The ARRIVE Trial: Evidence, Outcomes and Counseling for the 39-week Conversation

Quality in Action

Page to Practice Lecture

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Wednesday

June 24, 2026

2 – 3 pm ET

Before We Get Started

This webinar will be recorded

If you need help during the call, please private chat an ACOG staff member

Submit your questions throughout this session using the Q&A box

Any questions following this webinar can be sent to obgynsafety@acog.org

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Who are we?

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A Partner in Quality and Patient Safety

Combining ACOG's trusted expertise with real-world services to help hospitals and health systems deliver safer, more equitable care.

- Safety event review
- Plan to support review of patient safety work
- Tailored support for frontline teams
- Designed for measurable impact

Let's improve ob-gyn care–together.

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What is “Page to Practice”?

A deep dive into clinical topics held in **a 2-session format**:

Conversation

A casual, virtual conversation between an ACOG host and guidance document or article’s author(s) to introduce the topic and context.

Lecture

A teaching-style CME offering on the same or closely related topic to the previous offering, providing actionable take aways by national experts.

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Journal Club (CE)

Perinatal Mental Health and Risk of Severe Maternal Morbidity in Women With Physical Disabilities

June 30th, 2026
11:00am-12:00pm ET

Safety Action Series (CME and CE)

A Fresh Look at Simulations for Obstetric Emergency Readiness

July 21st, 2026
1:00 – 2:00pm ET

Join us!!!

Journal Club (CE)

Implementation of Perinatal Mental Health Screening for Parents of Infants in a Level IV NICU: A QI Initiative

July 28th, 2026
1:00-1:45pm ET

Summer Webinar Series (CME)

Diagnosis and Management of Ectopic Pregnancy in the Emergency Department

August 6th, 2026
3:00-4:00pm ET

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Continuing Medical Education

We are excited to offer **CME credit** to attendees of this live session

To receive your certificate:

1. **Complete the evaluation following this activity**
2. **You need to create an ACOG account to complete the survey**

ACCREDITATION INFORMATION

ACCME Accreditation

The American College of Obstetricians and Gynecologists is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA PRA Category 1 Credit(s)™

The American College of Obstetricians and Gynecologists designates this live activity for a maximum of **1 AMA PRA Category 1 Credits™** Physicians should claim only the credit commensurate with the extent of their participation in the activity.

College Cognate Credit(s)

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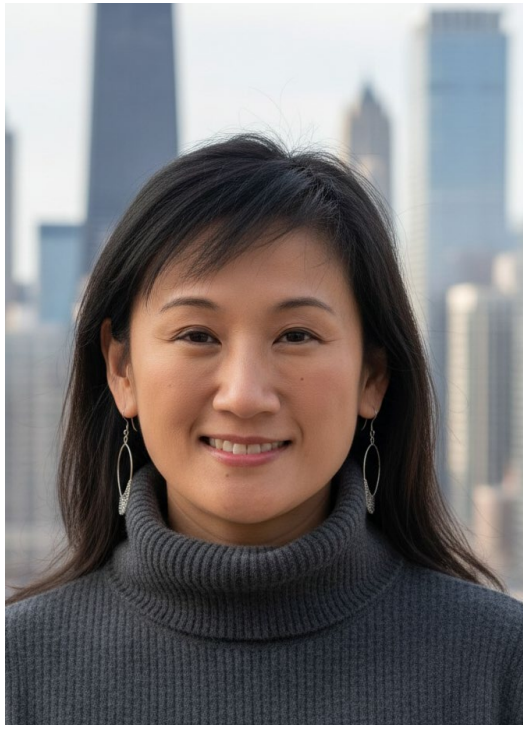
Today's Speakers

Laura Mercer, MD



Kai Tao, CNM

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Conflict of Interest

Laura Mercer MD, MPH, MBA:

Nothing to disclose

Kai Tao ND, MPH, CNM:

Nothing to disclose

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Poll Q1

What's your role in supporting pregnant people?

1. Ob/gyn Physician
2. Family Medicine Physician
3. Midwife (CM/CPM/CNM)
4. Nurse Practitioner
5. Registered Nurse
6. Social Worker
7. Lactation Consultant
8. Doula
9. Practice Administrator
10. Other

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Poll Q2

How has the ARRIVE trial changed the way you practice?

1. We routinely offer elective induction of labor (eIOL) for everyone at 39 weeks
2. It's up to the provider and the patient, so it's offered case by case at 39 weeks
3. I'm not sure, but I want to learn more
4. Nothing has changed, as we do not routinely offer eIOL at 39 weeks

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Learning Objectives:

1. Understand the primary findings of the ARRIVE Trial .
2. Identify current trends in elective 39-week induction and cesarean rates since the ARRIVE trial publication.
3. Apply patient-centered counseling techniques to discuss elective induction options clearly and accurately with consideration for equity across diverse patient populations.

