A Toolkit and Collaborative to Support Vaginal Birth and Reduce Primary Cesareans

23.9 is FINE!

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California Maternal Quality Care Collaborative
Co-Lead: A Collaborative to Support Vaginal Birth and Reduce Primary Cesareans
Stanford University Medical Center
Disclosure

I have no financial or other conflicts to disclose
Objectives

- Discuss implications of unnecessary primary Cesarean sections
- Identify strategies to improve NTSV rates in your hospital
What are we talking about?

Why focus on Cesarean Birth for Quality Improvement?

- US 2013 = 32.7%
- CA 2013 = 33.1%
Why does it matter to me?
Mom

- Subsequent cesarean births
- Placenta previa and accreta (every cesarean creates a step-wise significant increased risk for life threatening hemorrhage & hysterectomy)
- Uterine rupture
- Surgical adhesions, bowel injury, bowel obstruction

Long term & Subsequent Maternal Risks
## Neonatal Risks of Cesarean Birth

<table>
<thead>
<tr>
<th>Neonatal Risks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher risk of respiratory morbidity</td>
<td>(respiratory distress syndrome, transient tachypnea of the newborn, and infections)</td>
</tr>
<tr>
<td>Higher NICU admission rates</td>
<td></td>
</tr>
<tr>
<td>Prolonged length of stay in NICU</td>
<td></td>
</tr>
<tr>
<td>Increased risk of asthma</td>
<td>requiring hospitalization and inhaler use during childhood</td>
</tr>
<tr>
<td>Difficulty with breastfeeding</td>
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</tbody>
</table>
Test Question:

You are about to give birth. Pregnancy has gone smoothly. The birth seems as if it will, too. It’s one baby, in the right position, full term, and you’ve never had a cesarean section — in other words, you’re at low risk for complications.

What’s likely to be the biggest influence on whether you will have a Cesarean?

Rosenberg T, NYT, Jan 19 2016
Test Question:

You are about to give birth. Pregnancy has gone smoothly. The birth seems as if it will, too. It’s one baby, in the right position, full term, and you’ve never had a cesarean section — in other words, you’re at low risk for complications.

What’s likely to be the biggest influence on whether you will have a Cesarean?

(A) Your personal wishes
(B) Your choice of hospital
(C) Your baby’s weight
(D) Your baby’s heart rate in labor
(E) The progress of your labor
ABSTRACT Cesarean delivery is the most commonly performed surgical procedure in the United States, and cesarean rates are increasing. Working with 2009 data from 593 US hospitals nationwide, we found that cesarean rates varied tenfold across hospitals, from 7.1 percent to 69.9 percent. Even for women with lower-risk pregnancies, in which more limited variation might be expected, cesarean rates varied fifteenfold, from 2.4 percent to 36.5 percent. Thus, vast differences in practice patterns are likely to be driving the costly overuse of cesarean delivery in many US hospitals. Because Medicaid pays for nearly half of US births, government efforts to decrease variation are warranted. We focus on four promising directions for reducing these variations, including better coordinating maternity care, collecting and measuring more data, tying Medicaid payment to quality improvement, and enhancing patient-centered decision making through public reporting.
Have you seen these?

Your Biggest C-Section Risk May Be Your Hospital
Consumer Reports finds C-section rates vary from hospital to hospital and explains when cesareans are and aren’t necessary. Read on for more on what you need to know.
CONSUMERREPORTS.ORG

Having a Baby in California
Having a baby in California has become easier thanks to information from Consumer Reports on C-sections, breastfeeding, and more. Learn more.
CONSUMERREPORTS.ORG

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Variation in California

Figure 6a. Large Variation of the Total Cesarean Rate Among 251 California Hospitals: 2013

Range: 15.0%-71.4%
Median: 32.5%
Mean: 32.8%

But wait, you ask, my hospital only takes care of high risk patients!!
Why focus on Nulliparous Term Singleton Vertex Cesareans? Or NTSV
Why focus on Nulliparous Term Singleton Vertex Cesareans? Or NTSV

Nulliparity is a critical risk adjuster. Creates a standardized population

The NTSV population is the largest contributor to the recent rise in cesarean rates

The NTSV population exhibits the greatest variation for all sub-populations of cesarean births for both hospitals and providers
Importance of the First Birth

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

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 via vaginal birth
After adjusting for the NTSV cesarean rate, large variation between California hospitals still exists!

