CMQCC
California Maternal
Quality Care Collaborative

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

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

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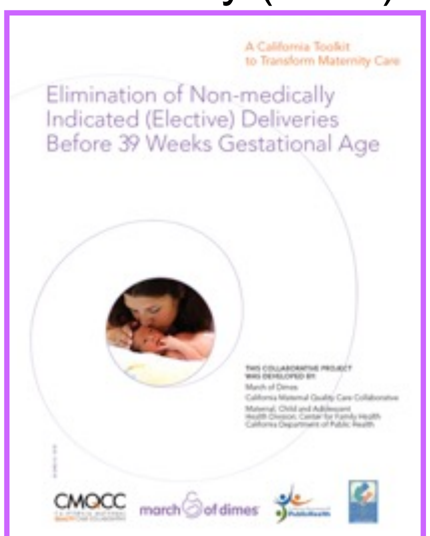
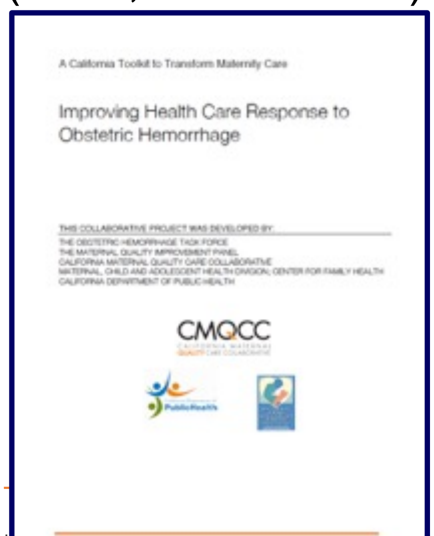
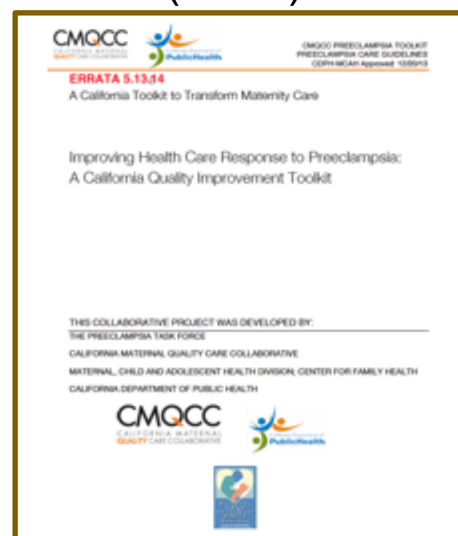
California Maternal Quality Care Collaborative Leader for Maternity QI Projects

- 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)

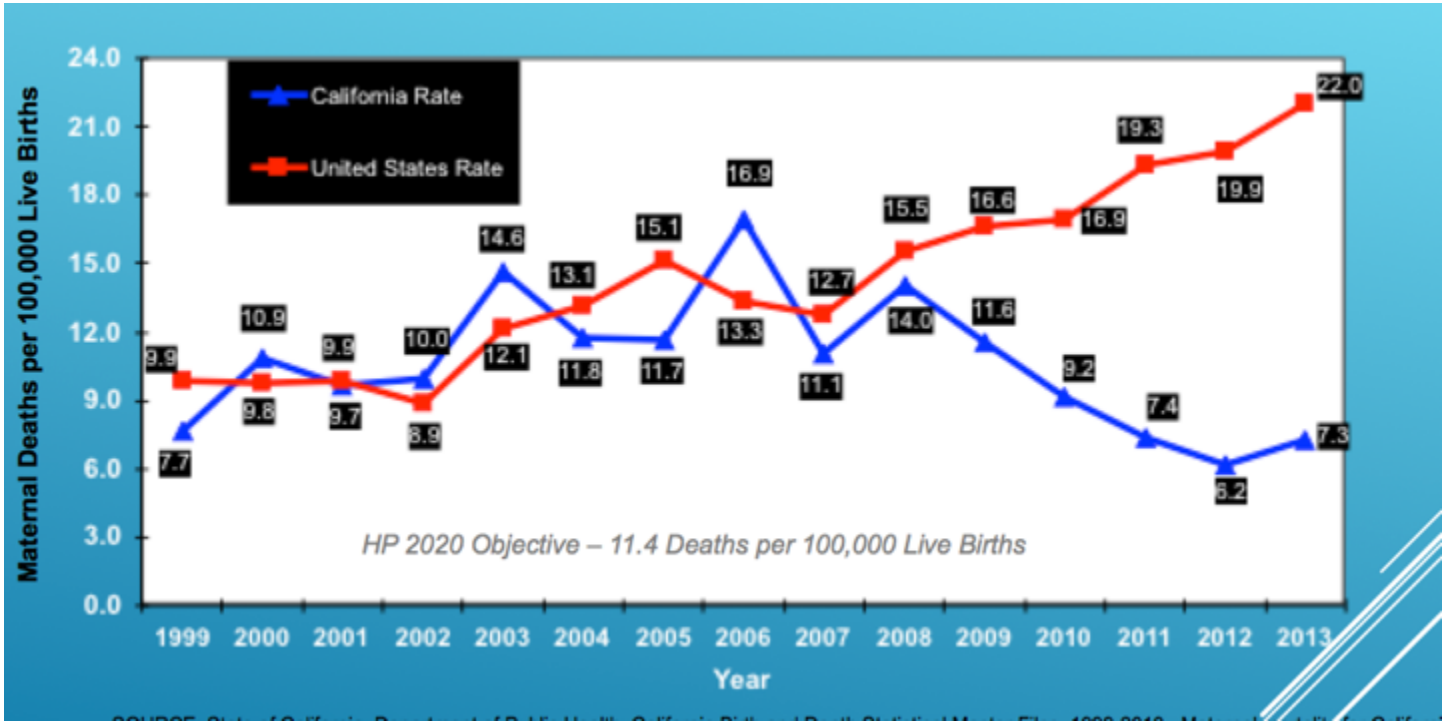
Professional Groups (California sections of national organizations)

- 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



SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1999-2013. Maternal mortality for California (deaths ≤ 42 days postpartum) was calculated using ICD-10 cause of death classification (codes A34, O00-O95,O98-O99). United States data and HP2020 Objective use the same codes. U.S. maternal mortality data is published by the National Center for Health Statistics (NCHS) through 2007 only. U.S. maternal mortality rates from 2008 through 2013 were calculated using CDC Wonder Online Database, accessed at http://wonder.cdc.govon March 11, 2015. Produced by California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, March, 2015.

California Maternal Data Center

Discharge Diagnosis Files

Birth Certificate Data

Individual Hospital QI Measures

CMQCC Maternal Data Center

Rapid-cycle Data (45 days)

CMQCC

Hospital Clinical Performance Measures: By Name

By Name | By Organization | By Topic

Show: ☐ Last 12 Months ☑ Last 3 Months ☐ L

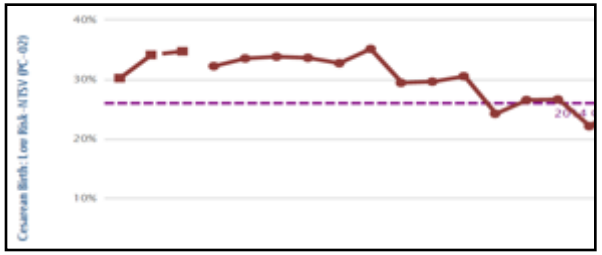
Measure	Q1 2015 Rate	2014 Statewide
3rd & 4th Degree Lacerations in Instrument-Assisted Vaginal Deliveries	17.9%	11.4%
3rd & 4th Degree Lacerations in NON-Instrument-Assisted Vaginal Deliveries	1.0%	1.9%
3rd & 4th Degree Lacerations in Vaginal Deliveries	2.4%	2.6%
5 Minute APGAR <7 Among All Deliveries >39 weeks (HEN)	0.6%	0.6%
5 Minute APGAR <7 in Early Term Newborns (HEN)	0.0%	0.7%
Antenatal Steroids (PC-03)	100.0%*	N/A
Appropriate DVT Prophylaxis in Women Undergoing CS	N/A	N/A
Birth Trauma - Injury to Neonate (AHRQ PSI 17)	0.2%	0.2%
Cesarean Birth: Low Risk-NTSV (PC-02)	23.6%	26.1%
Cesarean Birth: Low Risk-NTSV Age Adjusted	22.1%	24.3%
Cesarean Birth: Overall	31.9%	32.5%
Cesarean Birth: Primary	18.8%	20.1%
Cesarean Birth: Primary, Term, Singleton, Vertex (AHRQ IQI 33)	13.6%	16.0%
Cesarean Birth: Term, Singleton, Vertex (AHRQ IQI 21)	28.7%	29.2%
Elective Delivery (PC-01)	0.0%	N/A
Episiotomy Rate	11.4%	11.7%
Exclusive Breast Milk Feeding (PC-05)	N/A	N/A
Exclusive Breast Milk Feeding Considering Initial Feeding Plan (PC-05a)	N/A	N/A
Failed Induction	14.3%	N/A
Hemorrhage: Blood Product Units Transfused per 1000 Delivery Cases > 20 wks	N/A	N/A
Hemorrhage: Massive Transfusions (> 4 Units) per 1000 Delivery Cases > 20 wks	N/A	N/A
Hemorrhage: Risk assessment on Admission	N/A	N/A
Induction Rate	14.2%	N/A
Newborn Bilirubin Screening Prior to Discharge	100.0%	N/A
Operative Vaginal Delivery Rate	8.4%	7.3%
Preeclampsia: ICU Admit Rate among preeclamptic delivery cases ≥ 20 wks	N/A	N/A
Preeclampsia: ICU Days per 100 preeclamptic delivery cases ≥ 20 wks	N/A	N/A
Timely Treatment for Severe Hypertension	66.7%*	N/A
Unexpected Newborn Complications	3.2%	3.9%
VLBW (<1500g) NOT delivered at a Level III NICU	No Cases	0.6%
Vaginal Birth After Cesarean (VBAC) Rate, All (AHRQ IQI 34)	11.8%	10.6%
Vaginal Birth After Cesarean (VBAC) Rate, Uncomplicated (AHRQ IQI 22)	11.5%	10.7%

32 Nationally Recognized Hospital Clinical Quality Measures

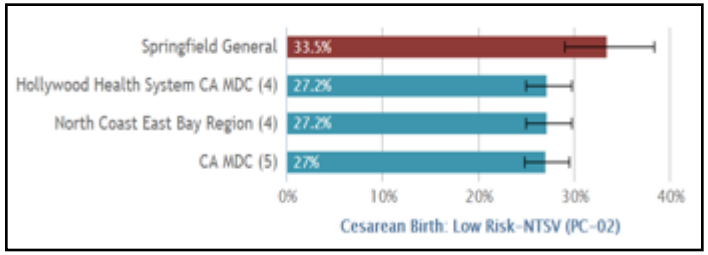
Focus on:
NTSV C-Section

Utilize the CMQCC Maternal Data Center to:

- Monitor hospital rates—in real time



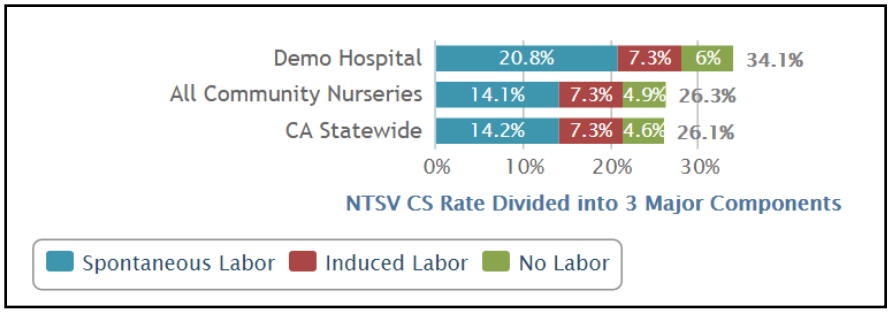
- Make peer comparisons



- Assess provider variation

- Identify QI opportunities

(and lots more!)