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ARRIVE Trial (A Randomized Trial of Induction Versus Expectant Management)

Labor Induction versus Expectant Management in Low-Risk Nulliparous Women

Authors: William A. Grobman, M.D., Madeline M. Rice, Ph.D., Uma M. Reddy, M.D., M.P.H., Alan T.N. Tita, M.D., Ph.D. Robert M. Silver, M.D., Gail Mallett, R.N., M.S., C.C.R.C., Kim Hill, R.N., B.S.N., +15 , for the Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal–Fetal Medicine Units Network* Author Info & Affiliations

Published August 8, 2018 | N Engl J Med 2018;379:513-523 | DOI: 10.1056/NEJMoa1800566 | VOL. 379 NO. 6

- **Design:** Multicenter randomized controlled, unmasked trial at 41 academic hospitals (maternal fetal medicine units network) with experienced multidisciplinary teams (94% physicians/6% midwives). Study period from 3/2014-8/2017.
- **Population:** 6,106 low-risk* nulliparous, singleton, vertex pregnancies at term
- **Intervention:** Elective induction at 39$^{0}/_{7}$ to 39$^{4}/_{7}$ weeks vs. expectant management (waiting for spontaneous labor or medical indication up to 42$^{2}/_{7}$ weeks). Randomized at 38 to 38.6 weeks and if < 5 modified bishop score, ripening first based on hospital protocols.

* Low risk = absence of any condition considered to be a maternal or fetal indication for delivery before 40 weeks 5 days (e.g., hypertensive disorders of pregnancy or suspected fetal-growth restriction).

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Understanding the Population for ARRIVE Trial

- 50,581 screened / 22,533 eligible / 27% consented
- Had to have certain LMP, so 13% were excluded
- 23% were AA (15% are AA women)
- Younger age with 4% > 35 years old (18% > 35 years)
- ~20% cesarean rate overall (lower than US average of ~25%, Healthy People 2030 aim is 23.6%)
- Higher incidence of preeclampsia at time of birth (8% in IOL, 14% in expectant, while nationally 5-6% for high and low risk)

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Primary Outcomes:

Severe neonatal morbidity and perinatal mortality

Outcome	Induction Group (N=3059)	Expectant-Management Group (N=3037)	Relative Risk (95% CI)†	P Value‡
	no. (%)			
Primary composite outcome	132 (4.3)	164 (5.4)	0.80 (0.64–1.00)	0.049
Perinatal death	2 (0.1)	3 (0.1)	0.66 (0.12–3.33)	
Respiratory support	91 (3.0)	127 (4.2)	0.71 (0.55–0.93)	
Apgar score ≤3 at 5 min	12 (0.4)	18 (0.6)	0.66 (0.32–1.37)	
Hypoxic–ischemic encephalopathy	14 (0.5)	20 (0.7)	0.70 (0.35–1.37)	
Seizure	11 (0.4)	4 (0.1)	2.74 (0.91–8.12)	
Infection	9 (0.3)	12 (0.4)	0.74 (0.31–1.76)	
Meconium aspiration syndrome	17 (0.6)	26 (0.9)	0.65 (0.35–1.19)	
Birth trauma	14 (0.5)	18 (0.6)	0.77 (0.38–1.55)	
Intracranial or subgaleal hemorrhage	9 (0.3)	7 (0.2)	1.28 (0.48–3.42)	
Hypotension requiring vasopressor support	2 (0.1)	5 (0.2)	0.40 (0.06–1.79)	

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Secondary Outcomes:

MATERNAL

- Cesarean delivery and indication
- Operative vaginal delivery and indication
- Chorioamnionitis, defined as a clinical diagnosis before delivery
- Third or fourth degree perineal laceration
- Admission to intensive care unit (ICU)
- Preeclampsia/gestational hypertension
- Postpartum hemorrhage, defined as any of the following.
- Patient-reported outcomes including feelings of control during childbirth, as measured by the Labor Agentry Scale
- Gestational age at delivery
- Maternal postpartum infection
- Maternal venous thromboembolism
- Maternal death

FETAL AND NEONATAL

- Birth weight, macrosomia > 4500 g, large for gestational age (LGA) defined as > 90th percentile weight for gestational age
- Duration of respiratory support including ventilator, CPAP, high-flow nasal cannula (HFNC)
- Small for gestational age defined as < 5th and < 10th percentile weight for gestational age
- Cephalohematoma
- Shoulder dystocia
- Transfusion of blood products or blood
- Hyperbilirubinemia requiring phototherapy or exchange transfusion
- Hypoglycemia (glucose < 40 mg%) requiring IV therapy
- Admission to neonatal intensive care unit (NICU) or intermediate care unit

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Findings from the ARRIVE Trial