Figure 6b. Extreme Variation of the NTSV Cesarean Rate Among 251 California Hospitals: 2013

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

36% of CA hospitals meet the national target.
64% of CA hospitals need to improve.

Risk adjustment did not reduce the variation.
Large variation = improvement opportunity.
### What Indications have driven the RISE in Cesareans?

<table>
<thead>
<tr>
<th>Cesarean Indication</th>
<th>Percent of the Increase in Primary Cesarean Rate Attributable to this Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yale (2003 v. 2009) (Total: 26% to 36.5%) Focus: all primary Cesareans</td>
</tr>
<tr>
<td>Labor complications (CPD/FTP)</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Kaiser So. Cal. (1991 v. 2008) (Primary: 12.5% to 20%) Focus: all primary singleton Cesareans</td>
</tr>
<tr>
<td></td>
<td>~38%</td>
</tr>
<tr>
<td>Fetal Intolerance of Labor</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>~24%</td>
</tr>
<tr>
<td>Breech/Malpresentation</td>
<td>&lt;1%</td>
</tr>
<tr>
<td></td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Multiple Gestation</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>Not available</td>
</tr>
<tr>
<td>Various Obstetric and Medical Conditions (Placenta Abnormalities, Hypertension, Herpes, etc.)</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>20% (Did not separate preeclampsia from other complications)</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>10%</td>
</tr>
<tr>
<td>“Elective” (defined variously)</td>
<td>8% (Scheduled without “medical indication”)</td>
</tr>
<tr>
<td></td>
<td>18% (Those “without a charted indication”)</td>
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</table>
Who Created the Toolkit?

Over 50 expert writers and advisors:

- Doctors
- Midwives
- Nurses
- Childbirth Educators
- Doulas
- Public Health Experts and Policy Makers
- Health Care Purchasers
- Risk Management and Health Care Safety Experts

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The experts who wrote and advised for the toolkit represent organizations such as:

- American Congress of Obstetricians and Gynecologists (including current District IX Chair)
- American College of Nurse-Midwives, California Nurse-Midwives Association
- Association of Women’s Health, Obstetric, and Neonatal Nurses (including current California Chair)
- American Association of Birth Centers, California Birth Center Association
- California Hospital Association/Hospital Quality Institute (including current President/CEO of HQI)
- Childbirth Connection/National Partnership for Women and Families
- Blue Shield of California
- BETA Healthcare Group
- Kaiser Permanente, Sutter Health, MemorialCare Health System, various university health systems, various birth centers, urban and rural hospitals alike
- Doulas of North America, Lamaze International, Coalition for Improving Maternity Services

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What is the Toolkit?

- Comprehensive, evidence-based “How-to Guide” to reduce primary cesarean delivery in the NTSV population
- Will be the resource foundation for the QI collaborative project
- The principles are generalizable to all women giving birth
Tenets of the toolkit
### Readiness

**Improving the Culture of Care, Awareness and Education**

<table>
<thead>
<tr>
<th>Improve quality of and access to childbirth education</th>
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<tbody>
<tr>
<td>Improve shared decision making at critical points in care</td>
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<tr>
<td>Bridge the provider knowledge and skills gap</td>
</tr>
<tr>
<td>Improve support from hospital leadership and harness the support of clinical champions</td>
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<tr>
<td>Transition from paying for volume to paying for value</td>
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## Recognition and Prevention

