Timing of Delivery and Management of Labor

[August 2025 (replaces September 2024)]
Author: Dr. Christina Davidson
Editor: Dr. MT Winsten

Highlights

The BCM Ob/Gyn Perinatal Guidelines Committee makes the following recommendations regarding timing of delivery and management of labor and labor induction. These guidelines are not meant to be all-inclusive and there may be other appropriate indications for delivery that are beyond the scope of these guidelines.

1) **There is no role for elective delivery in a woman with a suboptimally dated pregnancy.[1]**

2) For patients who desire planned repeat CD, delivery is advised at 39 weeks of gestation using best clinical estimate of gestational age.[1]

3) Late term (41 0/7- 41 6/7) and post term (≥42 0/7) IOL:

   a) IOL between 41 0/7 and 42 0/7 weeks of gestation should be considered due to increases in stillbirth, neonatal death, and infant death with gestations at >41 0/7 weeks.[2]

   b) Given concern that a full-term or late-term suboptimally dated pregnancy could actually be weeks further along than it is believed to be, late-term delivery is indicated at 41 weeks of gestation when gestational age is uncertain (i.e., suboptimally dated), using the best clinical estimate of gestational age.[1]

4) Table I below can be used to guide the clinical decision making for optimal timing of indicated late-preterm and early-term births.[3] There may be variations in clinical practice dependent on the clinical situation given none of the management recommendations are A recommendations

5) ACOG criteria should be satisfied prior to performing a CD for failed IOL, arrest of active phase, or arrest of descent/2nd stage labor. The criteria for CD should be documented in the medical record (see smart phrase examples).

6) If a CD is performed that does not meet ACOG criteria, shared decision making and counseling on risks of CD should be well documented in the medical record (see smart phrase example).

Introduction

The American College of Obstetricians and Gynecologists (ACOG) and the Society for Maternal-Fetal Medicine (SMFM) have long discouraged nonindicated delivery before 39 weeks of gestation due to the neonatal risks of late-preterm (34 0/7–36 6/7) and early-term (37 0/7–38 6/7) births.[4] There are, however, maternal and fetal indications that warrant delivery prior to 39 weeks of gestation. Although not intended to serve as standard of care, a consensus based on available data and expert opinion determined optimal timing of indicated deliveries in the late-preterm and early-term periods..[5] Table I presents ACOG's modifications of these recommendations for timing of delivery.[4]

Although guidelines for indicated late-preterm and early-term deliveries depend on accurate determination of gestational age[4,5], women with suboptimally dated pregnancies should be managed according to these same guidelines because of the lack of a superior alternative.[1] According to ACOG, pregnancies without an ultrasonographic examination confirming or revising the estimated due date before 22 0/7 weeks of gestation should be considered suboptimally dated. Consistent with the practice for accurately dated pregnancies, the timing of an indicated delivery for a suboptimally dated pregnancy should be based on the best clinical estimate of gestational age.[1]

Regarding mode of delivery, the rapid increase in the rate of cesarean delivery (CD) without evidence of concomitant decreases in maternal and/or neonatal morbidity or mortality raises significant concerns about contemporary CD rates. The primary CD increases the risk of maternal complications in the index pregnancy as well as future gestations. The most common indication for primary cesarean delivery is labor dystocia. ACOG recently published a clinical practice guideline that provides definitions for labor arrest, along with recommendations for management of dystocia in the first and second stages of labor that may help optimize labor management and assist with assessment of indication for cesarean delivery for labor dystocia.[6] This document replaces the ACOG and SMFM Obstetric Care Consensus from March 2014 on the Safe Prevention of the Primary Cesarean Delivery.[2]

Induction of Labor

When delivery is indicated, often an induction of labor (IOL) must be undertaken. The goal of an IOL is to stimulate uterine contractions before the spontaneous onset of labor in order to achieve a vaginal delivery.[7]

If the Bishop score is greater than 8, the probability of vaginal delivery after IOL is similar to that after spontaneous labor.[8] **If the cervix is unfavorable, numerous studies have found that the use of cervical ripening methods lead to lower rates of cesarean delivery (CD) than IOL without cervical ripening**.[2] The Bishop scoring system, which was originally developed in the 1960s, has been simplified to include an assessment of only dilation, station and effacement with a similarly high predictive ability of successful induction. **A simplified Bishop score of greater than 5, in both indicated inductions and spontaneous labor at term and preterm was associated with a probability of a vaginal delivery after IOL similar to spontaneous labor.[9]**

7ǐ╡Ń─╔©ŏ─╗¾

Score	Dilation (cm)	Effacement	Station	Consistency	Position
0	Closed	0-30	-3 (_9.to.>9 scale)	Firm	Posterior
1	1-2	40-50	-2	Medium	Midposition
2	3-4	60-70	-1 or 0	Soft	Anterior
3	≥5	≥80	+1, +2	---	---

"Simplified" Bishop Score

- If the Bishop score is >8, theprobability of vaginal delivery after IOL is similar to that after spontaneous labor
- Simplified Bishop score >5 performs similarly to an original Bishop score >8
- Unfavorable cervix → use of cervical ripening methods leads to lower rates of CD than IOL without cervical ripening