Outcome	Induction Group	Expectant Management	Significance
Composite neonatal outcome	4.3%	5.4%	No significant difference (p=0.049)
NICU admission / Respiratory support	8.4%/3.0%	8.3%/3.1%	No difference
Cesarean delivery	18.6%	22.2%	**Lower with induction (RR 0.84)**
Hypertensive disorders	9.1%	14.1%	**Lower with induction (RR 0.64)**
Labor duration	6+ more hrs.	Shorter	Patient experience and LDR capacity

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Potential Benefits from the ARRIVE Trial:

- ~4% absolute reduction in cesarean risk for this population
- Lower risk of hypertensive disorders
- Scheduling predictability
- Avoids post-term pregnancy risks

Contextualizing the Data from ARRIVE Trial:

- Not generalizable to many community hospitals and settings outside of academia
- Trial was designed and powered to understand if there was a reduction of perinatal death and severe neonatal morbidities – there was no difference.
- Population level results have not replicated the same benefits
- Birthing hospitals are strained

After the ARRIVE Trial…

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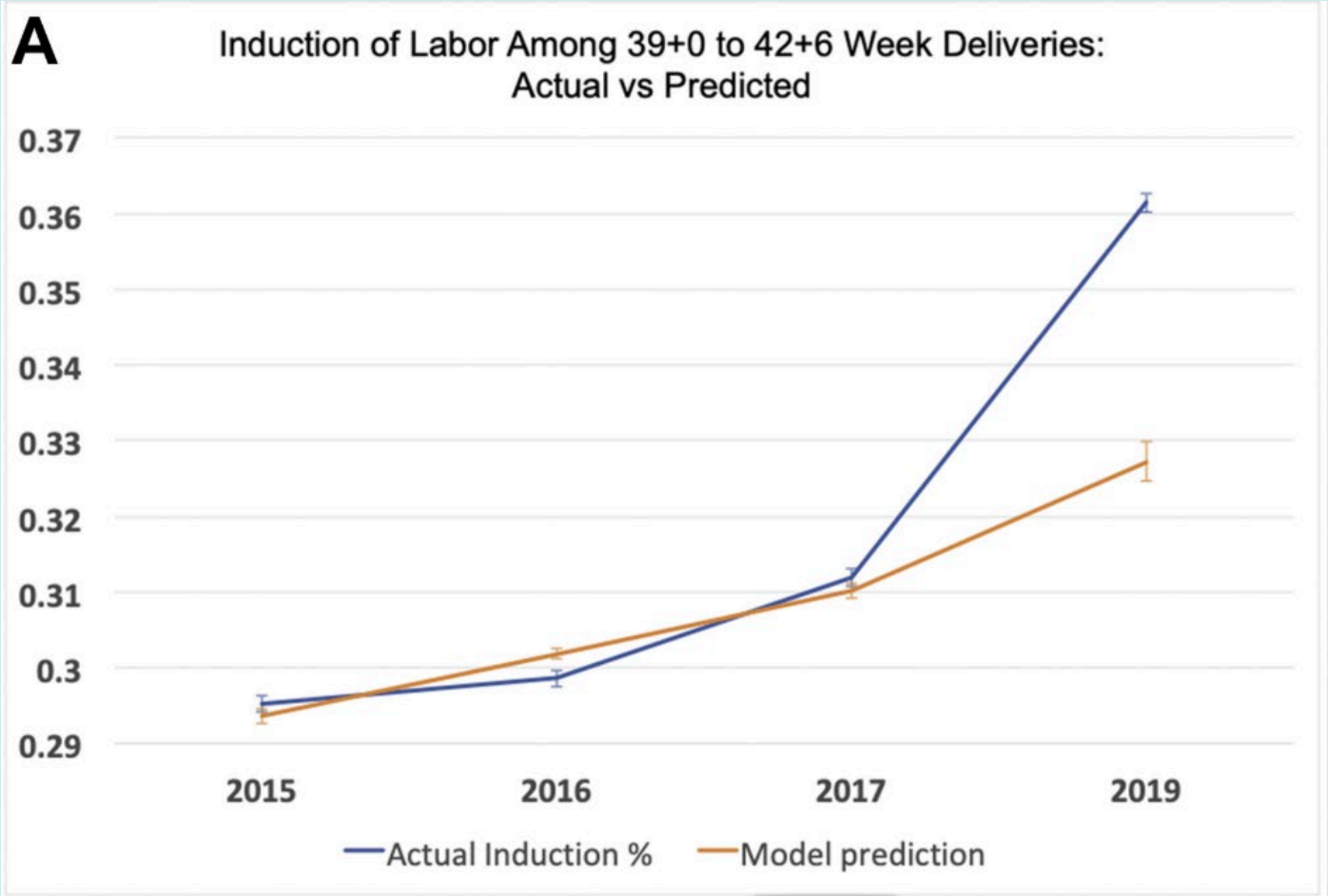
Gilroy, et al (2022)