CMQCC Maternal Data Center

Data Monitoring and Evaluation

CMQCC Toolkit

Evidence-Based Support Tools

CMQCC Collaborative

Engagement of Hospital Clinicians and Administrators

Your Hospital!

Improved Maternity Care

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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?

By Katy Backes Kozhimannil, Michael R. Law, and Beth A. Virnig

Cesarean Delivery Rates Vary Tenfold Among US Hospitals; Reducing Variation May Address Quality And Cost Issues

DOI: 10.1377/hlthaff.2012.1030
HEALTH AFFAIRS 32,
NO. 3 (2013): 527–535

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.**

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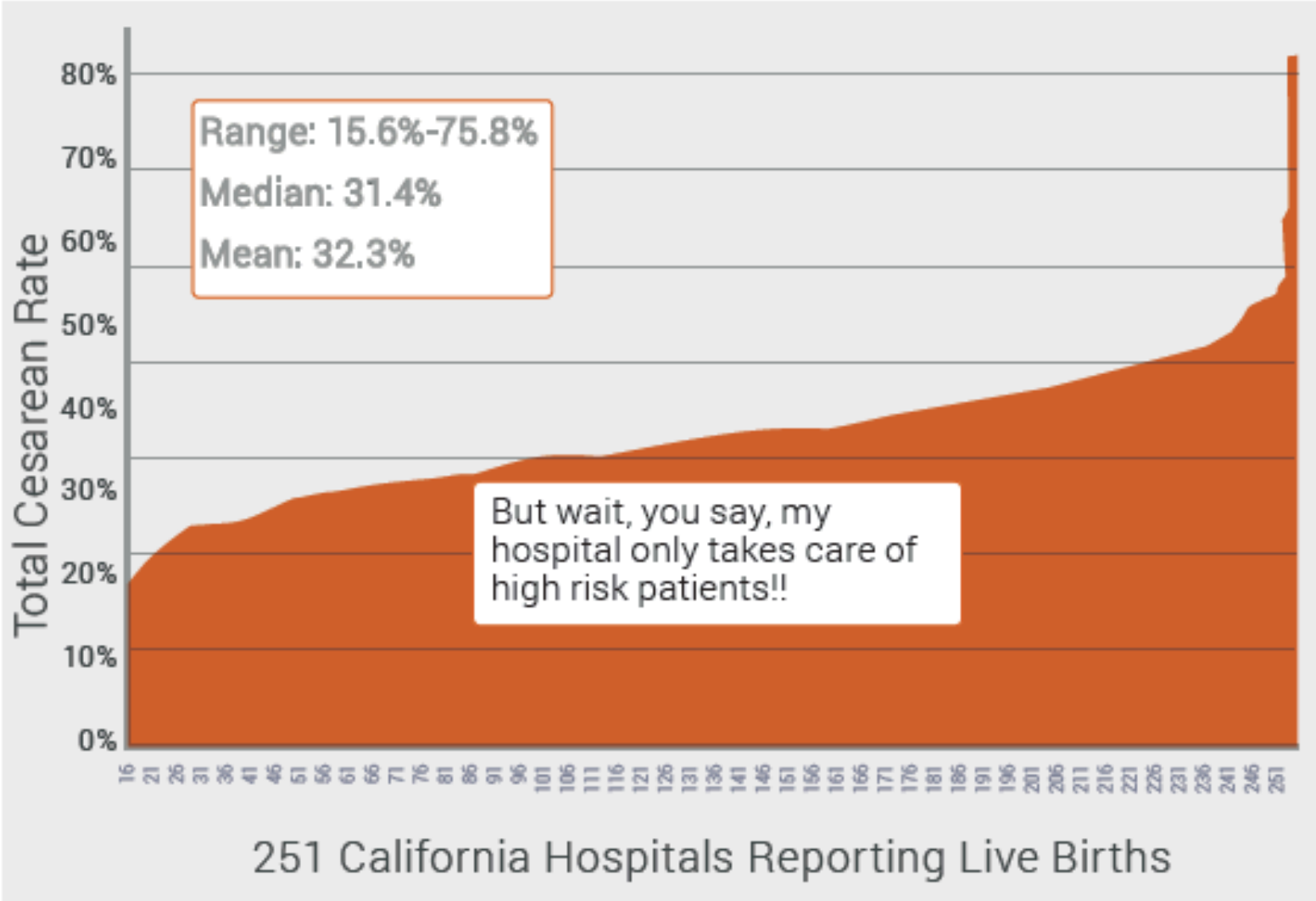
Beth A. Virnig is associate dean of research and a professor at the School of Public Health, University of Minnesota.

There is a Large Variation in Cesarean Rates Among California Hospitals



Why does the Toolkit Focus on NTSV Cesarean Rate?