### Supporting Intended Vaginal Birth

<table>
<thead>
<tr>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>Implement institutional policies that support intended vaginal birth and safely reduce routine obstetrical interventions</td>
</tr>
<tr>
<td>Implement early labor supportive care policies and active labor criteria for admission</td>
</tr>
<tr>
<td>Improve the support infrastructure and supportive care during labor</td>
</tr>
<tr>
<td>Encourage use of doulas and work collaboratively to provide labor support</td>
</tr>
<tr>
<td>Utilize best practice recommendations for laboring women with regional anesthesia</td>
</tr>
<tr>
<td>Implement intermittent monitoring policies for low-risk women</td>
</tr>
<tr>
<td>Implement current prevention and treatment guidelines for potential modifiable conditions (HSV, Breech)</td>
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**Response**

Management of Labor Abnormalities

<table>
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<tr>
<th>Action</th>
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<tbody>
<tr>
<td>Create highly reliable teams and improve interdisciplinary communication</td>
</tr>
<tr>
<td>Implement standard diagnostic criteria and standard responses to labor challenges and fetal heart rate abnormalities</td>
</tr>
<tr>
<td>Utilize operative vaginal delivery for eligible cases</td>
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<tr>
<td>Identify malposition and implement appropriate interventions</td>
</tr>
<tr>
<td>Consider alternative coverage programs</td>
</tr>
<tr>
<td>Develop systems that facilitate safe, efficient transfer of care from the out of hospital birth environment to the hospital</td>
</tr>
<tr>
<td>Don’t practice defensively: Focus on quality and safety</td>
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</table>
### Reporting/Systems

**Using Data to Drive Improvement**

<table>
<thead>
<tr>
<th>Objective</th>
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<tbody>
<tr>
<td>Create awareness of the scope of the problem by both the public and</td>
</tr>
<tr>
<td>providers/nurses</td>
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<tr>
<td>Promote transparency of hospital level data</td>
</tr>
<tr>
<td>Improve data quality</td>
</tr>
<tr>
<td>Create actionable data</td>
</tr>
<tr>
<td>Reduce data burden</td>
</tr>
<tr>
<td>Design new measures to drive QI</td>
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Thus, the ability to improve comfort and decrease anxiety according to each patient’s distinct preference is fundamental to promoting labor progress and preventing dysfunctional labor.
Benefits of Continuous Labor Support

- Slightly shorter labor
- More likely to report satisfaction with birth experience
- Less likely to need the assistance of vacuum or forceps
- Less likely to need pain medication
- Babies less likely to have low 5-minute Apgar scores
- Less likely to have a cesarean birth
How to Improve Labor Support on the Unit

- Improve nursing knowledge and skill in supportive care during labor
- Improve unit infrastructure and supportive tools
- Work collaboratively with doulas to provide effective and continuous labor support

Regional Workshops to reinforce labor support skills
Toolkit Spotlight: Implement Standard Diagnostic Criteria/Responses to Labor Abnormalities

- Diagnosis of labor dystocia
- Safe use of Pitocin
- Response to abnormal heart rate patterns
- Induction of labor
ACTIVE LABOR PARTOGRAM
Term ≥ 37 Weeks Gestation

CAUTION ZONE: Consider AROM, Augmentation if not already done and no contraindication

At 6cms or more, 4 hours without cervical change is ≥ 95th %ile. Successful vaginal delivery is less likely and maternal & neonatal complications increase.
Pre-Cesarean Checklist for Labor
Dystocia or Failed Induction

___ 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 statuses permit

___ Latent Phase Arrest <6 cm dilation (must fulfill one of the two criteria)

___ Moderate or strong contractions palpated for > 12 hours without cervical change

OR

cesarean delivery as long as fetal and maternal statuses remain reassuring. Please exercise caution when diagnosing latent phase arrest and allow for sufficient time to enter the active phase.

___ Active Phase Arrest > 6 cm Dilation (must fulfill one of the two criteria)

___ Membranes ruptured (if possible), then:

___ Adequate uterine contractions (e.g. > 200 MVU for > 4 hours) without improvement in dilation, effacement, station or position

OR

___ Inadequate uterine contractions (e.g. < 200 MVU) for > 6 hours of oxytocin administration without improvement in dilation, effacement, station or position

___ Second Stage Arrest (must fulfill any one of four criteria)

___ Nullipara with epidural in the second stage > 4 hours inclusive of laboring down (if applicable)

OR

___ Nullipara without epidural in the second stage > 3 hours inclusive of laboring down (if applicable)

OR

___ Multipara with epidural in the second stage > 3 hours inclusive of laboring down (if applicable)

OR

___ Multipara without epidural in the second stage > 2 hours inclusive of laboring down (if applicable)

___ Although not fulfilling contemporary criteria for labor dystocia as described above, my clinical judgment deems this cesarean delivery indicated

___ Failed Induction: Duration in hours: _______________

Latent-Phase Arrest: Duration in hours: _______________
Patience With Patients

Prior to active labor, it “may take more than six hours to progress from 4-5 cm and more than 3 hours to progress from 5 to 6 cm of dilation” – Zhang

ACOG/SMFM recommend allowing longer 1st and 2nd stages of labor

Slow but progressive labor in the first stage is not an indication for cesarean, nor is a prolonged latent phase previously defined by Friedman

Six is the NEW four!
# ACOG/SMFM Criteria for Dystocia: CMQCC Checklist

## Diagnosis of Dystocia/Arrest Disorder
(All 3 should be present)

<table>
<thead>
<tr>
<th>Identifier (MRN, Other)</th>
<th>Criteria 1</th>
<th>Criteria 2</th>
<th>Criteria 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervix $\geq 6$ cm</td>
<td>Diagnosis of Dystocia/Arrest Disorder (all three should be present)</td>
<td>Diagnosis of Failed Induction before 6 cm dilation (both should be present)</td>
<td>Diagnosis of failed induction after 6 cm dilation (see criteria 1)</td>
</tr>
<tr>
<td>Membranes ruptured, then</td>
<td>No change $\times$ 4 hrs with adequate uterine activity (or 6 hrs with oxytocin)</td>
<td>Bishop score $\geq 6$ cm before elective induction</td>
<td>Oxytocin used for a minimum of 12 hours after ROM</td>
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Consortium on Safe Labor is the NEW normal

TIME TO LET FRIEDMAN GO

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Toolkit Spotlight: Shared Decision Making at Critical Points in Care

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

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## Patient Decision Points That Impact Risk of Cesarean

<table>
<thead>
<tr>
<th>Decision Point</th>
<th>Impact Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice of provider and/or facility for prenatal care and care at time of birth</td>
<td></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>
<td></td>
</tr>
<tr>
<td>Choice of fetal monitoring method (continuous monitoring is associated with an increased risk of cesarean)</td>
<td></td>
</tr>
<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>
<td></td>
</tr>
<tr>
<td>Induction of labor without medical indication</td>
<td></td>
</tr>
</tbody>
</table>
Current obstetric care in the United States remains distinctly different from the rest of the world, applying a high-risk model to all women and overusing costly procedures that increase risk. At the same time, current care underutilizes beneficial, low-cost interventions that are readily available, easy to implement and well suited for low-risk women.
Algorithm for Management of Category II Tracings

Algorithm for the Management of Intrapartum Fetal Heart Rate Tracings

**Category I**
- Moderate variability w/o late or variable decels or w/o tachycardia
- May observe

**Category II**
- Marked variability or moderate variability w/ decels or w/ tachycardia
- ABCD*

**Category III**
- Absent variability w/ or w/o decels or w/ or w/o
- Prolonged decel < 60 BPM (or < 80 BPM if remote)
- Initiate maneuvers so patient begins transport to OR by 3 min with goal to accomplish delivery by 10 min should decel persist

### Flowchart:
- Acoustic or scalp stimulation
- If no acceleration or return of moderate variability, then evaluate evolution of tracing
- If acceleration or return of moderate variability, then ABCD*
- If preceding tracing not associated with significant acidaemia, then ABCD*
- If minimal or absent variability persists for 60 min w/o accel or return of moderate variability to

*CMQCC* Transforming Maternity Care
ACTIVE LABOR PARTOGRAM
Term ≥ 37 Weeks Gestation

<table>
<thead>
<tr>
<th>Normal Labor Progress</th>
<th>Consider Interventions</th>
<th>≥ 95TH %ile – MAKE DELIVERY PLAN</th>
</tr>
</thead>
</table>

TIME = Hours from 6cms dilation

CAUTION ZONE: Consider AROM, Augmentation if not already done and no contraindication

At 6cms or more, 4 hours without cervical change is ≥ 95%ile. Successful vaginal delivery is less likely and maternal & neonatal complications increase.

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Implementation Guide

- Identification of areas to focus on
- Strategies to address identified areas of improvement
- Help with planning improvement and sustainability
What we learned from our pilot project
3 Pilot QI Projects Informed the Development of the Toolkit

- Hoag Hospital, Newport Beach CA
- Miller Children’s and Women’s Hospital, Long Beach CA
- Saddleback Memorial Medical Center, Laguna Hills CA
Data Measurement Support

Quality Improvement Support

Payment Reform

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Voila!! – Astonishing results

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**Hospital 1**
- Baseline: 32.6%
- After QI: 24.7%
- Reduction: 24.2%

**Hospital 2**
- Baseline: 31.2%
- After QI: 24.3%
- Reduction: 22.1%

**Hospital 3**
- Baseline: 27.2%
- After QI: 21.9%
- Reduction: 19.5%
CMQCC Data-Driven QI: NTSV CS

Pilot Hospital: PBGH / RWJ CS Collaborative

NTSV CS Rate

QI Project Started: Jan 2014

National Target for TSV CS = 23.9%
Any Downsides? –Balancing Measures

- More vaginal births--Any increase in 3rd or 4th degree lacerations?
  - Zero change from the prior 4 year baseline
Any Downsides? –Balancing Measures

Most important outcome is a healthy baby

- NQF measure “Unexpected Newborn Complications”
- Asks whether term babies without preexisting conditions had any major complications during birth or neonatal period
- No change in the 3 hospitals’ rates
Collaborative Work
Together, Working Towards

A **Consistent** effort to implement bundle elements:

- **Readiness** – Developing a maternity culture that values, promotes 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
Why Should My Hospital Be Involved?

- With the release of current data and newly-released strategies for improvement in the Toolkit, reducing NTSV cesarean deliveries is a national patient safety focus for patients, providers, accreditation agencies and payer groups.
The Collaborative to Support Vaginal Birth and Reduce Primary Cesareans

Mentor Model
California Maternal Quality Care Collaborative

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Hospital A
Hospital B
Hospital C
Hospital E
Hospital F
 YOUR Hospital QI Team
What is the Cost to Participate?

- **NO COST** to join collaborative

- Hospitals will provide the internal resources necessary for success during the Collaborative by identifying:
  - Clinician and Nursing champions
  - Time for the Perinatal Quality Improvement team to work on implementation, education and data analysis
Hospital Involvement Means:

- Sharing and collaborating with others through participation in monthly mentor web-based team calls, as well as in-person and virtual learning sessions.
- A commitment to de-identified data sharing of measures already being collected by the hospital through Active Track status in the CMQCC Maternal Data Center.
- Mostly automated data collection and reporting.
Collaborative Timelines

- Each hospital can expect to spend one year implementing changes and making improvements during their participation in the Supporting Vaginal Birth and Reducing Cesareans Collaborative.

- The first group of Collaborative hospitals will begin mostly in Southern California in May 2016, with the next statewide group beginning a few months later.
Supporting Vaginal Birth Collaborative

What is the first step?
Thank you!

Questions or comments…

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