- Retrospective cohort study using US Natality Database
- Population: Low risk, Nulliparous, Singleton, Nonanomalous, PNC by 12w
- PreARRIVE = Jan 1, 2015 to Dec 31, 2017 = 1,966,870 births
- PostARRIVE = Jan 1, 2019 to December 31, 2019 = 609,332 births

- Population level data (not individual)

After ARRIVE: More IOLs among deliveries 39w-42w6d



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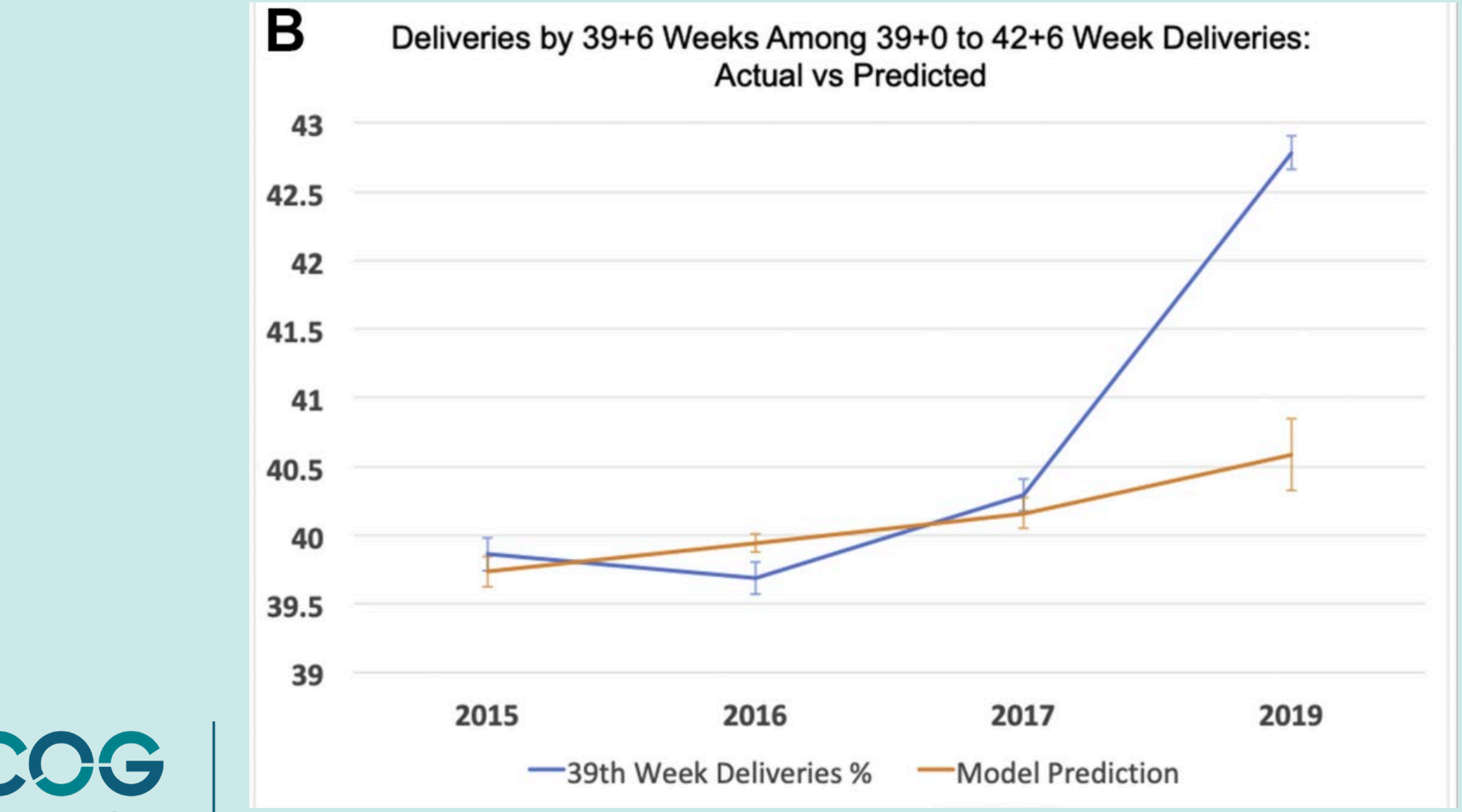
Gilroy et al (2022)

