Immediate Postpartum Long Acting Contraception (LARC)

Natalie Whaley, MD, MPH
Katrina Nicandri, MD
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We do not have financial interest or other relationships with the industry relative to the topics being discussed.
Objectives

• Understand the benefits of immediate postpartum insertion of intrauterine contraception (IUD) and etonogestrel implant

• Review evidence for safety and breastfeeding

• Recognize the need for caution in promoting long acting reversible contraception (LARC)

• Describe technique for PP IUC insertion
Unintended Pregnancy

• 49% of all pregnancies are unintended

• Unintended pregnancy rate is 10-40% within the first postpartum year

• 21% of women give birth within 24 months of a previous birth

• More likely to:
  - smoke cigarettes
  - drink alcohol
  - not take MVI

Short birth interval: Adverse Outcomes

• Maternal: < 24-month interpregnancy intervals
  – maternal mortality
  – hypertensive disorders of pregnancy
  – bleeding
  – anemia

• Infant: mothers < 18 month postpartum
  – small for gestational age
  – preterm birth
  – low birth weight

Postpartum Contraception: General Considerations

Effective contraception
• Limiting family size
• Risks of short interval pregnancy
• Preventing unintended pregnancy

Avoid causing harm
Avoid VTE
Support breastfeeding

Questions
What is ideal birth spacing?
When does postpartum ovulation occur?
What is ideal timing for initiation of contraception?
What effect does contraception have on breastfeeding?
Postpartum Contraception: Individual Considerations

Timing

6 weeks immediate

Patient preference Autonomy
Postpartum Ovulation: “Rule of 3”

Exclusive breastfeeding:
- Mean ovulation 6 months
- **Earliest is 3\textsuperscript{rd} postpartum month**

Partial/no breastfeeding:
- Mean ovulation 6 weeks
- **Earliest is 3\textsuperscript{rd} postpartum week**

By traditional 6 week postpartum visit, many women will have ovulated!
Postpartum fertility

• Non-breastfeeding women have a mean return to ovulation 45 days after delivery

• Most women resume sexual activity within 1 to 2 months postpartum

• Even in a study situation where explicitly instructed to abstain until 6 weeks postpartum, 45% of women reported unprotected intercourse

Tradition: 6 week PP visit and contraception

• Majority of women are sexually active by 6 weeks PP
• Many do not return for visit (30-35%)
  • Predictors: limited prenatal care; lower education, more children, unstable housing, transportation, communication difficulties
  • 45%-60% do not get desired IUD
• Standard barriers to IUD insertion- multiple visits, insurance
Postpartum contraception

- Many women do not receive postpartum contraception at all due to missing the postpartum visit.

- Of women surveyed at 2-9 months, only 62% reported using effective contraceptive methods.

- Of patients desiring IUD at hospital discharge, 40% did not get one secondary to:
  - Repeat early pregnancy
  - Failure to return for postpartum visit
  - Provider advice against it

Why consider immediate PP LARC?

- Convenience for the woman
- Motivated to use contraception
- Highly effective (>99%) and safe
- No influence on milk supply
- Pregnancy can be ruled out
- Point of access to care
  - Especially for women unable/unlikely to return for PP visit
  - Temporary Medicaid in pregnancy
“immediate postpartum periods is a particularly favorable time…”
Long-acting Reversible Contraception

LARC
Efficacy: 1st Year Failure Rates of Select Contraceptives (Typical Use)

- No Contraception
- Spermicides
- Condom - Male
- Pill - Progestin Only
- Pill - Combined
- Injectable (DMPA)
- IUD - Copper T 380A
- IUD - Levonorgestrel
- Implant
- Female Sterilization
- Vasectomy
LARC use increased 5 fold in last decade

Figure 1. Trends in current long-acting reversible contraceptive use, by device

Branum NSFG 2015
Unintended pregnancy rate is lowest in 3 decades

45/1000
18% drop in 3 years

Increasingly concentrated among poor women

Finer NEJM 2016
Etonogestrel Implant

• Single 40-mm × 2-mm rod

• Rod is made of ethylene vinyl acetate copolymer

• Contains 68 mg of etonogestrel
  • active metabolite of desogestrel
  • releases 60 mcg daily