Cervical Ripening Safety and Efficacy[7,10-16]

Agent	Dosing/Route	Safety and Efficacy	Side Effects
Misoprostol/Cytotec (PGE1)	-25 mcg PV q 3-6 hours -25-50 mcg PO q 2-4 hours -oxytocin should not be administered <4 hours after last misoprostol dose	-vaginal misoprostol at doses of 50 mcg, compared with other dosages and routes of administration, has the highest probability of achieving vaginal delivery within 24 hours -Higher doses associated with increased incidence tachysystole -contraindicated in TOLAC secondary to uterine rupture	-fever, chills, diarrhea (mostly in high dosing for early abortions, rare with doses used cervical ripening/IOL)
Dinoprostone/Cervidil (PGE2)	-slow-release suppository placed in vaginal fornix -10-mg suppository releases 0.3 mg of dinoprostone every hour -remains in place for up to 12 hours -can be repeated every 12 hours -Patients must remain recumbent for 2 hours after placement -must be removed 30 minutes before starting oxytocin		-nausea, vomiting, diarrhea (less common than with misoprostol) -temperature elevation in up to 50% of patients (similar to misoprostol)

Agent	Dosing/Route	Safety and Efficacy	Side Effects
Oxytocin	-Low- and high-dose IV infusion regimens -Low-dose: 0.5-2 mU/min starting dose, increasing by 1-2 mU/min q 15-40 min -High-dose: 6 mU/min starting dose, increasing by 3-6 mU/min q 15-40 min -No established max dose -Uterine response ↑ from 20-30 weeks & ↑ rapidly at term -t ½ = 1-6 min -Uterus contracts within 3-5 min of starting oxytocin -Steady-state reached in 40 min	-Lower BMI, greater cervical dilation, parity, gestational age = predictors of successful response to oxytocin for induction -in nullips, high-dose is associated with lower CD rate compared with low-dose protocols, with no difference in maternal hemorrhage -IV oxytocin + AROM ranks in top 3 most effect IOL method; IV oxytocin without AROM ranked 15th in effectiveness	-anaphylactic reactions, PPH, cardiac arrhythmias (PVCs), fatal afibrinogenemia, nausea, vomiting, pelvic hematoma, subarachnoid hemorrhage, hypertensive episodes, uterine rupture -antidiuretic effect - prolonged or high-dose IV infusion may lead to water intoxication and hyponatremia -most reported adverse events pertain to uterine tachysystole, secondary to slow onset of action, long time to steady state, unpredictable therapeutic index because of variability in patients' uterine receptivity based on oxytocin receptor status

Agent	Dosing/Route	Safety and Efficacy	Side Effects
Mechanical ripening (Foley catheter and double-balloon [Cook] catheter)	-Foley can be used inpatient and outpatient -Foley: 16-26 gauge with inflation of 30 to 80 mL -Cook: 80 ml in each balloon -Cook removal after 6 hours compared with 12: shorter insertion-to-delivery interval, similar Bishop score change and CD rates, lower rates of maternal intrapartum fever	-outpatient Foley: shorter intervals from admission to delivery, lower rates of CD, no difference in adverse maternal/perinatal outcomes compared to inpatient (low risk patients) -Foley: primary choice for cervical ripening because it costs less and has efficacy similar to double-balloon catheter -Comparison of Cook vs. 60 ml Foley : equally efficacious for inducing labor, no statistical difference in CD between groups -Combination of balloon catheter with oxytocin or misoprostol: shorter induction to delivery time, increased rate of delivery within 24 hours compared to any solo method -Combination of a single-balloon catheter with misoprostol = most effective method for reducing odds for CD and prolonged time to vaginal delivery -Foley + oxytocin has been studied in 1 prior CD	-Both types of catheters have similar efficacy, safety, and patient satisfaction levels - inconsistent results of chorio in the setting of ROM + Foley -no correlation found between use of Foley and subsequent risk of preterm birth

Failed induction of labor[3,17-20]

Failed induction indicates lack of progression into the active phase of labor (i.e., CD in the latent phase for lack of cervical dilation)

Standardized IOL management: **active labor defined as 4 cm/90% or 5 cm**

- Amniotomy within 24 hours of starting induction
- IUPC after membrane rupture
- Titration of oxytocin to achieve >200 MVUs
- At least 12 hours of oxytocin after ROM before CD for failed induction
- 4% nullips and no multips in latent labor after 12 hours

Subsequent studies validated at least 12, 15, or 18 hours of membrane rupture + oxytocin before considering failed IOL; all studies defined active labor as 4/90 or 5 cm

Only 1 study has used 6 cm for defining entry into the active phase

- Results were consistent with the other studies that used either a 4- or 5-cm cutoff
- Consistent with previous research: 96% of patients who reach 4-cm dilation ultimately reach 6 cm

ACOG: CD for failed IOL can be avoided by recommending that oxytocin be administered for at least 12–18 hours after ROM before deeming the induction to be unsuccessful. Depending on clinical characteristics, patient preference, and discussion of the risks and benefits, the decision to continue past 18 hours may be individualized.