N

T

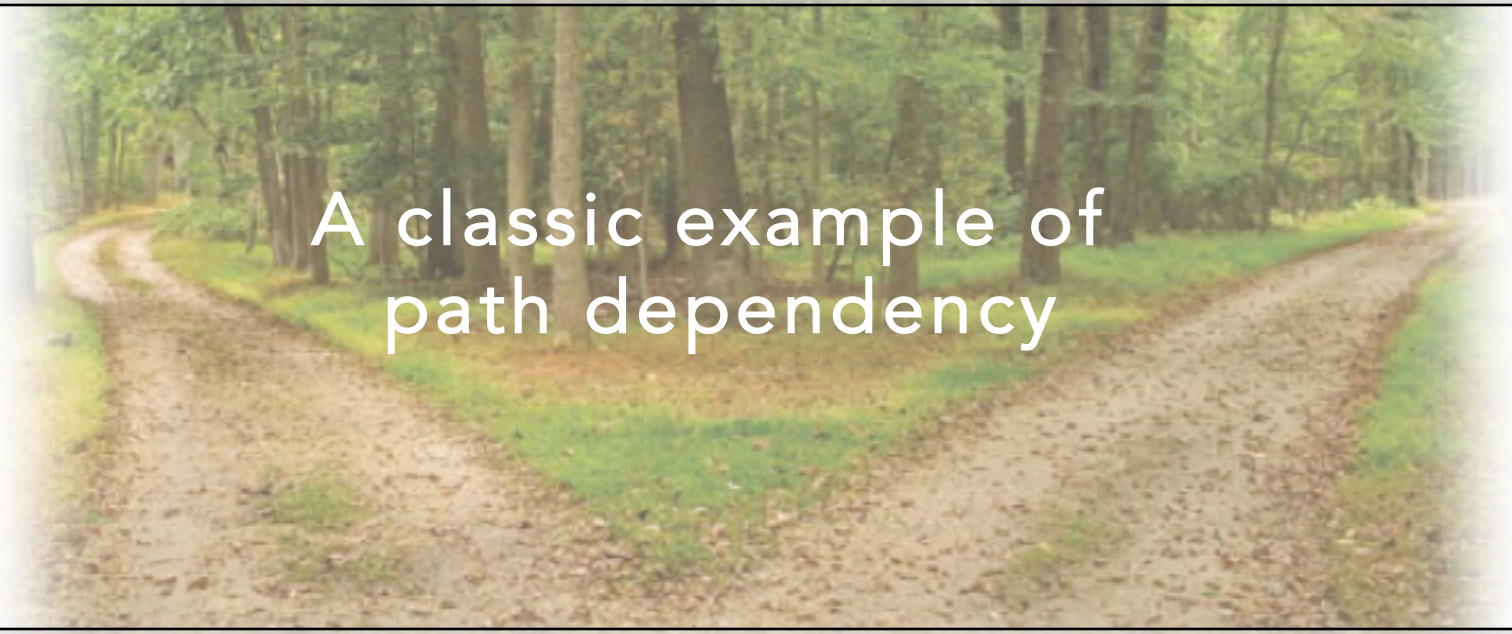
S

V

- 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

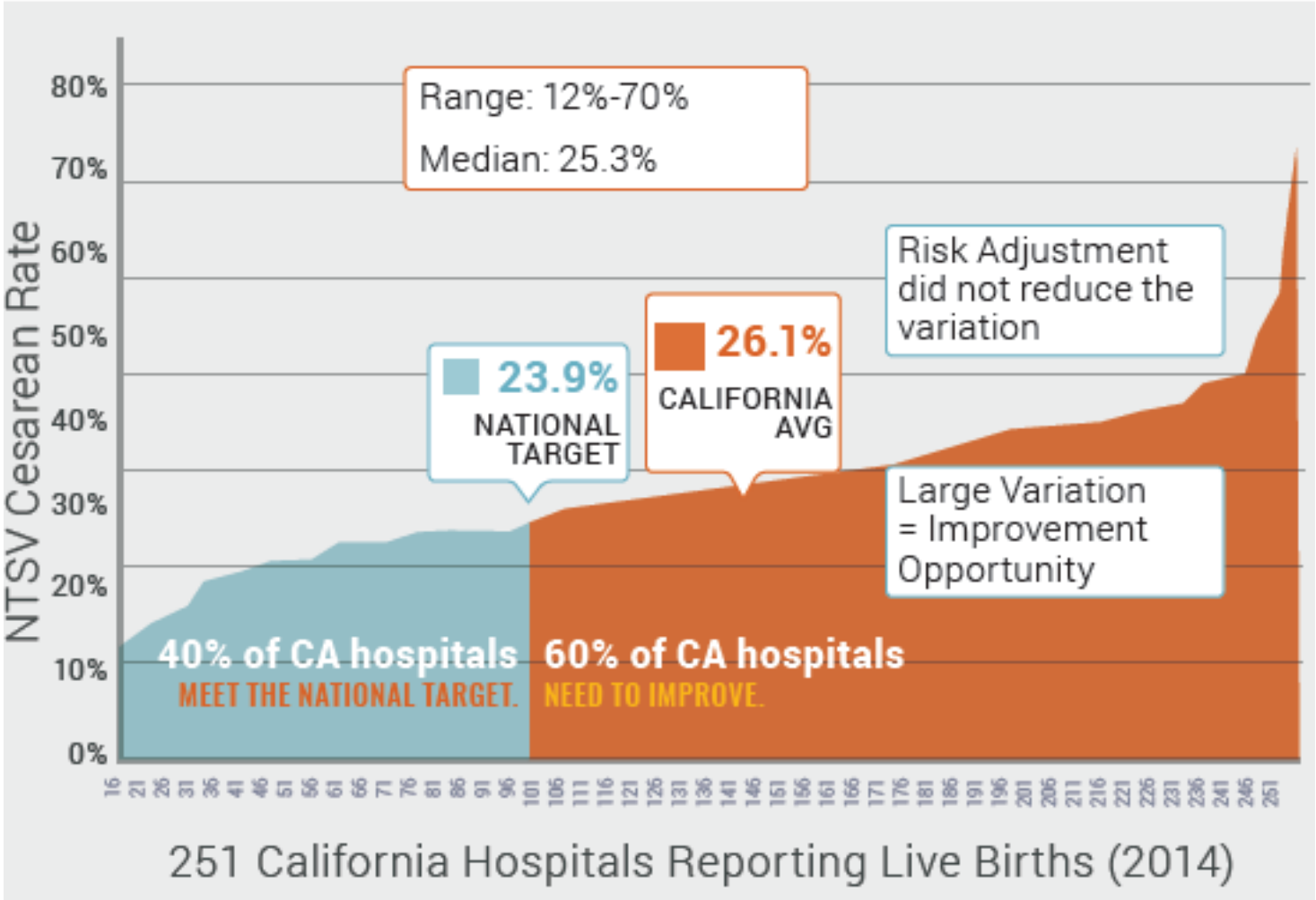
Importance of the First Birth

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



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?

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

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

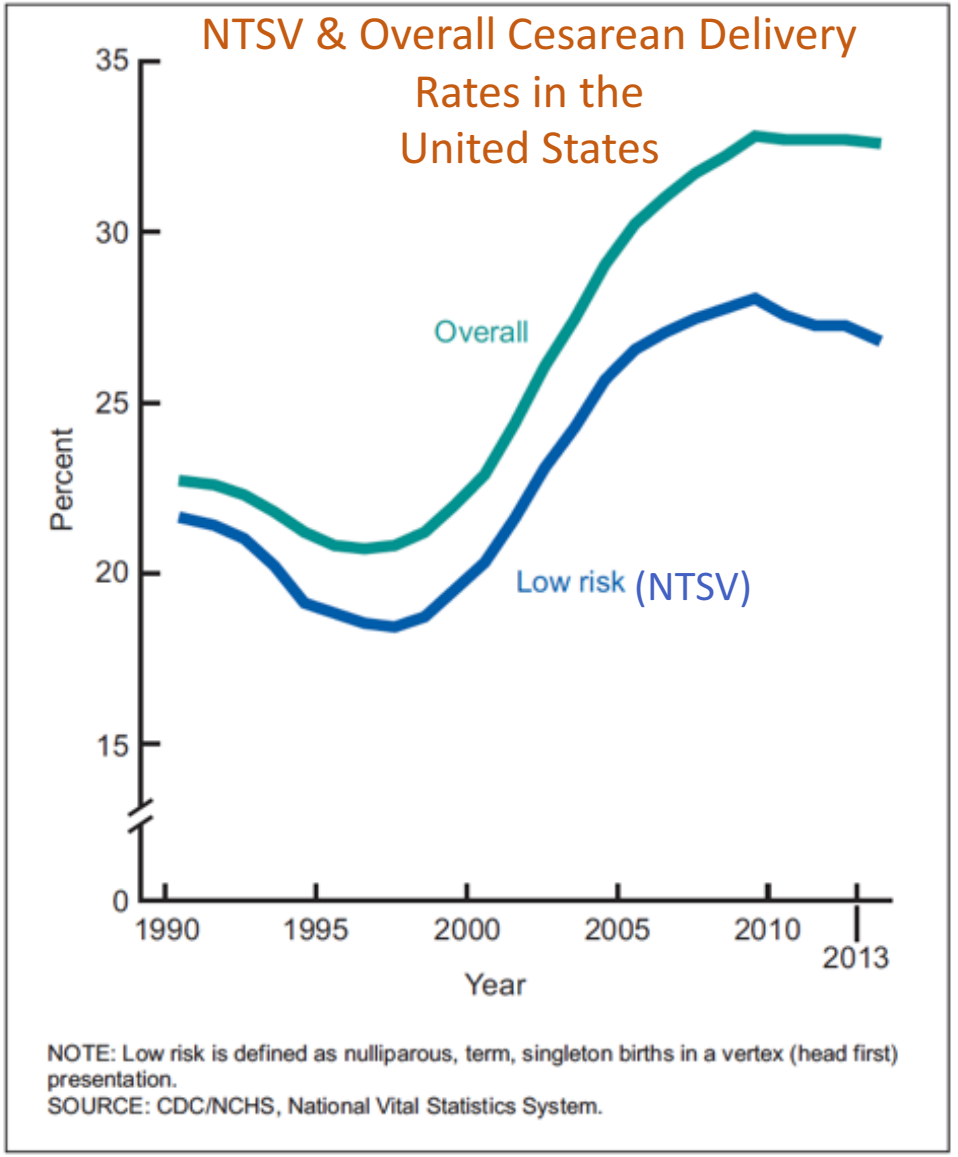
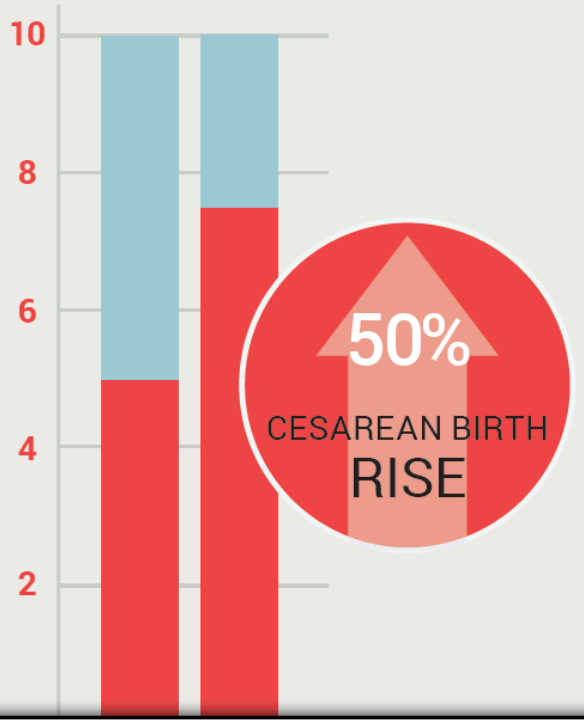


Figure 1. Overall cesarean delivery and low-risk cesarean delivery: United States, final 1990–2012 and preliminary 2013

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 & SUGSEQUENT PREGNANCIES

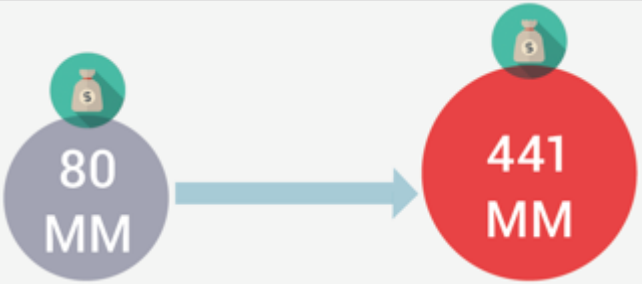
- Postpartum anxiety and depression
- Post traumatic stress disorder (PTSD)

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

Need for **professional** society leadership

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

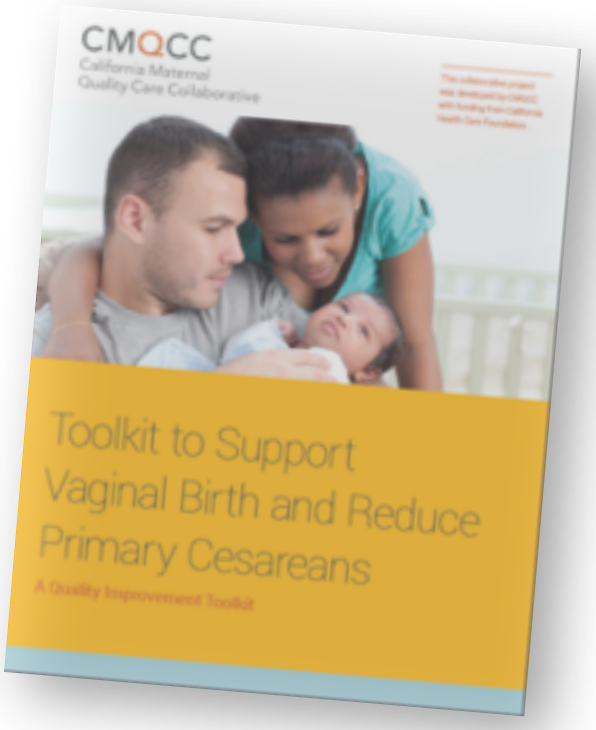
Risk: "Never got sued for doing a Cesarean"

It takes a Village to Reduce Unnecessary Cesareans

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

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Society for Maternal-Fetal Medicine

OBSTETRIC CARE CONSENSUS

March 2014

Safe Prevention of the Primary Cesarean Delivery

New National Guidelines for Defining Labor Abnormalities and Management Options

COUNCIL ON PATIENT SAFETY IN WOMEN'S HEALTH CARE
safe health care for every woman

SAFE REDUCTION OF PRIMARY CESAREAN BIRTHS: SUPPORTING INTENDED VAGINAL BIRTHS

READINESS

Every Patient, Provider and Facility

- Build a provider and maternity unit culture that values, promotes, and supports spontaneous onset and progress of labor and vaginal birth and understands the risks for current and future pregnancies of cesarean birth without medical indication.
- Optimize patient and family engagement in education, informed consent, and shared decision making about normal healthy labor and birth throughout the maternity care cycle.
- Adopt provider education and training techniques that develop knowledge and skills on approaches which maximize the likelihood of vaginal birth, including assessment of labor, methods to promote labor progress, labor support, pain management (both pharmacologic and non-pharmacologic), and shared decision making.

RECOGNITION AND PREVENTION

Every patient

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

PATIENT SAFETY BUNDLE

Safe Reduction of Primary Cesarean Births

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.