• Effective for 3 years

• Rapidly reversible
Immediate postpartum etonorgestrel implant

Safe

• No change in markers of hemostasis¹

Effective

• vs. IUC: 86% 1 year continuation (All LARC methods)²
• vs. IUC: lower 1 year pregnancy (7.6% vs. 1.5% [p=.04])²
• vs. other methods:³
  Continuation @ 12 mo: 86%
  Pregnancy @ 6 mo: 0 vs. 10%
  @ 12 mo: 3% vs. 19%

² Cohen Contraception 2016
³ Tocce KM, et al. AJOG 2013
### U.S. Medical Eligibility Criteria for Contraceptive Use, 2010

Adapted from the World Health Organization
Medical Eligibility Criteria for Contraceptive Use, 4th edition

<table>
<thead>
<tr>
<th></th>
<th>Can use the method</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Can use the method</td>
<td>No restrictions</td>
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<tr>
<td>2</td>
<td>Can use the method</td>
<td>Advantages generally outweigh theoretical or proven risks.</td>
</tr>
<tr>
<td>3</td>
<td>Should not use method unless no other method is appropriate</td>
<td>Theoretical or proven risks generally outweigh advantages</td>
</tr>
<tr>
<td>4</td>
<td>Should not use method</td>
<td>Unacceptable health risk</td>
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</table>
# Birth Control Methods

<table>
<thead>
<tr>
<th>Condition</th>
<th>Sub-condition</th>
<th>Combined pill, patch, ring</th>
<th>Progestin-only pill</th>
<th>Injection</th>
<th>Implant</th>
<th>LNG-IUD</th>
<th>Copper-IUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headaches</td>
<td>a) Non-migrainous</td>
<td>I</td>
<td>C</td>
<td>I</td>
<td>I</td>
<td>C</td>
<td>C</td>
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<tr>
<td></td>
<td>b) Migraine</td>
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<tr>
<td></td>
<td>i) without aura, age &lt;35</td>
<td>2*</td>
<td>3*</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
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<td></td>
<td>ii) without aura, age ≥35</td>
<td>3*</td>
<td>4*</td>
<td>1*</td>
<td>2*</td>
<td>2*</td>
<td>2*</td>
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<tr>
<td></td>
<td>iii) with aura, any age</td>
<td>4*</td>
<td>4*</td>
<td>2*</td>
<td>3*</td>
<td>3*</td>
<td>3*</td>
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<tr>
<td>History of bariatric surgery†</td>
<td>a) Restrictive procedures</td>
<td>1*</td>
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<td>1*</td>
<td>1*</td>
<td>1*</td>
<td>1*</td>
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<tr>
<td></td>
<td>b) Malabsorptive procedures</td>
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<td></td>
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<td>COCs: 3</td>
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<td>1</td>
<td>1</td>
<td>1</td>
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<td></td>
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<td>P/R: 1</td>
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<tr>
<td>History of cholestasis</td>
<td>a) Pregnancy-related</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>b) Past COC-related</td>
<td></td>
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<td></td>
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<tr>
<td>History of high blood pressure during pregnancy</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of pelvic surgery</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV</td>
<td>High risk or HIV infected‡</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>AIDS (see drug interactions) §</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Clinically well on ARV therapy$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If on treatment see drug interactions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperlipidemias</td>
<td>a) Adequately controlled hypertension</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Elevated blood pressure levels (properly taken measurements)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(i) systolic 140-159 or diastolic 90-99</td>
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<td></td>
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</tr>
</tbody>
</table>

* MEC Category

† For bariatric surgery, consider a low-risk COC or progestin-only pill.
‡ For high blood pressure, consider a low-risk COC or progestin-only pill.
§ For AIDS, consider a low-risk COC or progestin-only pill.
$ For ARV therapy, consider a low-risk COC or progestin-only pill.

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**Medical Condition**

- Headaches
- Migraine
- History of bariatric surgery
- History of cholestasis
- History of high blood pressure during pregnancy
- History of pelvic surgery
- HIV
- AIDS
- Hyperlipidemias
- Hypertension

**Birth Control Methods**

- Combined pill, patch, ring
- Progestin-only pill
- Injection
- Implant
- LNG-IUD
- Copper-IUD

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**MEC Category**
### Postpartum implant: CDC MEC

