Introduction to the Toolkit to Support Vaginal Birth and Reduce Primary Cesareans

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Funding for the development of this toolkit was provided by the California Health Care Foundation
Introduction to the Toolkit

- Wide variation in risk adjusted CS rates
- Why should we care about CS rates?
- It takes a village to successfully reduce cesarean rates
- The Toolkit: Readiness, Recognition, Response, Reporting—barriers, strategies and tools
- Pilot hospital success stories
- What do we do first? – Implementation guide
California Maternal Quality Care Collaborative
Leader for Maternity QI Projects

- Statewide multi-disciplinary Taskforces that develop QI toolkits and implementation guides
- Large-scale quality collaboratives in California
- Widespread adoption by other states and national

Elimination of Early Elective Delivery (2010)
Response to OB Hemorrhage (2010; 2nd Ed 2015)
Response to Preeclampsia (2013)
Who are CMQCC’s Key Partners

State Agencies
- CA Department of Public Health, MCAH
- Regional Perinatal Programs of California (RPPC)
- DHCS: Medi-Cal
- Office of Vital Records
- Office of Statewide Health Planning and Development (OSHPD)
- Covered California

Membership Associations
- Hospital Quality Institute (HQI)/California Hospital Association (CHA)
- Pacific Business Group on Health (PBGH)
- Integrated Healthcare Association (IHA)

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

Professional Groups (California sections of national organizations)
- 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
- UC, Kaisers, Sutter, Sharp, Dignity Health, Scripps, Providence, Public hospitals
Maternal Mortality: California and U.S. 1999-2013


©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

Transforming Maternity Care
A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans
California Maternal Data Center

CMQCC Maternal Data Center

- Discharge Diagnosis Files
- Birth Certificate Data
- Individual Hospital QI Measures

Rapid-cycle Data (45 days)

Transforming Maternity Care
A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans
### Hospital Clinical Performance Measures: By Name

<table>
<thead>
<tr>
<th>Measure</th>
<th>Q1 2015 Rate</th>
<th>2014 Statewide</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd &amp; 4th Degree Lacerations in Instrument-Assisted Vaginal Deliveries</td>
<td>17.9%</td>
<td>11.4%</td>
</tr>
<tr>
<td>3rd &amp; 4th Degree Lacerations in NON-Instrument-Assisted Vaginal Deliveries</td>
<td>1.0%</td>
<td>1.9%</td>
</tr>
<tr>
<td>3rd &amp; 4th Degree Lacerations in Vaginal Deliveries</td>
<td>2.4%</td>
<td>2.6%</td>
</tr>
<tr>
<td>5 Minute APGAR, &lt; 7 Among All Deliveries, &gt; 39 weeks, (HEN)</td>
<td>0.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td>5 Minute APGAR, &lt; 7 in Early Term Newborns, (HEN)</td>
<td>0.5%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Antenatal Steroids (PC-03)</td>
<td>100.0%*</td>
<td>N/A</td>
</tr>
<tr>
<td>Aspiration DVT, Prophylaxis in Women Undergoing CS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Birth Trauma - Injury to Neonate (AHRQ PSI 17)</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Cesarean Birth: Low Risk-NTSV (PC-02)</td>
<td>23.5%</td>
<td>25.1%</td>
</tr>
<tr>
<td>Cesarean Birth: Low Risk-NTSV, Age Adjusted</td>
<td>22.1%</td>
<td>24.3%</td>
</tr>
<tr>
<td>Cesarean Birth: Overall</td>
<td>31.9%</td>
<td>32.5%</td>
</tr>
<tr>
<td>Cesarean Birth: Primary</td>
<td>18.8%</td>
<td>20.1%</td>
</tr>
<tr>
<td>Cesarean Birth: Primary, Term, Singleton, Vertex (AHRQ IQR 33)</td>
<td>13.5%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Cesarean Birth: Term, Singleton, Vertex (AHRQ IQR 21)</td>
<td>24.7%</td>
<td>29.2%</td>
</tr>
<tr>
<td>Elective Delivery (PC-01)</td>
<td>0.0%</td>
<td>N/A</td>
</tr>
<tr>
<td>Episiotomy Rate</td>
<td>11.4%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Exclusive Breast Milk Feeding (PC-05)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Exclusive Breast Milk Feeding Considering Initial Feeding Plan (PC-05a)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Failed Induction</td>
<td>14.3%</td>
<td>N/A</td>
</tr>
<tr>
<td>Hemorrhage: Blood Product Units Transfused per 1000 Delivery Cases &gt; 20 wks</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Hemorrhage: Massive Transfusions (&gt; 4 Units) per 1000 Delivery Cases &gt; 20 wks</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Hemorrhage: Risk assessment on Admission</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Induction Rate</td>
<td>14.2%</td>
<td>N/A</td>
</tr>
<tr>
<td>Newborn Bilirubin Screening Prior to Discharge</td>
<td>100.0%*</td>
<td>N/A</td>
</tr>
<tr>
<td>Operative Vaginal Delivery Rate</td>
<td>8.4%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Preeclampsia: ICU Admit Rate among preeclamptic delivery cases &gt; 39 wks</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Preeclampsia: ICU Days per 100 preeclamptic delivery cases &gt; 39 wks</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Timely Treatment for Severe Hypertension</td>
<td>66.7%*</td>
<td>N/A</td>
</tr>
<tr>
<td>Unexpected Newborn Complications</td>
<td>3.2%</td>
<td>3.9%</td>
</tr>
<tr>
<td>VLBW (&lt;1500g), NOT delivered at a Level III NICU</td>
<td>No Cases</td>
<td>0.6%</td>
</tr>
<tr>
<td>Vaginal Birth After Cesarean (VBAC) Rate, All (AHRQ IQR 54)</td>
<td>11.8%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Vaginal Birth After Cesarean (VBAC) Rate, Uncomplicated (AHRQ IQR 22)</td>
<td>11.5%</td>
<td>10.7%</td>
</tr>
</tbody>
</table>
Utilize the CMQCC Maternal Data Center to:

- Monitor hospital rates—in real time
- Make peer comparisons
- Assess provider variation
- Identify QI opportunities (and lots more!)
Transforming Maternity Care
A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans
Begin with a Test:

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 C-section?

(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.

Rosenberg T, NYT, Jan 19 2016
Why focus on Nulliparous Term Singleton Vertex Cesarean Birth?
Cesarean Delivery Rates Vary Tenfold Among US Hospitals; Reducing Variation May Address Quality And Cost Issues

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.
There is a Large Variation in Cesarean Rates Among California Hospitals

Range: 15.6%-75.8%
Median: 31.4%
Mean: 32.3%

But wait, you say, my hospital only takes care of high risk patients!!
Why does the Toolkit Focus on NTSV Cesarean Rate?

- Nulliparity is a critical risk adjuster. Creates a standardized population that can be compared across providers, hospitals, states, etc.

- NTSV represents the most favorable conditions for vaginal birth, but also the most difficult labor management (helps focus QI on labor management!)

- 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 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.
Even when we adjust for risk with the NTSV rate, large variation between California hospitals still exists!
### 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>
Why should we care about CS rates?
Why should we care?

- Steady rise in total CS rate without maternal or neonatal benefit
  - 6% in early 70’s
  - 20% in mid 80’s
  - 33% in 2010
  - Cerebral Palsy rates, neonatal seizure rates unchanged since 1980
Why Focus on Cesarean Birth for Quality Improvement?

US 2013 overall CS= 32.7%

CA 2013 overall CS= 33.1%

Osterman M etal, NVSR vol 63, num 6, Nov 2014
Cesarean birth is the most common hospital surgery in the U.S.

In just 10 years, Cesarean birth rates rose by 50% in both California and the United States.
Maternal Risks Include:

Long Term & Subsequent Cesarean Births

• Abnormal placentation
• Step-wise increase in life threatening hemorrhage with each cesarean
• Uterine rupture
• Surgical adhesions
• Bowel injury
• Bowel obstruction
• Delayed interval from incision to birth (neonatal risk)

Acute

• Longer hospital stay
• Increased pain and fatigue
• Slower return to normal activity and productivity
• Delayed and difficult breastfeeding
• Anesthesia complications
• Postpartum hemorrhage
• Wound infection
• Deep vein thrombosis
Maternal Risks (continued)

**ACUTE**
- Delayed and/or ineffective bonding with neonate
- Maternal anxiety

**LONG TERM & SUBSEQUENT PREGNANCIES**
- Postpartum anxiety and depression
- Post traumatic stress disorder (PTSD)
Neonatal Risks of Cesarean Birth

- Impaired neonatal respiratory function
- Increase NICU admissions
- Increased risk of childhood asthma requiring inhaler use and hospitalization
- Affects maternal-newborn interactions
- Breastfeeding
The Cost... Another Important Reason to Reduce Unnecessary CS

California could save an estimated $80 to 441 million each year by reducing unnecessary Cesarean births.¹
Why has Cesarean Birth Reduction been so hard?

**Direct challenge** to Physician autonomy

Very **complex**, many factors; need to be able to focus on areas with real preventability

**Timing:** prior attempts were often “Voices in the wilderness”; “3rd rail of OB QI”; “Enter at your own risk…”

**Risk:** “Never got sued for doing a Cesarean”

Need for **professional** society leadership
It takes a Village to Reduce Unnecessary Cesareans

Insurers/Employers
Public Advocates/Consumers
Public Policy/Medicaid
Prof Orgs (Natl and Local)
Hospitals & Providers: Data-driven QI Projects

TEAMWORK
The CMQCC Toolkit

- Comprehensive, evidence-based “How-to Guide” to reduce primary cesarean delivery in the NTSV population
- Will be the resource foundation for the CA QI collaborative project
- The principles are generalizable to all women giving birth
- Released on the CMQCC website April 28, 2016
- Has a companion Implementation Guide
Task Force Writing Group:

- Obstetricians
- Certified Nurse Midwives
- Registered Nurses
- Educators
- Doulas
- Hospital Leaders
- Public Health
Advisory Group Members:

- ACOG
- AWHONN
- ACNM
- SOAP (Society of Obstetric Anesthesia Providers)
- California Hospital Association
- Medical Liability Providers
- Several Hospital Systems
Key Foundation Materials

New National Guidelines for Defining Labor Abnormalities and Management Options
Using a toolkit you pick the right tool for the job
(and one you know how to use)
First and foremost, it should be understood that a labor support and 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.
SAFE REDUCTION OF PRIMARY CESAREAN BIRTHS: SUPPORTING INTENDED VAGINAL BIRTHS

The Toolkit translates the AIM Safety Bundle for Safe Reduction of Cesarean into an easy-to-use “menu” of tools and practical approaches

- Readiness
- Recognition and Prevention
- Response to Every Labor Challenge
- Reporting
READINESS

Developing a maternity culture that values, and supports intended vaginal birth
Strategies to Improve Readiness

- Improve access and quality to modern childbirth education
- Improve shared decision making at critical points in care
- Bridge provider knowledge and skills gap
- Harness the power of clinical champions
- Transition from paying for volume to paying for value
Examples

- Sources of best childbirth education
- Tools/policies/concepts of “mother friendly” hospital
- Approaches to shared decision making and training aspects
## Available Childbirth Education Tools

### Tools for Part I of Toolkit - For Women

<table>
<thead>
<tr>
<th>Strategy #</th>
<th>Name of Tool</th>
<th>CMQCC Tool</th>
<th>External Tool</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Childbirth Connection – What Every Pregnant Woman Needs to Know about Cesarean Section</td>
<td></td>
<td><a href="http://www.childbirthconnection.org/pdfs/cesareanbooklet.pdf">http://www.childbirthconnection.org/pdfs/cesareanbooklet.pdf</a></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lamaze International - Online Parent Education Courses</td>
<td></td>
<td><a href="http://www.lamaze.org/ParentOnlineEducation">http://www.lamaze.org/ParentOnlineEducation</a></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Lamaze International – Healthy Birth Practices</td>
<td></td>
<td><a href="http://www.lamazeinternational.org/d/do/653">http://www.lamazeinternational.org/d/do/653</a></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ACNM - Share With Women (printable consumer education series from the Journal of Midwifery and Women's Health)</td>
<td></td>
<td><a href="http://www.midwife.org/Share-With-Women">http://www.midwife.org/Share-With-Women</a></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CMQCC Birth Preferences Guide (Birth Plan)</td>
<td></td>
<td>Appendix E</td>
<td></td>
</tr>
</tbody>
</table>
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)

### Shared Decision Making (continued)

**Patient Decision Points That Impact Risk of Cesarean**

<table>
<thead>
<tr>
<th>Decision Point</th>
<th>Associated Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice of provider and/or facility for prenatal care and care at time of birth</td>
<td></td>
</tr>
<tr>
<td>Timing of admission to hospital (admission to labor and delivery while still in the latent/early phase)</td>
<td>Increased risk of cesarean</td>
</tr>
<tr>
<td>Choice of fetal monitoring method</td>
<td>Increased risk of cesarean</td>
</tr>
<tr>
<td>Whether to have continuous labor support by a trained caregiver like a doula</td>
<td>Improves chances of having a vaginal birth</td>
</tr>
<tr>
<td>Induction of labor without medical indication</td>
<td></td>
</tr>
</tbody>
</table>
Birth Preferences Worksheet

- Collaborate with healthcare provider to determine birth preferences
- Tailor choices to what is available at each facility

Example available in the toolkit
RECOGNITION AND PREVENTION

Supporting Intended Vaginal Birth
Strategies to Support Intended Vaginal Birth

- Implement institutional policies which support vaginal birth/physiologic processes (and reduce routine intervention)
- Implement early labor policies for admission and supportive care
- Improve supportive care (RN labor support, use of doulas, infrastructure/equipment)
- Implement best practices for regional anesthesia
- Intermittent monitoring for low risk women
- Implement protocols for modifiable conditions like HSV and breech position
Examples

- Model policies for labor support, intermittent monitoring, freedom of movement, etc.
- Coping with labor algorithm
- Guidelines for working with doulas
- Patient education and decision guides
Quality Patient Care in Labor and Delivery: A Call to Action

“Pregnancy and birth are physiologic processes, unique for each woman, that usually proceed normally. Most women have normal conception, fetal growth, labor, and birth and require minimal-to-no intervention in the process.”
Implement Early Labor Supportive Care Policies and Active Labor Criteria for Admission

- **Physiologic onset of labor is critical to the success in labor**, and introduces moms and babies to protective hormonal pathways.
- **Women admitted in early labor are more likely to have a cesarean, and more likely to have routine interventions e.g. oxytocin even if not clinically necessary.**
- **Translation: Early labor at home. Let labor start on its own!**
Early Labor Support / Active Labor Admission Policies

- Checklist/algorithm for spontaneous labor and recommendations for active labor admission policies
- Latent labor support if admitted, and therapeutic rest as alternative to admission
- Patient education materials to explain rationale for delayed admission, reduce anxiety and provide guidance on when to return to the labor and delivery unit
- Material with specific guidance for partners and family members as to how to best support the woman in early labor
Various weblinks to resources that support early labor and establish criteria for active labor admission

**Safe Deliveries Roadmap**

*Advancing Safety for Mothers and Babies*
*A Roadmap from Pre-pregnancy to Postpartum*

**Topic 3b: Labor - First Stage: Consider Discharge Home or Further Observation**

**Note:** For spontaneous labor only.

**Recommendations**

- Cervix 4-5 cm without change x 2 - 4 hours
- Less than 80% effacement
- Membranes intact
- Reactive NST/FHR category I (if uterine contractions present)
- Contractions less than 3/10 minutes
Weblinks to patient resources to guide and support early labor
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

- Less likely to have a cesarean birth
- 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
Doulas

Published data indicate that one of the most effective tools to improve labor and delivery outcomes is the continuous presence of support personnel, such as a doula...Given that there are no associated measurable harms, this resource is probably underutilized.”

— ACOG/SMFM Obstetric Care Consensus on Safe Prevention of the Primary Cesarean Delivery (2014).³
Key Components of Labor Support

Policies should encourage:

- Freedom of movement in labor
- Upright and ambulatory positioning
- Nonpharmacologic comfort measures that are beneficial to every woman
- Use of techniques and tools that facilitate fetal rotation, flexion, and descent for women with epidural anesthesia
- Maternal exercises and positioning that facilitate fetal rotation in women with and without epidural anesthesia
- Intermittent monitoring, or telemetry if continuous monitoring is necessary
Key Components of a Supportive Physical Environment

- Low lighting and privacy
- Comfortable space with adequate room for movement and walking
- Adequate availability of non-pharmacologic coping tools such as tubs or showers, rocking chairs, birthing balls, squat bars, and peanut balls
- Freely available snacks with high nutritional value
Coping Algorithm

Coping with Labor Algorithm v2 ©

Observe for cues on admission and throughout labor.
Assessment per protocol:
- Ask: “How are you coping with your labor?”
- Every shift
- PRN
- At signs of change.

Legend
[S] = Sufficient Evidence
[L] = Limited Evidence
[I] = Insufficient Evidence
[*] = No Evidence & No Harm

Coping
- States she is coping
- Rhythmic activity during contraction (rocking, swaying)
- Focused inward
- Rhythmic breathing
- Able to relax between contractions
- Vocalization (moaning, counting, chanting)

Not Coping
- States she is not coping
- Crying (may see with self-hypnosis)
- Sweaty
- Tremulous voice
- Thrashing, wringing, writhing
- Inability to focus or concentrate
- Clawing, biting
- Panicked activity during contractions
- Tense

Physiologic/Natural process of labor
- Patient desires pharmacological intervention
- Patient desires non-pharmacological intervention

Physical Environment
- Appropriate changes to environment PRN [S]
  - Mood [*]
  - Lighting [*]
  - Music [*]

Emotional/Psychosocial
- One-on-One Support [S]
- Doula [S]
- Midwifery Care being “With Woman” [S]
Implement Intermittent Monitoring for Low-risk Patients

Continuous monitoring:
- Increases the likelihood of cesarean
- Has not been shown to improve neonatal outcomes e.g. reduce rates of CP
- Restricts movement (and normal physiologic processes and coping)

- Potentially reduces nursing interaction/ labor support
APPENDIX C: The Procedure of Fetal Monitoring

1. **Intermittent Auscultation**
   a. **Auscultation**: When using auscultation as a mode of intermittent monitoring, a Doppler is used. FHR baseline should be established between contractions. Auscultation should be performed before, during and continued for one minute after the completion of a contraction. Maternal pulse to be determined immediately prior to and during auscultation. If maternal pulse and FHR cannot be distinguished from one another consider electronic monitoring and/or use of maternal pulse oximetry.
   b. **Utilizing abdominal palpation**, contraction frequency, duration and intensity will be assessed and documented with the same frequency as FHR.
Epidural and Fetal Malposition

- NO EVIDENCE to suggest epidurals cause malposition, but women with epidurals are up to four times as likely to have an occiput posterior fetus than women without epidurals.

- Toolkit gives techniques and tools to assist the labor nurse in preventing malposition in the epiduralized patient:
  - Use of peanut ball
  - Appropriate patient positioning
  - Considerations for pushing if fetus persistently malpositioned.
RESPONSE

Management of Labor Abnormalities
Strategies for Appropriate Management of Labor Abnormalities

- Create highly reliable teams and improve interdisciplinary communication
- Adopt standard measures for labor dystocia and FHR abnormalities
- Utilize operative vaginal deliveries in appropriate cases
- Identify malposition and perform manual rotation
- Consider alternative coverage programs (laborist and collaborative practice models)
- Develop systems that facilitate safe, efficient transfer of care from the out-of-hospital birth environment
- Don’t practice defensively: Focus on quality and safety!
Examples

- Spontaneous labor algorithms/dystocia checklists/labor management algorithms
- Induction algorithms/checklists/policies for timing, scheduling, proper selection
- Algorithms for standard intervention for FHR changes
- Model policies for oxytocin
- Tools for effective communication
<table>
<thead>
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<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AHRQ TeamSTEPPS® (strategies and tools to enhance team performance and patient safety)</td>
<td></td>
<td><a href="http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/index.html">http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/index.html</a></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CMQCC - Cesarean Checklist for Labor Dystocia or Failed Induction (adapted with permission from Miller Children’s and Women’s Hospital)</td>
<td></td>
<td>Appendix K</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CMQCC - Dystocia Checklist</td>
<td></td>
<td>Appendix L</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Zuckerberg San Francisco General Hospital – Guidelines for Labor Duration and Management</td>
<td></td>
<td>[link to be added]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CMQCC - Labor Duration Guidelines (Adapted with permission from Zuckerberg San Francisco General Hospital)</td>
<td></td>
<td>Appendix M</td>
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</tr>
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<td>2</td>
<td>CMQCC - Spontaneous Labor Algorithm (adapted with permission from Washington State Hospital Association)</td>
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</tr>
<tr>
<td>2</td>
<td>CMQCC - Algorithm for Management of the Second Stage Labor (adapted with permission from Kaiser Roseville Medical Center)</td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>CMQCC – Active Labor Partogram (adapted with permission from Washington State Hospital Association)</td>
<td></td>
<td>Appendix P</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ACOG- Optimizing Protocols in Obstetrics: Oxytocin for Induction of Labor (includes model policies for safe use of oxytocin and the Hospital Corporation of America’s pre-oxytocin and in-use checklists)</td>
<td></td>
<td><a href="http://mail.ny.acog.org/website/OxytocinForInduction.pdf">http://mail.ny.acog.org/website/OxytocinForInduction.pdf</a></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Steven Clark MD - Algorithm for the Management of Category II Fetal Heart Rate Tracings</td>
<td></td>
<td>Appendix Q</td>
<td></td>
</tr>
</tbody>
</table>
## Fetal Surveillance – For Providers and Hospitals

<table>
<thead>
<tr>
<th>Strategy #</th>
<th>Name of Tool</th>
<th>CMQCC Tool</th>
<th>External Tool</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 2 ~ 6</td>
<td>Model Policy for Fetal Surveillance - Kaiser Permanente Northern California Region (includes decision tree for type of monitoring and procedures for intermittent methods)</td>
<td></td>
<td>Model Policies - Appendix T</td>
<td></td>
</tr>
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<td>-----------</td>
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<td>.</td>
<td></td>
<td>Appendix P</td>
</tr>
</tbody>
</table>
Four Specific Areas where Standardization Can Significantly Improve Care

- Diagnosis of labor dystocia
- Use of oxytocin
- Response to abnormal heart rate patterns
- Induction of labor
Patience

Greater clinical **patience** is the main focus of many of the recommendations in the ACOG/SMFM Obstetric Care Consensus on Safe Prevention of the Primary Cesarean Delivery

- Specifically, “slow but progressive labor” in the first stage is not an indication for cesarean, nor is a “prolonged latent phase” as defined by previously by Friedman
- 6 is the new 4 (Zhang et al and Consortium on Safe Labor)
- Longer pushing times may be necessary for women with epidural anesthesia or malpositioned fetus
Example of ACOG/SMFM Labor Dystocia Checklist in Toolkit

<table>
<thead>
<tr>
<th>CMQCC Labor Dystocia Checklist (ACOG/SMFM Criteria)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diagnosis of Dystocia/Arrest Disorder (all 3 should be present)</td>
</tr>
<tr>
<td>- Cervix 6 cm or greater</td>
</tr>
<tr>
<td>- Membranes ruptured, then</td>
</tr>
<tr>
<td>- No cervical change after at least 4 hours of adequate uterine activity (e.g. strong to palpation or MVUs &gt; 200), or at least 6 hours of oxytocin administration with inadequate uterine activity</td>
</tr>
<tr>
<td>2. Diagnosis of Second Stage Arrest (only one needed)</td>
</tr>
<tr>
<td>No descent or rotation for:</td>
</tr>
<tr>
<td>- At least 4 hours of pushing in nulliparous woman with epidural</td>
</tr>
<tr>
<td>- At least 3 hours of pushing in nulliparous woman without epidural</td>
</tr>
</tbody>
</table>
Example of Induction of Labor Algorithm found in toolkit
Pre-Cesarean 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 (when starting with unfavorable 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)

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

  Membranes ruptured (if possible), then:
  - ___ Adequate uterine contractions (e.g. moderate or strong to palpation, or > 200 MVU, for ≥ 4 hours) without improvement in dilation, effacement, station or position
  - ___ 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 pushing for at least 4 hours
  - ___ Nullipara without epidural pushing for at least 3 hours
  - ___ Multipara with epidural pushing for at least 3 hours
  - ___ Multipara without epidural pushing for at least 2 hours

- ___ 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: ____________

---

*For historical context or reference, the asterisked note indicates an important aspect of the labor process. Typically, in modern obstetrics, this period might be extended to ensure maternal and fetal safety, especially in cases where membrane rupture has not occurred naturally or within the recommended time frame.
Active Labor Partogram available in the Toolkit

ACTIVE LABOR PARTOGRAM
Term ≥ 37 Weeks Gestation

NORMAL LABOR PROGRESS

CONSIDER INTERVENTIONS

≥ 95TH PERCENTILE MAKE DELIVERY PLAN

Algorithm for Management of Intrapartum FHR Tracings available in Toolkit

![Algorithm for the Management of Intrapartum Fetal Heart Rate Tracings](image)
Clark’s Algorithm for Management of Cat II Tracings available in Toolkit

**Algorithm for management of category II fetal heart rate tracings**

1. **Moderate variability or accelerations**
   - **Yes**
     - **Significant decelerations with ≥50% of contractions for 1 hour**
       - **Yes**
         - **Latent Phase**
           - **Normal labor progress**
             - **No**
               - Cesarean
             - **Yes**
               - Observe
           - **Normal progress**
             - **No**
               - Cesarean or OVD
             - **Yes**
               - Observe
         - **No**
           - Cesarean or OVD
       - **No**
         - **Active Phase**
           - **Observe**
         - **Second Stage**
           - **Observe**
               - **Cesarean or OVD**
               - **Manage per algorithm**
         - **Persistent pattern**
   - **No**
     - **Observe for 1 hour**

---

*OVD, operative vaginal delivery.*

*That 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.*

Model Policies for Induction of Labor, Induction of Labor Scheduling, and Safe Use of Oxytocin

<table>
<thead>
<tr>
<th>Category:</th>
<th>Patient Care Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner:</td>
<td>Labor and Delivery OR Manager</td>
</tr>
<tr>
<td>Title:</td>
<td>Cesarean Delivery / Induction of Labor Scheduling</td>
</tr>
</tbody>
</table>

**PURPOSE:** To eliminate non-medically indicated (elective) deliveries prior to 39 weeks gestation.

---

To be completed by Chief of Maternal Fetal Medicine or OB Hospitalist

- [ ] Schedule: Medically indicated and necessitates delivery < 39 weeks gestation
- [ ] Schedule: Gestation age ≥ 39 weeks on scheduled date

Completed by: [Chief of Maternal Fetal Medicine/OB Hospitalist]

Date/Time: ______________________
Prevention and Management of Malposition

- Avoid routine early amniotomy
- Employ preventive measures for women with epidural anesthesia
- Intrapartum maternal/fetal positioning
- Consider pushing positions
- Support maternal psyche and body
- Manual rotation
- Patience, patience, patience!
REPORTING/SYSTEMS

Using Data to Drive Improvement
Strategies for Using Data to Drive Improvement

- Provide timely feedback in persuasive manner
- Use comparative data which conveys a sense of urgency
- Present data for both hospital and providers
- Set achievable goals
- Tie descriptive “cold” data with patient stories and other successes
Use 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
- Provide a lay explanation of the measures
- Widely distribute these measures through multiple media channels to capture the greatest attention
Is real change possible?

- We know there are some hospitals with low rates and others with high rates.

- But can we take hospitals with high rates and lower their rates?
3 Pilot Quality Improvement 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
Pilot QI Project Components: 2014-15

Data Measurement Support

Quality Improvement Support

Payment Reform
Impressive Results: within 6 months

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Baseline (%)</th>
<th>After QI (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital 1</td>
<td>32.6%</td>
<td>24.7%</td>
</tr>
<tr>
<td>Hospital 2</td>
<td>31.2%</td>
<td>24.3%</td>
</tr>
<tr>
<td>Hospital 3</td>
<td>27.2%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

Reductions:
- Hospital 1: 24.2% Reduction
- Hospital 2: 22.1% Reduction
- Hospital 3: 19.5% Reduction
CMQCC Data-Driven QI: NTSV CS

Pilot Hospital: PBGH / RWJ CS Collaborative

NTSV CS Rate

National Target for NTSV CS = 23.9%

QI Project Started: Jan 2014

Transforming Maternity Care
A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans
## Provider-Level Cesarean Rates

### Period: Oct 2012 – Sep 2013 (12 months)

<table>
<thead>
<tr>
<th>Provider</th>
<th>Total Deliveries</th>
<th>NTSV Cesarean Section</th>
<th>Total CS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rate</td>
<td>D</td>
</tr>
<tr>
<td>Oct 2012 – Sep 2013</td>
<td></td>
<td>27.6%</td>
<td>163090</td>
</tr>
<tr>
<td>Missing Provider</td>
<td>491</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Medical Center</td>
<td>5844</td>
<td>32.2%</td>
<td>2369</td>
</tr>
<tr>
<td>G7xxxx</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>G5xxxx</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>

Screen Shot from the CMQCC Maternal Data Center

Note the two busiest providers had widely different rates.
No Change in Baby Outcomes: Rate of Unexpected Newborn Complications

Remains significantly below State mean

Hoag Hospital

Intervention Period

Dec - Feb 2015

Screen Shot from the CMQCC Maternal Data Center
Take-home Lessons from the Pilot Hospitals

- Power of provider-level data
- Key role of nurses
- Need a reason to change
- National guidelines very helpful
- Needs “constant gardening”
- Medical and nursing leadership important
Implementation Guide

- Created to support implementation efforts of the toolkit
- Contains:
  - Basics of quality improvement
  - Leadership
  - MOST IMPORTANT:
    - Where and how to start!
Available for Download

Collaborative Resources to Support Vaginal Birth and Reduce Primary Cesareans

Resources have been developed to help support the Collaborative efforts to reduce first birth cesarean sections.

The Implementation Guide

Collaborative Resources

Transforming Maternity Care
A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans
Readiness Assessment
Available in the Implementation Guide and on
www.cmqcc.org

<table>
<thead>
<tr>
<th>Focus</th>
<th>Readiness Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has your hospital previously participated in a formal data-driven OB QI Collaborative?</td>
<td>Y N</td>
</tr>
<tr>
<td>If yes:</td>
<td></td>
</tr>
<tr>
<td>Were there monthly chart reviews for process measures?</td>
<td></td>
</tr>
<tr>
<td>Were there monthly reports on outcome measures?</td>
<td></td>
</tr>
<tr>
<td>Were results shared with staff on an ongoing basis?</td>
<td></td>
</tr>
<tr>
<td>Have you identified current practices or policies that may be associated with increased cesarean rate?</td>
<td></td>
</tr>
<tr>
<td>Have you considered alternative policies/practices to reduce cesareans?</td>
<td></td>
</tr>
<tr>
<td>Do you have a multidisciplinary team?</td>
<td></td>
</tr>
<tr>
<td>If yes, have you started meeting?</td>
<td></td>
</tr>
<tr>
<td>If so, has your team considered strategies (practices, policies) that could serve to address and identified barriers?</td>
<td></td>
</tr>
<tr>
<td>Has your team discussed and understands the rationale for a standardized approach to the definition and management of labor dystocia?</td>
<td></td>
</tr>
</tbody>
</table>
READINESS: Build a provider and maternity unit culture that values, promotes, and supports intended vaginal birth and optimally engages patients and families.

Create a team of providers (e.g. obstetricians, midwives, family practitioners, and anesthesia providers), staff and administrators to lead the effort and cultivate maternity unit buy-in.

Develop program for ongoing staff training for labor support techniques including caring for women regional anesthesia.

Develop a program positive messaging to women and their families about intended vaginal birth strategies for use throughout pregnancy and birth.
RECOGNITION AND PREVENTION: Develop unit-standard approaches for admission, labor support, pain management and freedom of movement

- Implement protocols and support tools for women who present in latent (early) labor to safely encourage early labor at home
- Implement Policies and protocols for encouraging movement in labor and intermittent monitoring for low-risk women
RESPONSE: Develop unit-standard approaches for prompt identification and treatment of abnormal labor and fetal heart patterns

<table>
<thead>
<tr>
<th>TOP 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement standard criteria for diagnosis and treatment of labor dystocia, arrest disorders and failed induction</td>
</tr>
<tr>
<td>Implement training/procedures for identification and appropriate interventions for malpositions (e.g. OP/OT)</td>
</tr>
</tbody>
</table>
REPORTING AND SYSTEMS LEARNING: Utilize local data and case reviews to present feedback and benchmarking for providers and to guide unit progress.

Share provider level measures with department (may start with blinded data but quickly move to open release).

Perform monthly case reviews to identify consistency with dystocia and induction ACOG/SMFM checklists.

Establish a project communications plan (at least monthly education and progress updates).
Next steps

- Participate in the CMQCC Maternal Data Center
  - If not already a member, please contact Anne Castles acastles@stanford.edu
- Download Implementation Guide
  - Evaluate your readiness – take the readiness assessment
- Evaluate your own process:
  - Audit 20 charts for women with NTSV for “labor dystocia” (audit tool available on www.cmqcc.org resources page)
- If interested in joining collaborative, contact Kim Werkmeister at KWerkmeister@cmqcc.org
- Questions about Toolkit Nancy Peterson NurseNP@stanford.edu
Thank You!

Visit: CMQCC.org