COUNCIL ON PATIENT SAFETY
IN WOMEN'S HEALTH CARE
safe health care for every woman

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

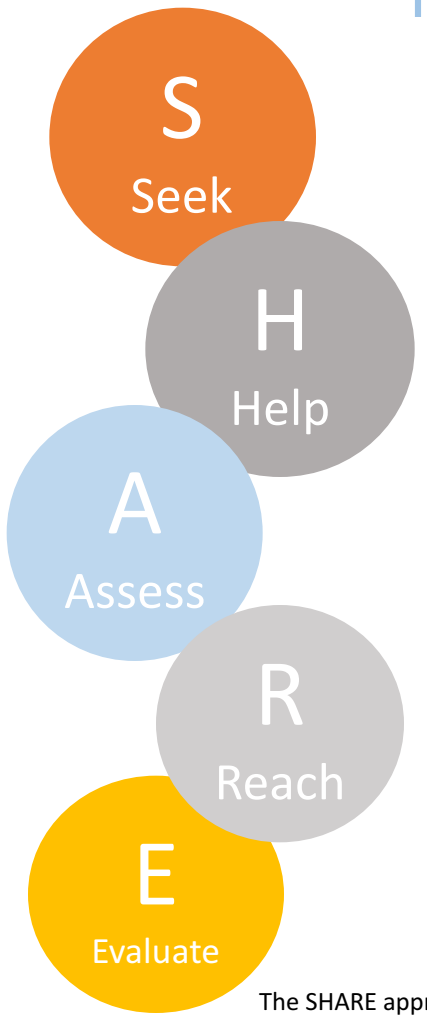
Examples

- 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				
Strategy#	Name of Tool	CMQCC Tool	External Tool	Location
1	Childbirth Connection - Index of Best Pregnancy Resources A-Z		•	http://childbirthconnection.org/article.asp?Clicked-Link=547&ck=10332&area=27
1	Childbirth Connection – What Every Pregnant Woman Needs to Know about Cesarean Section		•	http://www.childbirthconnection.org/pdfs/cesareanbooklet.pdf
1	Lamaze International - Online Parent Education Courses		•	http://www.lamaze.org/ParentOnlineEducation
1	Lamaze International – Healthy Birth Practices		•	http://www.lamazeinternational.org/d/do/653
1	ACNM - Share With Women (printable consumer education series from the Journal of Midwifery and Women's Health)		•	http://www.midwife.org/Share-With-Women
2	CMQCC Birth Preferences Guide (Birth Plan)	•		Appendix E
2	AHRQ Know Your Questions Infographic		•	http://www.ahrq.gov/sites/default/files/publications/files/optionsposter.pdf

Sharing in decision making:
The SHARE Model



Seek the patient's participation

Help her explore each option and the corresponding risks and benefits

Assess what matters most to her

Reach a decision together and arrange for a follow up conversation

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

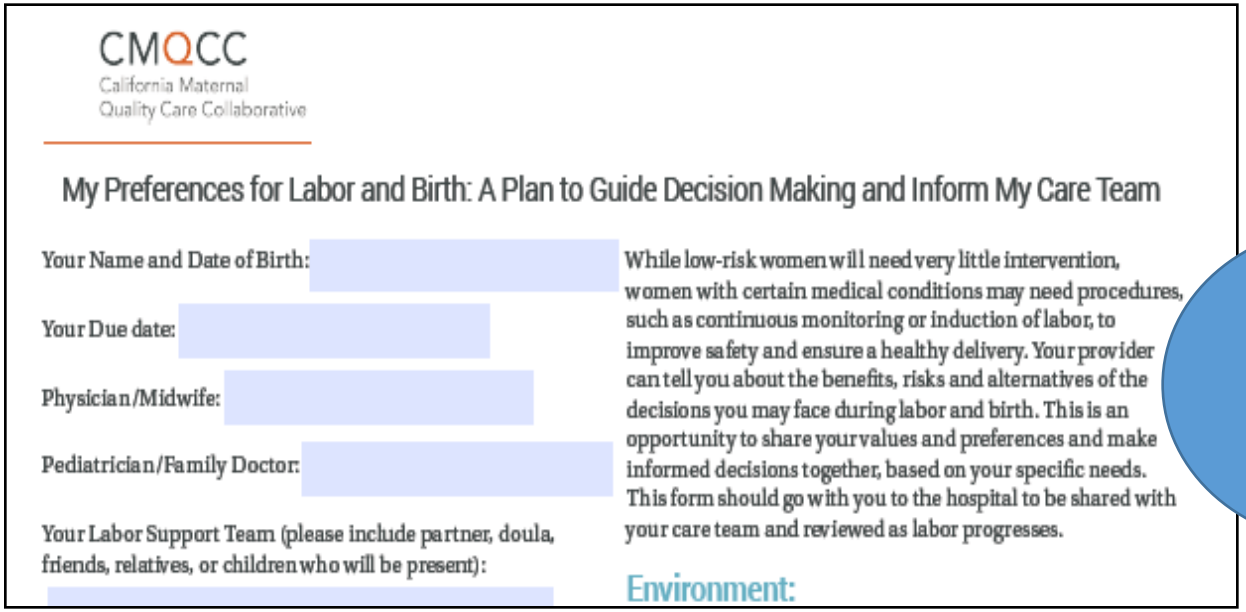
The SHARE approach. Agency for Healthcare Research and Quality Website. http://www.ahrq.gov/professionals/education/curriculum-tools/shareddecisionmaking/index.html. Accessed December 1, 2015.

Shared Decision Making (continued)

PATIENT DECISION POINTS THAT IMPACT RISK OF CESAREAN
Choice of provider and/or facility for prenatal care and care at time of birth
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)
Choice of fetal monitoring method (continuous monitoring is associated with an increased risk of cesarean)
Whether to have continuous labor support by a trained caregiver like a doula (continuous labor support improves chances of having a vaginal birth)
Induction of labor without medical indication

Birth Preferences Worksheet

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



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My Preferences for Labor and Birth: A Plan to Guide Decision Making and Inform My Care Team

Your Name and Date of Birth:

Your Due date:

Physician/Midwife:

Pediatrician/Family Doctor:

Your Labor Support Team (please include partner, doula, friends, relatives, or children who will be present):

While low-risk women will need very little intervention, women with certain medical conditions may need procedures, such as continuous monitoring or induction of labor, to improve safety and ensure a healthy delivery. Your provider can tell you about the benefits, risks and alternatives of the decisions you may face during labor and birth. This is an opportunity to share your values and preferences and make informed decisions together, based on your specific needs. This form should go with you to the hospital to be shared with your care team and reviewed as labor progresses.

Environment:

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

AMERICAN ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA

AMERICAN COLLEGE of NURSE-MIDWIVES
With women, for a lifetime℠

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

AWHONN
Association of Women's Health, Obstetric and Neonatal Nurses

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

CMQCC

Various weblinks to resources that support early labor and establish criteria for active labor admission

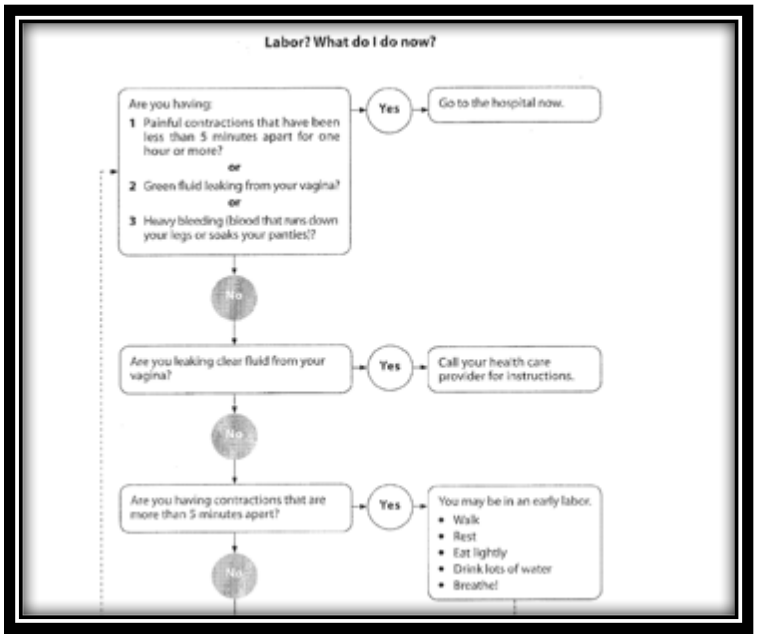
Topic 3b: Labor- First Stage: Consider Discharge Home or Further Observation

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

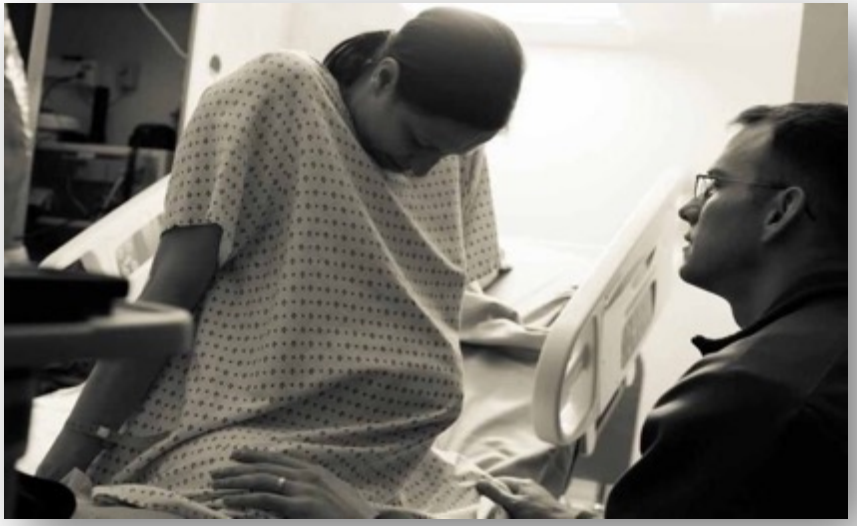


Improve Labor Support

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



Recognition

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:

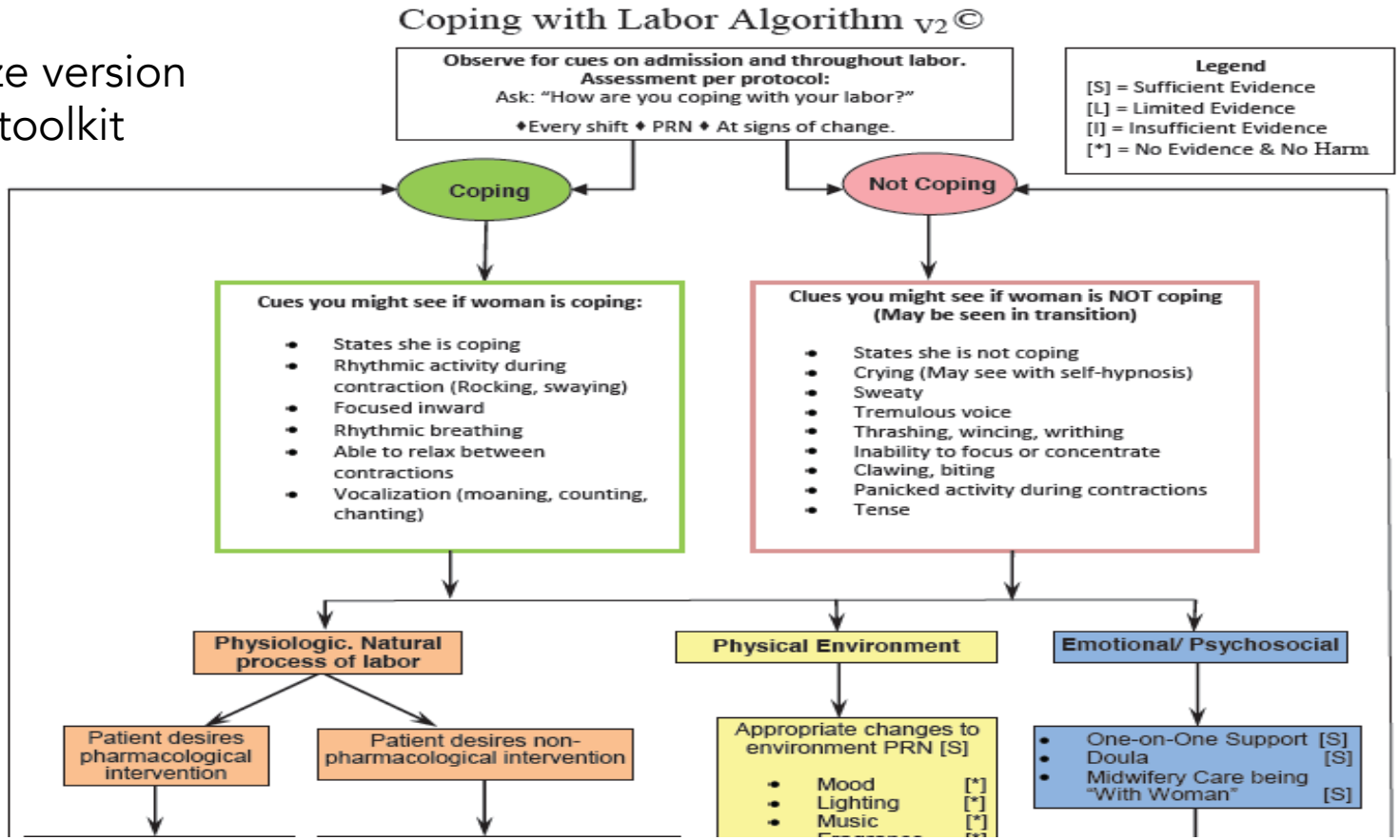
- Freedom of movement in labor
- Upright and ambulatory positioning
- Nonpharmacologic comfort measures that are beneficial to every woman
- Use of techniques and tools that facilitate fetal rotation, flexion, and descent for women with epidural anesthesia
- Maternal exercises and positioning that facilitate 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

Full size version
in the toolkit



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

Components of Successful Implementation of Intermittent Fetal Monitoring
Policies should include a risk assessment tool or checklist with exclusion criteria to assist in identifying women for which intermittent auscultation or intermittent EFM is appropriate[85]
Provide patient education for the use of intermittent methods of monitoring, including the risks and benefits of intermittent versus continuous methods, and engage in shared decision making in order to determine most appropriate method for each woman
Provide on-going assessments of women to determine appropriateness of continued intermittent methods versus conversion to continuous EFM[85]
Engage in initial and ongoing training and education of all nurses and providers on intermittent auscultation or intermittent EFM procedures
Provide appropriate staffing, e.g. 1:1 nursing care as recommended by AWHONN for intermittent auscultation in low-risk women[150]
Work with necessary committees and Information Technology (IT) to modify admission orders to reflect the use of intermittent EFM or auscultation as the default mode of monitoring for women who do not meet the exclusion criteria
Ensure that the appropriate equipment, such as Dopplers, are readily available in sufficient numbers

Maternal Conditions

Chronic Disorders
1. Active drug use that may affect neonatal morbidity
2. Chronic HTN
3. SLE or antiphospholipid syndrome
4. Thyroid disease, if uncontrolled

Diabetes requiring insulin or uncontrolled gestational diabetesObstetric history
1. History of IUFD
2. Previous cesarean birth

Current pregnancy
1. No prenatal care
2. Cholestasis
3. Diabetes that requires insulin or uncontrolled gestational diabetes
4. Gestational hypertension
5. Increased maternal serum AFP or HCG
6. Malpresentation
7. Twins
8. Oligohyramnios
9. Prolonged pregnancy >41weeks
10. Pre-eclampsia
11. Prematurity (less than 36 weeks)
12. Preterm premature ROM (<36 weeks)

Labor
1. Chorioamnionitis
2. Epidural anesthesia
3. Meconium
4. Pitocin administration
5. Vaginal bleeding greater than bloody show
6. Misoprostol administration within two hours

Fetal Conditions
1. IUGR
2. Known congenital anomaly
3. Polyhydramnios
4. Red cell alloimmunization in the presence of erythroblastosis

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 oxymetry.
   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

Response

- 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

CMQCC

Tools for Part III of ToolkIt - For Providers and Hospitals				
Strategy#	Name of Tool	CMQCC Tool	External Tool	Location
1	AHRQ TeamSTEPPS® (strategies and tools to enhance team performance and patient safety)		•	http://www.ahrq.gov/professionals/education/curriculum-tools/teamstepps/index.html
1	Institute for Health Care Improvement - How-to Guide Deploy Rapid Response Teams		•	http://www.ihi.org/resources/Pages/Tools/HowtoGuideDeploy-RapidResponseTeams.aspx
2	CMQCC - Cesarean Checklist for Labor Dystocia or Failed Induction (adapted with permission from Miller Children's and Women's Hospital)	•		Appendix K
2	CMQCC - Dystocia Checklist	•		Appendix L
2	Zuckerberg San Francisco General Hospital – Guidelines for Labor Duration and Management		•	[link to be added]
2	CMQCC - Labor Duration Guidelines (Adapted with permission from Zuckerberg San Francisco General Hospital)	•		Appendix M
2	CMQCC - Spontaneous Labor Algorithm (adapted with permission from Washington State Hospital Association)	•		Appendix N
2	CMQCC - Algorithm for Management of the Second Stage Labor (adapted with permission from Kaiser Roseville Medical Center)	•		Appendix O
2	Northern New England Perinatal Quality Improvement Network – Second Stage Management Guideline		•	http://www.nnepqin.org/Guidelines.asp#tabs-14
2	CMQCC – Active Labor Partogram (adapted with permission from Washington State Hospital Association)	•		Appendix P
2	ACOG- Optimizing Protocols in Obstetrics: Oxytocin for Induction of Labor (includes model polices for safe use of oxytocin and the Hospital Corporation of America's pre-oxytocin and in-use checklists		•	http://mail.ny.acog.org/website/OxytocinForInduction.pdf
2	NNEPQIN Model Policy for Use of Oxytocin		•	http://www.nnepqin.org/documentUpload/22._Guideline_for_the_Use_of_Oxytocin_FINAL_2012.12.12.pdf
2	ACOG Practice Bulletin 116 - Management of Intrapartum FHR Tracings (found in ACOG Optimizing Protocols in Obstetrics: Oxytocin for Induction)		•	http://mail.ny.acog.org/website/OxytocinForInduction.pdf
2	Steven Clark MD - Algorithm for the Management of Category II Fetal Heart Rate Tracings		•	Appendix Q

Fetal Surveillance – For Providers and Hospitals				
Strategy#	Name of Tool	CMQCC Tool	External Tool	Location
Part 2 ~ Strategy 6	ACNM Healthy Birth Initiative – Reducing Primary Cesareans – Intermittent Auscultation Bundle		•	http://birthtools.org/birthtools/files/BirthToolFiles/FILE-NAME/000000000089/Bundle-Intermittent-Ausculation-v2.pdf
Part 2 ~ Strategy 6	Denver Health Slide Deck – Intermittent Auscultation (includes identifying appropriate patients for intermittent auscultation, procedures, clinical decision making, and criteria for discontinuing intermittent auscultation and implementing EFM)		•	http://birthtools.org/birthtools/files/BirthToolFiles/FILE-NAME/000000000024/MOC-FWB-IntermittentAuscultation-DenverHealth.pptx
Part 2 ~ Strategy 6	Model Policy for Fetal Surveillance - Northern New England Perinatal Quality Collaborative (includes exclusion criteria for intermittent monitoring, procedures for intermittent methods, and FHR management algorithm)		•	http://www.nnepqin.org/documentUpload/20._NNEPQIN_Fetal_Monitoring_Practice_Guidelines_FINAL_12.12.12._POSTED_ON_THE_WEBSITE.pdf
Part 2 ~ Strategy 6	Model Policy for Fetal Surveillance - Kaiser Permanente Northern California Region (includes decision tree for type of monitoring and procedures for intermittent methods)		•	Model Policies - Appendix T
Part 3 ~ Strategy 2	Northern New England Perinatal Quality Improvement Network - Algorithm for Electronic Fetal Heart Rate Assessment and Initial Intervention (found in Appendix 4 of Guideline for Fetal Monitoring in Labor and Delivery		•	http://www.nnepqin.org/documentUpload/20._NNEPQIN_Fetal_Monitoring_Practice_Guidelines_FINAL_12.12.12._POSTED_ON_THE_WEBSITE.pdf

Labor Management – For Providers and Hospitals				
Strategy#	Name of Tool	CMQCC Tool	External Tool	Location
Part 3 ~ Strategy 2	CMQCC - Cesarean Checklist for Labor Dystocia or Failed Induction (adapted with permission from Miller Children's and Women's Hospital)	•		Appendix K
Part 3 ~ Strategy 2	CMQCC - Dystocia Checklist	•		Appendix L
Part 3 ~ Strategy 2	Zuckerberg San Francisco General Hospital – Guidelines for Labor Duration and Management		•	
Part 3 ~ Strategy 2	CMQCC - Labor Duration Guidelines (Adapted with permission from Zuckerberg San Francisco General Hospital)	•		Appendix M
Part 3 ~ Strategy 2	CMQCC - Spontaneous Labor Algorithm (adapted with permission from Washington State Hospital Association)	•		Appendix N
Part 3 ~ Strategy 2	CMQCC - Algorithm for Management of the Second Stage Labor (adapted with permission from Kaiser Roseville Medical Center)	•		Appendix O
Part 3 ~ Strategy 2	Northern New England Perinatal Quality Improvement Network – Second Stage Management Guideline	•		http://www.nnepqin.org/Guidelines.asp#tabs-14
Part 3 ~ Strategy 2	CMQCC – Active Labor Partogram (adapted with permission from Washington State Hospital Association)	•		Appendix P
Part 3 ~ Strategy 2	Washington State Hospital Association Safe Deliveries Roadmap - Best Practice Bundles (Labor Management Bundle includes criteria for delayed admission, algorithm and checklist for spontane-		•	http://www.wsha.org/quality-safety/projects/safe-deliveries/