<table>
<thead>
<tr>
<th>Postpartum timing</th>
<th>MEC Category</th>
</tr>
</thead>
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<tr>
<td>&lt;21 days</td>
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<tr>
<td>21-42 days</td>
<td>1</td>
</tr>
<tr>
<td>with other RF for VTE</td>
<td>1</td>
</tr>
<tr>
<td>without other RF for VTE</td>
<td>1</td>
</tr>
<tr>
<td>&gt;42 days</td>
<td>1</td>
</tr>
<tr>
<td><strong>Breastfeeding</strong></td>
<td></td>
</tr>
<tr>
<td>&lt; 1 month PP</td>
<td>2</td>
</tr>
<tr>
<td>More than 1 month PP</td>
<td>1</td>
</tr>
</tbody>
</table>
**CDC Medical Eligibility for Contraceptive Use**

<table>
<thead>
<tr>
<th>Postpartum</th>
<th>ENG implant</th>
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<tbody>
<tr>
<td>Breastfeeding</td>
<td></td>
</tr>
<tr>
<td>&lt;1 months postpartum</td>
<td>2</td>
</tr>
<tr>
<td>&gt;1 month postpartum</td>
<td>1</td>
</tr>
<tr>
<td>Nonbreastfeeding any time</td>
<td>1</td>
</tr>
</tbody>
</table>

*Breastfeeding or non-breastfeeding women, including post-Cesarean section.*

Irregular bleeding with implant

Common reason for discontinuation (10%-20%)
• 18% prolonged, 6% frequent

No difference in discontinuation for bleeding between immediate, delayed, interval placement

Counseling is key!!!

Usually light
Unpredictable for 3 years
Immediate Postpartum Etonogestrel Implant

Breastfeeding:

- ENG implant (when placed 4-8 weeks PP) does not effect breast milk quantity, breastfeeding duration, or infant growth/development
- Early (1-3 days PP) placement of ENG implant doesn’t effect time to lactogenesis, breast milk quality, and breastfeeding rates

Postpartum implant & breastfeeding

RCTs of immediate vs. none, vs. delayed, and delayed vs. interval show:

- No effect on milk content, milk consumption over 6 wks, duration of breastfeeding, infant growth, breastfeeding rates.

Immediate Postpartum Etonogestrel Implant in Adolescents: Colorado Experience

Prospective observational study of adolescent mothers who received immediate postpartum implants (171) versus other methods (225):

- Implant continuation: 96% at 6 months, 86% at 12 months
- No pregnancies at 12 months (compared to 10% of control group)

Intrauterine Devices

Begin working immediately after insertion

High contraceptive efficacy

Rapidly reversible

Highest degree of patient satisfaction among contraceptive methods
  • 99% of users are “very” or “somewhat” satisfied

Hormone-free LARC option => Copper IUD

Long acting
  • LNG: 3 or 5 (7) years
  • Copper: 10 (12) years
## Definitions

<table>
<thead>
<tr>
<th>IUC</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate post-placental/postpartum</td>
<td>Within 10 minutes of placental delivery</td>
</tr>
<tr>
<td>Early postpartum</td>
<td>10 minutes to 48 hours after delivery</td>
</tr>
<tr>
<td>Delayed postpartum</td>
<td>4 weeks – 8 weeks postpartum</td>
</tr>
<tr>
<td>Transcesarean</td>
<td>After placenta, before hysterotomy closure</td>
</tr>
<tr>
<td>Interval</td>
<td>Non-postpartum, &gt; 12 weeks</td>
</tr>
<tr>
<td><strong>Implant</strong></td>
<td></td>
</tr>
<tr>
<td>Immediate postpartum</td>
<td>During postpartum hospital stay</td>
</tr>
</tbody>
</table>
Immediate Postpartum IUC: Safe and Effective

RCTs immediate vs. delayed insertion

• 6 mo use: OR=2.04 (1.01-4.09)
• Only 27% non-randomized followed up for IUD

1 year continuation ~80%

No increased bleeding, infection or perforation

Vaginal or cesarean delivery

• Avoid if infection or postpartum hemorrhage
# CDC Medical Eligibility for Contraceptive Use

<table>
<thead>
<tr>
<th>Postpartum*</th>
<th>LNG IUS</th>
<th>Copper IUD</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10 minutes after delivery of the placenta</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10 minutes after delivery of the placenta to &lt;4 weeks</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>≥4 weeks</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Puerperal sepsis</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

*Breastfeeding or non-breastfeeding women, including post-Cesarean section.

