A Rational Approach to Reducing First-birth (NTSV) Cesarean Birth Rates

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Today’s Discussion:

- What are the drivers for the rise and variation in Primary CS?
- NTSV (Nulliparous, Term Singleton, Vertex) as the focus for CS Quality Improvement
- Importance of L&D culture, Labor practices, and use of Data and the California Maternal Data Center to drive change
- Multi-strategy approach to address CS rates
- Public projects to support this initiative
Presenters’ Disclosures:

- No financial conflicts
- We are all employees of California Maternal Quality Care Collaborative (CMQCC) based at Stanford University, Palo Alto, CA
- No outside business interests

CMQCC is a multi-stakeholder State Quality Collaborative. The CMDC supported by the CDC and the California HealthCare Foundation
CPQCC and CMQCC

Mission: Improving care for moms and newborns

California Perinatal Quality Care Collaborative (CPQCC)
- Expertise in data capture from hospitals
- Established Perinatal Data Center in 1996
- Data use agreements in place with 130 hospitals with NICUs
- Model of working with state agencies to provide data of value

California Maternal Quality Care Collaborative (CMQCC)
- Expertise in maternal data analysis
- Developer of QI toolkits
- Host of collaborative learning sessions
- Established Maternal Data Data Center in 2011
CMQCC Key Partner/Stakeholders

State Agencies:
- MCAH, Dept Public Health
- OSHPD Healthcare Information Division
- Office of Vital Records (OVR)
- Regional Perinatal Programs of California (RPPC)
- DHCS, Medi-Cal

Public Groups
- California Hospital Accountability and Reporting Taskforce (CHART)
- California HealthCare Foundation
- Kaiser Family Foundation
- March of Dimes (MOD)

Professional groups
- American College of Obstetrics and Gynecology (ACOG)
- Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN)
- American College of Nurse Midwives (ACNM),
- American Academy of Family Physicians (AAFP)

Key Medical and Nursing Leaders
- Universities and Hospital Systems
- Kaisers, Sutter, Sharp, Dignity, Scripps, Providence, Public hospitals,

CMQCC: Transforming Maternity Care
CMQCC Key Partner/Stakeholders (con’t)

**Medical Associations:**
- California Hospital Association
- Regional Hospital Associations
- California Medical Association

**Payers**
- Aetna
- Anthem Blue Cross
- Blue Shield
- Cigna
- Health Net

**Purchasers**
- CALPERS (State and local government employees and retirees)
- Medi-Cal (for managed care plans)
- Pacific Business Group on Health/ Silicon Valley Employers Forum
- Cover California (ACA entity)
CMQCC Perinatal QI Toolkits Adopted Nationally

A California Toolkit to Transform Maternity Care

Improving Health Care Response to Obstetric Hemorrhage

This collaborative project was developed by:

The Obstetric Hemorrhage Task Force

The Maternal Quality Improvement Panel

California Maternal Quality Care Collaborative

Maternal, Child and Adolescent Health Division; Center for Family Health

California Department of Public Health

CMQCC

California Maternal Quality Care Collaborative

This collaborative project was developed by:

March of Dimes

California Maternal Quality Care Collaborative

Maternal, Child and Adolescent Health Division; Center for Family Health

California Department of Public Health
Cesarean Births Have Risen by Over 50% in the Last 10 years
What are the Indications for Cesarean Section?

<table>
<thead>
<tr>
<th>CS Indication</th>
<th>Proportion of Overall CS Rate</th>
<th>Proportion of Primary CS Rate</th>
<th>CS Rate for this Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeat (prior)</td>
<td>30-35%</td>
<td></td>
<td>90+%</td>
</tr>
<tr>
<td>“Abnormal Labor” (CPD/FTP)</td>
<td>25-30%</td>
<td>35-45%</td>
<td>variable</td>
</tr>
<tr>
<td>“Fetal Distress”</td>
<td>10-15%</td>
<td>15-20%</td>
<td>variable</td>
</tr>
<tr>
<td>Breech/Malpres.</td>
<td>10%</td>
<td>15-20%</td>
<td>98%</td>
</tr>
<tr>
<td>Multiple Gestation</td>
<td>5-9%</td>
<td>10-15%</td>
<td>60-80%</td>
</tr>
<tr>
<td>Other: Placenta Previa, Herpes, etc</td>
<td>~5%</td>
<td>~10-15%</td>
<td>90%</td>
</tr>
</tbody>
</table>
# What Indications Have Driven the Rise in CS?