After Arrive: More deliveries 39-39w6d



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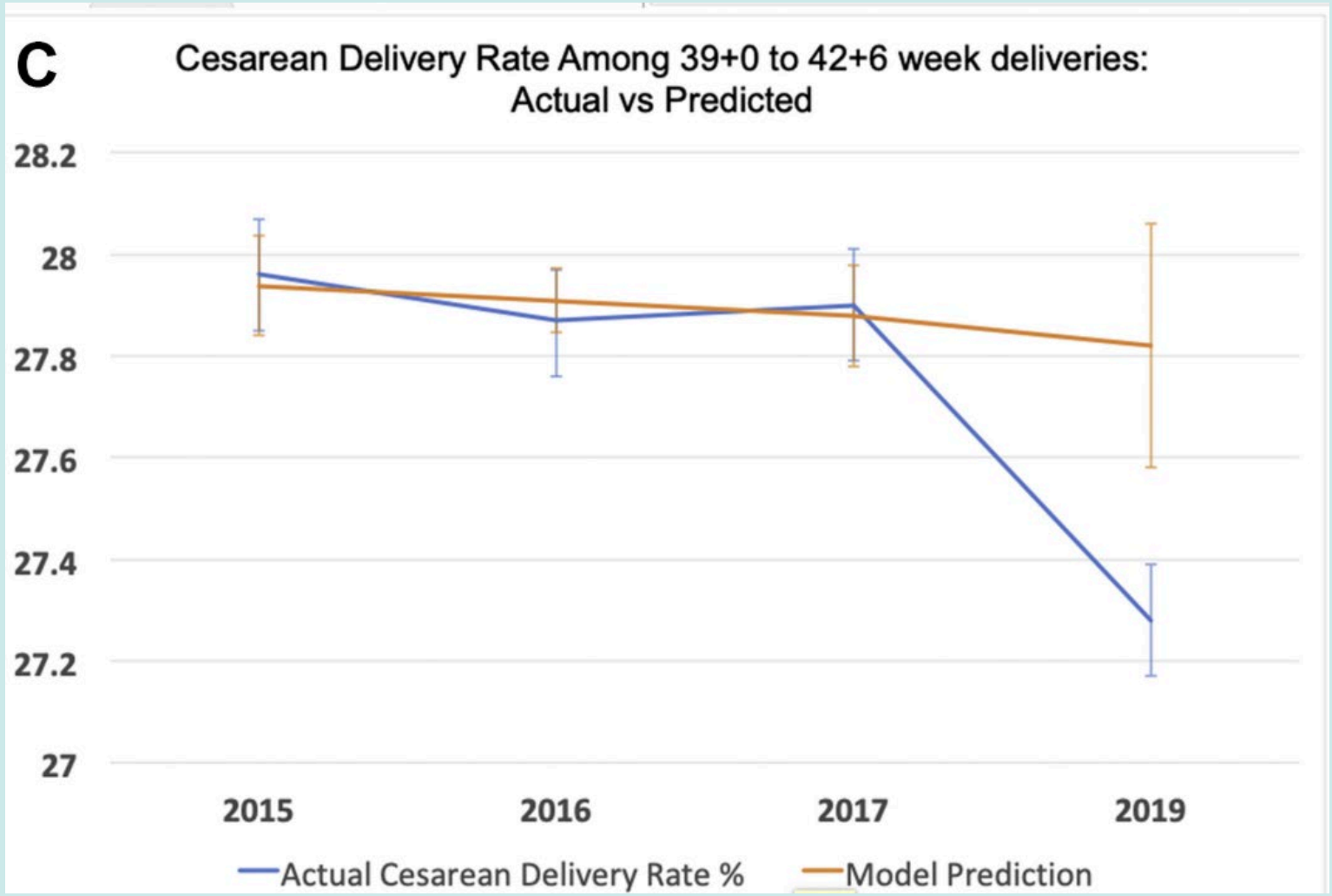
Gilroy et al (2022)

After ARRIVE: Fewer Cesareans



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Gilroy et al (2022)

AFTER ARRIVE Trial

Table2. Adverse maternal and neonatal outcomes between the post-ARRIVE and the pre-ARRIVE groups

Outcome	Post-ARRIVE group N=609,322	Pre-ARRIVE group N=1,966,870	Adjusted OR (95% CI)[a]
Maternal			
Blood transfusion[b]	2104 (0.4)	5062 (0.3)	1.43 (1.36–1.50)
MICU Admission[c]	577 (0.09)	1535 (0.08)	1.20 (1.09–1.33)
Neonatal			
Immediate assisted ventilation[b]	21,182 (3.5)	54,343 (2.8)	1.28 (1.26–1.30)
Assisted ventilation for >6 h[b]	3681 (0.6)	9302 (0.5)	1.36 (1.31–1.41)
Low 5-min Apgar[c]	2112 (0.4)	6661 (0.3)	0.91 (0.86–0.95)
NICU admission[b]	29,604 (4.9)	96,101 (4.9)	1.01 (0.99–1.03)
Neonatal seizures[c]	221 (0.04)	791 (0.04)	0.97 (0.84–1.13)
Surfactant use[c]	459 (0.08)	1350 (0.07)	1.05 (0.94–1.17)

Gilroy et al (2022)