IUD Review

IUDs do NOT cause PID!!!
• Transient increased risk within 3 weeks of insertion (10/1000)
• GC/CT testing can follow CDC guidelines (ie not everyone needs test)

Beyond time of insertion
• Overall decreased risk with LNG IUD

Do not remove IUD if PID is diagnosed

Delivery-related conditions that may increase infection risk

- Prolonged rupture of membranes
- Prolonged labor
- Puerperal genital infection
- Puerperal sepsis

These conditions may predispose to endometritis, so consider IUD insertion at 4-6 weeks postpartum.
Postpartum IUC: Higher expulsion rates than delayed or interval

- Interval expulsion: ~5% (0-11%) \(^1\)
- Immediate vs. delayed:
  - OR=4.89 (1.47-16.32) \(^2\)
  - 6 wk: 5%, 6 mo: 7%, 12 mo: 12\(^3\)
- Vaginal delivery: 24% vs. 4% (p=.008) \(^4\)
- C-section: 20% vs. 0% (p=.04); \(^5\) no diff\(^6\)
- Median time: 4 wks (0.4-29)\(^7\)

\(^1\) Prager Obstet Gynecol Clin N Am 2015
\(^2\) Lopez Cochrane 2015
\(^3\) Celen Contraception 2004
\(^4\) Chen Obstet Gynecol 2010
\(^5\) Whitaker Contraception 2014
\(^6\) Lester Contraception 2015
\(^7\) Cohen Contraception 2016
Postplacental insertion

Within 10 minutes


Adjusted Cumulative Expulsion Rates

- ≤10 mins: 9.5%
- 2–23 hrs: 31.5%
- 24–47 hrs: 37.3%
- 48–72 hrs: 28.8%

p<0.001 (≤10 minutes compared to all other groups)
Expulsion versus no-show rate

Prospective cohort study of 1,024 women who accepted use of IUD for postpartum contraception

<table>
<thead>
<tr>
<th>Table 5. Verbal acceptance and actual insertion of IUCD</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Overall counseling</td>
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<td>Interval IUCD</td>
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<td>PPIUCD</td>
</tr>
<tr>
<td>Interval IUCD</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

* p < 0.01 acceptance and actual insertion.
PP LNG-IUS and Breastfeeding

RCT immediate vs. delayed

- Initiation → no difference
- @ 6-8 weeks: 30% vs. 35% (p=.62)
- @6mo: 6% vs. 24% (p=.02)

Cohort study (COC, implant, Cu IUD, LNG-IUS at 6 wks):

- No diff in milk supply, breastfeeding rate, infant weight at 6 wks and 6 mo
Cesarean Delivery & Postplacental IUD Insertion

Observational data

• Lower expulsion rates compared to post vaginal delivery (4-14%)
• High continuation rates (75-90%)

Review of 3,172 cesarean deliveries in 5 clinics over 17 years

• 5.5% expulsion at 1 year
• 84.5% continuation
• No perforations
• “no benefit to addition of suture”
• Matched with 905 cesareans without IUD
  • No difference in vaginal bleeding, infection, duration of lochia
PP IUC Technique: General Principles

Cleaning perineum; new gloves

Strings:
- no need to cut for Copper, cut LNG-IUS strings at cervix
- Warn patient may need trim 1-2 weeks

Ultrasound guidance

Minimal discomfort

Cavity path angle
PP IUD Techniques

Two techniques of postplacental IUD insertion and proper location of IUD after insertion

A) IUD strings placed in palm of hand

B) Manual insertion at top of fundus

Use of ring forceps to insert IUD
Manual insertion

1) Hold the IUD by gripping the vertical rod between the index and middle fingers of your predominant hand.
Manual insertion

2) Slowly insert IUD-holding hand into uterus. Direct it toward the abdominal hand, which should be firmly holding the uterine fundus through the relaxed abdominal wall.

3) Careful not to dislodge IUD as remove hand
LNG-IUS inserter

Can use ring forceps on inserter if need more length

Check inserter to make sure it’s intact
Ring forceps placement: Loading

1. Grasp the anterior cervix with a ring forceps

2. Place the IUD in a second ring forceps
   • Hold the IUD by its vertical arm
   • The horizontal arm of the IUD should be slightly out of the ring in the same plane of the ring and slightly tilted
   • Do not close around IUD
   • Not for LNG IUS
Ring forceps placement: Insertion

- Place traction on cervix, fundal pressure
- Place the IUD in ring forceps into the vagina and through the cervix
- Maintain orientation of forceps
- Angle to umbilicus, not cephalad
Ring forceps placement: Release

Open forceps at fundus to release IUD

Keep forceps open slightly, and sweep slightly lateral to avoid strings

Slowly remove from uterine cavity
Cesarean placement

Place at fundus prior to hysterotomy closure
  • Inserter, hand, ring forceps

Tuck strings toward cervix
  • Trim LNG-IUS strings at inserter

No need to suture IUD to fundus
Helpful tips from our experience!

