


The logo for CMQCC, with the letters 'C', 'M', and 'C' in black and the letter 'Q' in orange.

California Maternal  
Quality Care Collaborative

A decorative graphic on the left side of the slide consisting of several overlapping squares in various shades of orange, arranged in a stepped pattern.

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

## *23.9 is FINE!*

Kim Werkmeister, RN, CPHQ

California Maternal Quality Care Collaborative

Co-Lead: *A Collaborative to Support Vaginal Birth and Reduce  
Primary Cesareans*

# Disclosure

- I have no financial or other conflicts to disclose



# Objectives

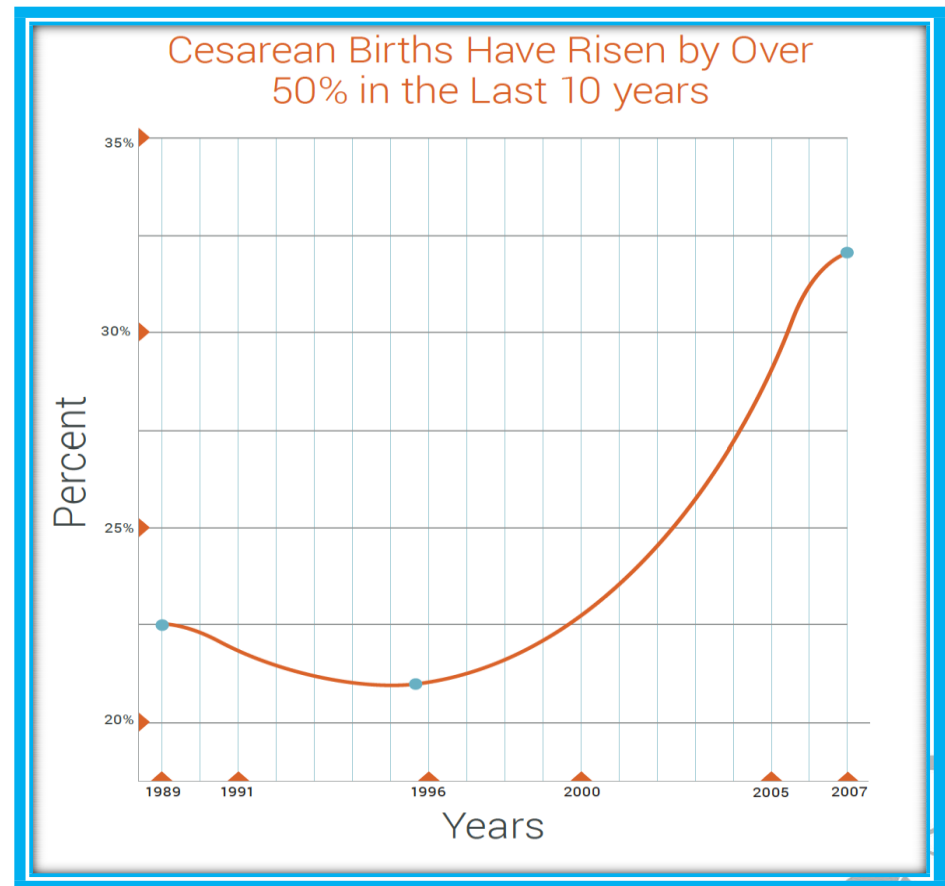
- Discuss implications of unnecessary primary Cesarean sections
- Identify strategies to improve NTSV rates in your hospital



# What are we talking about?

Why focus on  
Cesarean Birth for  
Quality  
Improvement?

- **US 2013= 32.7%**
- **CA 2013= 33.1%**





# Why does it matter to me?



# Mom

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

Long term & Subsequent Maternal Risks



# Baby

## Neonatal Risks of Cesarean Birth

Higher risk of respiratory morbidity (respiratory distress syndrome, transient tachypnea of the newborn, and infections)

Higher NICU admission rates

Prolonged length of stay in NICU

Increased risk of asthma requiring hospitalization and inhaler use during childhood

Difficulty with breastfeeding





## Test Question:

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

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

Rosenberg T, NYT, Jan 19 2016



## Test Question:

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

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

- (A) Your personal wishes
- (B) Your choice of hospital
- (C) Your baby's weight
- (D) Your baby's heart rate in labor
- (E) The progress of your labor



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

**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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NO. 3 (2013): 527-535  
©2013 Project HOPE—  
The People-to-People Health  
Foundation, Inc.

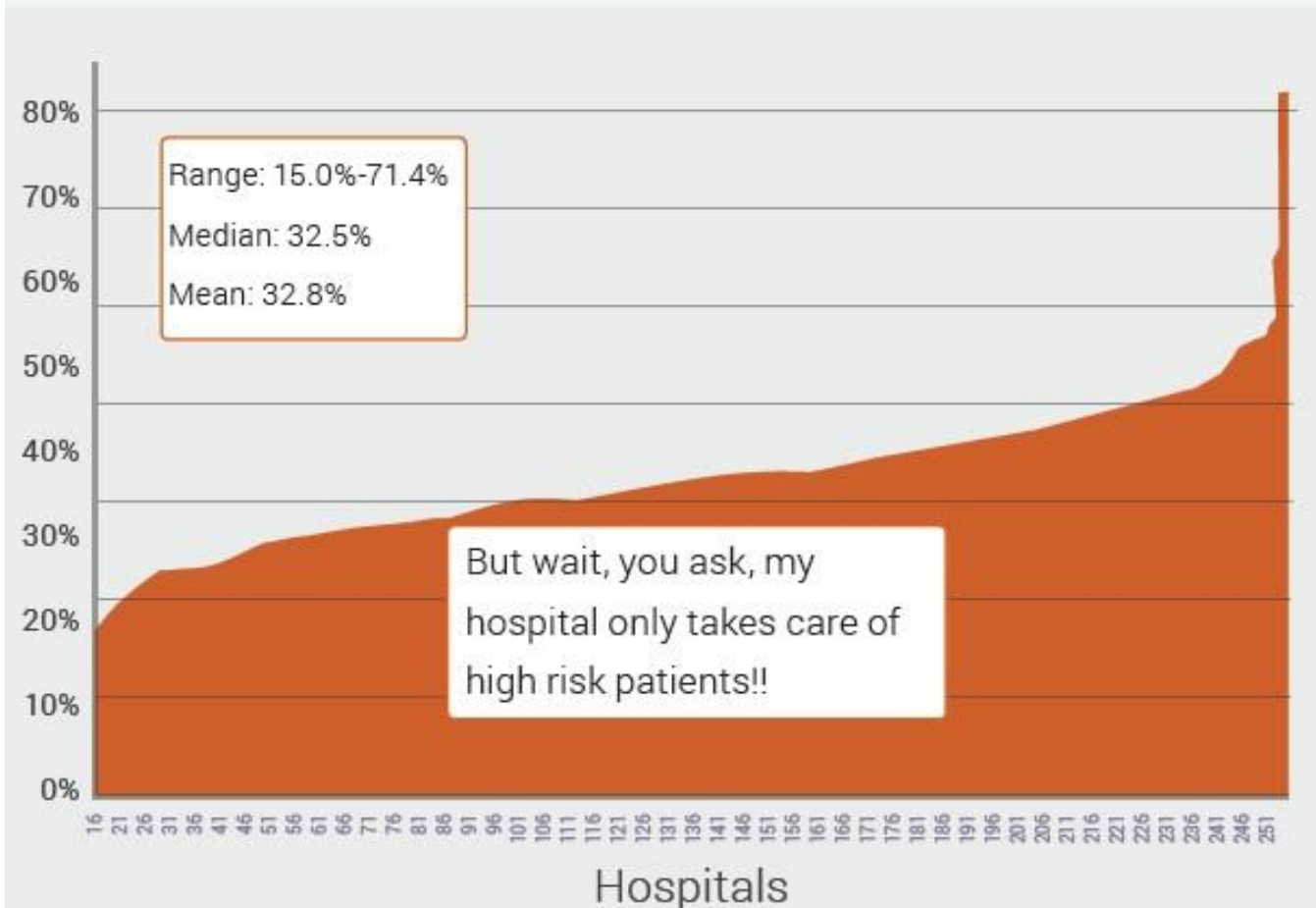
**Katy Backes Kozhimannil** (kbk@umn.edu) is an assistant professor in the Division of Health Policy and Management, School of Public Health, University of Minnesota, in Minneapolis.