Standardized IOL Protocols[21-23]

- Protocol:
  - Amniotomy within 24 hours of oxytocin induction
  - IUPC after membrane rupture
  - Titration of oxytocin to MVUs 200-300 or cervical change
  - Oxytocin for at least 12 to 18 hours after membrane rupture before diagnosis of failed IOL

- Findings:
  - Rate of failed IOL was significantly lower in the protocol-adherent group vs. protocol-nonadherent group, both among nulliparous (3.8% vs. 9.8% respectively; p=.043) and multiparous women (0% vs. 6%, respectively; p=.0004) women
  - Nulliparous women in the protocol-adherent group spent 3.5 fewer hours in labor than did the women in the nonadherent group.
  - Multiparous women in the protocol-adherent group spent 1.5 fewer hours in labor than did the women in the nonadherent group.
  - The lowest rate of failed induction was observed when *all* elements of the protocol were followed

- A standardized IOL protocol is also associated with reduced CD rate p (25.7% vs 34.2%; P=.02) and neonatal morbidity (2.9% vs 8.9%; P=.001) in Black women undergoing IOL.

- Early amniotomy (defined as artificial rupture of the membranes at < 4 cm) in nulliparous labor induction has been recognized as a safe and efficacious adjunct, with a resultant shortening of the time to delivery by >2 hours as well as increase in the proportion of induced nulliparous women who deliver within 24 hours.

IOL vs. Expectant Management in Nulliparous Patients (ARRIVE Trial)[21]

Recommendations regarding the timing of delivery are founded on balancing maternal and perinatal risks. Delivery before 39 0/7 weeks without a medical indication is associated with worse perinatal outcomes.. For women who are at 41 0/7 weeks or later, delivery has been recommended because of increasing perinatal risks. When gestation is between 39 0/7 and 40 6/7, prior common practice was to avoid an elective IOL because of a lack of evidence of perinatal benefit and concern about a higher frequency of CD and other possible adverse maternal outcomes, particularly among nulliparous women. However, these conclusions were derived largely from observational studies in which IOL was compared with spontaneous labor. Such a comparison, however, provides little insight into clinical management, because spontaneous labor is not a certain alternative to IOL. Most observational studies that have used the clinically relevant comparator of expectant management have not shown a higher risk of adverse outcomes with IOL; instead, some of these studies have shown that IOL resulted in a lower frequency of CD and more favorable perinatal outcomes than expectant management. The ARRIVE trial (A Randomized Trial of Induction Versus Expectant Management) was designed to test the hypothesis that elective IOL at 39 weeks would result in a lower risk of a composite outcome of perinatal death or severe neonatal complications than expectant management among low-risk nulliparous women.

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

- RCT comparing elective IOL at 39 weeks with expectant management among low-risk nullips
- Inclusion criteria: low-risk NTSV population (low risk = absence of any condition considered to be a maternal or fetal indication for delivery before 40 5/7, dated by LMP c/w US <21 0/7 or by US <14 0/7
- IOL group assigned to undergo IOL at 39 0/7 - 39 4/7, exp management group asked to forego elective delivery before 40 5/7 and to have delivery initiated no later than 42 2/7
- No specific IOL protocol
- 62.7% in the induction group and 64.2 % in the expectant management group with unfavorable simplified Bishop score (< 5) at time of randomization
- Outcomes:
  - No difference in composite outcome of perinatal mortality and severe perinatal morbidity
  - CD rate significantly lower in IOL group (18.6% versus 22.2%, P = < 0.001)
  - IOL group with significantly lower rates of GHTN and preE (9.1% versus 14.1%, P = < 0.001) and need for neonatal respiratory support within first 72 hours of life (3.0% versus 4.2%)
  - No significant differences noted according to race or ethnic group, maternal age, BMI, or modified Bishop score

ACOG: it is reasonable for obstetricians and health-care facilities to offer elective induction of labor to low-risk nulliparous women at 39 weeks gestation.

ACOG definitions of labor and management of labor dystocia[6]

Once active labor is reached (6 cm), either spontaneously or during IOL, various strategies exist to manage abnormal labor progression (dystocia) or labor arrest.

	Latent Labor	Active Labor	2nd stage Labor	Induction of Labor
Definition	Onset of labor to 6 cm	-Begins at 6 cm -Standards of active-phase management and active-phase arrest should not be applied until at least 6 cm	Begins at complete dilation (10 cm), NOT at onset of pushing	
Dystocia (abnormally slow labor progress)	-Prolonged : >16 hours -Labor may take >6 hours to progress from 4-5 cm and > 3 hours to progress from 5-6 cm of dilation	-Labor protraction = labor progress that is slower than normal (<1 cm dilation in 2 hours) -A slow but progressive active phase of labor demonstrating cervical change at least every 4 hours in the setting of reassuring maternal and fetal status should not be an indication for CD	-Prolonged: >3 hours of pushing in nullips, >2 hours of pushing in multips -Arrest: individualized approach; incorporating information regarding progress, clinical factors that may affect the likelihood of vaginal delivery, discussion of risks and benefits of available interventions, and individual patient preference is recommended when time in the second stage is extended beyond the parameters -Arrest can be identified earlier if there is lack of fetal rotation or descent despite adequate contractions, pushing efforts, and time	
Management of Dystocia	Exp management, AROM, oxytocin, d/c home	AROM, oxytocin, IUPC, continuous labor support (i.e., doula)	Immediate pushing at complete dilation, manual rotation	AROM, IUPC
Arrest (criteria for CD)	None	-Labor arrest = cessation of labor progress despite best attempts at augmentation ❑ Cervix ≥ 6 cm ❑ Membranes ruptured ❑ No cervical change after at least 4 hours of adequate uterine activity (>200 MVUs) **OR** at least 6 hours of inadequate uterine activity with oxytocin augmentation	❑ Cervix 10 cm ❑ Membranes ruptured ❑ > 3 hours of pushing in a nulliparous patient or > 2 hours of pushing in a multiparous patient (can be identified earlier if lack of fetal rotation or descent despite adequate contractions, pushing efforts, and time) ❑ Assess for OVD before CD	Failed IOL: ❑ Cervix <6 cm ❑ Membranes ruptured ❑ Oxytocin administered for at least 12-18 hours **after** membrane rupture

Management of IOL through Active and Second Stage Labor[2,6,7]

Checklist for Intrapartum Management

Intrapartum Management

A. Induction of labor (see algorithm)

- ☐ Unfavorable cervix and membranes intact → cervical ripening
  - ☐ Balloon
  - ☐ Balloon + Pitocin
  - ☐ Balloon + misoprostol (do not use in TOLAC)
  - ☐ Cervidil (do not use in TOLAC)
- ☐ Favorable cervix and/or membranes ruptured → Pitocin
- ☐ AROM as soon as safe and feasible
- ☐ Consider IUPC in latent labor to titrate MVUs >200 if unable to increase Pitocin because of contraction frequency

B. Augmentation of labor for labor dystocia (no or inadequate cervical change)

- ☐ Pitocin: initiate at 2 mU/min and increase by 2mU/min every 30 mins
- ☐ AROM
- ☐ IUPC if contracting every 2-4 minutes to titrate MVUs >200

C. Second stage

- ☐ Attempt manual rotation if OP or OT
- ☐ Assess for/offer operative vaginal delivery if at least +2 station for concerning FHR, maternal exhaustion, slow descent, and/or maternal request

***Figure 1**. Induction of Labor Algorithm*

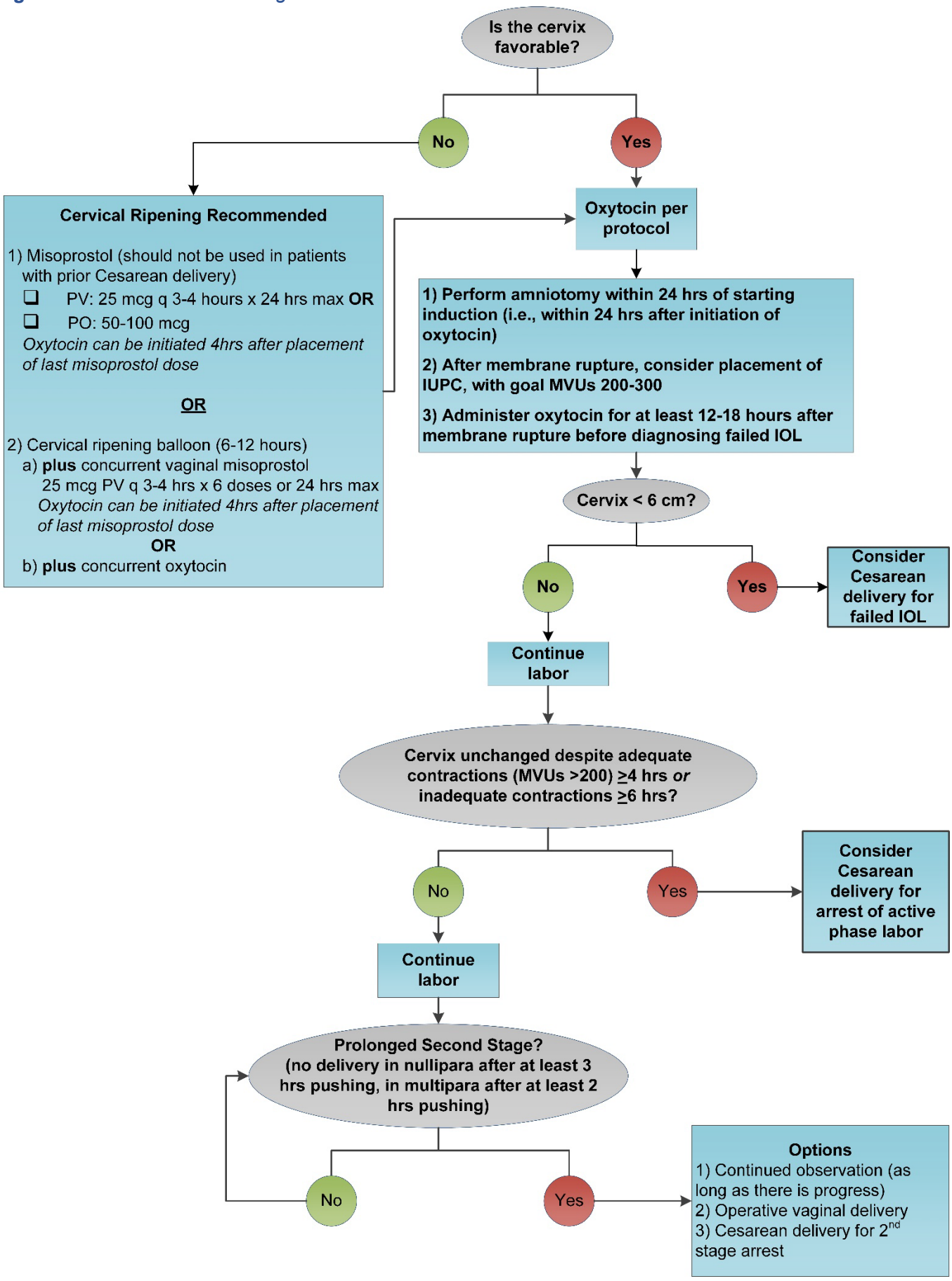

TABLE 2

Spontaneous labor progress stratified by cervical dilation and parity

Cervical dilation, cm	Median elapsed time, h		
	Parity 0 (95th percentile)	Parity 1 (95th percentile)	Parity ≥2 (95th percentile)
3-4	1.8 (8.1)	—	—
4-5	1.3 (6.4)	1.4 (7.3)	1.4 (7.0)
5-6	0.8 (3.2)	0.8 (3.4)	0.8 (3.4)
6-7	0.6 (2.2)	0.5 (1.9)	0.5 (1.8)
7-8	0.5 (1.6)	0.4 (1.3)	0.4 (1.2)
8-9	0.5 (1.4)	0.3 (1.0)	0.3 (0.9)
9-10	0.5 (1.8)	0.3 (0.9)	0.3 (0.8)

Modified from Zhang et al.[20]

ACOG. Safe prevention of primary cesarean delivery. Am J Obstet Gynecol 2014.

Arrest of Labor Diagnostic Criteria

A. Failed Induction (all boxes should be checked):

- ☐ Cervix <6 cm
- ☐ Membranes ruptured
- ☐ Oxytocin administered for at least 12-18 hours **after** membrane rupture

B. Active Phase Arrest (all boxes should be checked):

- ☐ Cervix ≥ 6 cm
- ☐ Membranes ruptured
- ☐ No cervical change after at least 4 hours of adequate uterine activity (>200 MVUs) **OR** at least 6 hours of oxytocin administration with inadequate uterine activity

C. Second Stage Arrest (all boxes should be checked):

- ☐ Cervix 10 cm
- ☐ Membranes ruptured
- ☐ > 3 hours of pushing in a nulliparous patient or > 2 hours of pushing in a multiparous patient (can be identified earlier if lack of fetal rotation or descent despite adequate contractions, pushing efforts, and time

D. Above criteria not met:

- ☐ Through shared-decision making with the patient, the decision was made to move to cesarean even though criteria were not met.
- ☐ Shared-decision making was well documented and it was documented that the patient was counseled on ACOG criteria for cesaran delivery.

Smart phrase examples[6,24]

At Ben Taub: .CMDDYSTOCIA
At PFW: .LABORDYSTOCIA

Failed IOL
@name@ was admitted for IOL for ***. I counseled her on my recommendation for cesarean delivery for failed induction of labor because ALL of the following criteria have been met:

- ☐ Cervix <6 cm
- ☐ Membranes ruptured
- ☐ Oxytocin administered for at least 12-18 hours after membrane rupture

@name@ understands and agrees with the plan.

Arrest of Active Phase Labor
@name@ was admitted in labor. I counseled her on my recommendation for cesarean delivery for arrest of active phase labor because ALL of the following criteria have been met:

- ☐ Cervix ≥ 6 cm
- ☐ Membranes ruptured
- ☐ No cervical change after at least 4 hours of adequate uterine activity (>200 MVUs) OR at least 6 hours of oxytocin administration with inadequate uterine activity

@name@ understands and agrees with the plan.

Arrest of Descent/2nd Stage Labor
@name@ was admitted in labor and progressed to complete dilation. I counseled her on my recommendation for cesarean delivery for arrest of descent/2nd stage labor because ALL of the following criteria have been met:

- ☐ Cervix 10 cm
- ☐ Membranes ruptured
- ☐ > 3 hours of pushing in a nulliparous patient or > 2 hours of pushing in a multiparous patient OR lack of fetal rotation or descent despite adequate contractions, pushing efforts, and time

Cesarean Delivery When ACOG Criteria Not Met
@name@ was admitted in labor and progressed to ***. We reviewed her labor course and I counseled her that she does not meet ACOG-supported criteria for cesarean for labor dystocia at this time. Through shared-decision making with the patient, the decision was made to move to cesarean even though criteria were not met. I further counseled her on the risks of cesarean delivery compared to vaginal delivery, including, but not limited to increased risk of bleeding, infection, and damage to nearby structures. I also counseled her that, given the high repeat cesarean delivery rate, future pregnancies are at increased risk of complications such as placenta previa, placenta accreta spectrum disorder, uterine rupture, and hysterectomy, all of which increase with each subsequent cesarean delivery.

Table 1. ACOG recommendations for the timing of delivery when conditions complicate pregnancy

Table 1. Recommendations for the Timing of Delivery When Conditions Complicate Pregnancy*

Condition	General Timing	Suggested Specific Timing
Placental/Uterine Conditions		
Placenta previa†	Late preterm/early term	36 0/7–37 6/7 weeks of gestation
Suspected accreta, increta, or percreta†	Late preterm	34 0/7–35 6/7 weeks of gestation
Vasa previa	Late preterm/early term	34 0/7–37 0/7 weeks of gestation
Prior classical cesarean delivery	Late preterm/early term	36 0/7–37 0/7 weeks of gestation
Prior myomectomy requiring cesarean delivery‡	Early term (individualize)	37 0/7–38 6/7 weeks of gestation
Previous uterine rupture	Late preterm/early term	36 0/7–37 0/7 weeks of gestation
Fetal Conditions		
Oligohydramnios (isolated or otherwise uncomplicated [deepest vertical pocket less than 2 cm])	Late preterm/early term	36 0/7–37 6/7 weeks of gestation or at diagnosis if diagnosed later
Polyhydramnios (mild, idiopathic)†	Full term (early term birth not routinely recommended)	39 0/7–40 6/7 weeks of gestation
Growth restriction (singleton)		
Otherwise uncomplicated, no concurrent findings, EFW between 3rd and 10th percentile	Early term/full term	38 0/7–39 0/7 weeks of gestation
Otherwise uncomplicated, no concurrent findings, EFW <3rd percentile	Early term	37 0/7 weeks of gestation or at diagnosis if diagnosed later
Abnormal umbilical artery Doppler studies: elevated impedance to flow (eg, S/D ratio, pulsatility index, or resistance index greater than 95th percentile for gestational age) with end-diastolic flow still present	Early term	37 0/7 weeks of gestation or at diagnosis if diagnosed later
Abnormal umbilical artery Doppler studies: absent end-diastolic flow	Preterm/late preterm	33 0/7–34 0/7 weeks of gestation or at diagnosis if diagnosed later§
Abnormal umbilical artery Doppler studies: reversed end-diastolic flow	Preterm	30 0/7–32 0/7 weeks of gestation or at diagnosis if diagnosed later§
Concurrent conditions (oligohydramnios, maternal comorbidity [eg, preeclampsia, chronic hypertension])	Late preterm/early term	34 0/7–37 6/7 weeks of gestation
Multiple gestations—uncomplicated		
Dichorionic-diamniotic twins	Early term	38 0/7–38 6/7 weeks of gestation
Monochorionic-diamniotic twins	Late preterm/early term	34 0/7–37 6/7 weeks of gestation
Monochorionic-monoamniotic twins	Preterm/late preterm	32 0/7–34 0/7 weeks of gestation
Triplet and higher order multiples	Preterm/late preterm	Individualized
Multiple gestations—complicated		
Dichorionic-diamniotic twins with isolated fetal growth restriction	Late preterm/early term	36 0/7–37 6/7 weeks of gestation
Dichorionic-diamniotic twins with concurrent condition	Late preterm	Individualized
Monochorionic-diamniotic twins with isolated fetal growth restriction	Preterm/late preterm	32 0/7–34 6/7 weeks of gestation
Alloimmunization		
At-risk pregnancy not requiring intrauterine transfusion	Early term	37 0/7–38 6/7 weeks of gestation
Requiring intrauterine transfusion	Late preterm or early term	Individualized

Maternal Conditions		
Hypertensive disorders of pregnancy		
Chronic hypertension: isolated, uncomplicated, controlled, not requiring medications	Early term/full term	38 0/7–39 6/7 weeks of gestation[||]
Chronic hypertension: isolated, uncomplicated, controlled on medications	Early term/full term	37 0/7–39 6/7 weeks of gestation[||]
Chronic hypertension: difficult to control (requiring frequent medication adjustments)	Late preterm/early term	36 0/7–37 6/7 weeks of gestation
Gestational hypertension, without severe-range blood pressure	Early term	37 0/7 weeks of gestation or at diagnosis if diagnosed later
Gestational hypertension with severe-range blood pressures	Late preterm	34 0/7 weeks of gestation or at diagnosis if diagnosed later
Preeclampsia without severe features	Early term	37 0/7 weeks of gestation or at diagnosis if diagnosed later
Preeclampsia with severe features, stable maternal and fetal conditions, after fetal viability (includes superimposed)	Late preterm	34 0/7 weeks of gestation or at diagnosis if diagnosed later
Preeclampsia with severe features, unstable or complicated, after fetal viability (includes superimposed and HELLP)	Soon after maternal stabilization	Soon after maternal stabilization
Preeclampsia with severe features, before viability	Soon after maternal stabilization[¶]	Soon after maternal stabilization[¶]
Diabetes		
Pregestational diabetes well-controlled[†]	Full term	39 0/7–39 6/7 weeks of gestation
Pregestational diabetes with vascular complications, poor glucose control, or prior stillbirth	Late preterm/early term	36 0/7–38 6/7 weeks of gestation
Gestational: well controlled on diet and exercise	Full term	39 0/7–40 6/7 weeks of gestation
Gestational: well controlled on medications	Full term	39 0/7–39 6/7 weeks of gestation
Gestational: poorly controlled	Late preterm/early term	Individualized
HIV		
Intact membranes and viral load >1,000 copies/mL	Early-term cesarean delivery	38 0/7 weeks of gestation
Viral load ≤1,000 copies/mL with antiretroviral therapy	Full term (early term birth not indicated)	39 0/7 weeks of gestation or later
Intrahepatic cholestasis of pregnancy: total bile acid levels <100 micromol/L	Late preterm/early term	36 0/7–39 0/7 weeks of gestation or at diagnosis if diagnosed later[#]
Intrahepatic cholestasis of pregnancy: total bile acid levels ≥100 micromol/L	Late preterm	36 0/7 weeks of gestation or at diagnosis if diagnosed later[#]
Obstetric Conditions		
Preterm PROM	Late preterm	34 0/7–36 6/7 weeks of gestation [**]
PROM (37 0/7 weeks of gestation and beyond)	Generally, at diagnosis	Generally, at diagnosis
Previous stillbirth	Full term (early term birth not routinely recommended)	Individualized [††]

Abbreviations: EFW, estimated fetal weight; HELLP, hemolysis, elevated liver enzymes, and low platelet count; PROM, prelabor rupture of membranes (also referred to as premature rupture of membranes); S/D, systolic/diastolic.

*In situations in which there is a wide gestational age range for acceptable delivery thresholds, the lower range is not automatically preferable, and medical decision making for the upper or lower part of a range should depend on individual patient factors and risks and benefits.

[†]Uncomplicated, thus no fetal growth restriction, superimposed preeclampsia, or other complication. If these conditions are present. then the complicating conditions take precedence and earlier delivery may be indicated.

[‡]Prior myomectomy may require earlier delivery similar to prior classical cesarean (36 0/7–37 0/7 weeks of gestation) in situations with more extensive or complicated myomectomy. Data are conflicting regarding specific timing of delivery. Furthermore, timing of delivery may be influenced by the degree and location of the prior uterine surgery, with the possibility of delivering as late as 38 6/7 weeks of gestation for a patient with a less extensive prior surgery. Timing of delivery should be individualized based on prior surgical details available and the clinical situation.

[§]Consultation with maternal-fetal medicine subspecialist is recommended.

[||]Expectant management beyond 39 0/7 weeks of gestation should only be done after careful consideration of the risks and benefits and with appropriate surveillance.

[¶]Management individualized to particulars of maternal-fetal condition and gestational age.

[#]Measurement of serum bile acid levels and liver transaminase is recommended in patients with suspected intrahepatic cholestasis of pregnancy. Delivery before 36 weeks of gestation occasionally may be indicated depending on laboratory and clinical circumstances.

[**]The balance between benefit and risk, from both maternal and neonatal perspectives, should be carefully considered, and patients should be counseled clearly. Although a period of expectant management may be considered for women who request additional time for the onset of spontaneous labor, the potential maternal and neonatal risks associated with prolonged expectant management should be discussed. Care should be individualized through shared decision making, and expectant management should not extend beyond 37 0/7 weeks of gestation. Outside the scenario of unknown GBS status, latency antibiotics are not appropriate in this setting. If expectant management is being considered in a patient with unknown GBS status, an initial GBS culture should be obtained, and an antibiotic regimen active against GBS should be started until results of the GBS culture return. Women with PPROM who are colonized with GBS are at an increased risk of neonatal infection with expectant management. The potential additional neonatal risks associated with prolonged expectant management in the setting of maternal GBS colonization should be discussed and the reasons for discouraging such management reviewed and documented in the medical record. Abbreviations: GBS, group B streptococcus; PPROM, preterm prelabor rupture of membranes.

[††]Deliveries before 39 weeks of gestation are associated with an increased risk of admission to neonatal special care units for respiratory complications and other neonatal morbidities; however, maternal anxiety with a history of stillbirth should be considered and may warrant an early term delivery (37 0/7 weeks to 38 6/7 weeks) in women who are educated regarding, and accept, the associated neonatal risks.

References:

References

1. Committee Opinion No. 688: Management of Suboptimally Dated Pregnancies. *Obstet Gynecol*. Mar 2017;129(3):e29-e32. doi:10.1097/AOG.0000000000001949
2. American College of O, Gynecologists, Society for Maternal-Fetal M, et al. Safe prevention of the primary cesarean delivery. *Am J Obstet Gynecol*. Mar 2014;210(3):179-93. doi:10.1016/j.ajog.2014.01.026
3. Ayala NK, Rouse DJ. Failed induction of labor. *Am J Obstet Gynecol*. Mar 2024;230(3S):S769-S774. doi:10.1016/j.ajog.2021.06.103
4. American College of O, Gynecologists' Committee on Obstetric Practice SfM-FM. Medically Indicated Late-Preterm and Early-Term Deliveries: ACOG Committee Opinion, Number 831. *Obstet Gynecol*. Jul 1 2021;138(1):e35-e39. doi:10.1097/AOG.0000000000004447
5. Spong CY, Mercer BM, D'Alton M, Kilpatrick S, Blackwell S, Saade G. Timing of indicated late-preterm and early-term birth. *Obstet Gynecol*. Aug 2011;118(2 Pt 1):323-333. doi:10.1097/AOG.0b013e3182255999
6. First and Second Stage Labor Management: ACOG Clinical Practice Guideline No. 8. *Obstet Gynecol*. Jan 1 2024;143(1):144-162. doi:10.1097/AOG.0000000000005447
7. ACOG Practice Bulletin No. 107: Induction of labor. *Obstet Gynecol*. Aug 2009;114(2 Pt 1):386-397. doi:10.1097/AOG.0b013e3181b48ef5
8. Bishop EH. Pelvic Scoring for Elective Induction. *Obstet Gynecol*. Aug 1964;24:266-8.
9. Laughon SK, Zhang J, Troendle J, Sun L, Reddy UM. Using a simplified Bishop score to predict vaginal delivery. *Obstet Gynecol*. Apr 2011;117(4):805-811. doi:10.1097/AOG.0b013e3182114ad2
10. Bleicher I, Dikopoltsev E, Kadour-Ferro E, et al. Double-Balloon Device for 6 Compared With 12 Hours for Cervical Ripening: A Randomized Controlled Trial. *Obstet Gynecol*. May 2020;135(5):1153-1160. doi:10.1097/AOG.0000000000003804
11. Carbone JF, Tuuli MG, Fogertey PJ, Roehl KA, Macones GA. Combination of Foley bulb and vaginal misoprostol compared with vaginal misoprostol alone for cervical ripening and labor induction: a randomized controlled trial. *Obstet Gynecol*. Feb 2013;121(2 Pt 1):247-252. doi:10.1097/AOG.0b013e31827e5dca
12. Gelber S, Sciscione A. Mechanical methods of cervical ripening and labor induction. *Clin Obstet Gynecol*. Sep 2006;49(3):642-57. doi:10.1097/00003081-200609000-00022
13. Levine LD, Downes KL, Elovitz MA, Parry S, Sammel MD, Srinivas SK. Mechanical and Pharmacologic Methods of Labor Induction: A Randomized Controlled Trial. *Obstet Gynecol*. Dec 2016;128(6):1357-1364. doi:10.1097/AOG.0000000000001778
14. Sanchez-Ramos L, Levine LD, Sciscione AC, et al. Methods for the induction of labor: efficacy and safety. *Am J Obstet Gynecol*. Mar 2024;230(3S):S669-S695. doi:10.1016/j.ajog.2023.02.009
15. Sanchez-Ramos L, Lin L, Vilchez-Lagos G, et al. Single-balloon catheter with concomitant vaginal misoprostol is the most effective strategy for labor induction: a meta-review with network meta-analysis. *Am J Obstet Gynecol*. Mar 2024;230(3S):S696-S715. doi:10.1016/j.ajog.2022.01.005
16. Schoen CN, Grant G, Berghella V, Hoffman MK, Sciscione A. Intracervical Foley Catheter With and Without Oxytocin for Labor Induction: A Randomized Controlled Trial. *Obstet Gynecol*. Jun 2017;129(6):1046-1053. doi:10.1097/AOG.0000000000002032
17. Grobman WA, Bailit J, Lai Y, et al. Defining failed induction of labor. *Am J Obstet Gynecol*. Jan 2018;218(1):122 e1-122 e8. doi:10.1016/j.ajog.2017.11.556
18. Rouse DJ, Owen J, Hauth JC. Criteria for failed labor induction: prospective evaluation of a standardized protocol. *Obstet Gynecol*. Nov 2000;96(5 Pt 1):671-7. doi:10.1016/s0029-7844(00)01010-3
19. Rouse DJ, Weiner SJ, Bloom SL, et al. Failed labor induction: toward an objective diagnosis. *Obstet Gynecol*. Feb 2011;117(2 Pt 1):267-272. doi:10.1097/AOG.0b013e318207887a
20. Simon CE, Grobman WA. When has an induction failed? *Obstet Gynecol*. Apr 2005;105(4):705-9. doi:10.1097/01.AOG.0000157437.10998.e7
21. Hamm RF, Srinivas SK, Levine LD. A standardized labor induction protocol: impact on racial disparities in obstetrical outcomes. *Am J Obstet Gynecol MFM*. Aug 2020;2(3):100148. doi:10.1016/j.ajogmf.2020.100148

22. Macones GA, Cahill A, Stamilio DM, Odibo AO. The efficacy of early amniotomy in nulliparous labor induction: a randomized controlled trial. *Am J Obstet Gynecol*. Nov 2012;207(5):403 e1-5. doi:10.1016/j.ajog.2012.08.032
23. Rhinehart-Ventura J, Eppes C, Sangi-Haghpeykar H, Davidson C. Evaluation of outcomes after implementation of an induction-of-labor protocol. *Am J Obstet Gynecol*. Sep 2014;211(3):301 e1-7. doi:10.1016/j.ajog.2014.05.007
24. ACOG Committee Opinion No. 761: Cesarean Delivery on Maternal Request. *Obstet Gynecol*. Jan 2019;133(1):e73-e77. doi:10.1097/AOG.0000000000003006