Increased risk of

- Blood transfusion
  - *But less than would be expected based on Pre-ARRIVE trends*
- MICU admission
  - *But not more likely in induced vs spontaneous in Post-ARRIVE group*
- Neonatal immediate assisted ventilation
  - *Continued increased trend, true for all induced >spontaneous*
- Neonatal assisted ventilation for >6 hours
  - *But less than would be expected based on Pre-ARRIVE trends*
- Low neonatal 5 minute Apgar
  - *But no change in NICU admission*

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Population Level Data -Gilroy et al (2022)

- Population level data (not individual)
  - Suggests confirmation of ARRIVE trial findings across US
    - Lower cesarean rate
    - No increase in adverse outcomes beyond already existing trend, potential slowing of trend in some areas
  - Cannot confirm causality
  - Three time points

Netherly, et al (2023)

- 13 Hospitals in NW region of US
- Retrospective analysis of 28,256 births – quasi-experimental interrupted time series analysis
- Pre-ARRIVE (Jan 2016 – July 2018)
- Post-ARRIVE (August 2018 – December 2020)
  - Prior analysis of this population had not demonstrated COVID-related changes in perinatal outcomes

- No statistically significant change in
  - Cesarean rate
  - Hypertensive disorders
  - NICU admission
- Overtime, 3% increase in risk of adverse perinatal events
  - Perinatal death
  - 5-min Apgar score lower than 4
  - Seizure
  - Septicemia or bacteremia
  - Birth trauma
  - Resuscitation requiring intubation, epinephrine, chest compressions, or umbilical line placement
  - Hypoxic-ischemic encephalopathy
  - Meconium aspiration syndrome

Is there more to the story?

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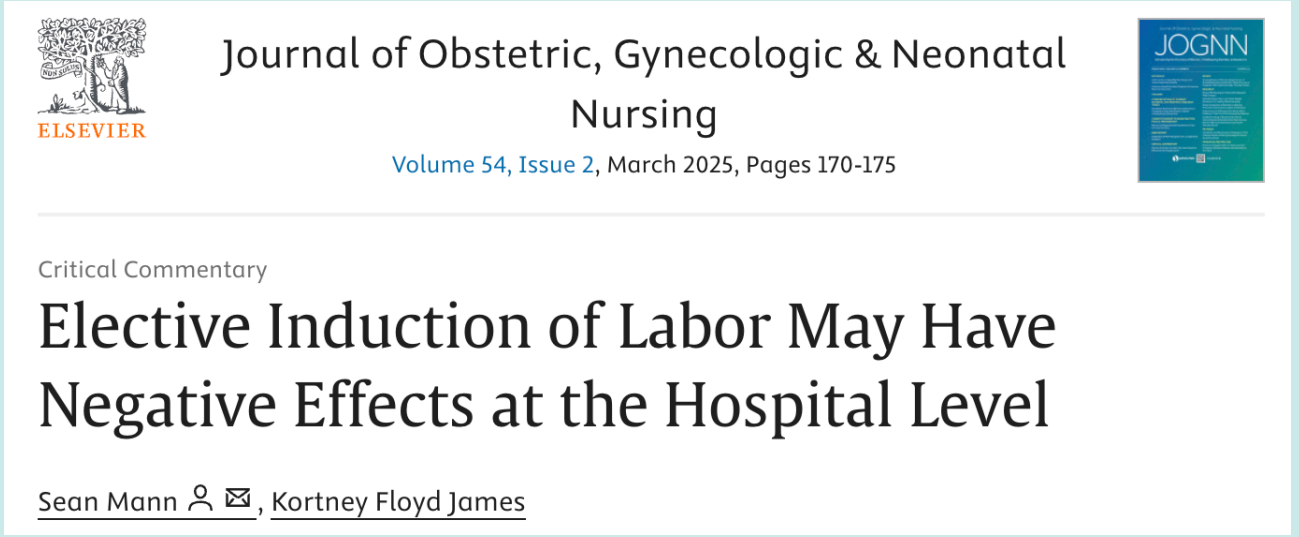
“Negative Spillover”

Hypothesis that intervention indirectly harms the control group and leads to over estimation of the benefit

Potential increased strain on labor and delivery unit resources



ELSEVIER

Journal of Obstetric, Gynecologic & Neonatal Nursing

Volume 54, Issue 2, March 2025, Pages 170-175

Critical Commentary

Elective Induction of Labor May Have Negative Effects at the Hospital Level

Sean Mann, Kortney Floyd James

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Mann and James (2025)

Patient Centered Counseling

in the context of your community resources

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Shared Decision Making

Assess your patient's values and personal circumstances

	Favoring Expectant Management	Favoring Scheduled Induction
Pain management goals	Prefers unmedicated birth	Open to an epidural/IV pain meds
Tolerance for interventions	Prefers natural physiologic birth/water birth, shorter hospital stay	Open to any clinical interventions, okay with longer hospital stay
Support person schedule	Resources for on call doula and/ or reliable and available partner/family	Limited schedule or flexibility for support team
Childcare logistics	Has reliable and available support for whenever labor happens	Limited schedule or flexibility for support team
Transportation & distance	Urban/suburban hospital with reliable transportation	Rural/maternity desert/ reliance on a ride or public transportation
Previous birth experience	Trauma informed care that may favor less intervention	Trauma informed care that may favor more intervention
Psychosocial stability	Calm and relaxed demeanor	Anxious and (in)tense demeanor