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

Response

CMQCC Labor Dystocia Checklist (ACOG/SMFM Criteria)

1. Diagnosis of Dystocia/Arrest Disorder (all 3 should be present)

- ☐ Cervix 6 cm or greater
- ☐ Membranes ruptured, then
- ☐ No cervical change after at least 4 hours of adequate uterine activity (e.g. strong to palpation or MVUs > 200), or at least 6 hours of oxytocin administration with inadequate uterine activity

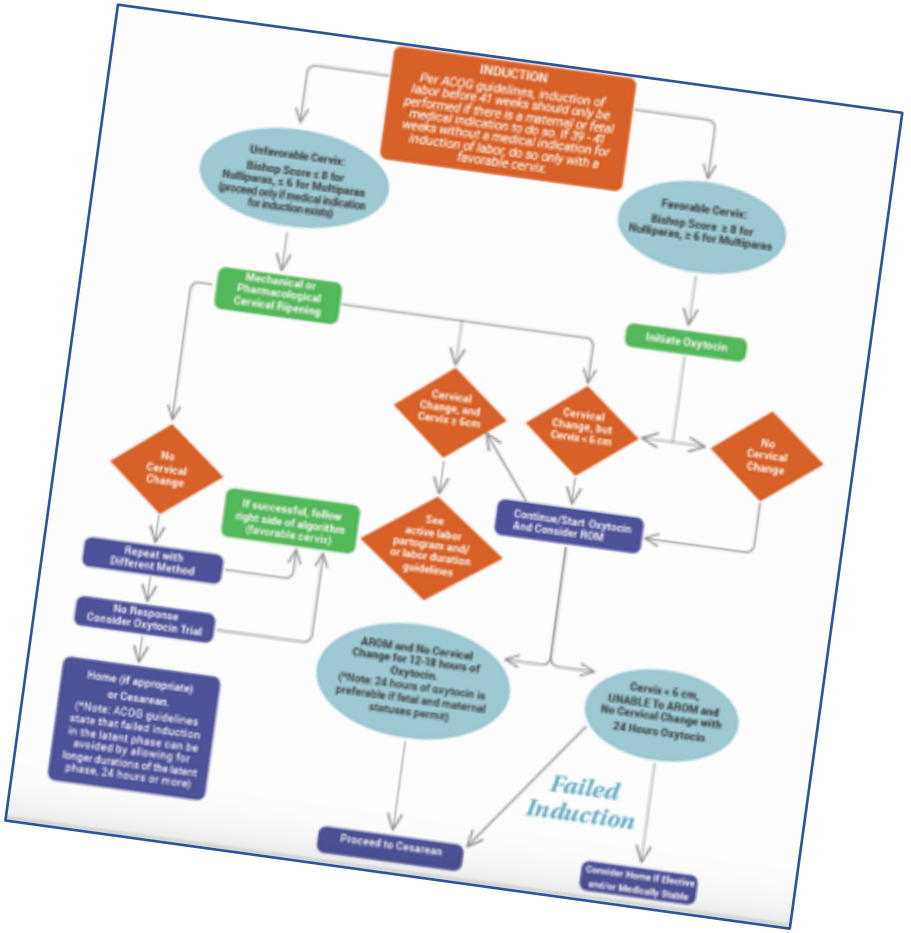
2. Diagnosis of Second Stage Arrest (only one needed)

No descent or rotation for:

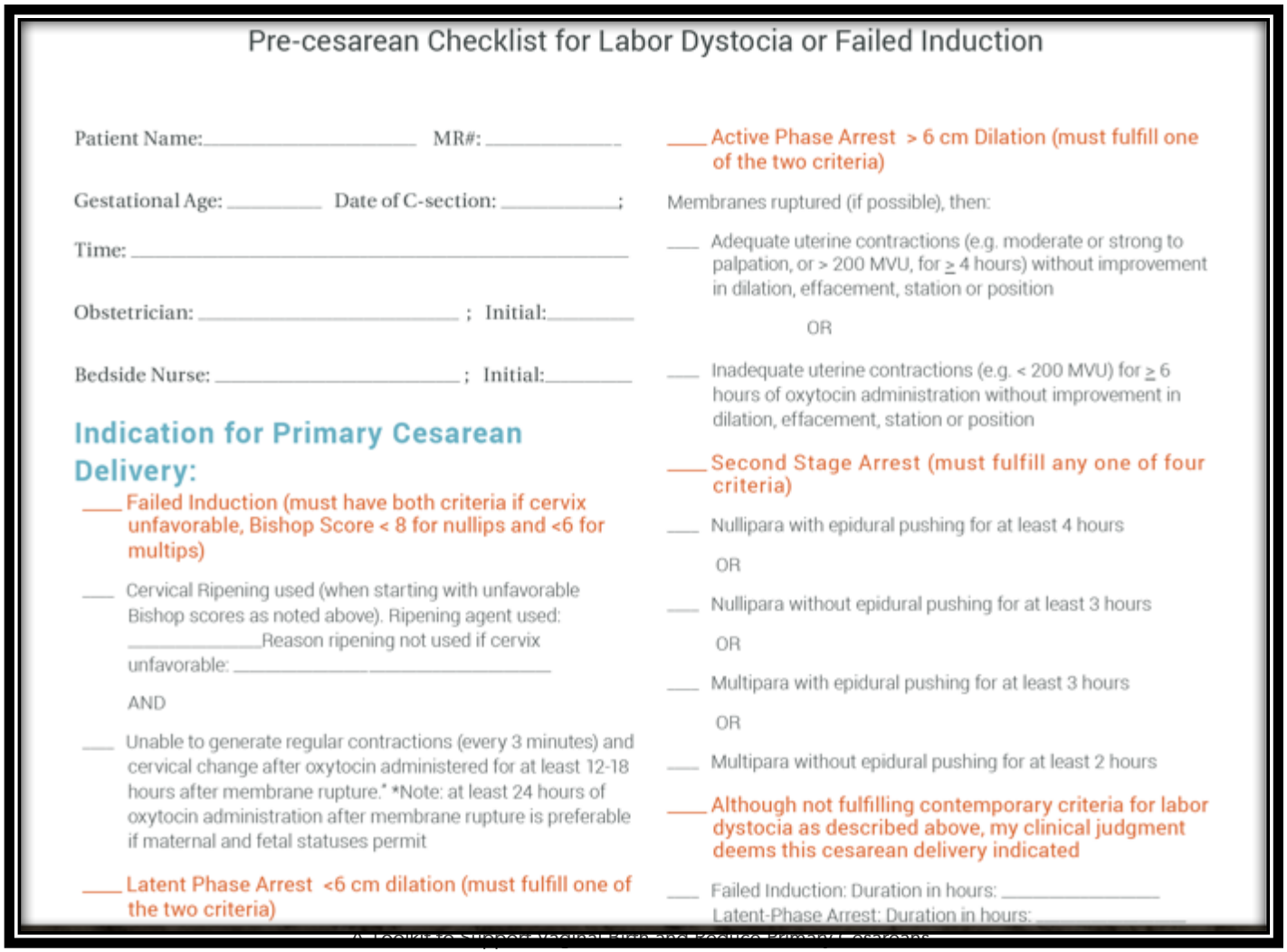
- ☐ At least 4 hours of pushing in nulliparous woman with epidural
- ☐ At least 3 hours of pushing in nulliparous woman without epidural

Response

Example of Induction of Labor Algorithm found in toolkit



Pre-Cesarean Checklist for Labor Dystocia available 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

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 pushing for at least 4 hours

OR

___ Nullipara without epidural pushing for at least 3 hours

OR

___ Multipara with epidural pushing for at least 3 hours

OR

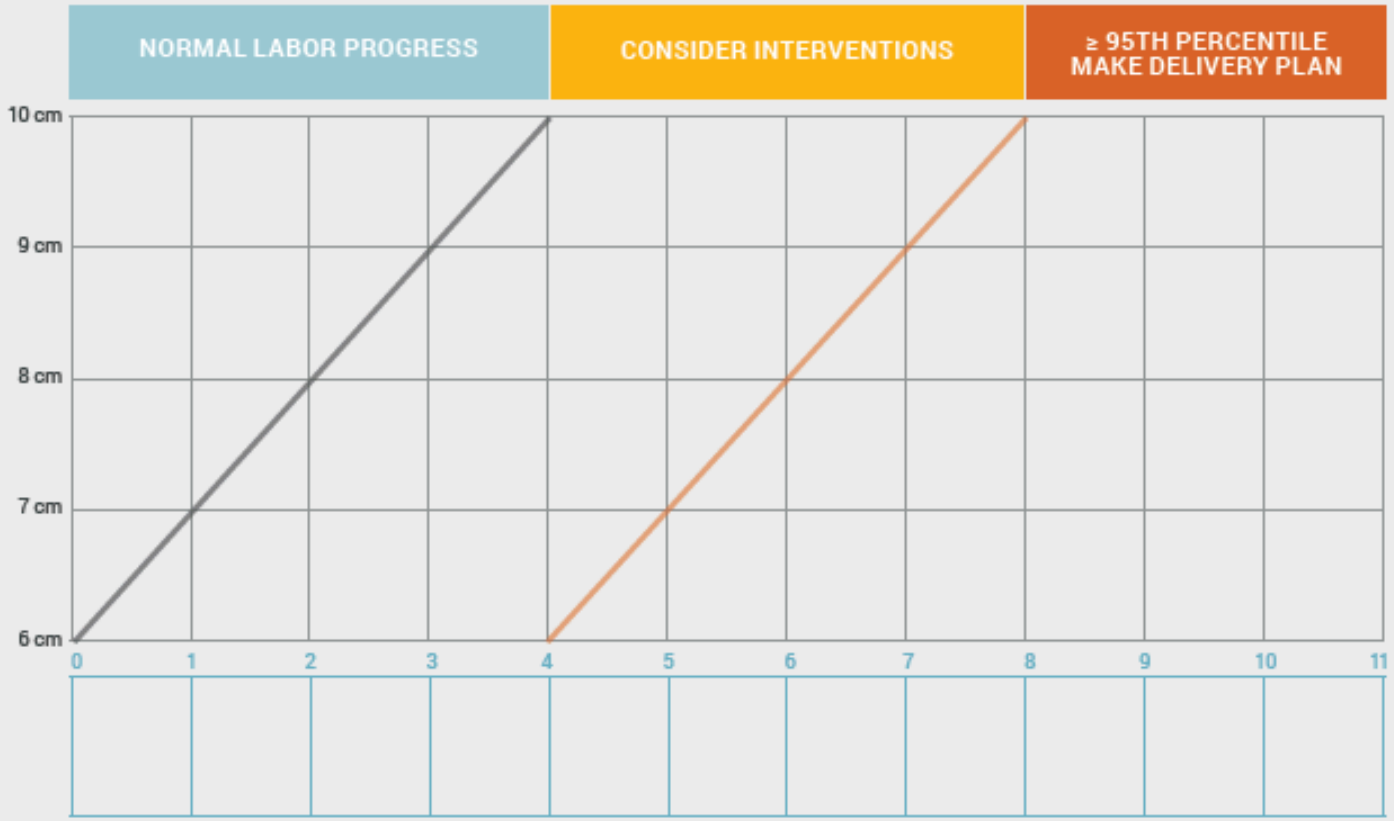
___ Multipara without epidural pushing for at least 2 hours

