Preventing the First Cesarean Delivery

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Objectives

1. Describe the history of cesarean section rates in the United States

2. Understand the factors which cesarean section contributes to maternal morbidity/mortality

3. List types of clinical protocols and administrative practices which experts believe can lower primary cesarean sections

4. Describe the key aspects of feedback reporting needed to help institutions and providers improve their performance statistics on primary cesarean section rates
Disclosure

- The presenter has no financial disclosures
- (But he really feels strongly about this subject and may well spin into hyperbole)
Nearly every cesarean section in my hospital in the past 6 months could not have been avoided.

A. True
B. False
C. Not Sure
My hospital has had a major complication, such as placenta accreta or organ damage, from the patient having had a prior cesarean section in the last 6 months.

- A. True
- B. False
- C. Not Sure
Historical Perspective of CSR
Rise of modern Obstetrics

United States Cesarean Rate, 1970 - 2009

- Reality Check 1
- VBAC Scare Elective CS Okay
- Programs Work!
- Reality Check 2

Sources: http://www.cdc.gov/nchs/pressroom/data/NVSR_59_03.pdf
http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_04.pdf
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1847267/?page=2
http://www.cdc.gov/mmwr/preview/mmwrhtml/00036643.htm
Figure 3. Total and primary cesarean rate and vaginal birth after previous cesarean (VBAC) rate: United States, 1989–2003

1 Per 100 births to women with a previous cesarean delivery.
2 Per 100 births.
3 Per 100 births to women with no previous cesarean delivery.
Large Variation of NTSV CS Rate Among 251 California Hospitals: 2013

Range: 10.0—75.8%
Median: 27.0%
Mean: 27.7%

National Target = 23.9%

36% of CA hospitals meet national target

Risk Adjustment did not reduce the variation

Large Variation = Improvement Opportunity
The cesarean delivery rate declined to 32.2% of births in 2014, down 2% from the 2009 peak of 32.9%. Declines in rates were seen for most race and Hispanic origin groups for 2013–2014.
Factors in Rising CSR

- Maternal age
- Increasing Obesity Rate
- Abandonment of VBAC
- Malpractice concerns continue
- Provider patterns
- “Okay to have elective cesarean section”
Maternal Mortality Rate, California and United States; 1999-2013

HP 2020 Objective – 11.4 Deaths per 100,000 Live Births


©California Department of Public Health, 2015; supported by Title V funds. Developed in partnership with California Maternal Quality Care Collaborative Cardiovascular Disease in Pregnancy and Postpartum Taskforce. Visit: www.CMQCC.org for details
Previous CS Risks Previa/Accreta

Previa Risk of Accreta

National call to action
AIM eModules
The Alliance for Innovation on Maternal Health is pleased to announce and share the AIM eModules. AIM eModules have been designed to be interactive and collaborative. Upcoming AIM eModules will focus on the implementation of the ‘4 R’ domains: Readiness, Response, and Reporting of each maternal care area.

CLICK TO ACCESS >>

The National Improvement Challenge
The National Improvement Challenge is an innovative approach to improving maternal health outcomes.

Participate in Action Series

AIM Program
- AIM eModules
- AIM States
- AIM Timelines
- AIM State Enrollment
- AIM Program Description
- AIM Program Fact Sheet
- AIM Data
- AIM In Situ OB Drill Resources
- Contact AIM
Importance of the First Birth

If a woman has a Cesarean birth in the first labor, over 90% of ALL subsequent births will be Cesarean births

A classic example of path dependency

If a woman has a vaginal birth in the first labor, over 90% of ALL subsequent births will be vaginal births
SAFE REDUCTION OF PRIMARY CESAREAN BIRTHS:
SUPPORTING INTENDED VAGINAL BIRTHS

READINESS

Every Patient, Provider and Facility

- Build a provider and maternity unit culture that values, promotes, and supports spontaneous onset and progress of labor and vaginal birth and understands the risks for current and future pregnancies of cesarean birth without medical indication.

- Optimize patient and family engagement in education, informed consent, and shared decision making about normal healthy labor and birth throughout the maternity care cycle.

- Adopt provider education and training techniques that develop knowledge and skills on approaches which maximize the likelihood of vaginal birth, including assessment of labor, methods to promote labor progress, labor support, pain management (both pharmacologic and non-pharmacologic), and shared decision making.
RECOGNITION AND PREVENTION

Every patient

- Implement standardized admission criteria, triage management, education, and support for women presenting in spontaneous labor.
- Offer standardized techniques of pain management and comfort measures that promote labor progress and prevent dysfunctional labor.
- Use standardized methods in the assessment of the fetal heart rate status, including interpretation, documentation using NICHD terminology, and encourage methods that promote freedom of movement.
- Adopt protocols for timely identification of specific problems, such as herpes and breech presentation, for patients who can benefit from proactive intervention before labor to reduce the risk for cesarean birth.
To Every Labor Challenge

- Have available an in-house maternity care provider or alternative coverage which guarantees timely and effective responses to labor problems.
- Uphold standardized induction scheduling to ensure proper selection and preparation of women undergoing induction.
- Utilize standardized evidence-based labor algorithms, policies, and techniques, which allow for prompt recognition and treatment of dystocia.
- Adopt policies that outline standard responses to abnormal fetal heart rate patterns and uterine activity.
- Make available special expertise and techniques to lessen the need for abdominal delivery, such as breech version, instrumented delivery, and twin delivery protocols.

Every birth facility

- Track and report labor and cesarean measures in sufficient detail to: 1) compare to similar institutions, 2) conduct case review and system analysis to drive care improvement, and 3) assess individual provider performance.
- Track appropriate metrics and balancing measures, which assess maternal and newborn outcomes resulting from changes in labor management strategies to ensure safety.
CMQCC Toolkit

Toolkit to Support Vaginal Birth and Reduce Primary Cesareans
A Quality Improvement Toolkit
First and foremost, it should be understood that a cesarean reduction program seeks to reduce unnecessary cesarean births. The program’s charter must clearly recognize that timely and well-chosen cesareans are sometimes necessary to prevent avoidable fetal and maternal harm.
CMQCC Toolkit

- Readiness (Developing a maternity culture that values, and supports intended vaginal birth)
- Recognition and Prevention (General labor support)
- Response to every labor challenge (Management of labor abnormalities)
- Reporting (Using Data to Drive Improvement)
- Lessons from Hospitals that have successfully reduced their NTSV CS Rate
- Lessons from Hospitals that have low NTSV CS Rates (year after year)
- Large appendix of resources

Available by April 2016 (CMQCC.org)
Using a toolkit you pick the right tool for the job (and one you know how to use)
Readiness

Recognition and prevention

Response

Reporting systems and learning
Readiness - Barriers

- Causal acceptance of cesarean birth
- Knowledge deficit of vaginal birth
- Maternity culture underappreciates maternal informed choices
- Payment systems with wrong incentives
Readiness-strategies

- Improve access and quality to modern childbirth education
- Improved shared decision making at critical points
- Bridge provider knowledge and skills gap
- Transition to value based payments
Readiness examples

- Sources of best childbirth education tools
- Tools/policies/concepts of “mother friendly” hospital
- Approaches to shared decision making and training aspects
- Payment models for value based results
Sharing in decision making

The SHARE Model

S - Seek
Seek the patient’s participation

H - Help
Help her explore each option and the corresponding risks and benefits

A - Assess
Assess what matters most to her

R - Reach
Reach a decision together and arrange for a follow up conversation

E - Evaluate
Evaluate her decision (revisit the decision and assess whether it has been implemented as planned)

Readiness

**Readiness-examples**

**PATIENT DECISION POINTS THAT IMPACT RISK OF CESAREAN**

<table>
<thead>
<tr>
<th>Decision Point</th>
<th>Risk Impact</th>
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<tbody>
<tr>
<td>Choice of provider and/or facility for prenatal care and care at time of birth</td>
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<tr>
<td>Timing of admission to hospital (admission to labor and delivery while still in the latent/early phase is associated with an increased risk of cesarean)</td>
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<tr>
<td>Choice of fetal monitoring method (continuous monitoring is associated with an increased risk of cesarean)</td>
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<tr>
<td>Whether to have continuous labor support by a trained caregiver like a doula (continuous labor support improves chances of having a vaginal birth)</td>
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<td>Induction of labor without medical indication</td>
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Recognition and prevention: barriers

- Lack of institutional support
- Admission in latent phase
- Lack of labor support
- Limited choices/techniques of pain management
- Overuse continuous monitoring
- Underuse of techniques like herpes prophylaxis or detection of breech/version
Recognition and prevention: strategies

- Implement institutional policies which support vaginal birth
- Early labor management and supportive care
- Labor support personnel (e.g. doulas)
- Infrastructure/equipment
- Best practices for regional anesthesia
- Protocols for intermittent auscultation
- Protocols for modifiable conditions like HSV and breech presentation
Recognition and prevention: examples

- Model policies for intermittent monitoring, freedom of movement, early labor support, etc.
- Coping with labor algorithm
- Guidelines for working with doulas
- Patient education and decision guides
Recognition and prevention: examples

<table>
<thead>
<tr>
<th>SUPPORT OF COPING AND LABOR PROGRESS</th>
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</thead>
<tbody>
<tr>
<td><strong>Support coping and comfort through:</strong></td>
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<tr>
<td>Breathing and relaxation techniques</td>
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<tr>
<td>Touch techniques and massage</td>
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<tr>
<td>Positions to promote comfort</td>
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<tr>
<td>Heat and cold therapy</td>
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<tr>
<td>Hydrotherapy (shower, tub)</td>
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<tr>
<td>Sterile water injections for back labor</td>
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<tr>
<td>Use of TENS</td>
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</tbody>
</table>
Promoting mobility in labor/birth

- Both non- and epiduralized patients
- Know your labor beds and what they can do
- Use of birthing balls and peanut balls
- Posters in labor rooms of labor positions
- Use of telemetry EFM units
- Decreasing length of labor
- Decreasing C-section rate in epiduralized patients

The Peanut Ball

Response: Barriers

- Poor professional communication
- Lack of standard response to labor challenges and abnormal fetal heart rate patterns
- Failure to intervene for persistent OP/OT positioning
- Professional challenges in abilities to respond
Response: strategies

- Create highly reliable teams and improve interdisciplinary communication
- Adopt standard responses to labor and FHR abnormalities
- Utilize operative vaginal deliveries in appropriate cases
- Identify malposition and perform manual rotation
- Develop alternative coverage patterns such as hospitalists/midwives
- Strategies to safely transport patients
Response: examples

- Spontaneous labor algorithms/dystocia checklists
- Induction algorithms/checklists/policies for timing, scheduling, proper selection
- Algorithms for standard intervention for FHR changes
- Model policies for oxytocin
- Tools for effective communication
# Labor Dystocia Checklist

## Cesarean Delivery Checklist for Labor Dystocia or Failed Induction

**Patient Name:** ______________________________  **MR#:** ___________________________________

**Gestational Age:** ______  **Date of C-section:** _______________;  **Time:** _____________

**Obstetrician:** _____________________________;  **Initial:** ____

**Bedside Nurse:** ___________________________;  **Initial:** ____

**Indication for Primary Cesarean Delivery:**
- [ ] Failed Induction (must have both criteria if cervix unfavorable, Bishop Score ≤ 8 for nullips and <6 for multips)
  - Cervical Ripening used for those starting with Bishop scores as noted above
  - Ripening agent used: ______________
  - Reason ripening not used if cervix unfavorable: ______________
- [ ] AND
- [ ] Unable to generate regular contractions (every 3 minutes) and cervical change after oxytocin administered for at least 12-18 hours after membrane rupture. **Note:** at least 24 hours of oxytocin administration after membrane rupture is preferable if maternal and fetal stress persist
- [ ] Latent Phase Arrest: Moderate or strong contractions palpated for > 12 hours
- [ ] Labor Dystocia > 6 cm Dilation—Active Phase Arrest (must fulfill one of the two criteria)
  - Nullipara (if possible), time: ________________
  - Adequate uterine contractions (e.g. ≥ 200 MVU for > 4 hours) without improvement in dilation, effacement, station or position
  - Inadequate uterine contractions (e.g. > 200 MVU) for ≥ 2 hours of oxytocin administration without improvement in dilation, effacement, station or position
- [ ] Labor Dystocia in the Second Stage (must fulfill any one of four criteria)
  - Nullipara with epidural in the second stage > 4 hours inclusive of laboring down (if applicable)
  - Nullipara without epidural in the second stage > 3 hours inclusive of laboring down (if applicable)
  - Multipara with epidural in the second stage > 3 hours inclusive of laboring down (if applicable)
  - Multipara without epidural in the second stage > 2 hours inclusive of laboring down (if applicable)
- [ ] Although not fulfilling contemporary criteria for labor dystocia, my clinical judgment deem this cesarean delivery indicated

**Duration in hours:**
- Failed Induction: ________________
- Latent-Phase Arrest: ________________
- Active-Phase Arrest: ________________
- Second-Stage Arrest: ________________

**Comments:** ____________________________________________________________
Induction of Labor Algorithm

INDUCTION
Per ACOG guidelines, induction of labor before 41 weeks should only be performed if there is a maternal or fetal medical indication to do so. If 39-41 weeks without a medical indication for induction of labor, do so only with a favorable cervix.

Unfavorable Cervix:
Bishop Score ≤ 8 for Nulliparas, ≤ 6 for Multiparas (procedure only if medical indication for induction exists)

Mechanical or Pharmacological Cervical Ripening

No Cervical Change
Repeat with Different Method

If successful, follow right side of algorithm (favorable cervix)

No Cervical Change
No Response
Consider Oxytocin Trial

Favorable Cervix:
Bishop Score ≥ 8 for Nulliparas, ≥ 6 for Multiparas

Initiate Oxytocin

Cervical Change, and Cervix ≤ 5 cm

If successful, follow right side of algorithm (favorable cervix)

Cervical Change, but Cervix ≤ 5 cm

See active labor parogram and/or labor duration guidelines

AROM and No Cervical Change for 12-18 hours of Oxytocin.
(*Note: 24 hours of oxytocin is preferable if fetal and maternal situations permit)

Cervix ≤ 6 cm, UNABLE To AROM and No Cervical Change with 24 Hours Oxytocin

Failed Induction
Proceed to Cesarean
Consider Home if Elsewise and/or Medically Stable

Home (if appropriate) or Cesarean.
(*Note: ACOG guidelines state that failed induction in the latent phase can be avoided by allowing for longer durations of the latent phase, 24 hours or more)
Active Labor Partogram

ACTIVE LABOR PARTOGRAM
Term ≥ 37 Weeks Gestation

NORMAL LABOR PROGRESS
CONSIDER INTERVENTIONS
≥ 95TH PERCENTILE MAKE DELIVERY PLAN


adapted with permission from SWEDISH Medical Center

CMQCC
California Maternal Quality Care Collaborative
Algorithm for the Management of Intrapartum Fetal Heart Rate Tracings

Category 1
- Moderate variability w/o late or variable decels or w/o tachycardia

Category 2
- Marked variability or moderate variability w/ decels or w/ tachycardia
- Minimal variability w/o decels or w/o decels or w/o or w/o
- Absent variability w/o decels and w/o if remote

Category 3
- Absent variability w/ decels > 20 min or w/ bradycardia (base-line rate < 110 BPM) or sinusoidal pattern

May observe
- ABCD*

Acoustic or scalp stimulation

If no acceleration or return of moderate variability,
then evaluate evolution of tracing

If preceding tracing not associated with significant acidemia, then ABCD*

If minimal or absent variability persists for 60 min w/o accel or return of moderate variability to

Response: examples
Critiquing a Failed Induction

- Induction in the face of unripe cervix (Bishop score < 8 primip and < 6 multip)
- Inadequate documentation of cervical ripening procedure and timing
- Adequate trial defined by latent phase at least 12-18 hours of oxytocin and ruptured membranes
Defining Failed Induction

- Nulliparous women remaining in the latent phase for 12 hours compared with women who had exited the latent phase had significantly increased rates of chorioamnionitis (12.1% compared with 4.1%) and endometritis (3.6% compared with 1.3%) and increased rates of neonatal intensive care unit admission (8.7% compared with 6.3%).

- Similar patterns were present for multiparous women at 15 hours.

- With ruptured membranes a latent phase (obtaining 6 cm) after initiation of oxytocin of at least 12 hours for nulliparous women and 15 hours in multiparous women is a reasonable criterion for diagnosing a failed induction.

Failed Induction-Exiting Latent Phase

Reporting and system learning: barriers

- Not compelling/no sense of urgency
- Data fatigue
- Lack of proper comparisons
- Challenges of multiple layers: providers, groups, etc.
- Attribution to responsible provider
- Lack of packaging “how to”s and presenting to department QI
Reporting and system learning: strategies

- Provide timely feedback in persuasive manner
- Use comparative data which conveys a sense of urgency
- Present data in multiple levels: provider/group/hospital/system/state/national
- Set achievable goals
- Tie descriptive “cold” data with patient stories and other successes
Reporting and system learning: examples
Getting Data Directly from Electronic Record

- MC*21 Epic Delivery Summary/Flowsheets, etc.
- Clarity (RDB)
- Chronicle (Caché)
- Perinatal Data Warehouse

(2016-present)
Reporting and system learning: examples

4 Strategies to engage women, employers and the general public in the improvement project

- Public release of selected hospital-level measures that have been well vetted
- Lay explanation of the meaning of the measures
- Wide distribution of these measures thru multiple media channels to capture the greatest attention
Can cesarean reduction work?
It takes a village.

Payers/ Purchasers
Public Advocates/ Consumers
Public Policy/ Medicaid
Data-driven QI Projects
Prof Orgs (National and Local)

TEAMWORK
Medical Legal: Have we changed?
Payment Reform: When will it transition?
Provider: Willingness to change?

Elephants in the room
Past successes

- Main EK. Pediatrics 1999 Jan;103(1 Suppl E):374-83
This is the same “Orange County” as depicted in the popular television show.
This is the hospital where most of these mothers deliver...
Contemporary success

Astonishing Results

HOSPITAL 1
26% Reduction
Baseline – 32.6%
After QI – 24.1%

HOSPITAL 2
22.1% Reduction
Baseline – 31.2%
After QI – 24.3%

HOSPITAL 3
19.5% Reduction
Baseline – 27.2%
After QI – 21.9%
PROGRESS but a ways to go!

- National Target = 23.9%
- Start Q1-2013
- Latest Q3-2015
- Bold Goal 15%

2014 NTSV Rates Hospitals California

National Target = 23.9%
It’s not **can** we? …

it’s **will** we?
Feedback