• Ultrasound and fundal pressure are good things
• Be flexible with technique
• Often minimal discomfort regardless of anesthesia
• Strings will find their way out of the cervix
  • May be out of the introitus
  • Warn patient: possibly have them return in 1-2 weeks for string trimming
• Most women recognize an expulsion
Immediate Postpartum LARC: Cost effective

IUD decision analysis¹
- 88 pregnancies prevented/1000 women (2 yrs)
- 1000 women → $282,540 savings

Implant decision analysis²
- Pregnancy rate 2.4% vs. 22% (1 yr)
- $1,263 savings per patient

CO saved $2.3 million/1000 women³

2. Garipey Obstet Gynecol 2015
3. Rodriguez Contraception 2014
Reimbursement Barrier to PP LARC

• Global fee vs. device and insertion cost

• Active efforts to change state policy

6 states changed policy to reimburse separately; supplemental code to global

• Physician advocacy matters!
Other Policy Barriers Remain

• In-patient pharmacy
• Hospital practices
• Nursing
• Pediatric Providers
• Role of trainees
Caution with postpartum LARC

Provider-controlled method- decreased autonomy to stop method

Postpartum is a vulnerable time

Patient preference vs. provider preference

Potential for biased counseling, especially for certain groups

• Unintended pregnancy ↑ for low income, minority women

• Substance use disorder
Are women of color counseled differently?

- Women of color and women with lower education levels are more likely to report being dissatisfied with their family planning provider, pressure to use birth control and limit family size

- Survey of 500 Black women, 67% reported race-based discrimination when receiving family planning care

- RCT of standardized patients, providers more likely to recommend IUD to low income women of color than to low income white women

Forrest and Frost, Fam Plan Perspect 1996
Thorbun and Bogart, Women’s Health 2005
Downing et al, AJPH, 2007
Well-meaning intentions: Sterilization and eugenics

Mandatory sterilization laws

*Buck v Bell* (1927, SC)

Vulnerable groups targeted for sterilization

California, 1909-1979

- 20,000 non-consensual sterilizations on institutionalized people and immigrants

California, 2006-2010

- >100 unlawful sterilizations of women in prison

“Three generations of imbeciles are enough”

-Oliver Wendell Holmes
Tempering LARC enthusiasm

• Recognizing patients may have different values and motivations than providers

• Directing groups with highest rates of unintended pregnancy to LARC has historical legacies

• Disproportionate emphasis on increasing access to LARC placement without necessarily increasing access to removal

Gomez et al 2014 @PSHe
Gold Guttmacher 2014
Strategies for promoting autonomy and justice with LARC

• Do not introduce PP LARC idea during labor

• Make removal easy for patient

• Careful of biased recommendations

• Reproductive life plan approach
  • “Plan” is not for everyone
  • OK to leave the hospital PP without a contraceptive plan

Do you want to have more children in the future? When do you think that might be?
Common Approaches to Contraceptive Counseling

Informed choice

Directive Counseling

Informed choice

Promote patient autonomy

Maximize efficacy

Shared Decision Making

Dehlendorf, Clin Ob Gyn, 2014
Dehlendorf, Patient Educ Couns, 2010
Shared Decision Making and LARC

Providers assess patient preferences:

- Sample questions:
  - What is most important to you about your method of birth control?
  - What were your birth control experiences in the past?
  - How would you feel if you got pregnant on your method of birth control?
Postpartum LARC: Summary

- PP LARC has many benefits and is safe, including in breastfeeding women
- Discuss family planning at prenatal visits; do not introduce LARC in labor
- OK to leave the hospital without contraception plan
- Shared decision making useful approach
- Physician advocacy can change policy
Thank you!

Roxanne Jamshidi
Paul Blumenthal
Mark Hathaway
Rameet Singh
Jodi Steinauer
Carolyn Sufrin

Fellowship in Family Planning