<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></td>
<td>Kaiser So. Cal. (1991 v. 2008) (Primary: 12.5% to 20%) Focus: all primary singleton Cesareans</td>
</tr>
<tr>
<td>Labor complications (CPD/FTP)</td>
<td>28%</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>
</tr>
</tbody>
</table>
Importance of NTSV population to the CS rate

>98% of inter-institutional variation in overall CS rates can be attributed to NTSV (TSCN)

>60% of the rise in CS rates over the last 10 years can be attributed to NTSV (TSCN)

Importance of the First Birth

- If you have a CS in the first labor, over 90% of ALL your subsequent births will be by Cesarean Section
- If you have a vaginal birth in the first labor, over 90% of ALL your subsequent births will be vaginal

*A Classic Example of “Path Dependency”*

How do we focus QI activity on preventing First-birth (Primary) Cesarean sections?
NTSV Cesarean Section Rate: Strengths

- Simple
- Focuses on the main source of variation
- Focuses on the first birth, and therefore her entire reproductive future
- Focuses on labor management
Consequences of a Primary Elective Cesarean Delivery Across the Reproductive Life

Emily S. Miller, MD MPH, Katherine Hahn, MD, and William A. Grobman, MD, MBA, for the Society for Maternal-Fetal Medicine Health Policy Committee

OBJECTIVE: To estimate cumulative risks of morbidity associated with the choice of elective cesarean delivery for a first delivery.

METHODS: A decision analytic model was designed to compare major adverse outcomes across a woman’s reproductive life associated with the choice of elective cesarean delivery compared with a trial of labor at a first delivery. Maternal outcomes assessed included maternal transfusion, hysterectomy, thromboembolism, operative injury, and death. Neonatal outcomes assessed included cerebral palsy and permanent brachial plexus palsy in the offspring.

RESULTS: Choosing an initial cesarean delivery resulted in a 0.3% increased risk of a major adverse maternal outcome in the first pregnancy. In each subsequent pregnancy, the respectively, per 10,000 women in the first pregnancy, by a fourth pregnancy, the risk of a adverse neonatal outcome was higher among offspring of women who had chosen the initial elective cesarean delivery (0.368% compared with 0.363%).

CONCLUSION: Maternal morbidity associated with the choice of primary elective cesarean delivery increases in each subsequent pregnancy and is greater in magnitude than that associated with the choice of a trial of labor. These increased risks are not offset by a substantive reduction in the risk of neonatal morbidity.

(Obstet Gynecol 2013;121:789–97)
DOI: http://10.1097/AOG.0b013e3182878b43
NTSV Cesarean Section Rate: Quality Measure

- Widely Adopted
  - DHHS: Healthy Person 2010 and 2020
  - NQF, Joint Commission
  - Similar to AHRQ Inpatient Quality Indicator (IQI #33: Low-risk Primary Cesarean Delivery Rate) (also includes MTSV)
  - Medicaid programs in California, Washington, others
Variation in California CS Rates by Region (2007)

HP2020 NTSV CS Target = 23.9%

NTSV CS State Mean = 28.1%
Total CS State Mean = 31.3%
In Effort to Limit C-Sections, Two Methods Yield Different Results on Staten Island

Susan Dominus NYT April 19, 2010

- **Staten Island University Hospital**
  - 23.2% Cesarean rate
  - Strong leadership and determination
  - No elective inductions prior to 41 wks
  - No elective CS
  - Non-interventionist policy