**Michael R. Law** is an assistant professor in the Centre for Health Services and Policy Research, School of Population and Public Health, at the University of British Columbia, in Vancouver.

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

# Variation in California

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



# Why focus on Nulliparous Term Singleton Vertex Cesareans? Or NTSV



# Why focus on Nulliparous Term Singleton Vertex Cesareans? Or N T S V

Nulliparity is a critical risk adjuster. Creates a standardized population

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

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





# Importance of the First Birth

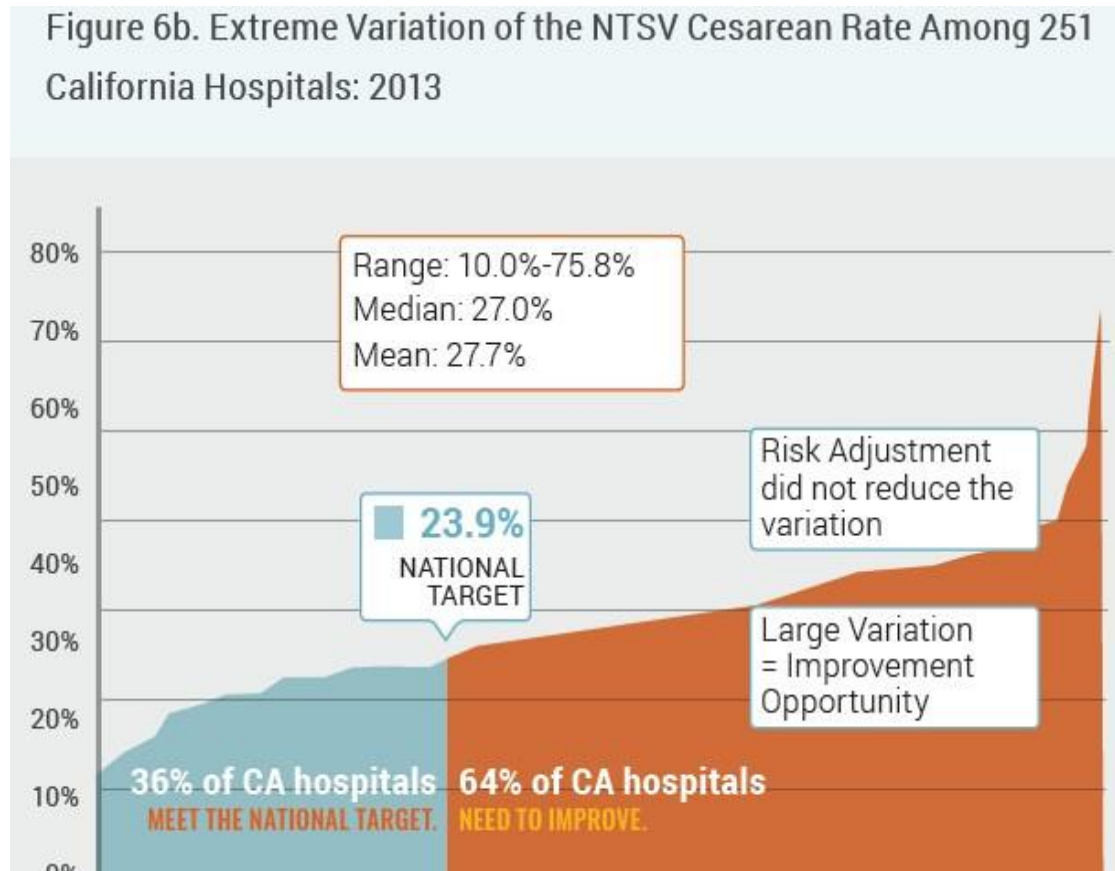
If a woman has a Cesarean birth in the first labor, over 90% of ALL subsequent births will be via Cesarean birth

A classic example of path dependency

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



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



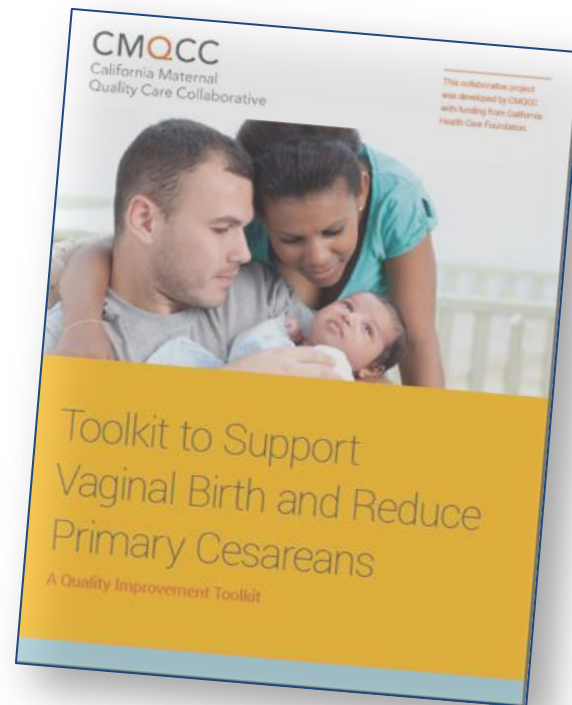


## What Indications have driven the RISE in Cesareans?

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 <i>singleton</i> 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”)

