fam Plann Perspect. 1996. 34
LARC continuation rates are highest of all reversible methods

One year continuation rates

Few US women know about LARC

• Less than half of young women have heard of LARC
• Two-thirds do not know safety or effectiveness
• Health care providers are primary source of information on LARC
• Many providers have not integrated LARC into counseling, especially in primary care settings

Kaye K et al. The Fog Zone. 2009.
Common misinformation about LARC methods
Guidance for contraceptive care

United States Medical Eligibility Criteria for Contraceptive Use

United States Selected Practice Recommendations for Contraceptive Use

Quality Family Planning

2016

2016

2015
# CDC Medical Eligibility Criteria

<table>
<thead>
<tr>
<th>CDC Medical Eligibility for Initiating Contraception</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Method can be used without restriction</td>
<td>1</td>
</tr>
<tr>
<td>Advantages of use generally outweigh theoretical or proven risks</td>
<td>2</td>
</tr>
<tr>
<td>Method usually not recommended unless other, more appropriate methods are not available / acceptable</td>
<td>3</td>
</tr>
<tr>
<td>Absolute contraindication, method not to be used</td>
<td>4</td>
</tr>
</tbody>
</table>

Search: “CDC Contraception”  
Look in your training manual on the last page of the “Tools” section.
Case Study 1: Mari

- 16 years old, no children
- Forgets to take the Pill
- Had PID three months ago
- Thinks she has vaginitis
- Wants to finish college before having children
- Requests an IUD

Would your clinic be able to give her an IUD today?
Can patients who have no children use an IUD?

- Yes
- High continuation rates

Do IUDs increase PID or infertility?

• No, IUDs do **not** significantly increase PID risk
  • Slight increase for 20 days after placement, then same as general population

• No, IUDs do **not** decrease future fertility

Can patients with a history of PID use an IUD?

Yes.

Active PID is contraindication.

### CDC Medical Eligibility for Initiating Contraception

<table>
<thead>
<tr>
<th>Condition</th>
<th>LNG-IUS or Copper IUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic inflammatory disease</td>
<td></td>
</tr>
<tr>
<td>Past PID, subsequent pregnancy</td>
<td>1</td>
</tr>
<tr>
<td>Past PID, no subsequent pregnancy</td>
<td>2</td>
</tr>
<tr>
<td>Current PID</td>
<td>4</td>
</tr>
</tbody>
</table>

Centers for Disease Control. *MMWR.* 2010.
Can patients with a history of STIs use an IUD?

Yes. Past infections are not a contraindication to any method of contraception.

LARC does not reduce condom use or increase STI incidence.

<table>
<thead>
<tr>
<th>CDC Medical Eligibility for Initiating Contraception</th>
<th>LNG-IUS or Copper IUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexually Transmitted Infections</td>
<td>Condition</td>
</tr>
<tr>
<td>Current vaginitis</td>
<td></td>
</tr>
<tr>
<td>Current chlamydia, gonorrhea, or purulent cervicitis</td>
<td></td>
</tr>
</tbody>
</table>

Selective STI Screening at IUD Placement Visit

Asymptomatic woman presenting for IUD insertion

< 25 years old

Negative test within 1 year?

Yes

New risk factors*

No

No test

Insert IUD

Yes

Test

Insert IUD

ACOG guidelines: screening and insertion

- Adopt same-day insertion protocols for IUD & Implant
- Selective STI Screening: not required for low risk
- Insertion at any time in the menstrual cycle

Bridging methods with Quick Start

• Quick start prevents pregnancies that may occur while your patient waits for next appointment
  
  • If can’t place LARC today
  OR negative PT, but UPSIC in last 2 weeks

  • Start pill / patch / ring until pregnancy ruled out and LARC can be placed

  • Reschedule in 2 weeks: repeat PT, place LARC

http://www.reproductiveaccess.org/resource/quick-start-algorithm/
Who can use LARC?

• Most women are IUD candidates
• Nearly all are implant candidates

Including:

• Adolescents
• Patients with no children
• History of STI/PID
• Abnormal Pap test without cervical cancer
Do LARC methods take a long time to reverse?

No.

Return to fertility is faster than other hormonal methods.