Shared Decision Making

Assess your patient's clinical factors and birth setting resources

	Favoring Expectant Management	Favoring Scheduled Induction
Parity	Nulliparous	Multiparous
Bishop score	Lower score	Higher score
Estimated fetal weight	Scan with unremarkable percentile, WNL EFW	Scan with high percentile, h/o LGA or macrosomia, high EFW
Maternal BMI	BMI Cat III unless other comorbidities	WNL BMI
Cervical ripening options	Limited cervical ripening resources/protocols	Offers balloon and/or out of hospital ripening protocols
Clinical birth history	H/O Cesarean (avoiding prostaglandins)	H/O precipitous labors or "easy" IOL, h/o preeclampsia
Staffing capacity	Short staffed workforce with many new staff. In house anesthesia. Midwifery model of care, private provider model.	Fully staffed with trained and seasoned workforce. On call anesthesia. Multidisciplinary, hospitalist providers.
Physical space	Limited LDR rooms (and /or high volume of medical IOL)	Multiple LDR rooms rarely needing overflow (and/or low volume of medical IOL).

Balancing Evidence and Values

- **Elective IOL at 39 weeks** / 16% relative reduction for cesarean / More interventions, longer labor
- **Continuous labor support** / 25% relative reduction for cesarean/ Requires available support person, ideally a doula
- **Midwifery continuity of care** / 16% relative reduction for cesarean / Requires system level interventions and addressing workforce challenges

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Ask Open Ended Questions – Listen

What matters most about your birth experience?

How do you feel about interventions to put your body into labor?

How important is attempting to plan when your baby arrives?

What are your preferences during labor?

"There are different ways to achieve a safe birth while lowering the chance for a c/s. A big study of first time, low risk moms showed that out of 100 women like you, about 4 fewer patients would have an c/s with an elective IOL. But we know doula support and midwifery care also reduces the chance for a c/s."

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Know Your Resources - Be Realistic

How often are scheduled inductions delayed or rescheduled due to resource limitations? (available rooms, staffing)

What are the practice patterns at your institution? (outpatient cervical ripening, tolerance for latent labor)

How does your patient population access/pay for care? (impact of multiple visits for cervical ripening and/or longer length of stay)

"Studies show that some people may benefit from an elective induction of labor, but this requires more resources that our institution doesn't have enough of. This limits our ability to offer eIOL to every individual, since we have to make sure we are fair to all pregnant people who will need to come here."

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Sample Case

32yo G1P0 at 36w asks about IOL during her routine PNC visit. She saw on Tik Tok that “everyone” gets induced 1 week before their due date and asks if what she saw is true.

How would you respond?

Sample Case Responses

A – Yes, it’s an option for everyone, but it’s ultimately up to you.

B – It isn’t an option at our hospital.

C - Sometimes this makes sense for some patients, but it depends on a few things.

D – It really isn’t worth it because of how long you’ll be stuck in labor.

Q1 – What do you know about your institution – Cervical Ripening?

We are able to accommodate outpatient cervical ripening:

A – True, both transcervical balloons and prostaglandins

B – True, transcervical balloons only

C – False, we don't have any outpatient cervical ripening available

D – False, there's no interest in adding this option from our providers/staff

Q2– What do you know about your institution - staffing?

Our current staffing levels allow us to routinely accommodate all current scheduled IOLs:

A – True, and that already includes 39w eIOLs

B – True, but that doesn't include 39w eIOLs

C – Mostly True – but sometimes patients need to be rescheduled or delayed

D – Sometimes – it really depends on the day/night

E – False – adding additional scheduled inductions would be a nightmare.

Q3 – What do you know about your institution – Physical Space?

Our physical space (available rooms) allows us to routinely accommodate all current scheduled IOLs:

A – True, and that already includes 39w eIOLs

B – True, but that doesn't include 39w eIOLs

C – Mostly True – but sometimes patients need to be rescheduled or delayed

D – Sometimes – it really depends on the day/night

E – False – adding additional scheduled inductions would be a nightmare.

Q4 – What do you know about your institution – CQI?