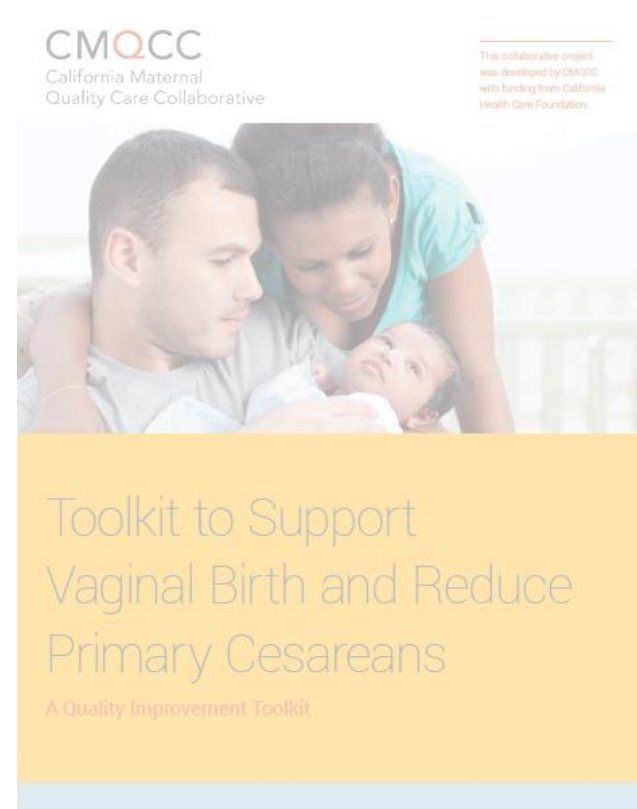


What if we were able to address those factors safely and effectively?



# What is the Toolkit?

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



# Who Created the Toolkit?

Over 50 expert writers and advisors:

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

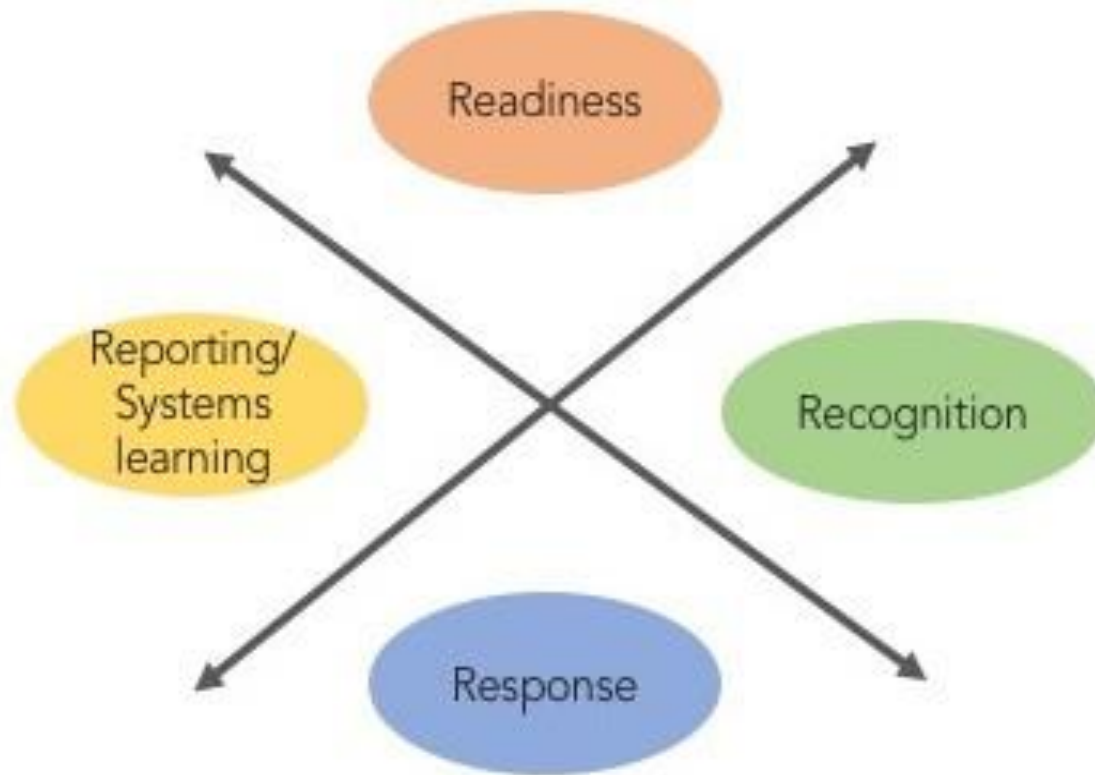


## The experts who wrote and advised for the toolkit represent organizations such as:

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



# Tenants of the toolkit



# Readiness

## Improving the Culture of Care, Awareness and Education

Improve quality of and access to childbirth education

Improve shared decision making at critical points in care

Bridge the provider knowledge and skills gap

Improve support from hospital leadership and harness the support of clinical champions

Transition from paying for volume to paying for value



# Recognition and Prevention

## Supporting Intended Vaginal Birth

Implement institutional policies that support intended vaginal birth and safely reduce routine obstetrical interventions

Implement early labor supportive care policies and active labor criteria for admission

Improve the support infrastructure and supportive care during labor

Encourage use of doulas and work collaboratively to provide labor support

Utilize best practice recommendations for laboring women with regional anesthesia

Implement intermittent monitoring policies for low-risk women

Implement current prevention and treatment guidelines for potential modifiable conditions (HSV, Breech)



# Response

## Management of Labor Abnormalities

Create highly reliable teams and improve interdisciplinary communication

Implement standard diagnostic criteria and standard responses to labor challenges and fetal heart rate abnormalities

Utilize operative vaginal delivery for eligible cases

Identify malposition and implement appropriate interventions

Consider alternative coverage programs

Develop systems that facilitate safe, efficient transfer of care from the out of hospital birth environment to the hospital

Don't practice defensively: Focus on quality and safety



# Reporting/Systems

## Using Data to Drive Improvement

Create awareness of the scope of the problem by both the public and providers/nurses

Promote transparency of hospital level data

Improve data quality

Create actionable data

Reduce data burden

Design new measures to drive QI



### The SHARE Model



## Toolkit Spotlight:

# Shared Decision Making at Critical Points in Care



A graphic of a spotlight on the left side of the slide, casting a yellow beam of light towards the center. The spotlight is black and grey, and the beam is a soft yellow gradient.