Three take home points on LARC

1. Many people do not know about LARC
2. Most women can use LARC methods
3. LARCs have high acceptability and continuation rates
Available on our website:

- FREE patient education materials and videos to download or order.
- FREE one-hour, online training on IUDs and implants. *(CME-accredited.)*
- Information about our research and initiatives.
- Copper IUD as emergency contraception resources.
Intrauterine devices: screening, placement & complex cases

Nishant Shah, MD, MPH
IUD placement: timing, techniques & tricks of the trade
Predictors of pain & early removal

- Procedural pain
  - No previous vaginal delivery, any age
  - H/o intermenstrual bleeding or menorrhagia
  - Expected pain
  - Insertion difficulty
- Post insertion pain to 2 weeks
  - Nulliparous adolescents
- Removal at 1 year
  - Preexisting dysmenorrhea

Stanback et al. Contraception 1998
Allen et al. J Ob Gyn 2014
Sinning et al. Ped Adol Gyn 2018
Maguire et al. Contraception 2015
Pain management for IUD placement

- Patients rate pain higher than providers
- Breathing, relaxation and “Verbicaine”
- Evidence does not support routine use of:
  - Motrin / Naproxyn < PO Ketoralac
  - Misoprostol – more SEs
  - Topical 2% benzocaine or intrauterine lidocaine
- Evidence does support
  - Topical 10% Lido spray
  - Paracervical lidocaine

Aksoy, BMJ 2017
Maguire K et al. Contraception. 2014.
Dean G et al. Up To Date. 2014.
Steps for IUD placement

1. Perform pelvic exam to assess size and position of uterus

2. Apply speculum (inspect), antiseptic, tenaculum
   - Take 1 x 1 cm
   - Apply at 12 o’clock
   - Ratchet slowly, 1 - 2 times

3. Sound the uterus
   - Use pencil grasp
   - Brace fingertips to control force
   - Plastic, metal or EMB pipelle

more…
Steps for placement:
(Technique varies according to product)

4. Load the device

5. Place the device

6. Trim the threads
Hands-on practice
IUD next steps, follow up, and complex cases
Next Steps

• Proctor on 3-10 IUD placements
  • Rotate to higher-volume sites
  • See competency checklists / protocols
• Use models to refresh skills before insertions
• Consider group simulator session (Bayer)
• Become “champions” and proctor others
• Aim to expand & scale: regional Center of Excellence

http://beyondthepill.ucsf.edu/clinic-tools
Patient IUD Follow-up

• Advise back up method use as needed (LNG-IUD 1 wk)
• Follow-up visit at clinician’s discretion: ~4 - 6 weeks
• Encourage return if there is:
  • Possible expulsion, displacement, pregnancy
  • Severe cramping or bleeding
  • Desired removal
• No data support routine thread checks by patient

Davies A. J Fam Plann Reprod Health Care 2014.
Current Data: screening & prophylactic antibiotics

• Same day screening for women at high STI risk
  • (< 25 years, multiple partners)
  • Avoid routine STI screening for women at low risk
• Routine antibiotics are not indicated; have no effect on:
  • Reduction in risk of PID
  • Medical follow up
  • IUD continuation

ACOG Practice Bulletin 2011
Grimes DA. Cochrane Database Sys Rev. 2004
IUD Case Review

1. Difficult IUD Placement
2. Vasovagal
3. Perforation
4. Missing threads
5. Pregnant with IUD *in situ*
6. Managing an STI or PID with an IUD in place
7. Prolonged heavy bleeding with IUD
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe bleeding or cramping soon after insertion; fever, chills, discharge</td>
<td>Perforation, infection</td>
</tr>
<tr>
<td>Pain during intercourse</td>
<td>Infection, perforation, partial expulsion</td>
</tr>
<tr>
<td>Missed period, signs of pregnancy</td>
<td>Pregnancy</td>
</tr>
<tr>
<td>Shorter, longer, or missing threads</td>
<td>Partial or complete expulsion, perforation</td>
</tr>
</tbody>
</table>
Case 1 – Difficult IUD placement

- 19 y/o G0P0 patient
- Bimanual exam: anteflexed uterus
- Sounding: difficulty sounding beyond 2 cm, gritty “dead end” sensation

Differential diagnosis?
Management?
Case 1 – Difficult IUD placement

• Differential diagnosis
  • Acute flexion, inaccurate exam, nulliparous
  • Other: fibroids, stenosis (cone), uterine anomaly

• Management
  • Add traction; change angle of sound, or bend sound to mimic flexion
  • Try os finder or dilator
  • If dilation or significant pain, add PCB
  • Use short, wide speculum or widen blades
  • Use ultrasound guidance
  • Repeat pelvic exam
  • Get help or refer

Espey E et al. AJOG. 2014.
Dijkhuizen K et al. Hum Reprod. 2011.
Case 1 – Difficult IUD placement

• Suspect fibroids if
  • ↑ size on bimanual exam or difficult placement

• Management
  • Ultrasound to assess fibroid location
  • Fundal fibroids with minimal uterine cavity distortion
    – Consider ultrasound guidance
    – Attempt placement
    – Evidence supports ↓ menorrhagia, ↓ surgery; same efficacy
  • Lower uterine fibroids with uterine cavity distortion
    – Contraindicated
Flexible Sounds and Os Finders
Case 2 – Vagal reflex with IUD

- 16 y/o patient feels faint during IUD placement
- Signs: Low BP and pulse, others?
- Risks? Predisposition, cervical stim, anxiety
- Mgmt? May be aborted by ↑ venous return
  - Isometric contractions of the extremities
    - Clenching arms, hands, and leg muscles
  - Keep supine or trendelenberg
  - Apply cold to face and neck
  - Rarely prolonged or severe ➔ atropine IV / IM

Case 3 – Perforation

• 17 y/o G1P1 patient with retroverted uterus
• Mild difficulty advancing sound
• Then advances past resistance, further than assessed exam, to 12 cm
• Patient experiences brief, sharp pain

Risk factors? Prevention?
Management?
Case 3 – Perforation

• Differential diagnosis
  • Perforation (1 in 1,000 placements), false tract

• Risk factors
  • Breastfeeding (6x)
  • Postpartum (2x until 12 weeks)
  • Placement difficulty, provider inexperience
  • Uterine immobility (c-section) or anomalies

• Most perforations do not cause serious illness or injury in abdomen

• Reduce perforations through training

Case 3 – Preventing perforation

- Examine carefully for uterine position
- Use traction on tenaculum
- Use thin, flexible sounding instrument
  - Plastic sound, EMB pipelle or ParaGard obturator
- Navigate endocervical canal with caution
  - Angle as necessary
  - Or bend rigid sound to mimic cervical flexion
- Avoid over-confidence
  - Use pelvic models, proctoring
  - Practice techniques for each IUD
Case 3 – Managing a perforation

- Remove instrument or IUD
- Evaluate pain, bleeding, vitals, ultrasound
  - Cul-de-sac fluid (rare) or IUD location
- Observe 1-2 hrs, give precautions before D/C
  - If no IUD on ultrasound, may need x-ray
- Consider antibiotics
- Provide alternative contraception
- Reschedule in 1 - 6 weeks
Case 4 – Missing threads

• 17 y/o G3P0 patient with LNG-IUS for 10 months
• Reports light periods for 6 months, then heavier periods and unable to feel threads
• On speculum exam, missing threads

Evaluation? Management?
Case 4 – Managing missing threads

- Rule out pregnancy
- Probe for threads in cervical canal
- Consider instrumentation: alligator or IUD hook
- Provide back-up contraceptive method
- Obtain ultrasound +/- x-ray as needed
- Refer promptly for IUD in abdomen
Case 5 – Pregnancy with IUD in situ

- 19 y/0 G2P1 patient
- Positive pregnancy test, 7 weeks LMP
- Desired pregnancy

Risks?
Evaluation?
Management?
Case 5 – Pregnancy with IUD in situ

- Risks: Malpositioned IUD
- Management: If threads visible, remove IUD
- Removal decreases risk of:
  - Spontaneous abortion 50%
  - Septic abortion, preterm delivery
- If no threads, ultrasound to r/o ectopic
- If non-desired IUP, aspiration abortion

Dean G et al. Up To Date. 2014.
Expulsions

• Partial or unnoticed expulsion may present as increasing bleeding (LNGIUD), irregular bleeding, cramping, pregnancy symptoms

• Encourage patient to return with these

• Risk of expulsion (2-10%)
  • Provider’s skill at fundal placement
  • Age and parity of patient
  • Time since placement
  • Timing of placement

Centers for Disease Control. MMWR. 2010.
Jacob NS. Obstet Gynecol. 2014.
Case 6 – Managing infection with IUD in place

- 17 y/o G0 patient, asymptomatic CT 2 yr ago
- Currently monogamous x 8 months
- Currently uses IUD
- Exam is notable for a abnormal discharge

- How would you manage her?
- Any differently if they also had CMT?
Case 6 – BV and IUD

- Bacterial Vaginosis - Does IUD increase the risk?
  - Limited data: BV among IUD > CHC users but adjusting for irregular bleeding, IUD users were no more likely to acquire BV

- Screen, treat and place on same day (MEC 2)
- Standard treatment: Metronidazole PO/PV or Clinda PV
Case 6 – Managing STI or PID: IUD in place

- If STI diagnosed
  - Treat infection
  - Counsel patient about prevention of STI transmission with condoms

- If PID diagnosed:
  - Treat infection
  - IUD removal not necessary if PID symptoms improve within 72 hours of treatment

- Outreach to regional EDs to do the same

Centers for Disease Control. MMWR. 2013.
Case 7 - Heavy bleeding with IUD

- 18 y/o G0P0 patient with IUD for 4 months
- Heavy menses

Differential diagnosis?
Management?
Case 7 – Managing heavy bleeding lasting >6 months

- Examine for infection, fibroids, displacement
- Consider ultrasound or x-ray to evaluate
- NSAIDs and reassurance; If Cu IUD, check for anemia and treat as needed
- Remove if medically indicated or unacceptable to patient

Centers for Disease Control. MMWR. 2013
Hubacher D, Hum Reprod. 2006
Summary points

1. Most women contraindicated from hormone use are LARC candidates

2. Careful pelvic exam and IUD placement technique will minimize complications

3. Proctoring, early problem-solving & tools will assist in prevention of complications