____ 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: _____

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans

Active Labor Partogram available in the Toolkit



Refs: Zhang J. et al. Obs Gynecol. 2010; 116(6):12 1287. Neal JL, Lowe NK. Med Hypothesis. 2012; 78(2):319-326. Hoppe K, et al. Am J of Obstet Gynecol. 2016; 214(1):S4

SWEDISH

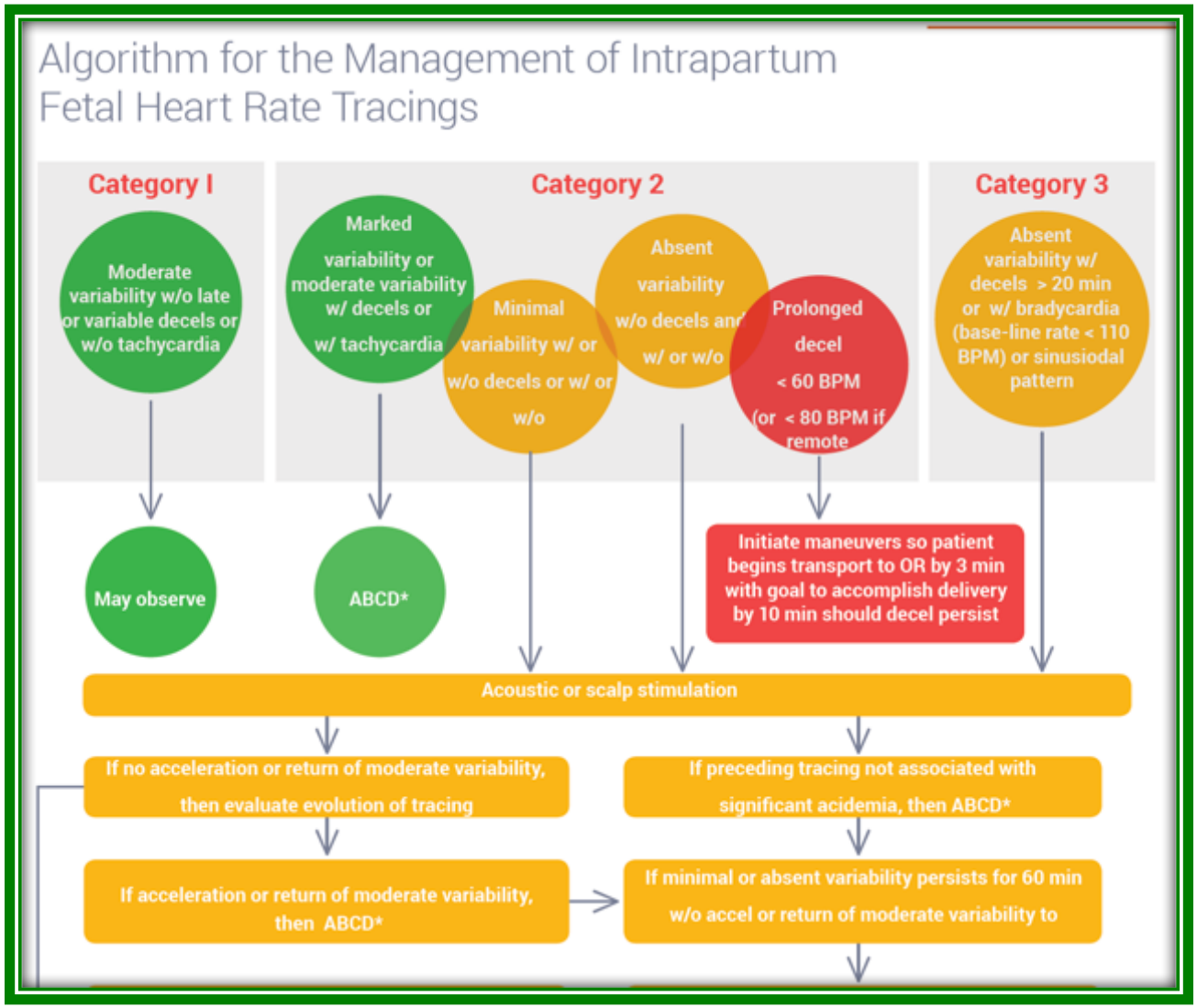
adapted with permission from Swedish Medical Center

CMQCC
California Maternal Quality Care Collaborati

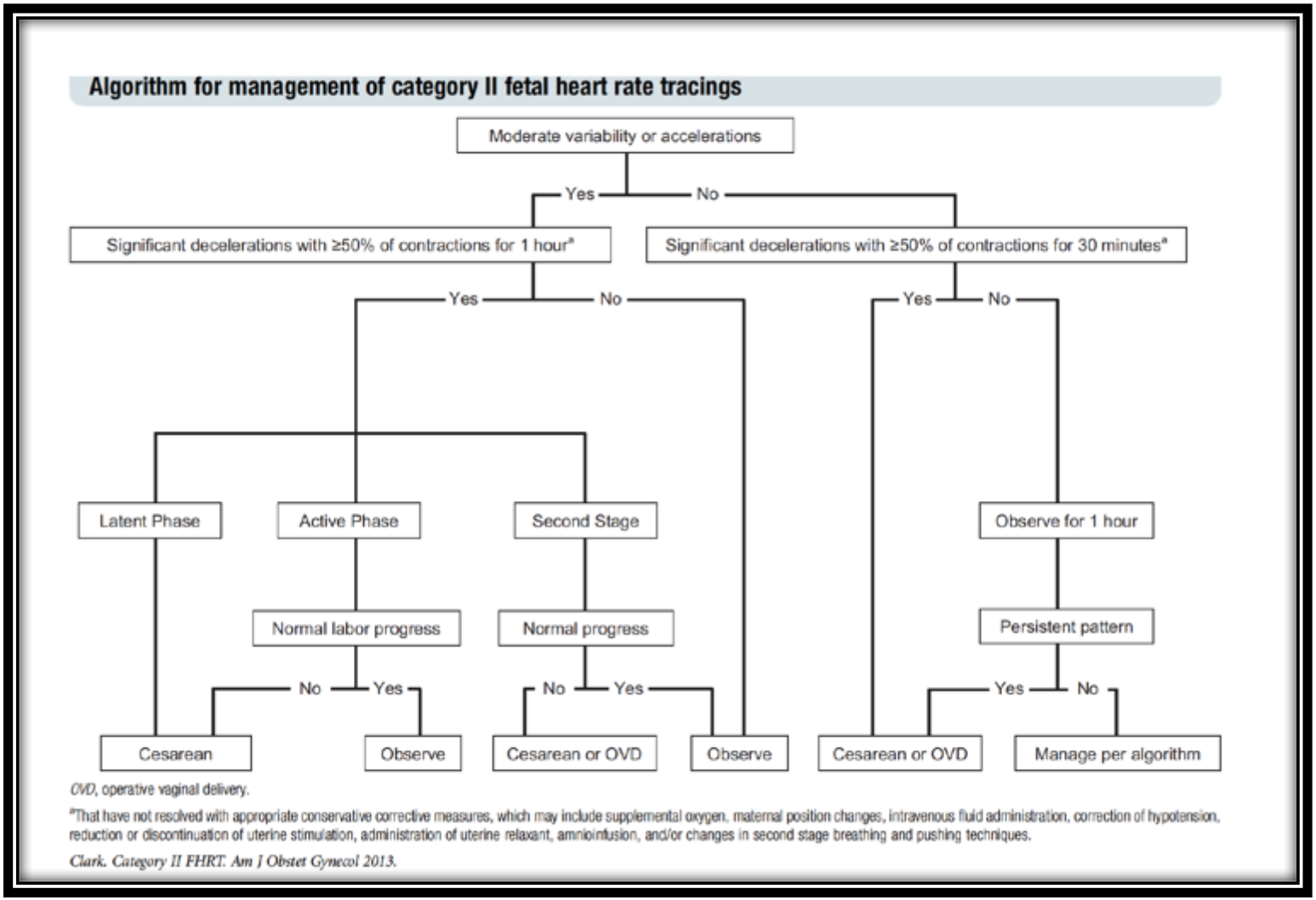
Response

Algorithm for Management of Intrapartum FHR Tracings available in Toolkit

Response



Clark's Algorithm for Management of Cat II Tracings available in Toolkit



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

Response

Category:	**Patient Care Services**
Owner:	**Labor and Delivery OR Manager**
Title:	**Cesarean Delivery / Induction of Labor Scheduling**

PURPOSE: To eliminate non-medically indicated (elective) deliveries prior to 39

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

Procedure Scheduling Determination:

☐ Schedule: Medically indicated and necessitates delivery < 39 weeks gestation

☐ Schedule: Gestation age ≥ 39 weeks on scheduled date

Completed by: _____ Date/Time: _____

[Chief of Maternal Fetal Medicine/OB Hospitalist]