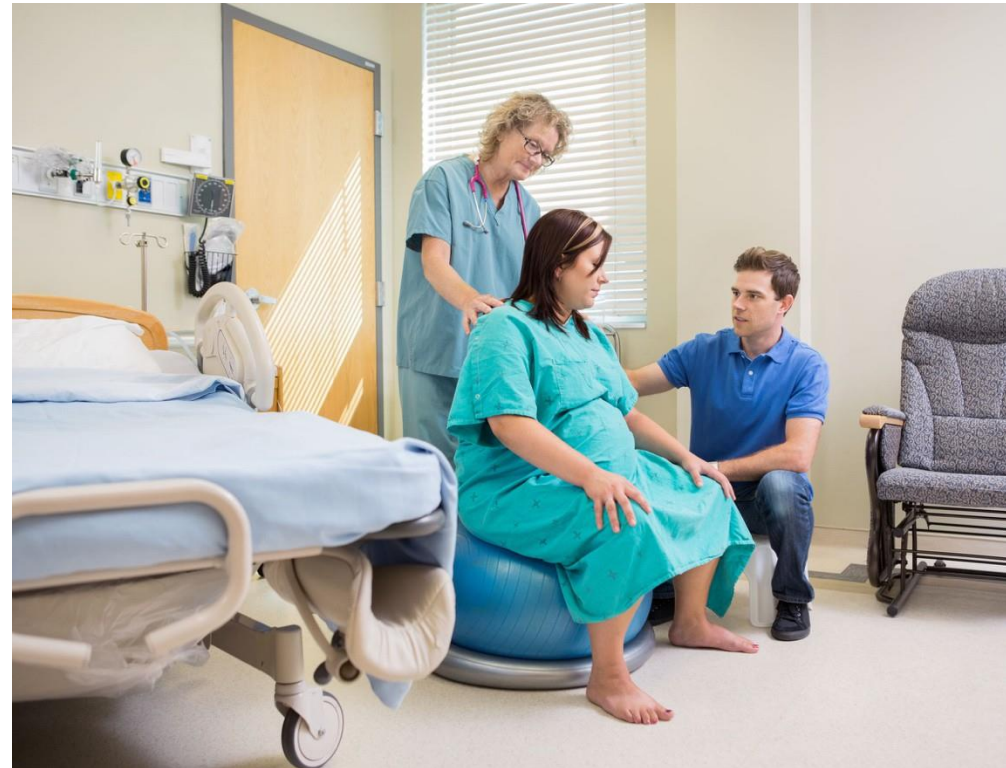
## Toolkit Spotlight: Improve Labor Support

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

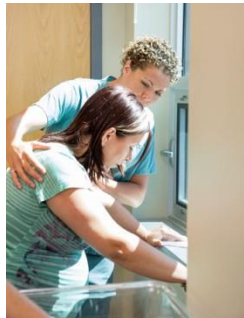
- Slightly shorter labor
- More likely to report satisfaction with birth experience
- Less likely to need the assistance of vacuum or forceps
- Less likely to need pain medication
- Babies less likely to have low 5-minute Apgar scores
- **Less likely to have a cesarean birth**




## How to Improve Labor Support on the Unit

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

Regional Workshops to reinforce labor support skills



A graphic of a spotlight on the left side of the slide, casting a yellow beam of light towards the title text.

# Toolkit Spotlight: Implement Standard Diagnostic Criteria/Responses to Labor Abnormalities

- Diagnosis of labor dystocia
- Safe use of Pitocin
- Response to abnormal heart rate patterns
- Induction of labor





# Pre-Cesarean Checklist for Labor Dystocia or Failed Induction

\_\_\_ **Failed Induction (must have both criteria if cervix unfavorable, Bishop Score < 8 for nullips and <6 for multips)**

\_\_\_ Cervical Ripening used for those starting with Bishop scores as noted above Ripening agent used: \_\_\_\_\_ Reason ripening not used if cervix unfavorable: \_\_\_\_\_

AND

\_\_\_ Unable to generate regular contractions (every 3 minutes) and cervical change after oxytocin administered for at least 12-18 hours after membrane rupture." \*Note: at least 24 hours of oxytocin administration after membrane rupture is preferable if maternal and fetal statuses permit

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

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

OR

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

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

\_\_\_ Membranes ruptured (if possible), then:

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

OR

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

\_\_\_ **Second Stage Arrest (must fulfill any one of four criteria)**

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

OR

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

OR

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

OR

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

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

\_\_\_ Failed Induction: Duration in hours: \_\_\_\_\_

\_\_\_ Latent-Phase Arrest: Duration in hours: \_\_\_\_\_





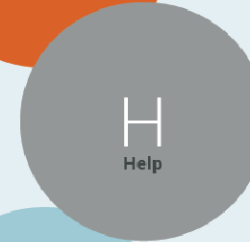
A graphic of a spotlight shining from the top left corner onto the title text.

# Toolkit Spotlight: Shared Decision Making at Critical Points in Care

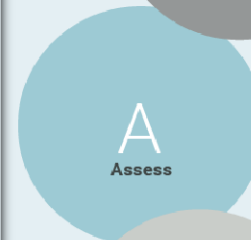
## The SHARE Model



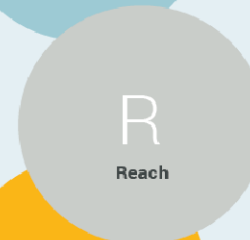
Seek the patient's participation



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



# 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

A graphic of a spotlight on the left side of the slide, with a yellow beam of light shining towards the title text.

# Toolkit Spotlight: Implement Institutional Policies That Safely Reduce Routine Obstetrical Interventions

Current obstetric care in the United States remains distinctly different from the rest of the world, applying a high-risk model to all women and overusing costly procedures that increase risk. At the same time, current care underutilizes beneficial, low-cost interventions that are readily available, easy to implement and well suited for low-risk women.





# Patience With Patients

Six  
is the  
**NEW**  
four!

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

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

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



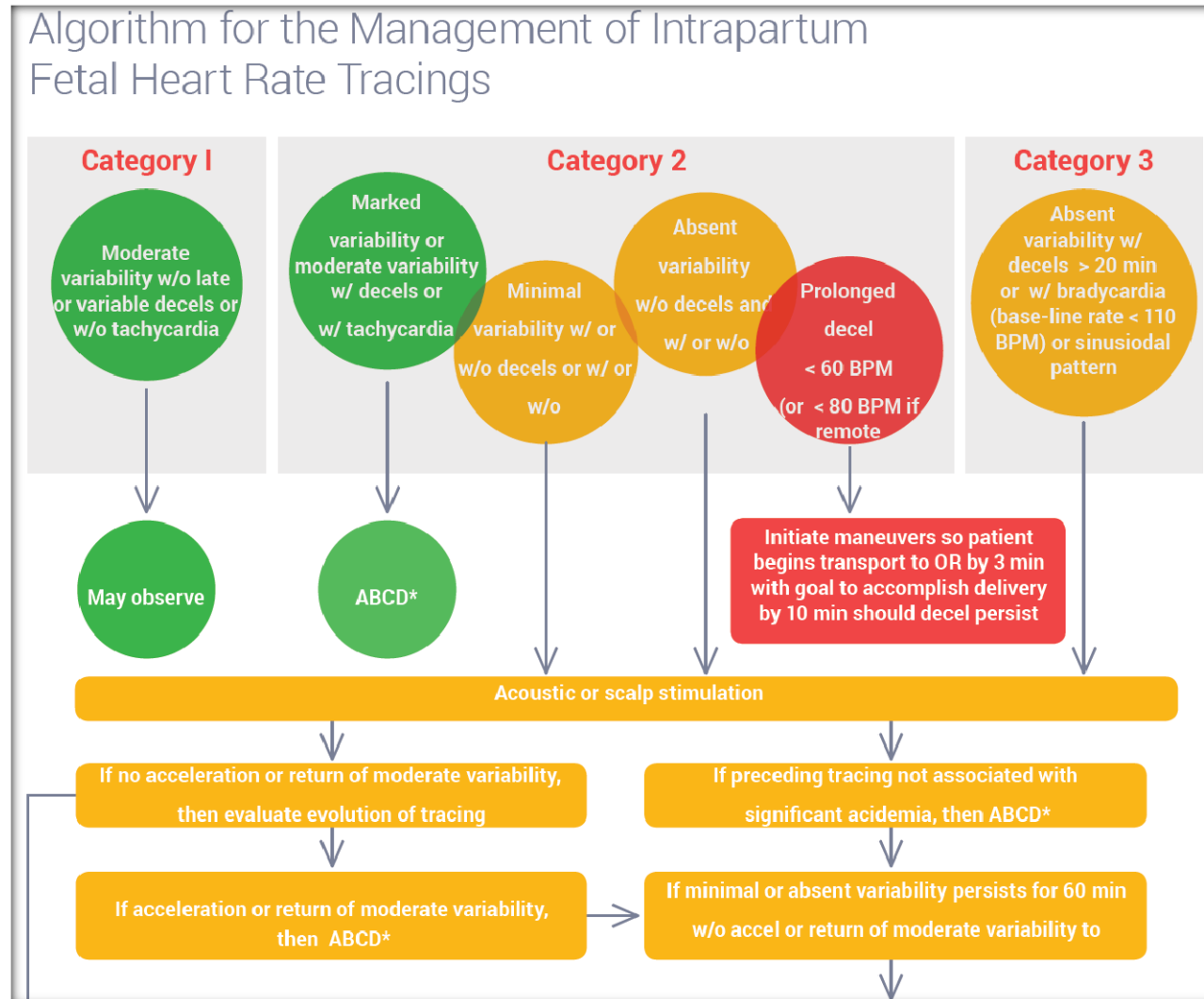
# ACOG/SMFM Criteria for Dystocia: CMQCC Checklist