- **Richmond University Medical Center**
  - 48.3% Cesarean rate
  - “Perinatal Center” (for high-risk pregnancies)
  - “Peer Review” to reduce CS
  - 2nd opinions for elective CS (half-hearted?)
So what do we mean by “culture” (1)
“The way we do things around here”

- Nursing culture is about...
  - Experience in managing labor (versus charting, caring for complications and FHR interpretation)
  - Value seen for vaginal birth
  - Importance of labor support
  - Flexibility and patience

- OB culture is about...
  - All of the above, and...
  - Outside pressure (back to the office or family)
  - Perception of liability risk
So what do we mean by “culture” (2)

“The way we do things around here”

- Leadership (MD and Admin) culture is about…
  - All of the above, *and*…
  - Does anyone care?
  - Do leaders feel they have leverage?

- Patient culture is about…
  - Value of vaginal birth (friends, family, and Hollywood)
  - Fear of pain, vaginal birth (for mother and baby), and vaginal cosmesis
  - Childbirth preparation
Primary CS QI Pathways
Which is the driver in my hospital??

- Latent phase admission
- Nullip (first birth) labor induction
  - Esp. with unfavorable cervix
- Dystocia/Failure to progress
  - Arrest or protraction disorder
- Non-reassuring Fetal Status
  - Oxytocin/misoprostol associated tachysytole
- 2nd Stage (failure of descent)
- Predicted macrosomia
- Patient choice
The California Maternal Data Center (CMDC)

Anne Castles, MPH, MA          Kathryn Melsop, MS  
CMDC Project Managers

Elliott Main, MD  
CMQCC Medical Director
The California Maternal Data Center (CMDC) Project Vision

- Build a statewide data center to collect and report timely maternity metrics—in a way that is low cost, low burden and high value for hospitals.
- Produce metrics that will support QI and L&D service line management.
- Improve quality of administrative data.
- Facilitate performance reporting.
- Over time, publicly report select set of robust measures to inform decisions of childbearing women.
Key Issue

Data most useful for hospital QI if:

- Data available in rapid-cycle fashion—so actually useful for motivating quality improvement!

- Program does not entail significant additional data reporting burden for hospitals
CMQCC Maternal Data Center: Data Flow

1. Links Birth Data to OSHPD file
2. Runs exclusions
3. Identifies CS and Inductions
4. Prints list of charts for review

<39wk Elective
Delivery
CHART REVIEW
Labor?/SROM?
(~6% of cases for brief review)

Limited manual
data entry for this
measure

CMQCC Data Center

uploads electronic files

Calculates all the Measures

Birth Certificate File
(Clinical Data)

PDD--Discharge
Diagnosis File
(ICD9 codes)

REPORTS
Benchmarks against other hospitals
Sub-measure reports

Mantra: “If you use it, they will improve it”
Example Projects Using the California Maternal Data Center:

Support multiple projects and QI collaboratives to:

- Reduce Early Elective Deliveries
- Improve BC data quality for selected data elements
- Reduce Severe Maternal Morbidity from Hemorrhage and Preeclampsia
- Increase utilization of Antenatal Steroids
- Reduce NICU Length of Stay
- Partner for public release of selected perinatal measures
- Reduce Primary Cesarean Sections with a focus on Low-risk First-birth Cesareans
- Improve outcomes for term newborns

CMQCC: Transforming Maternity Care
Total CS Rate Among 251 California Hospitals 2011-2012
(Source: CMQCC--California Maternal Data Center combining primary data from OSHPD and Vital Records)

Range: 15.0—71.4%
Median: 32.5%
Mean: 32.8%
Low-Risk First-Birth (Nuliparous Term Singleton Vertex) CS Rate
(endorsed by NQF, TJC PC-02, CMS, HP2020)
Among 249 California Hospitals: 2011-2012
(Source: CMQCC--California Maternal Data Center combining primary data from OSHPD and Vital Records)