We routinely monitor outcomes (NTSV cesarean rate, PPH, transfusion, ICU admission, etc):

A – Yes, and there is lots of transparency with dashboarding

B – Yes, but I don’t know details for myself or my practice

C – Maybe, but I am not sure and we don’t track consistently

D – No, I don’t think so

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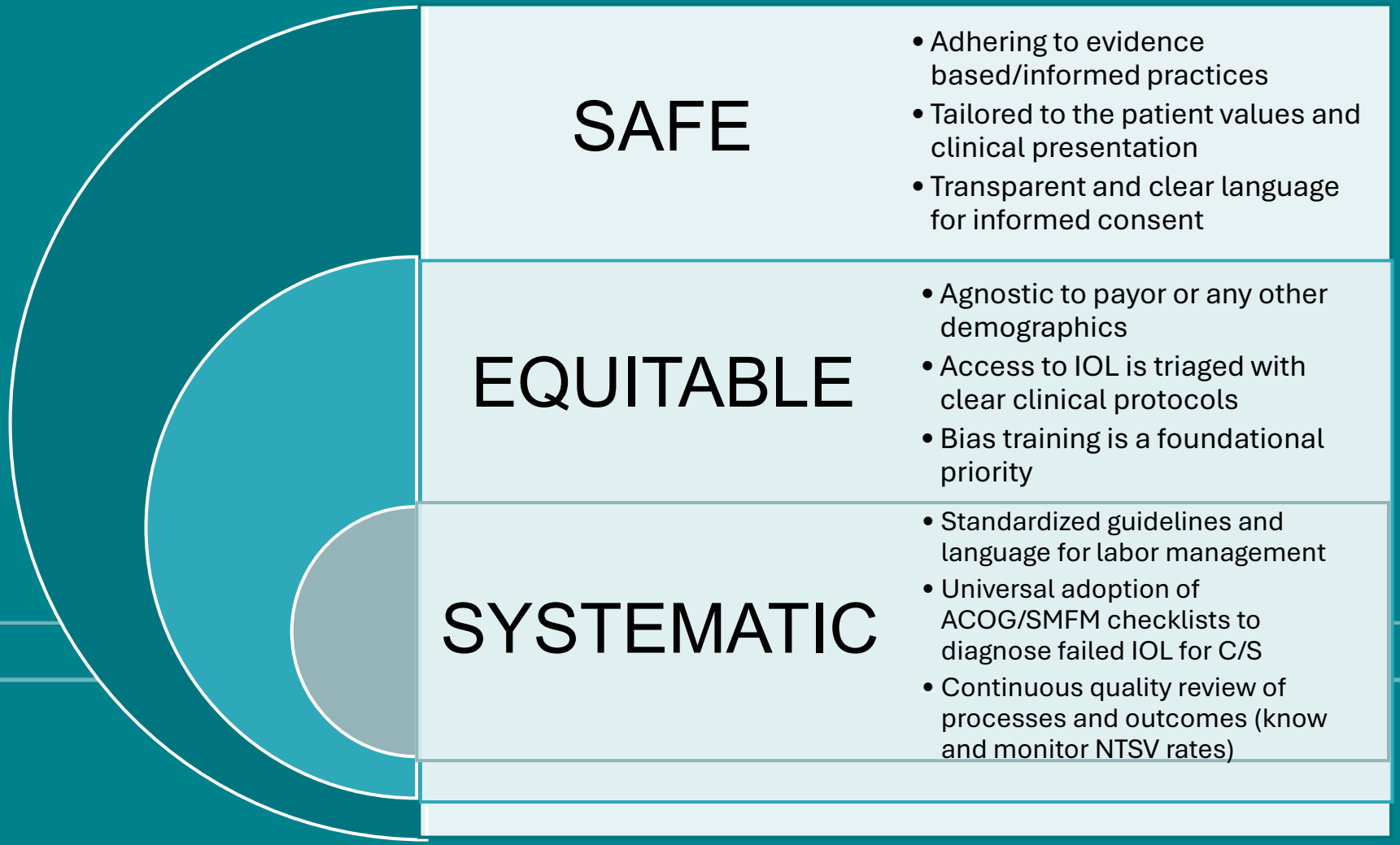
Putting It All Together

- 39w eIOL: individual level benefits of reduced risk of hypertensive disorders and cesarean delivery
- Population level data suggests increase in some maternal and neonatal risks since 2019, ongoing studies are needed to see to what degree this may be related to increased inductions.
- Individual institutions may have varied resource availability limiting feasibility of implementing 39w eIOLs universally
- Patient counseling should discuss what is known and unknown in the literature, and should put it in the context of the individual patient's situation at her intended delivery institution

Safeguards for eIOL at 39 weeks



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Steps for Shared Decision Making

- Clarify goals and concerns in the patient's own words.
- Present options: elective IOL at 39–40 weeks vs expectant management with surveillance.
- Review outcomes that matter to the patient (cesarean risk, timeline, pain options, support).
- Elicit preferences and decide together; document consent with r/b/a.
- Provide a clear plan and written overview of what to expect, while reminding patient to stay flexible.

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Questions?

Please enter your questions in the Q&A box at the bottom of your screen.

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Thank You!

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