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

	Criteria 1			Criteria 2		Criteria 3
	Diagnosis of Dystocia/Arrest Disorder (all three should be present)			Diagnosis of Failed Induction before 6 cm dilation (both should be present)		Diagnosis of failed induction after 6 cm dilation (see criteria 1)
Identifier (MRN, Other)	Cervix $\geq$ 6 cm	Membranes ruptured, then	No change x 4 hrs with adequate uterine activity (or 6 hrs with oxytocin)	Bishop score $\geq$ 6cm before elective induction	Oxytocin used for a minimum of 12 hours after ROM	



# Algorithm for Management of Category II Tracings



# What we learned from our pilot project



## 3 Pilot QI Projects Informed the Development of the Toolkit

- Hoag Hospital, Newport Beach CA
- Miller Children's and Women's Hospital, Long Beach CA
- Saddleback Memorial Medical Center, Laguna Hills CA







Data Measurement  
Support

Quality Improvement  
Support

Payment  
Reform



# Voila!! – Astonishing results



24.2 % Reduction

Baseline – 32.6%  
After QI – 24.7%

22.1% Reduction

Baseline – 31.2  
After QI – 24.3%

19.5% Reduction

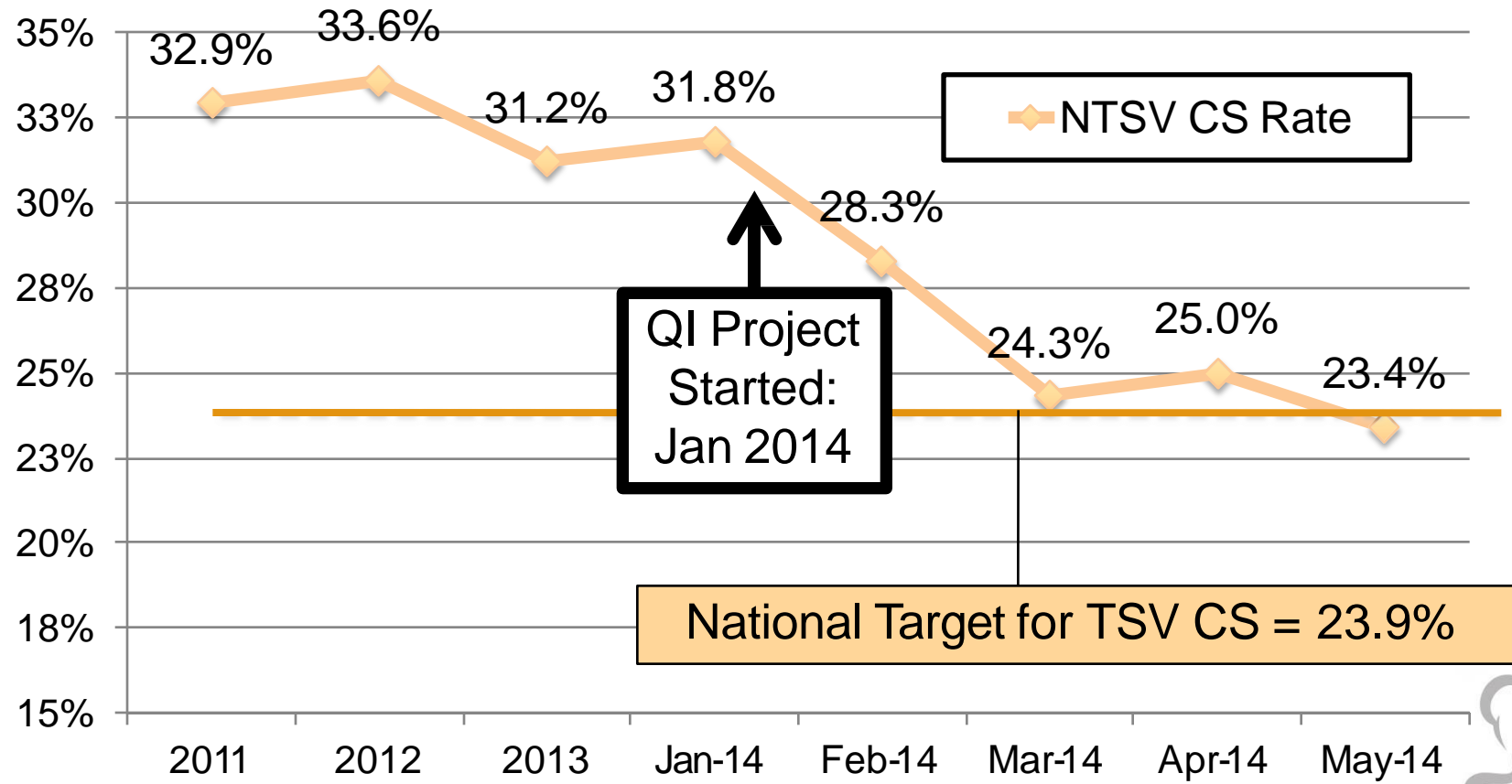
Baseline – 27.2%  
After QI – 21.9%

Transforming Maternity Care



# CMQCC Data-Driven QI: NTSV CS

Pilot Hospital: PBGH / RWJ CS Collaborative



# Any Downsides? –Balancing Measures

- More vaginal births--Any increase in 3<sup>rd</sup> or 4<sup>th</sup> degree lacerations?
  - Zero change from the prior 4 year baseline



## Any Downsides? –Balancing Measures

- Most important outcome is a healthy baby
  - NQF measure “Unexpected Newborn Complications”
  - Asks whether term babies without preexisting conditions had any major complications during birth or neonatal period
  - No change in the 3 hospitals’ rates



# Collaborative Work



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# Success Through Collaboration

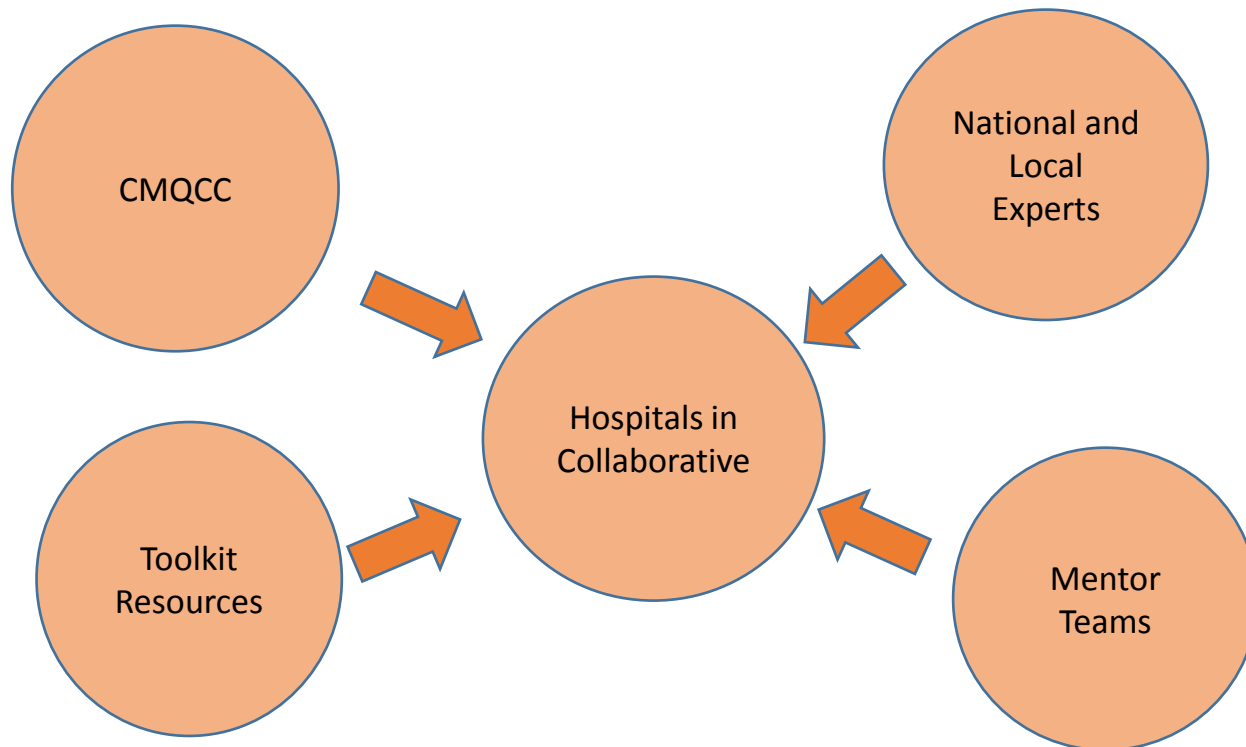


Transforming Maternity Care

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans



# Framework of Support



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A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans





## Why Do We Need a Collaborative?

- Reducing NTSV cesarean deliveries has become a national patient safety focus for patients, providers, accreditation agencies and payer groups
- 60% of California birthing hospitals are **not meeting the goal yet**

# Have you seen these?



## Your Biggest C-Section Risk May Be Your Hospital

Consumer Reports finds C-section rates vary from hospital to hospital and explains when cesareans are and aren't necessary. Read on for more on what you need to know.

[CONSUMERREPORTS.ORG](http://CONSUMERREPORTS.ORG)



## Having a Baby in California

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

[CONSUMERREPORTS.ORG](http://CONSUMERREPORTS.ORG)

Like Comment Share

Like Comment Share





## Still..... Why Do We Need A Collaborative?

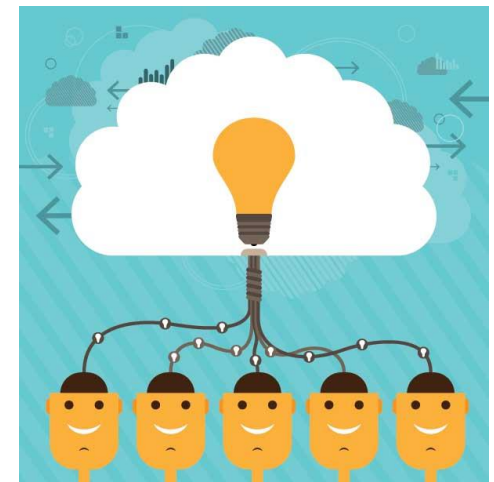
- Peer to peer learning, networking and sharing of best practices are THE BEST WAY to improve further, faster
- Gives hospitals the ability to translate the knowledge “that” into the knowledge “how”
- Ability to rapidly spread innovations that work
- Identify practical advice from peers sharing the same challenges on how to implement best practices
- Ability to integrate reliability and sustainability into improvement work





## Quality Collaboratives 101

- Start with a goal - Find out how you compare to the goal
- Form a local improvement team - Plan changes based on evidence/experience-informed recommendations
- Test those changes on a VERY small scale - Measure the effectiveness
- Make changes based on the feedback and measurement - Scale up



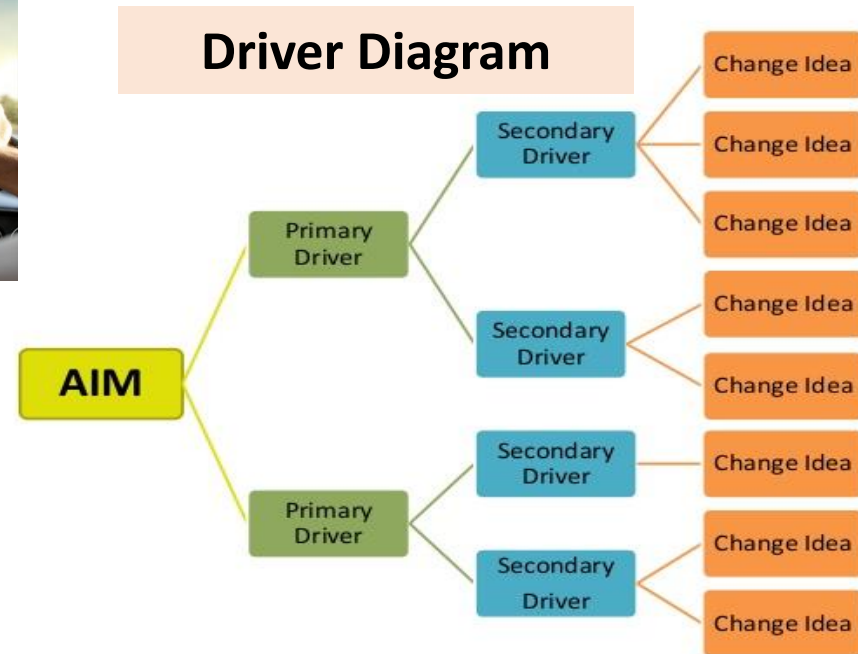


## Goals of the Collaborative

Hospitals in California working together and learning from each other for about a year to:

Reduce and sustain the NTSV cesarean delivery rate to the HP2020 goal of 23.9% or less (Measurable level of success)







## How Will We Accomplish This?

Drivers for Improvement:

- Readiness – Developing a maternity culture that values, promotes and supports intended vaginal birth
- Recognition and prevention – General labor support
- Response to every labor challenge – Management of labor abnormalities
- Reporting – Using data to drive improvement

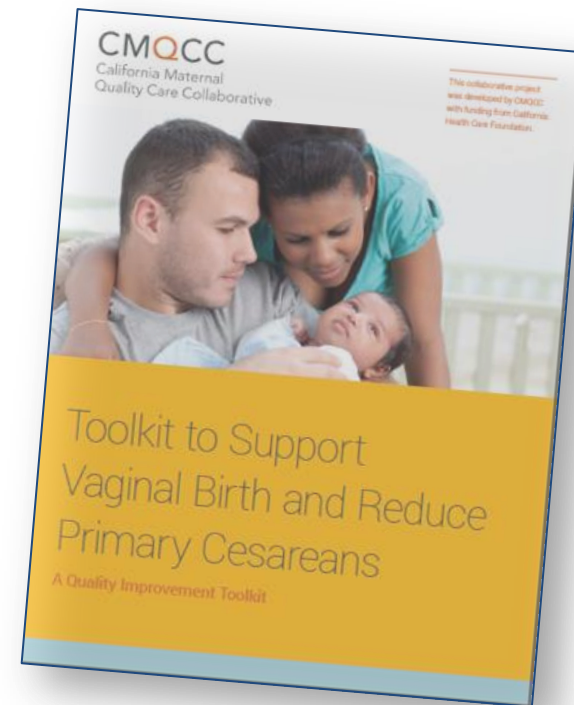






## Toolkit as the Foundation

- 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
- Has a companion *Implementation Guide*





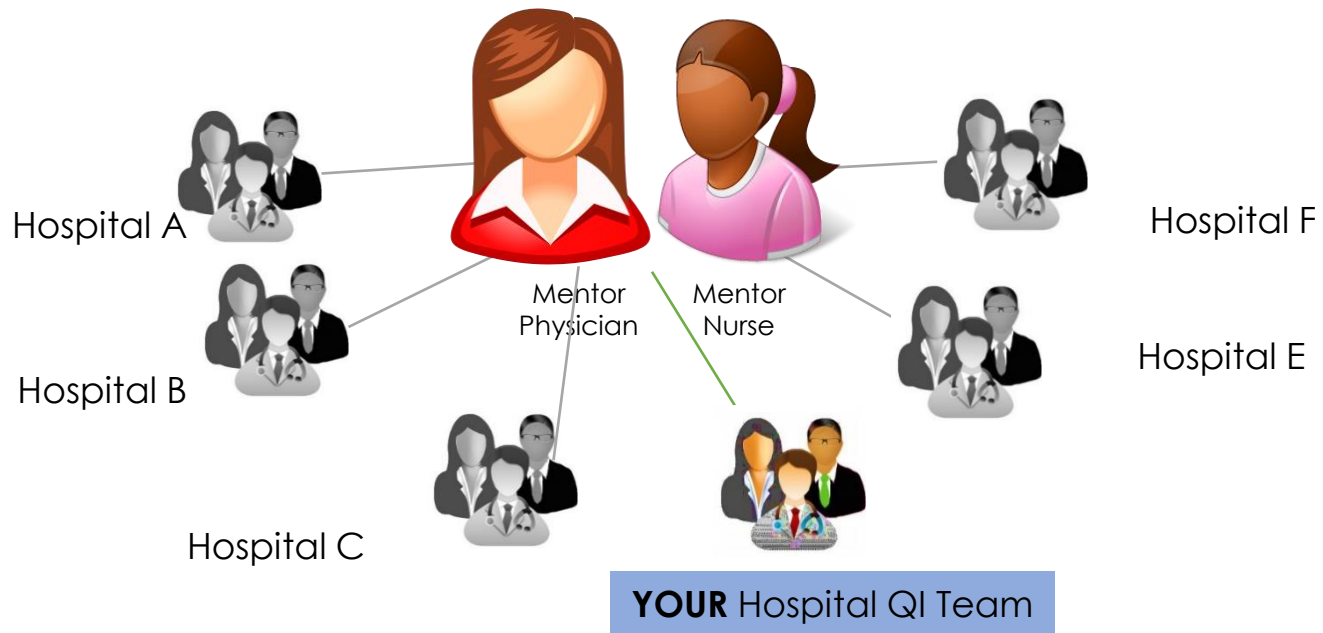


## What is Different about *this* Collaborative?

- In addition to the use of all of the features of the **CMQCC Maternal Data Center**:
- **Mentor support** from experts for implementation of bundle elements in smaller groups
- Access to national and local experts through grand rounds, in-person and virtual education and mentor/team monthly calls



# The Collaborative to Support Vaginal Birth



Transforming Maternity Care

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans



## Features of the Mentor Model

- Monthly web based meetings facilitated by mentor physician and nurse
- Opportunity for focused attention to your team
- On-site assistance for grand rounds or other in-depth help
- CMQCC Support





## Hospital Involvement Means:

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

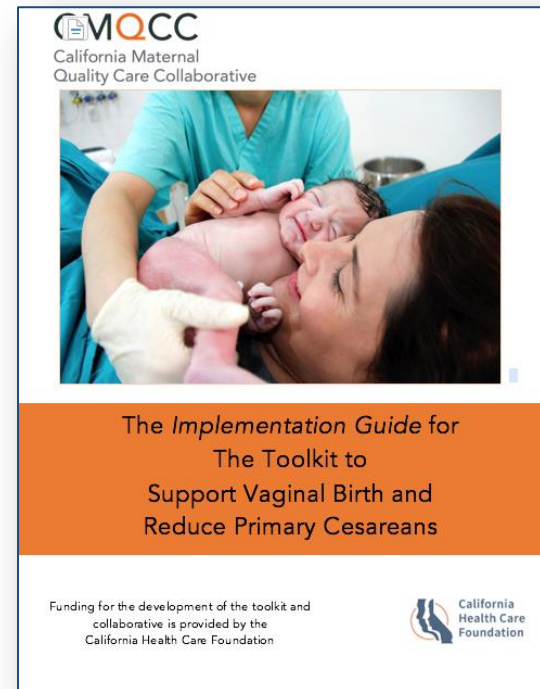




# Collaborative Tools to Guide Improvement Across Hospitals

## Implementation Guide

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





# Collaborative Tools to Guide Improvement Across Hospitals

## Timeline Worksheet

**Ready! Set! Go!**

The Collaborative to Support Vaginal Birth and Reduce Primary Cesareans Timeline for Progression					
Pre-work	Month 1	Month 2	Month 3	Month 4	Month 5
<input type="checkbox"/> Assemble multidisciplinary team	<input type="checkbox"/> Attend In person kick off meeting	<input type="checkbox"/> Attend monthly team mentor meeting	<input type="checkbox"/> Attend monthly team mentor meeting	<input type="checkbox"/> Attend monthly team mentor meeting	<input type="checkbox"/> Attend monthly team mentor meeting
<input type="checkbox"/> Obtain access to maternal data center	<input type="checkbox"/> Share information from kick off meeting with staff, administration	<input type="checkbox"/> Enter data (if available)	<input type="checkbox"/> Enter data	<input type="checkbox"/> Enter data	<input type="checkbox"/> Enter data
<input type="checkbox"/> Review and understand baseline data for NTSV Cesarean Rates <input type="checkbox"/> Review 20 cases of CPD compare against ACOG guidelines	<input type="checkbox"/> Provide baseline NTSV Cesarean provider rates (see example) <input type="checkbox"/> Post baseline data for staff, administration to review	<input type="checkbox"/> Share progress through data	<input type="checkbox"/> Share progress through data	<input type="checkbox"/> Share progress through data	<input type="checkbox"/> Share progress through data



# Collaborative Tools to Guide Improvement Across Hospitals

Potential Implementation Barriers & Strategies to Overcome	
Potential Barrier Drivers	Strategies to Overcome
<b>Clinician</b> <ul style="list-style-type: none"><li>• Resistance to change</li><li>• Don't see the need for change</li><li>• Lack of understanding and/or knowledge deficit</li></ul>	<ul style="list-style-type: none"><li>• Build compelling story with respected peer leader to speak to the importance of initiating proposed changes</li><li>• Provide peer based education to all clinicians with education on the initiative and goals</li><li>• Provide peer-reviewed evidence to support change</li><li>• Share goals of the proposed QI project/change</li><li>• Provide opportunities to answer questions and/or concerns</li></ul>
<b>Upper management</b> <ul style="list-style-type: none"><li>• Lack of knowledge of Perinatal QI</li><li>• Lack of resource support</li></ul>	<ul style="list-style-type: none"><li>• Share data on outcomes of facility in relation to like facilities</li><li>• Provide high quality peer-reviewed research and evidence to support change</li><li>• Instill the importance of resource (people, financial) support for project to ensure success</li><li>• Share plan for implementation and sustainability</li></ul>
<b>Time limitations</b>	<ul style="list-style-type: none"><li>• Utilize efforts of many staff members – consider use of nurse clinical ladder to support project</li><li>• Make sure meetings are organized and succinct to</li></ul>



# Early Wins Matter



Transforming Maternity Care

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans





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



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)



## 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



## 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)



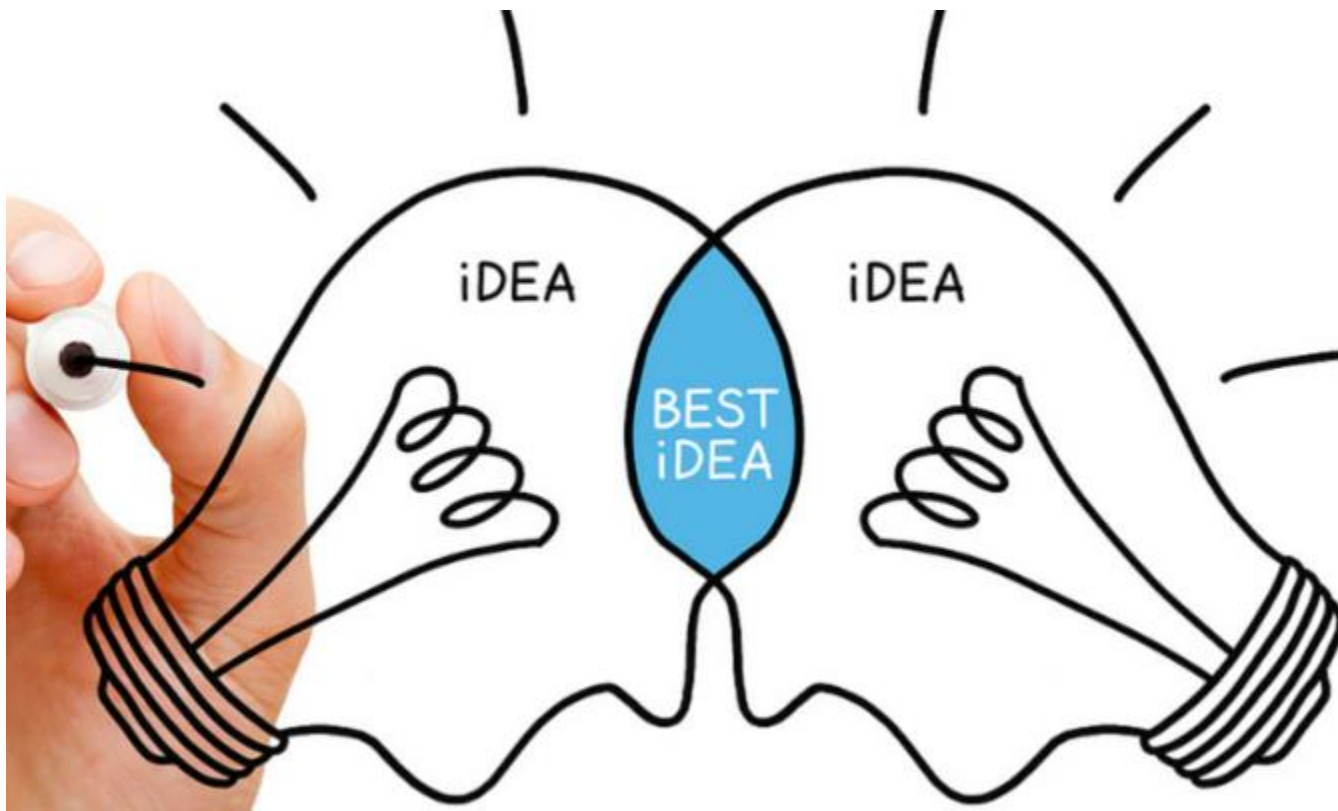
# My Hospital's NTSV Cesarean Rate is Above 23.9%

## What is the next step?





# Collaboration!



Transforming Maternity Care

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans

# CMQCC Cesarean QI Collaborative

- NO COST to join collaborative



CALIFORNIA HEALTHCARE FOUNDATION  
HEALTH CARE THAT WORKS FOR ALL CALIFORNIANS

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





# QI Collaborative Timelines

- One year commitment
- Next cohort begins October 2016
- Applications available at [www.CMQCC.org](http://www.CMQCC.org)





# Thank you!

For more information about the Toolkit,  
Collaborative, and Implementation Guide  
please visit [www.CMQCC.org](http://www.CMQCC.org)

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