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

National Target =23.9%

36% of CA hospitals meet national target

July 24, 2013
Low-Risk First-Birth (Nuliparous Term Singleton Vertex) CS Rate
(endorsed by NQF, TJC PC-02, CMS, HP2020)
Among 249 California Hospitals: 2011-2012
(Source: CMQCC--California Maternal Data Center combining primary data from OSHPD and Vital Records)

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

National Target = 23.9%
36% of CA hospitals meet national target
3 Major Drivers of the Primary CS Rate

The Primary CS rate (Denominator=all mothers without a prior CS; Numerator=among those mothers, who had a CS) is comprised of 3 major, mutually exclusive sub-populations. Nulliparous term singleton vertex (NTSV), multiparous term singleton vertex (MTSV) and mothers who have a preterm, multiple, or non-vertex pregnancy. NTSV is the component that has driven the 50% increase in primary CS in the last decade, is typically the largest component, and has the greatest variation among hospitals. This graph helps you determine what drives your primary CS rate. Each component tells you what percentage of your women with no prior CS has a CS for these populations.

<table>
<thead>
<tr>
<th></th>
<th>NTSV</th>
<th>MTSV</th>
<th>Preterm/Multiples/Breech</th>
<th>Total Primary CS Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Hospital</td>
<td>15.9%</td>
<td>2.3%</td>
<td>8.7%</td>
<td>26.8%</td>
</tr>
<tr>
<td>All Community NICUs</td>
<td>11.4%</td>
<td>3.3%</td>
<td>6.5%</td>
<td>21.2%</td>
</tr>
<tr>
<td>Statewide (2012)</td>
<td>11.5%</td>
<td>3.2%</td>
<td>6.3%</td>
<td>21.1%</td>
</tr>
</tbody>
</table>
Comparison Rates for the 3 Major Drivers

Period: Oct 2012 - Sep 2013 (12 months)

What Drives Our Primary CS Rate?
How do Our Hospital's Primary CS Sub-population Rates Compare?

In contrast to the above bar graph, this figure shows the specific rates for each of the 3 patient sub-populations. For example, what percentage of your NTSV population did you perform a CS on? This allows comparison of hospital performance between hospitals and allows benchmarking for a specific indication.

- Nulliparous Term Singleton Vertex: 32.1%
- Multiparous Term Singleton Vertex: 6%
- Preterm/Multiples/Breech: 68.3%

CS rates for specific sub-populations:

- **Sample Hospital**
- All Community NICUs (2012)
- Statewide (2012)
What Drives Our Nulliparous Term Singleton Vertex (NTSV) CS Rate of 32.1%?

The NTSV CS rate is comprised of 3 major, mutually exclusive sub-populations (Spontaneous labor resulting in CS, Induced Labor Resulting in CS, and CS with no Labor). This breakdown of the NTSV CS rate should help determine where QI efforts can best be applied. The most common issue among most hospitals is a high rate of CS during NTSV spontaneous labor. Some hospitals may also have a high rate during induced labor.

Sample Hospital

<table>
<thead>
<tr>
<th></th>
<th>Spontaneous Labor</th>
<th>Induced Labor</th>
<th>No Labor</th>
<th>Total NTSV CS Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Hospital</td>
<td>18.0%</td>
<td>6.1%</td>
<td>8.0%</td>
<td>32.1%</td>
</tr>
<tr>
<td>All Community NICUs (2012)</td>
<td>15.3%</td>
<td>7.4%</td>
<td>4.9%</td>
<td>27.6%</td>
</tr>
<tr>
<td>Statewide (2012)</td>
<td>15.6%</td>
<td>7.3%</td>
<td>4.8%</td>
<td>27.6%</td>
</tr>
</tbody>
</table>
Comparison Rates for the 3 Major NTSV Drivers

- **Spontaneous Labor**
  - FTP / CPD: Sample Hospital 15.3%, All Community NICUs (2012) 15.6%, Statewide (2012) 15.6%
  - Fetal Distress: Sample Hospital 6.5%, All Community NICUs (2012) 5.2%

- **Induced Labor**
  - FTP / CPD: Sample Hospital 26.0%, All Community NICUs (2012) 24.2%
  - Fetal Distress: Sample Hospital 6.9%, All Community NICUs (2012) 7.1%
  - Other: Sample Hospital 3.1%, All Community NICUs (2012) 4.7%

- **No Labor**
  - Medical Indication: Sample Hospital 2.1%, All Community NICUs (2012) 1.4%, Statewide (2012) 1.4%
  - Macrosomia / Unengaged Head: Sample Hospital 2.6%, All Community NICUs (2012) 1.4%
  - Other / Unknown: Sample Hospital 2.1%, All Community NICUs (2012) 3.1%
### Analysis of Numerator Cases: Macrosomia CS

**Primary CS: NTSV No Labor: Indication -- Macrosomia / Unengaged Head**

**Discharge Dates:** 04/01/2013-06/30/2013

<table>
<thead>
<tr>
<th>Case Number</th>
<th>Delivery Date</th>
<th>Gest. Age</th>
<th>BW</th>
<th>Diagnoses</th>
</tr>
</thead>
<tbody>
<tr>
<td>65a34b7daa</td>
<td>05/23/2013</td>
<td>38</td>
<td>2750</td>
<td>658.11, 652.51, 659.61</td>
</tr>
<tr>
<td>eafa457099</td>
<td>06/03/2013</td>
<td>39</td>
<td>2980</td>
<td>656.61, V27.0, V06.1</td>
</tr>
<tr>
<td>cf3685268e</td>
<td>05/04/2013</td>
<td>40</td>
<td>3028</td>
<td>658.41, 652.51, V27.0</td>
</tr>
<tr>
<td>6ecf11ba26</td>
<td>05/21/2013</td>
<td>39</td>
<td>3099</td>
<td>652.51, 648.01, 659.51, 663.11, 250.00, V45.85, V27.0</td>
</tr>
<tr>
<td>90bceacb17</td>
<td>05/18/2013</td>
<td>39</td>
<td>3629</td>
<td>652.51, V27.0, V06.1</td>
</tr>
<tr>
<td>4b4ef53d7c</td>
<td>05/30/2013</td>
<td>41</td>
<td>3634</td>
<td>656.61, V27.0</td>
</tr>
<tr>
<td>feba89f3e1</td>
<td>04/11/2013</td>
<td>40</td>
<td>3657</td>
<td>656.61, 659.51, 648.91, 625.1, 648.21, 285.9, V06.1, V27.0</td>
</tr>
</tbody>
</table>

**Spot Light Cases**
3 Major Drivers of the Multip-TSV CS Rate

What Drives Our Multiparous Term Singleton Vertex (MTSV) CS Rate of 6.0%?

The MTSV CS rate is comprised of 3 major, mutually exclusive sub-populations (Spontaneous labor resulting in CS, Induced Labor Resulting in CS, and CS with no Labor). Usually, MTSV is a smaller contributor to the overall Primary CS rate but this breakdown of the MTSV CS rate could help determine where QI efforts could best be applied.

<table>
<thead>
<tr>
<th></th>
<th>Sample Hospital</th>
<th>All Community NICUs (2012)</th>
<th>Statewide (2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>total</td>
<td>6%</td>
<td>7.2%</td>
<td>7%</td>
</tr>
<tr>
<td>spontaneous labor</td>
<td>2.6%</td>
<td>3.4%</td>
<td>3.3%</td>
</tr>
<tr>
<td>induced labor</td>
<td>0.8%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>no labor</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Spontaneous Labor</th>
<th>Induced Labor</th>
<th>No Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Hospital</td>
<td>2.6%</td>
<td>0.8%</td>
<td>2.6%</td>
</tr>
<tr>
<td>All Community NICUs</td>
<td>3.4%</td>
<td>1.2%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Statewide (2012)</td>
<td>3.3%</td>
<td>1.2%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Provider</td>
<td>Total Deliveries</td>
<td>NTSV Cesarean Section</td>
<td>Total CS</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td>-----------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Rate</td>
<td>D</td>
<td>Rate</td>
</tr>
<tr>
<td>Oct 2012 - Sep 2013 Statewide</td>
<td>27.6%</td>
<td>163090</td>
<td>33.2%</td>
</tr>
<tr>
<td>Sample Hospital</td>
<td>5844</td>
<td>32.2%</td>
<td>2369</td>
</tr>
<tr>
<td>G5xxxx</td>
<td>52</td>
<td>13.6%</td>
<td>22</td>
</tr>
<tr>
<td>G6xxxx</td>
<td>47</td>
<td>36.8%</td>
<td>19</td>
</tr>
<tr>
<td>G7xxxx</td>
<td>68</td>
<td>20.8%</td>
<td>24</td>
</tr>
<tr>
<td>G8xxxx</td>
<td>60</td>
<td>15.4%</td>
<td>26</td>
</tr>
<tr>
<td>A8xxxx</td>
<td>190</td>
<td>42.7%</td>
<td>75</td>
</tr>
<tr>
<td>A6xxxx</td>
<td>52</td>
<td>35.0%</td>
<td>20</td>
</tr>
<tr>
<td>A5xxxx</td>
<td>2</td>
<td>No Cases</td>
<td>0</td>
</tr>
<tr>
<td>A4xxxx</td>
<td>114</td>
<td>35.3%</td>
<td>51</td>
</tr>
<tr>
<td>A8xxxx</td>
<td>214</td>
<td>18.3%</td>
<td>82</td>
</tr>
<tr>
<td>A9xxxx</td>
<td>481</td>
<td>36.2%</td>
<td>163</td>
</tr>
</tbody>
</table>
Preventing the First Cesarean Delivery

Summary of a Joint Eunice Kennedy Shriver National Institute of Child Health and Human Development, Society for Maternal-Fetal Medicine, and American College of Obstetricians and Gynecologists Workshop

Catherine Y. Spong, MD, Vincenzo Berghella, MD, Katharine D. Wenstrom, MD, Brian M. Mercer, MD, and George R. Saade, MD

Definitions of Failed Induction and Arrest Disorders

Failed induction of labor

Failure to generate regular (eg, every 3 min) contractions and cervical change after at least 24 h of oxytocin administration, with artificial membrane rupture if feasible

First-stage arrest

6 cm or greater dilation* with membrane rupture and no cervical change for
4 h or more of adequate contractions (eg, >200 Montevideo units) or
6 h or more if contractions inadequate

Second-stage arrest

No progress (descent or rotation) for
4 h or more in nulliparous women with an epidural
3 h or more in nulliparous women without an epidural
3 h or more in multiparous women with an epidural
2 h or more in multiparous women without an epidural

# Duration of Each Centimeter Change in Cervical Dilatation for Nulliparous Women With Spontaneous Onset of Labor

<table>
<thead>
<tr>
<th>Cervical Change (cm)</th>
<th>Median (h)</th>
<th>95th Percentile (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3–4</td>
<td>1.8</td>
<td>8.1</td>
</tr>
<tr>
<td>4–5</td>
<td>1.3</td>
<td>6.4</td>
</tr>
<tr>
<td>5–6</td>
<td>0.8</td>
<td>3.2</td>
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<tr>
<td>6–7</td>
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<td>7–8</td>
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<td>8–9</td>
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<tr>
<td>9–10</td>
<td>0.5</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Box 2. Key Points

- A cesarean delivery that is performed without an accepted indication should be labeled as such, ie, “nonindicated cesarean delivery.” The term “elective cesarean delivery” should be avoided.

- Labor induction should be performed only for medical indication; if done for nonmedical indications, the gestational age should be 39 weeks or more, and the cervix should be favorable (Bishop score more than 8), especially in the nulliparous patient.

- The diagnosis of failed induction should only be made after an adequate attempt. Failed induction is defined as failure to generate regular (eg, every 3 minutes) contractions and cervical change after at least 24 hours of oxytocin administration with artificial membrane rupture if feasible.

- Adequate time for normal latent and active phases of the first stage, and for the second stage, should be allowed unless expeditious delivery is medically indicated (Table 5; Figs. 1 and 3).

Case Review For Cesarean during First Stage Labor (before 10cm dilation)

**Example Checklist: All 3 should be present**

- Cervix 6 cm or greater and no change X 4 hours
- Membranes ruptured
- Adequate Uterine activity:
  - > 200 Montivideo units x 4 hrs., or Q 3 minute palpably strong contractions when not feasible to rupture membranes.
  - OR
  - < 200 Montivideo units or < 3/10 minute contractions x6 hrs. despite Oxytocin administration.

Modified from:
Take the “Test” in Your Hospital...

• Identify 20 cases of CS in the first stage of labor performed for Labor dystocia/Failure to progress
• Review using the Check List
• How many will fail the 3 criteria?
Common sense approach to Category II fetal monitor strips!

FIGURE 1
Algorithm for management of category II fetal heart rate tracings

Moderate variability or accelerations

Yes

Significant decelerations with ≥50% of contractions for 1 hour

No

Significant decelerations with ≥50% of contractions for 30 minutes

Yes

Observe for 1 hour

No

Persistent pattern

Latent Phase

Active Phase

Second Stage

Normal labor progress

Normal progress

No

Yes

Yes

No

Yes

No

Cesarean

Observe

Cesarean or OVD

Observe

Cesarean or OVD

Manage per algorithm

OVD, operative vaginal delivery.

*aThat have not resolved with appropriate conservative corrective measures, which may include supplemental oxygen, maternal position changes, intravenous fluid administration, correction of hypotension, reduction or discontinuation of uterine stimulation, administration of uterine relaxant, amnioinfusion, and/or changes in second stage breathing and pushing techniques.

Significant decelerations are defined as any of the following:

- **Variable decelerations** lasting longer than 60 seconds and reaching a nadir more than 60 bpm below baseline.
- **Variable decelerations** lasting longer than 60 seconds and reaching a nadir less than 60 bpm regardless of the baseline.
- Any **late decelerations** of any depth.
- Any **prolonged deceleration**, as defined by the NICHD. Due to the broad heterogeneity inherent in this definition, identification of a prolonged deceleration should prompt discontinuation of the algorithm until the deceleration is resolved.

Creating a Public Agenda for Maternity Safety and Quality in Cesarean Delivery

Elliott K. Main, MD, Christine H. Morton, PhD, Kathryn Melsop, MS, David Hopkins, PhD, Giovanna Giuliani, MBA, MPH, and Jeffrey B. Gould, MD, MPH

5 Key Complimentary Strategies:

✅ 1) QI for labor management practices
✅ 2) Payment reform to eliminate negative or perverse incentives
✅ 3) Education for the value of normal birth (culture)
✅ 4) Transparency with Public Reporting
✅ 5) Continued public engagement

Public Engagement in Primary Cesarean Prevention: 2014

- NQF, Joint Commission, LeapFrog, CHCF, and CMS all reporting NTSV CS
- Patient Safety First: CA Hospital Collaborative for NTSV CS
- Hospital Engagement Networks (HENs) will focus on Primary CS
- National Partnership for Patients: Maternity Action Team—NTSV CS Focus for 2014-2015
- CalSIM (payer and purchaser coalition)—Maternity and Cesarean focus for payment reform in CA: 2014-2015
Primary Cesarean QI Steps

- Identify the local leaders
  - MD, RN and Admin

- Identify your hospital's issue (Focus!)
  - CMDC is available in your hospital
  - Use the Checklists

- CMQCC Toolkit and Change packages
  - Ready in Feb 2014

- QI Mentoring (potential)
  - Sharing of experiences
Today’s Discussion:

- What are the drivers for the rise and variation in Primary CS?
- NTSV (Nulliparous, Term Singleton, Vertex) as the focus for CS Quality Improvement
- Importance of L&D culture, Labor practices, and use of Data and the California Maternal Data Center to drive change
- Multi-strategy approach to address CS rates
- Public projects to support this initiative
Thank You!

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