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

Reporting

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

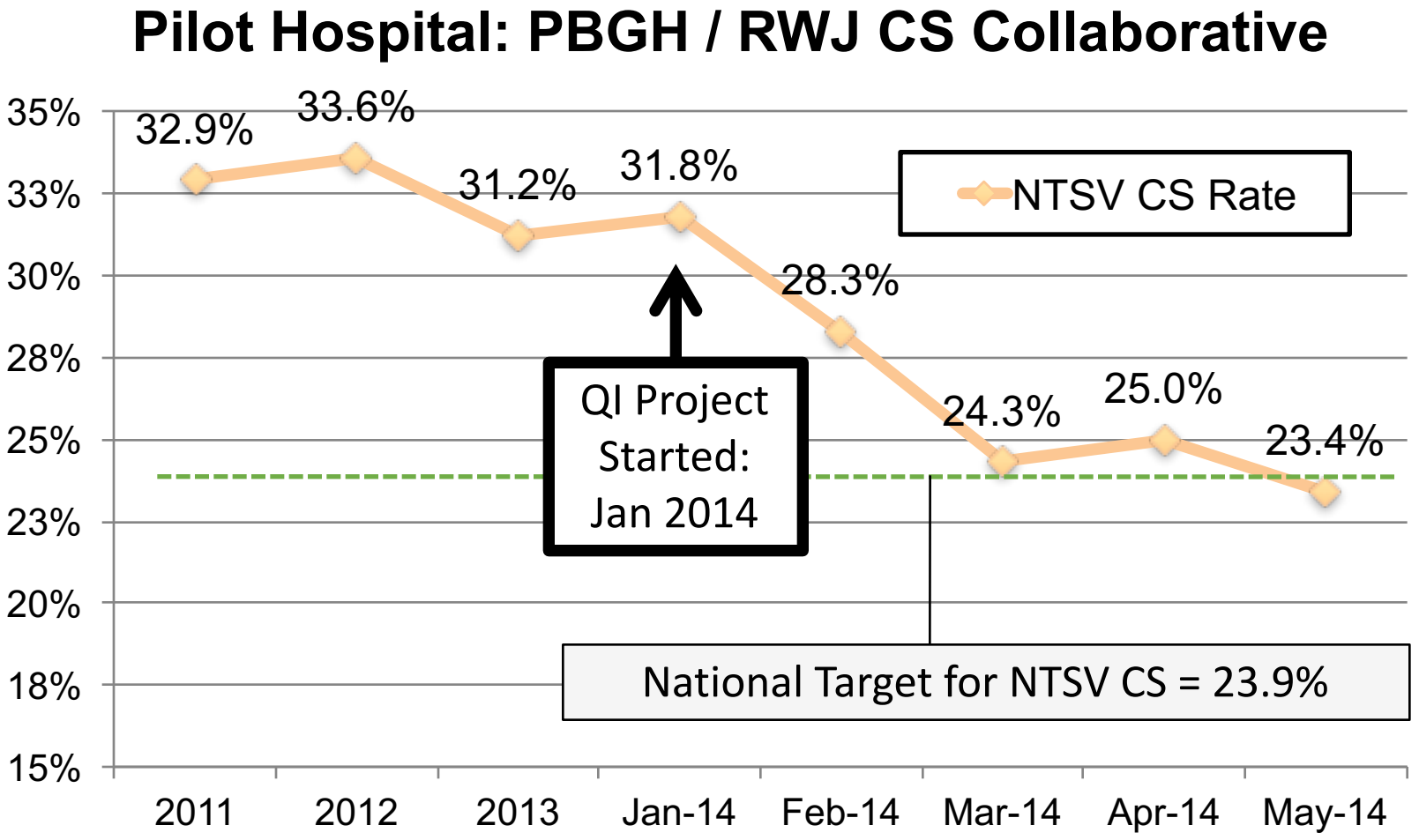
Quality Improvement Support

Payment Reform

Impressive Results: within 6 months

24.2 % Reduction	22.1% Reduction	19.5% Reduction
Baseline – 32.6% After QI – 24.7%	Baseline – 31.2 After QI – 24.3%	Baseline – 27.2% After QI – 21.9%

CMQCC Data-Driven QI: NTSV CS



Provider-Level Cesarean Rates

Screen Shot from the CMQCC Maternal Data Center

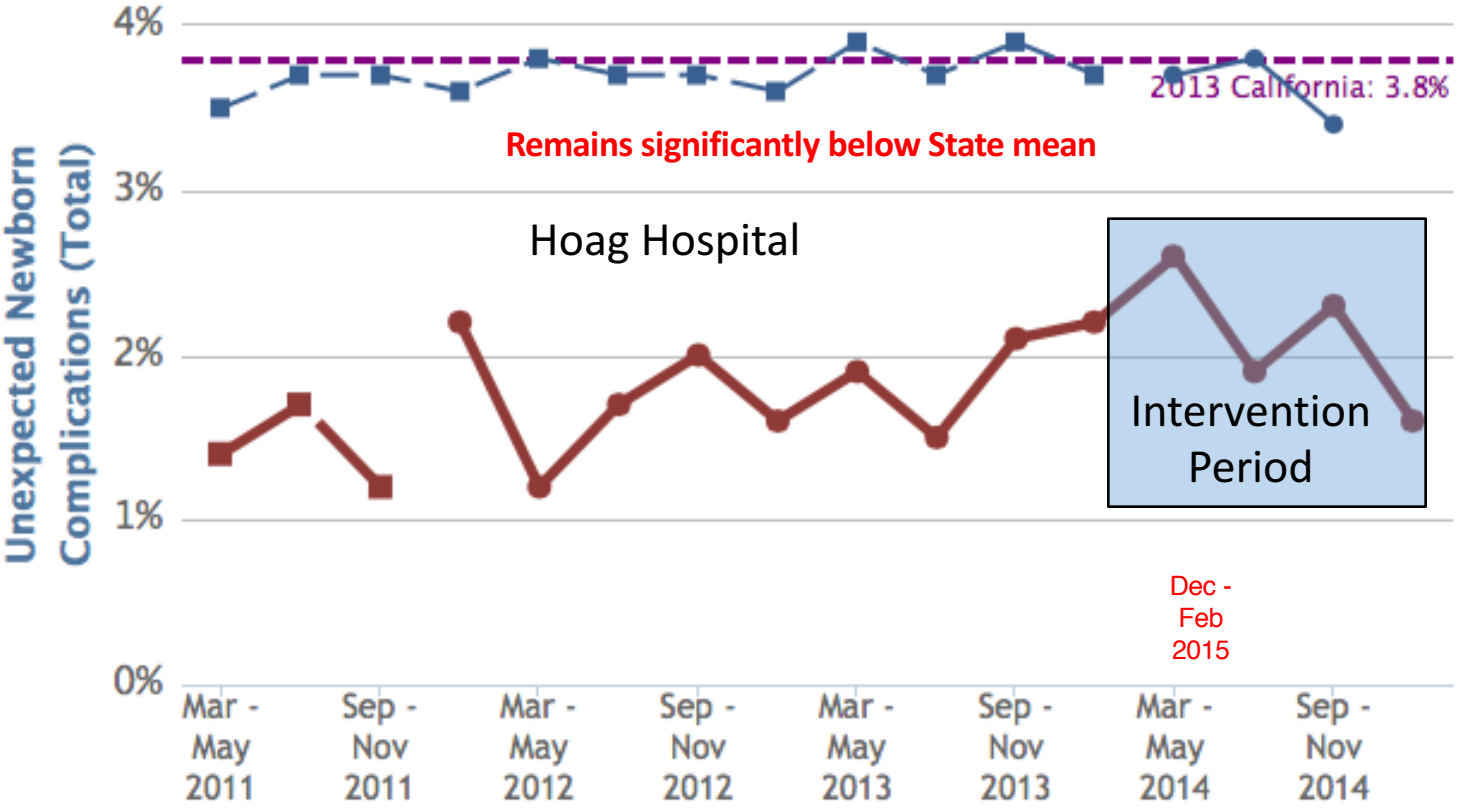
Note the two busiest providers had widely different rates

Period: Oct 2012 – Sep 2013 (12 months)

		NTSV Cesarean Section		Total CS	
	Total Deliveries	Rate	D	Rate	D
Oct 2012 – Sep 2013		27.6%	163090	33.2%	478231
Missing Provider	491				
Sample Medical Center	5844	32.2%	2369	37.9%	5844
G7xxxx	52	13.6%	22	9.6%	52
G6xxxx	47	36.8%	19	40.4%	47
G5xxxx	68	20.8%	24	42.6%	68
G8xxxx	60	15.4%	26	21.7%	60
A8xxxx	190	42.7%	75	44.7%	190
A6xxxx	52	35.0%	20	42.3%	52
A5xxxx	2	No Cases	0	100.0%	2
A4xxxx	114	35.3%	51	46.5%	114
A8xxxx	214	18.3%	82	28.0%	214
A9xxxx	481	36.2%	163	43.2%	481

No Change in Baby Outcomes:
Rate of Unexpected Newborn Complications

Screen Shot from the CMQCC Maternal Data Center

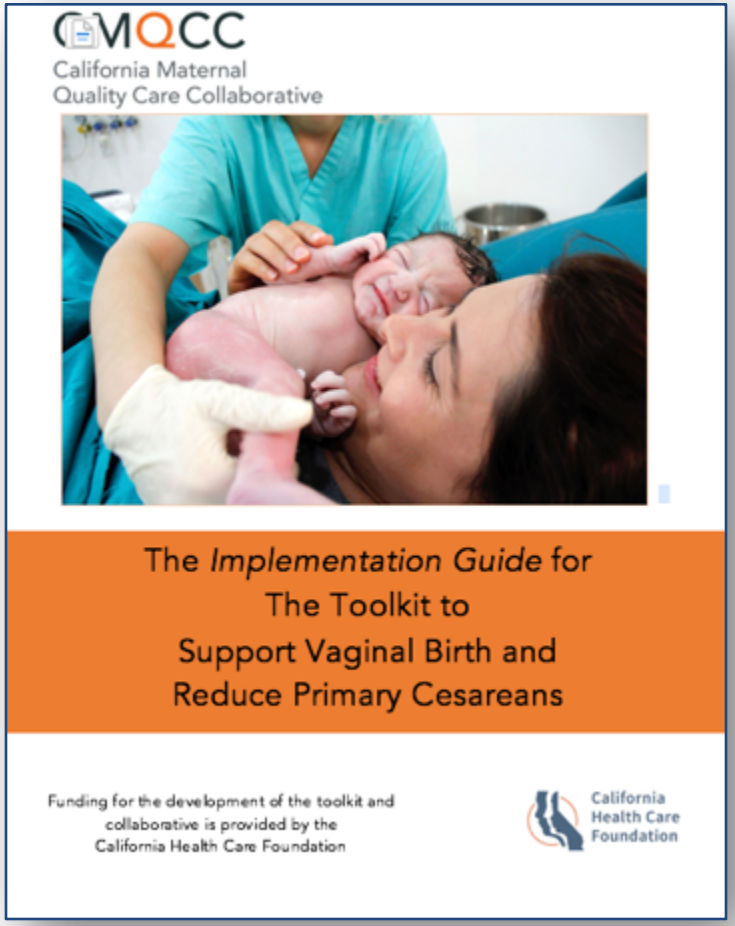


Take-home Lessons from the Pilot Hospitals

- 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

Readiness Assessment

Available in the Implementation Guide and on www.cmqcc.org

spital Name: ject Contact:		
Focus	Readiness Questions	Y N
	Has your hospital previously participated in a formal data-driven OB QI Collaborative?	
	If yes: Were there monthly chart reviews for process measures?	
	Were there monthly reports on outcome measures?	
	Were results shared with staff on an ongoing basis?	
	Have you identified current practices or policies that may be associated with increased cesarean rate?	
	Have you considered alternative policies/practices to reduce cesareans?	
	Do you have a multidisciplinary team?	
	If yes, have you started meeting?	
	If so, has your team considered strategies (practices, policies) that could serve to address and identified barriers?	
	Has your team discussed and understands the rationale for a standardized approach to the definition and management of labor dystocia?	

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

Implement standard criteria for diagnosis and treatment of labor dystocia, arrest disorders and failed induction

Implement training/procedures for identification and appropriate interventions for malpositions (e.g. OP/OT)

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

Transforming Maternity Care

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans