CESAREAN DELIVERY & VBAC

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OBJECTIVES

- List the maternal-fetal indications that may contribute to a Cesarean Section (C-Section)
- Discuss the indications for offering a patient a "Trial of Labor After Cesarean (TOLAC)
- List (2) items that contribute to successful Vaginal Birth After Cesarean (VBAC) rates
- Discuss complications of C-Section and VBAC's
- List signs and symptoms of Uterine Rupture

BACKGROUND

- C-Section rates ^ from 6.5% in 1965 to 31-35% in 2013 !!
- National Goal for Healthy People 2010 Nulliparous, Term, Singleton, Vertex (NSVT)/ Primary C-Section Rates: 15.5%...
- Healthy People 2020 Goal for Primary C-Section Rates: 23.9%

ACOG/SMFM Consensus www.AJOG.org

ACOG/SMFM OBSTETRIC CARE CONSENSUS

Safe prevention of the primary cesarean delivery

Society for Maternal-Fetal Medicine

This document was developed jointly by the American College of Obstetricians and Gynecologists (the College) and the Society for Maternal–Fetal Medicine with the assistance of Aaron B. Caughey, MD, PhD; Alison G. Cahill, MD, MSCI; Jeanne-Marie Guise, MD, MPH; and Dwight J. Rouse, MD, MSPH

The information reflects emerging clinical and scientific advances as of the date issued, is subject to change, and should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

March, 2014

Key Points:

- Induction should be performed only for medical indication
- Adequate time for normal latent and active phases of labor should be allowed unless expeditious delivery is medically indicated
  - >6cm with membranes ruptures & ≥ 4 hours of adequate contractions
  - 6 hours if no cervical change with adequate Ucs
  - Pushing: 4 hrs primip with CLE; 3 hrs multip CLE

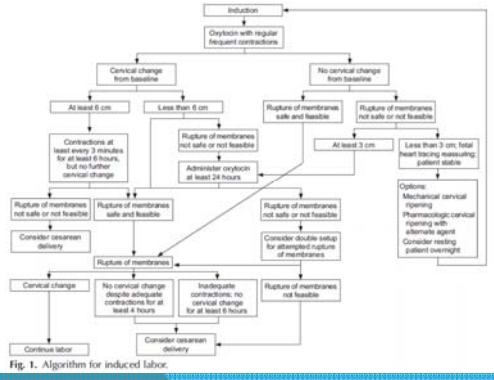
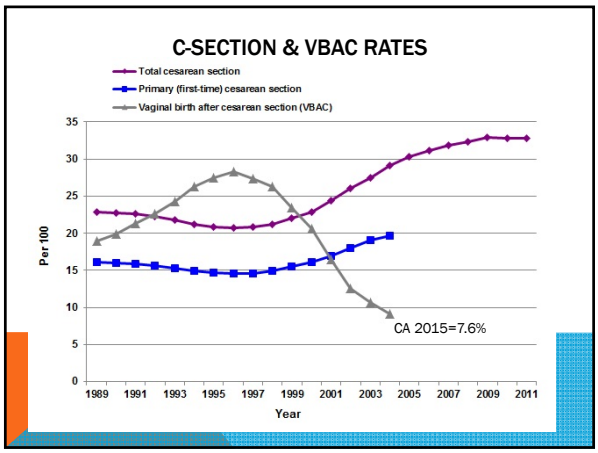


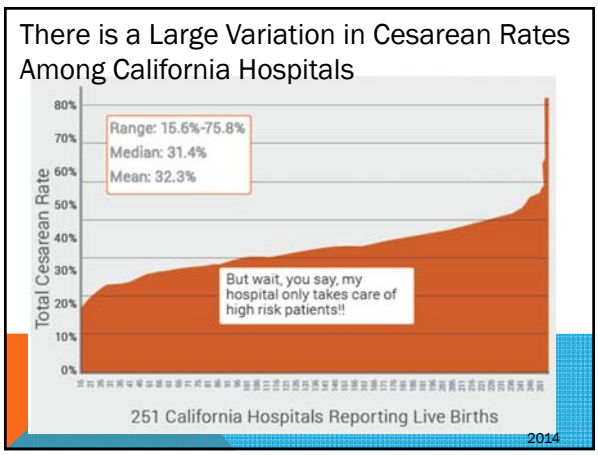
Fig. 1. Algorithm for induced labor.

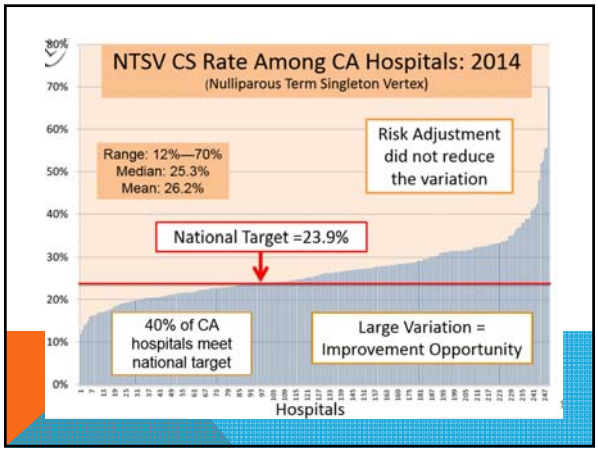
BACKGROUND

- **Targeting NSVT Rate REDUCTION now to STOP future impact: (90% will have REPEAT C-Sections)**
- **2020 Goal to "double" VBAC rates**

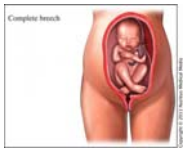


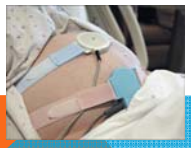
There is a Large Variation in Cesarean Rates Among California Hospitals





FACTORS EFFECTING RATES??





FACTORS INCREASING CESAREAN RATE

- Repeat C-Sections
- Dystocia- Breech Deliveries (Less Mid-Pelvic Deliveries)
- Electronic Fetal Monitoring
- Malpractice Fears
- Changing Demographics: Increased age, Obesity, Induction rates
- Convenience for provider
- Maternal Request for Primary (2.5%)

What Indications Have Driven the **RISE** in CS?

Cesarean Indication	Percent of the Increase in Primary Cesarean Rate Attributable to this Indication	
	Yale (2003 v. 2009) (Total: 26% to 36.5%) Focus: all primary Cesareans	Kaiser SoCal (1991 v. 2008) (Primary: 12.5% to 20%) Focus: all primary *singleton* Cesareans
Labor progress complications (CPD/FTP)	28%	~38%
Fetal Intolerance of Labor	32%	~24%
Breech/Malpresentation	<1%	<1%
Multiple Gestation	16%	Not available
Various Obstetric and Medical Conditions (Placenta Abnormalities, Hypertension, Herpes, etc.)	6%	20% (Did not separate preeclampsia from other complications)
Preeclampsia	10%	
"Elective" (variously defined)	8% (Scheduled without "medical indication")	18% (Those "without a charted indication")

60%!

SHOULD BE AN INDICATION FOR SURGERY: LABOR DYSTOCIA

- **POWER/ No Power- (Inadequate Forces)**
  Contractions ineffective (intensity, frequency, irregular patterns/ poor pushing)
- **PASSENGER PROBLEMS" - FETAL PRESENTATION/ POSITION/SIZE-** (Breech, Occiput Posterior, Macrosomia)
- **PELVIS PROBLEMS: Shape** (Small Pelvic Inlet, Pelvic Shape)
  Other abnormalities of the Birth Canal
- **PAIN PROBLEMS- (Uncontrolled)** Pain increases tension, inability to relax
- **PSYCHE-** (Induction/ Time in labor, Support, etc)

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What Indications Drive the **VARIATION** in CS?

CS Indication	Proportion of Overall CS Rate	Proportion of Primary CS Rate	CS Rate for this Indication
Repeat (prior)	30-35%	---	90+%
"Abnormal Labor" (CPD/FTP)	25-30%	35-45% 60%!	Highly variable
Fetal Intolerance of labor	10-15%	15-20%	Highly variable
Breech/Transverse	10%	15-20%	98%
Multiple Gestation	5-9%	10-15%	60-80%
Other: Placenta Previa, Herpes, etc	~5%	~10%	90%

MATERNAL INDICATIONS

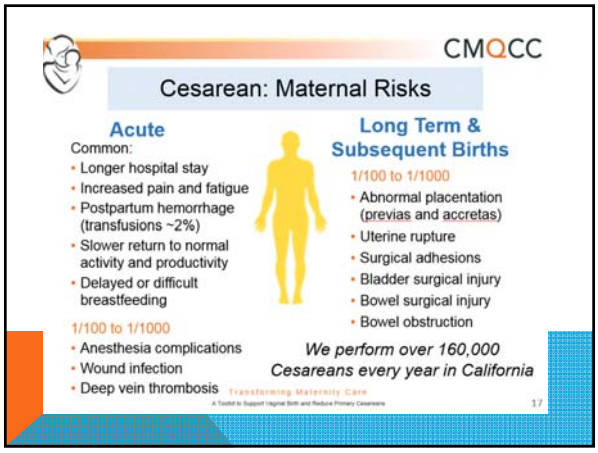
- **Repeat C-Section**
- **Contracted pelvis (congenital, fracture)**
- **Obstructive tumors**
- **Placenta Previa**
- **Active Herpes**
- **Medical Conditions (Cardiac, Pulmonary, etc)**

FETAL INDICATIONS

- Category II &/or Category III FHR Tracings (Fetal Intolerance of Labor)
- Mal-presentation (Breech)
- Cord Prolapse
- Congenital anomalies

MATERNAL-FETAL INDICATIONS

- **Failure to progress in labor**
- **Placental Abruption**
- **Conjoined Twins**
- **Perimortem**



MATERNAL MORBIDITY

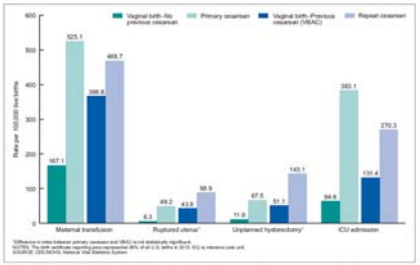


Figure 1. Maternal morbidity, by method of delivery and previous cesarean history: 41-state and District of Columbia reporting area, 2013

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics
National Vital Statistics System

CDC

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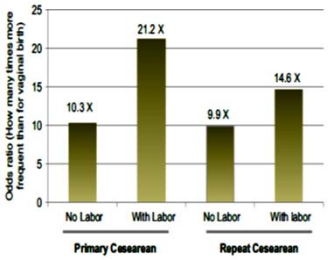
Cesarean: Neonatal Risks

- Increased neonatal morbidity
  - Impaired neonatal respiratory function
  - Increased NICU admissions
  - Affects maternal-newborn interactions including breastfeeding
  - No reduction in cerebral palsy rates

Figure 9: Increased Risk of Uterine Infection for Cesarean Delivery Compared to Vaginal Birth



Source: Burrows et al 2004, Magee Women's Hospital, 1995-2000

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Summary of Issues

- Extreme variation among hospitals
- Rapid rise of rates without neonatal or maternal benefits (indeed can have complications)
- Significant consequences for future pregnancies
- Monetary cost, combined with the human cost of unnecessary cesarean, undermines the ongoing nationwide effort to provide high value maternity care for all women

But, cesarean births are also life-saving and they have an absolute role in Obstetrics— making the message to patients: "They shouldn't be taken lightly"

VBAC = FEWER COMPLICATIONS THAN REPEAT C-SECTION

- ❑ Avoid Major Abdominal Surgery
- ❑ Have Less Hemorrhage Risk
- ❑ Have Less Infection Risk
- ❑ Have Reduced Recovery Time
- ❑ Uterine Rupture Rates approximately : 0.3- 0.9%

WHY NOT TRY IT???? 1/100 is still a big risk....

AMERICAN CONGRESS OF OBSTETRICIAN AND GYNECOLOGISTS (ACOG) (2011)

Trial of Labor after Cesarean Section (TOLAC) is a reasonable approach to take in selected pregnancies.

VBAC RATES:

1985- 5%
1996- 28.3%
2006- 8.5%
2013- 7%

VBAC

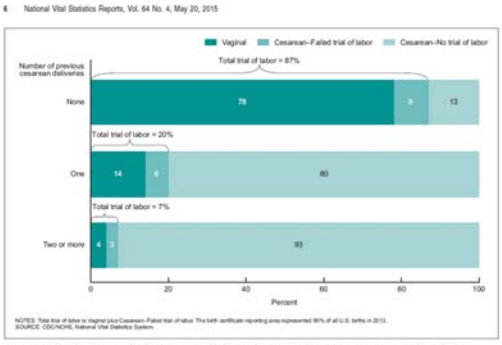


Figure 2. Trial of labor and method of delivery, by number of previous cesarean deliveries: 41-state and District of Columbia reporting area, 2013

FACTORS CONTRIBUTING TO SUCCESSFUL VBAC

1. **Patient had a previous vaginal delivery**
2. **Spontaneous Labor (verses Induction)**

Other considerations for TOLAC should also include a review of the C-Section Indication. There may be a better VBAC success if previous surgery was for:

Breech Presentation

Emergent C-Section for Fetal or Maternal Indications

Active Herpes Lesions

VERSES: A FAILURE TO PROGRESS /ARREST of DILATION or DESCENT History

DECREASED VBAC SUCCESS INDICATORS

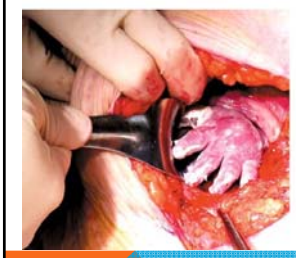
- ✓ **Increased Maternal Age**
- ✓ **Non-White Ethnicity**
- ✓ **Gestational Age > 40 weeks**
- ✓ **Maternal Obesity (High BMI)**
- ✓ **Preeclampsia**
- ✓ **Short Interval between pregnancies**
- ✓ **History of Macrosomia**

UTERINE RUPTURE IS THE BIGGEST RISK

AND HAS BEEN LINKED TO :

- ❑ History of a Classical Uterine Incision or prior trans fundal surgery
- ❑ Misoprostol Use (DO NOT USE FOR TOLAC INDUCTIONS)
- ❑ Use of Prostaglandins and Pitocin during induction

UTERINE RUPTURE SIGNS/SYMPTOMS



- ❑ Category II and/or III Fetal Heart Rate Tracing (70% of cases)
- ❑ Increase /change in PAIN- Constant or Severe, Radiates to Shoulder or Rib Cage, Burning or Tearing, Unrest between Contractions…
- ❑ Change in Uterine Activity- Suddenly absent, Irritable OR Tetanic
- ❑ Abnormal Uterine Shape, Fundal Height suddenly increases
- ❑ Maternal VS changes (Shock Symptoms)
- ❑ LOSS of Fetal Station

ABSOLUTE CONTRAINDICATIONS FOR TOLAC

- ➢ **Previous "Classical Uterine" Incision**
- ➢ **Previous Uterine Rupture**
- ➢ **History of Trans fundal Uterine Surgery**
- ➢ **Medical or Obstetrical complications that preclude vaginal delivery**
- ➢ **Induction with Misoprostol (Cytotec)**

CONSIDERATIONS FOR TOLAC/VBAC

- ✓ **Up to (2) previous "Low Transverse "Uterine Incisions**
- ✓ **Twins with no other contraindication to vaginal delivery and only ONE prior C-Section**

WEIGHTED RISKS for DISCUSSION:

Unknown Uterine Scar

Macrosomia Suspected (>4000 gms)

Previous low vertical incision

ACOG ENDORSED REQUIREMENTS

- ❖ Resources for Emergency C-Section Delivery should be "Immediately Available"(OB, Anesthesia, OR Staff, Nurse, Pediatrician) (Institutionally driven)
- ❖ The risks for both the TOLAC and the Elective Repeat C-Section must be clearly documented in the medical record: 1.6/100,000 Maternal Deaths (TOLAC)
  5.6/100,00 Maternal Deaths (Repeat)
- ❖ Documentation of counseling and management plan shall be included in medical record.

PATIENT SAFETY

- ❖ **Staffs ability to recognize Uterine Rupture signs/symptoms and respond. (DRILLS, DRILLS, DRILLS)**
- ❖ **If conflicts arise between patient wishes and health care provider or facility policy; careful explanation and if appropriate, transfer of care to facilities supporting TOLAC, should be used rather than coercion. (Antenatally is BEST)**

NURSING IMPLICATIONS

- **Continuous FHR Monitoring**
- **High Risk Intrapartum Assessment Guidelines**
- **Induction Considerations- Foley Bulb use for cervical ripening should be considered. NO MISOPROSTOL USE!!!**
- **Observe for S/S of Uterine Rupture & Implement Interventions:**

  STAT C-Section, (2) IV Lines, Oxygen, Fluid Bolus, Transfusion possibility, Neonatal Team
- **KNOW Institutional Policy/ Procedure**

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- California Maternal Quality Care Collaborative (CMQCC) Cesarean Deliveries, Outcomes and Opportunities for Changes in California. (2011).
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