



**CMQCC**  
California Maternal  
Quality Care Collaborative

# The Collaborative to Support Vaginal Birth and Reduce Primary Cesareans



California  
Health Care  
Foundation

Funding for the collaboratives  
was provided by the California  
Health Care Foundation

Elliott Main, MD  
Medical Director,  
California Maternal  
Quality Care Collaborative  
Stanford University

## Disclosures

Dr. Main has no financial or other conflicts of interest

## Objectives

1. Identify the drivers for the rise and variation in NTSV Rates
2. List labor management changes that can safely reduce primary cesarean rates
3. List the component of a quality improvement collaborative
4. Identify the new outside pressures on our specialty over cesarean births

# California Maternal Quality Care Collaborative

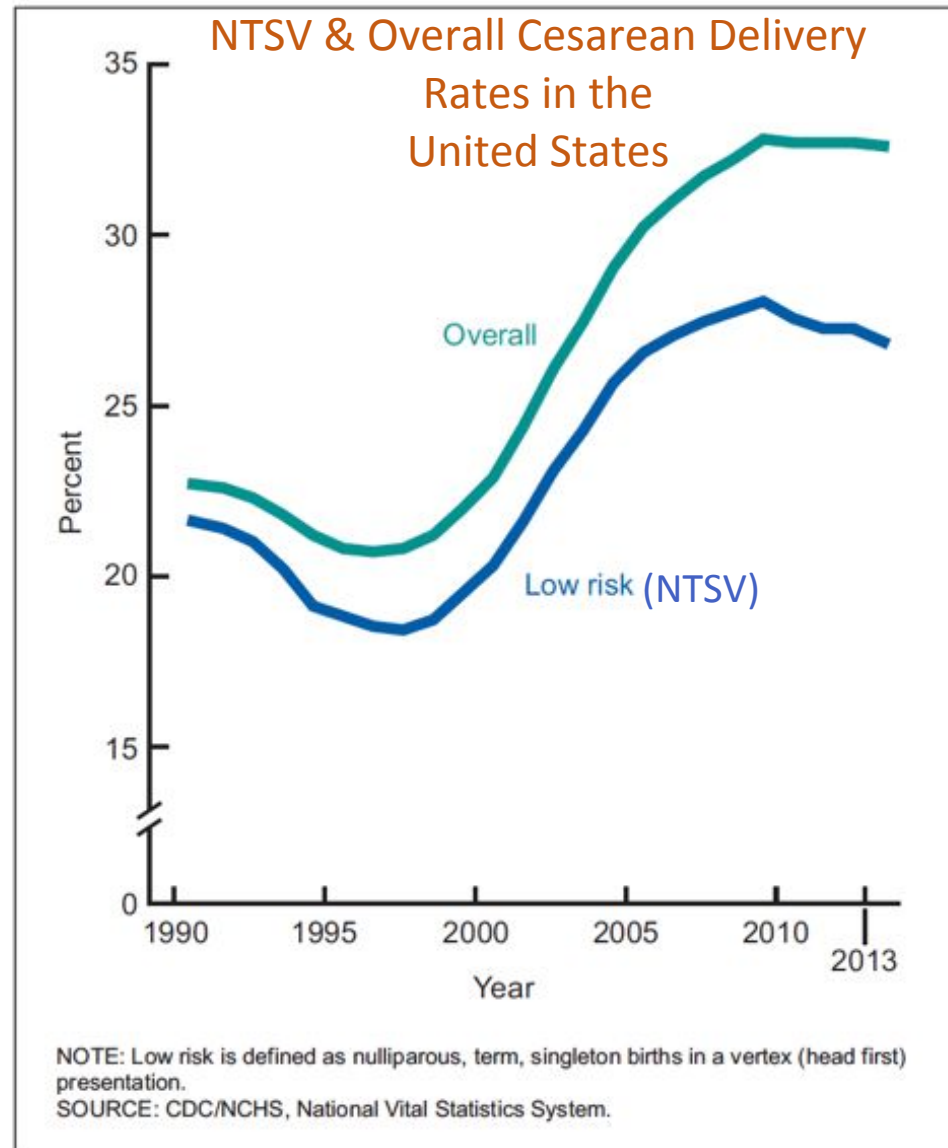
- Multi-stakeholder organization established in 2006: providers, state agencies, public groups with focus on Maternal Care
- Hosts California Maternal Mortality Review Committee
- Sister organization with CPQCC (neonatal care)
- Developer of QI toolkits: Early Elective Delivery, OB Hemorrhage, Preeclampsia, CVD in Pregnancy, and First Cesarean Prevention
- Leads multiple QI Collaboratives (Hemorrhage, HTN)
- Established Maternal Data Center in 2011

50% rise in CS rates over a 10 year period

In CA and the US, cesareans account for 1/3 of all births

Cesarean is the most common hospital surgery in the US!

Osterman M et al, 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**

For the Last 30 Years,  
Reducing Cesarean  
Section Rates  
has been the “Third Rail”  
for Obstetric Quality  
Programs

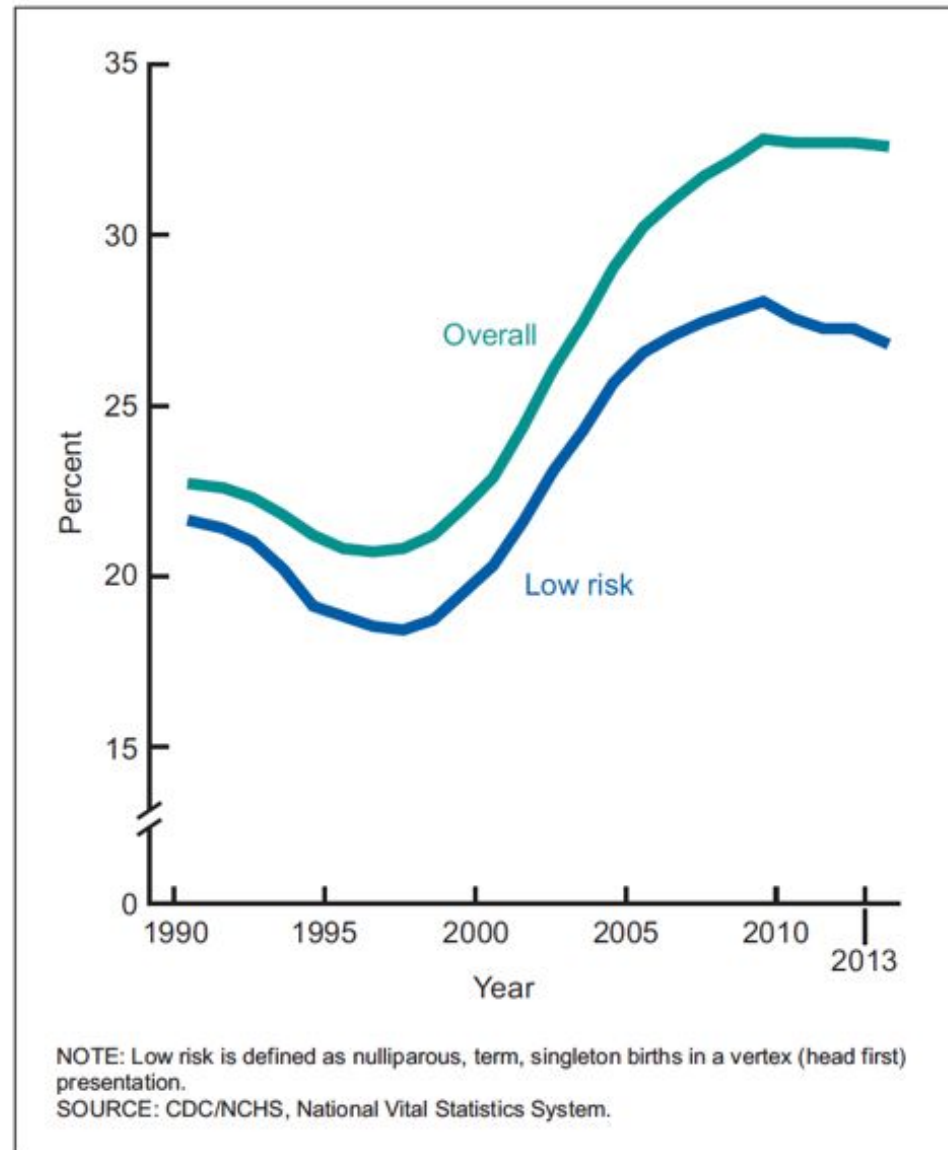
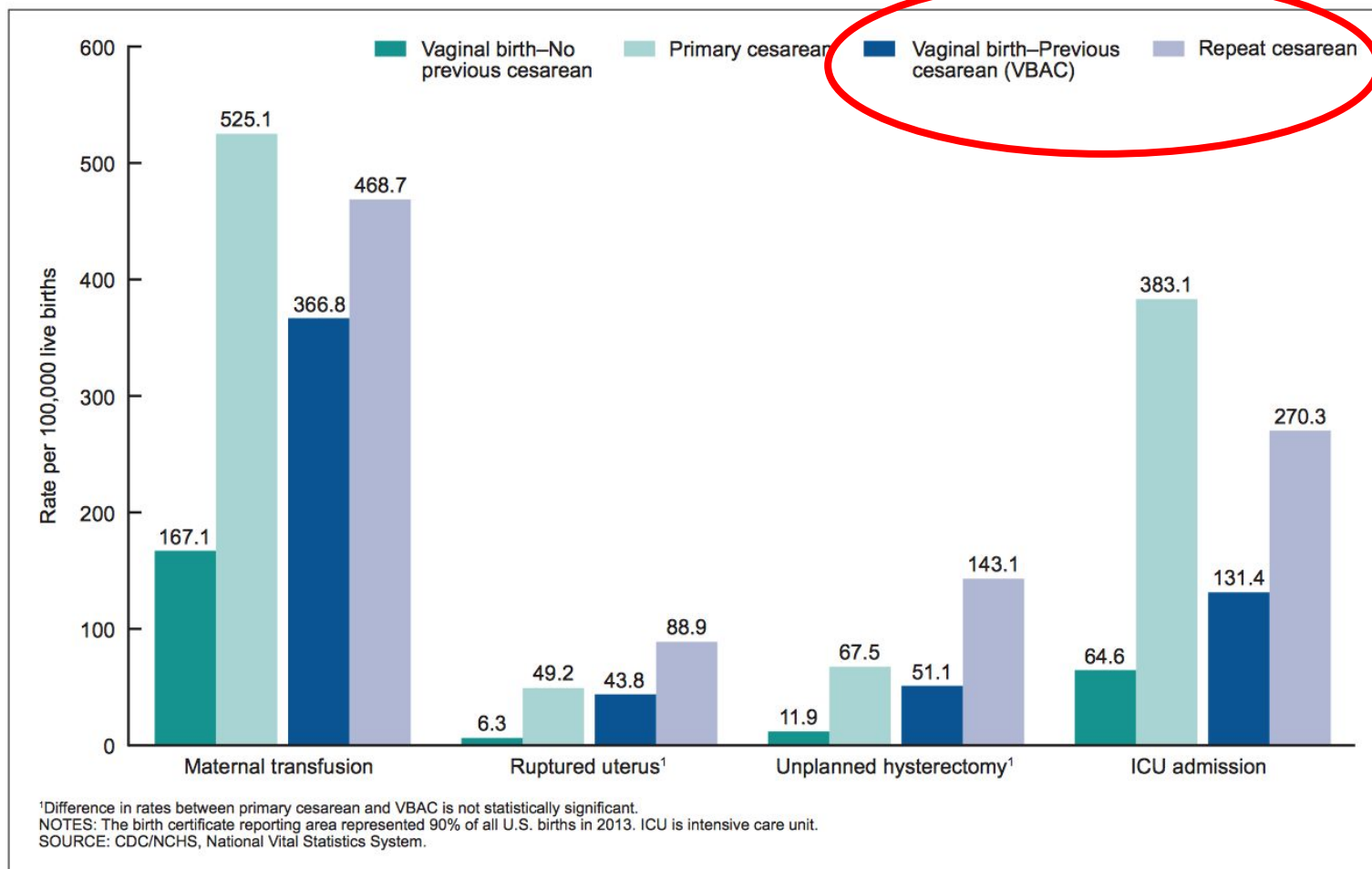


Figure 1. Overall cesarean delivery and low-risk cesarean delivery: United States, final 1990–2012 and preliminary 2013

# What Indications Have Driven the **RISE** in CS?

Cesarean Indication	Percent of the Increase in Primary Cesarean Rate Attributable to this Indication
Labor complications (Failure to progress concerns)	<p>Failure to Progress and Fetal Concerns also account for most of the hospital variation</p>
Breech	
Multiple Gestation	10%
Various Obstetric Conditions (Hypertension)	<p>Quality Improvement Focus: How can we prevent the development of Labor Indications for Cesarean?</p>
"Elective" (cesarean scheduled without medical indication)	

## Major Maternal Complications: Vaginal Births versus Primary Cesareans, Repeat Cesareans, and Vaginal Births After Cesarean



**Figure 1. Maternal morbidity, by method of delivery and previous cesarean history: 41-state and District of Columbia reporting area, 2013**



≡ **People**

8/3/2017

Not just plac



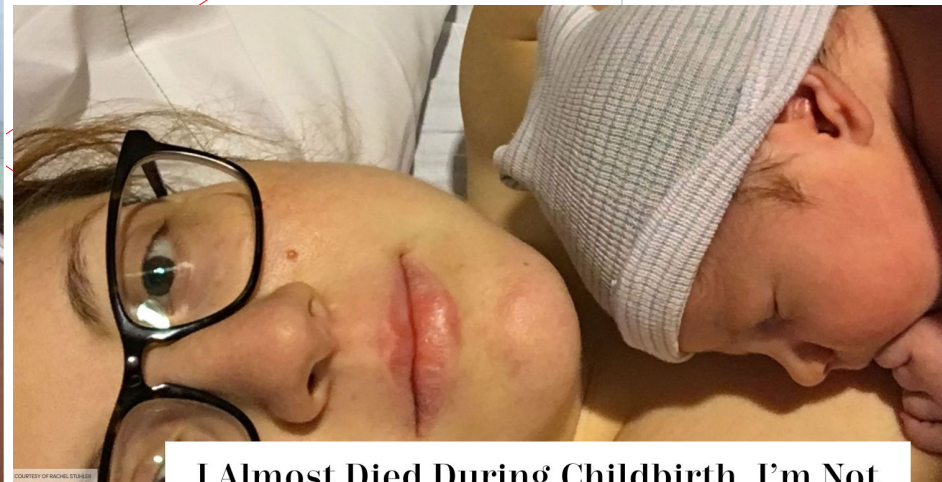
Charles V, Charles IV and Kira Johnson  
// COURTESY CHARLES JOHNSON

## *How Judge Hatchett's Son Is Coping After His Wife's Childbirth Death*

(Healthy woman with complications resulting in death during "routine" repeat Cesarean)

≡ **COSMOPOLITAN**

8/21/2017



## **I Almost Died During Childbirth. I'm Not Alone.**

Maternal mortality is rising in America, and that doesn't even include cases like mine.

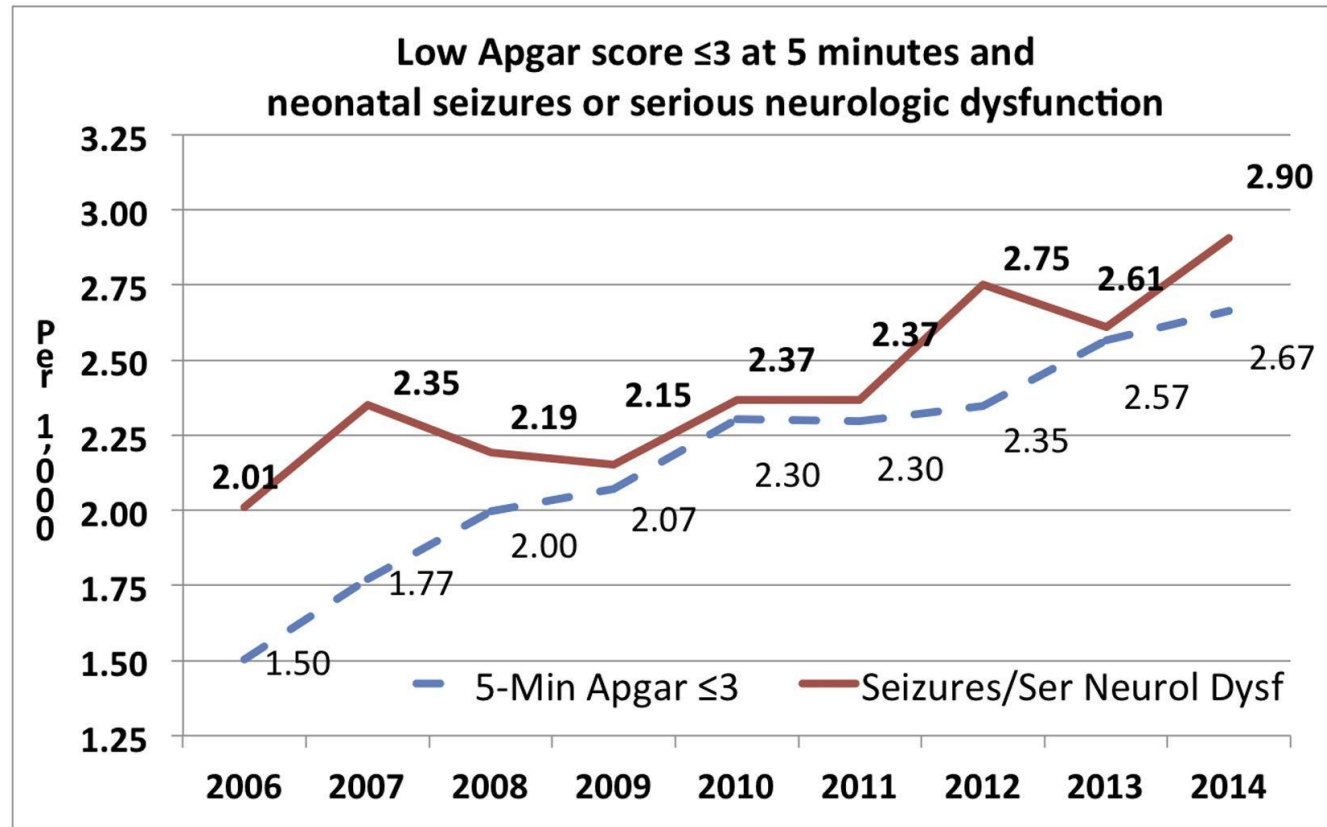
(Healthy woman with major complications during "routine" repeat Cesarean: "Near Miss" now with PTSD)



# Where is the benefit from higher CS rates?

- Relentless Rise without Baby or Mother benefit
  - 6% in early 70's, 20% in mid 80's, 33% in 2010
  - CP rates, neonatal seizures unchanged since 1980
  - Overall, no benefit for long-term urinary continence
- Increased maternal and neonatal morbidity
  - Impaired neonatal respiratory function, NICU admits
  - Affects maternal-infant interaction/Breast Feeding
  - Increased maternal PP infections, VTE, transfusions
  - Longer recovery, 2X PP re-admissions
- Prior CS can have major complications
  - Placenta previa and accreta (invasion deep into or thru the uterine wall) → hysterectomy or worse
  - Uterine rupture; abdominal adhesions

# Rising Rate of Low APGARs and Serious Term Neonatal Neurologic Complications



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  
©2013 Project HOPE—  
The People-to-People Health  
Foundation, Inc.

**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.

**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.

## Let's 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.

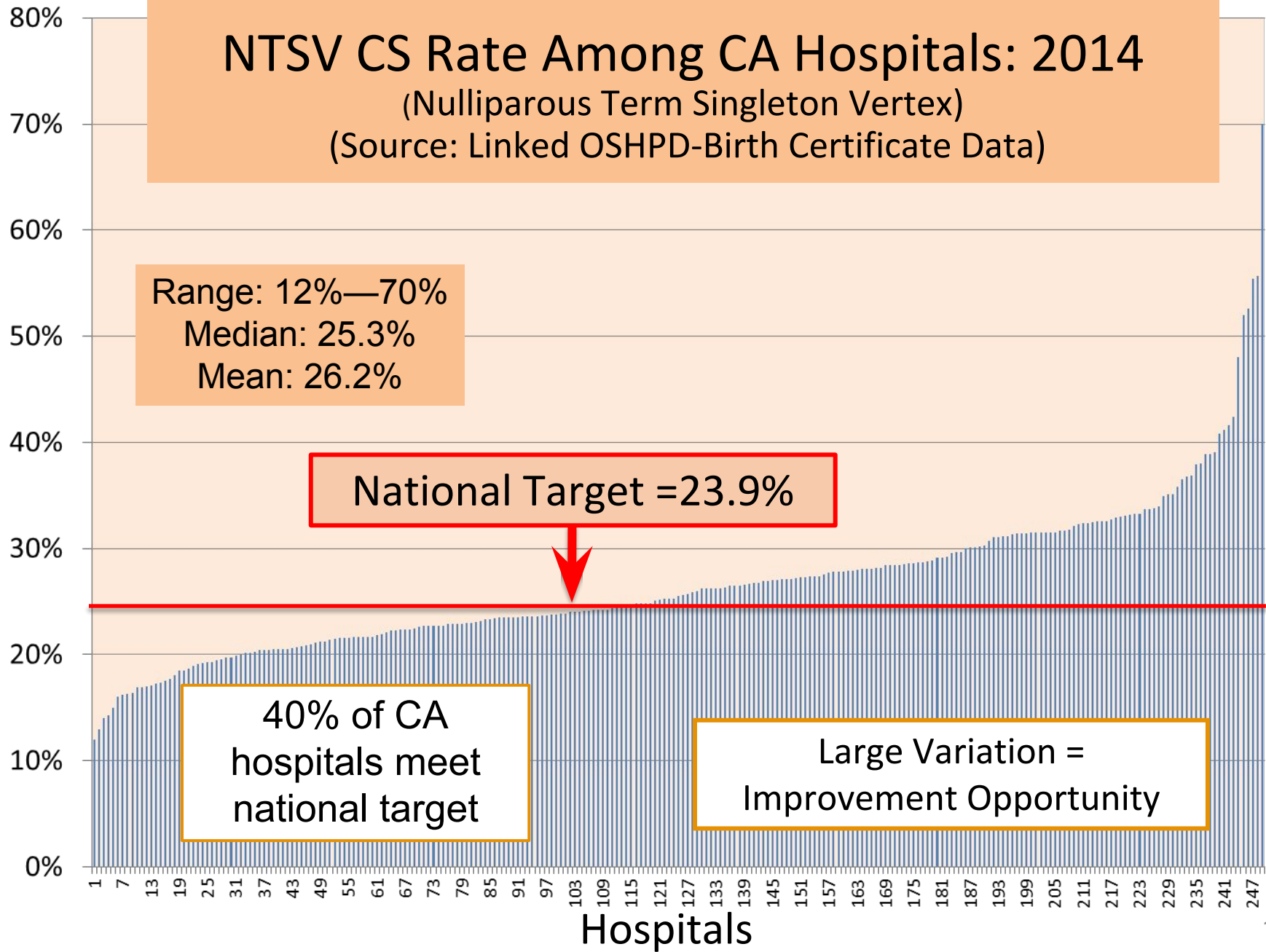
What's likely to be the biggest influence on whether you will have a C-section?

- (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.

# Nulliparous, Term, Singleton, Vertex (NTSV) Cesarean Section Rate: Performance Measure

- Risk Stratified ("standard population")
  - No further risk-adjustment needed (more discussion later)
- Widely adopted nationally
  - ACOG: Task Force on Cesarean Section rates (2000)
  - DHHS: Healthy Person 2010 and 2020
  - NQF endorsed, Joint Commission Perinatal Core Measure (PC-02), LeapFrog, CMS e-measure
- >15 years experience
- National data and trends available







# Keys To Our approach

- **Toolkit:** Collection of best practices, and practical implementation ideas, sample policies
- **Collaborative:** doctors and nurses from multiple hospitals working together to share ideas and implement relevant parts of Toolkit
- **Data Center:** Rapid sharing of real-time benchmarking data to support and drive the QI process

# Who Needs to Be Engaged?

- **Obstetricians:** Help set expectations during prenatal care; set up a coverage scheme to reduce time pressure for delivery
- **Nurses:** Develop a passion for labor support and a balanced approach to Category II strips
- **Mothers:** Increasing understanding that Cesarean delivery should not be taken lightly; There is a lot of approaches that you can use to increase your chance
- **Administrators:** Develop a labor support system for patients, nurses, and physicians

# Toolkit as the Foundation

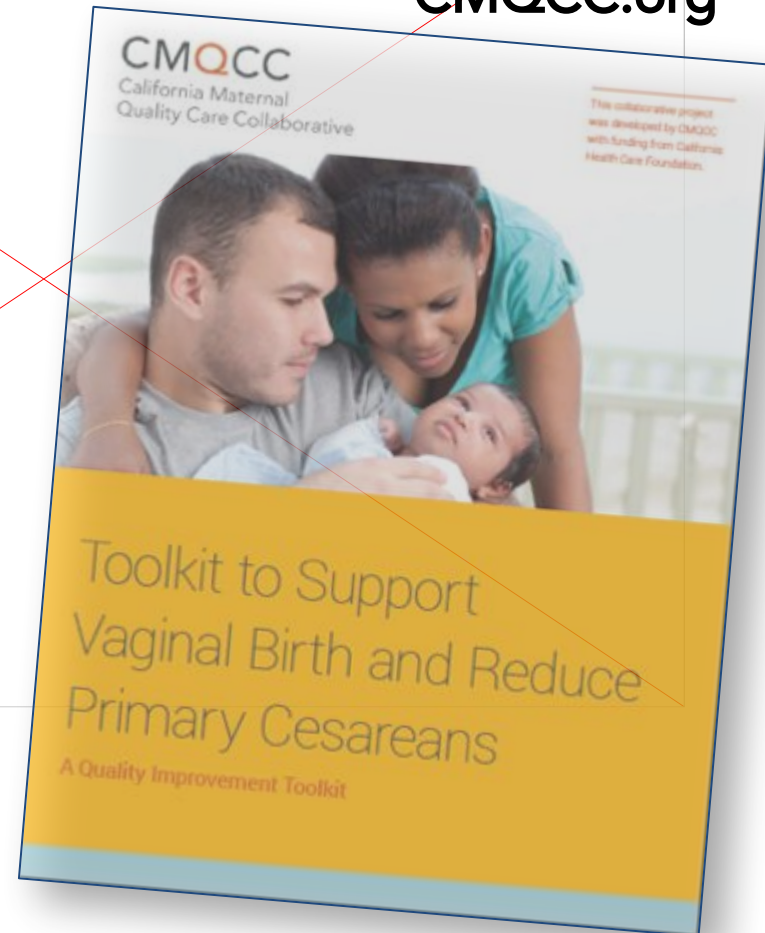
Public Release  
April 28, 2016

Download from:  
[CMQCC.org](http://CMQCC.org)

- “How-to Guide” to reduce primary cesarean delivery
- Is the resource foundation for the QI collaborative
- The principles are generalizable
- Has a companion *Implementation Guide*

79 pages in 5 parts

Followed by:  
20 appendices  
(graphics, flow charts)  
338 references





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

CMQCC

May 24, 2016

John Wachtel, MD  
Chair: District IX  
American Congress of Obstetricians and Gynecologists

Dear Dr. Wachtel:

In representing the American College of Obstetricians and Gynecologists (ACOG), we would like to congratulate you and all the contributors involved in the development of the CMQCC "Toolkit to Support Vaginal Birth toolkit and ACOG strongly supports its dissemination and use to address the efforts at reducing the primary Cesarean delivery rate. We have had the honor to review this comprehensive toolkit and ACOG strongly supports its dissemination and use to address the efforts at reducing the primary Cesarean delivery rate.

Clearly, the rising Cesarean delivery rate, and particularly the primary Cesarean rate, is concerning to all involved in the provision of women's healthcare, and although there have been a number of efforts nationwide to encourage awareness and implementation of the plan for encouraging awareness and implementation is unquestionably a commendable program to address this issue and should set a benchmark for achieving success in reducing the primary Cesarean delivery rate. We look forward to the program's implementation, and to hear of the future successes.

Again, we express our appreciation for your leadership and the role you had a part in developing this toolkit. Congratulations, and best wishes moving forward!

Sincerely,

Hal. C. Lawrence III, MD  
Executive Vice President and CEO

Christopher M. Zahn, MD  
Vice President, Practice Activities

## Early admission support

- Admission policy or checklist for spontaneous labor
- Latent labor support and therapeutic rest policies
- 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
- Setting expectations prior to labor is a critical step

# Peanut Ball

Recog/Prevent

- Decreased length of labor
- Decreased CS rate in patients with epidurals



Tussey, C. M., Botsios, E., Gerkin, R. D., Kelly, L. A., Gamez, J., & Mensik, J. (2015). Reducing length of labor and cesarean surgery rate using a peanut ball for women laboring with an epidural. *The Journal of Perinatal Education*, 24(1), 16-24.  
<http://dx.doi.org/10.1891/1058-1243.24.L16>

Transforming Maternity Care

A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans



# 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

**“6 is the new 4”**

#### 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

**Table 3.** Recommendations for the Safe Prevention of the Primary Cesarean Delivery**Recommendations****Grade***Induction of labor*

Before 41 0/7 weeks of gestation, induction of labor generally should be performed based on maternal and fetal medical indications. Inductions at 41 0/7 weeks of gestation and beyond should be performed to reduce the risk of cesarean delivery and the risk of perinatal morbidity and mortality.

Strong recommen

Cervical ripening methods should be used when labor is induced in women with an unfavorable cervix.

Strong recommenda

If the maternal and fetal status allow, cesarean deliveries for failed induction of labor in the latent phase can be avoided by allowing longer durations of the latent phase (up to 24 hours or longer) and requiring that oxytocin be administered for at least 12–18 hours after membrane rupture before deeming the induction a failure.

Strong recommenda

Safe prevention of the primary cesarean delivery. Obstetric Care Consensus No. 1. American College of Obstetricians and Gynecologists. Obstet Gynecol 2014;123:693–711.



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

# COMMITTEE OPINION

Number 687 • February 2017

## Committee on Obstetric Practice

*The American College of Nurse–Midwives and the Association of Women's Health, Obstetric and Neonatal Nurses endorse this document. This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice, in collaboration with American College of Nurse–Midwives' liaison member Tekoa L. King, CNM, MPH, and College committee members Kurt R. Wharton, MD, Jeffrey L. Ecker, MD, and Joseph R. Wax, MD.*

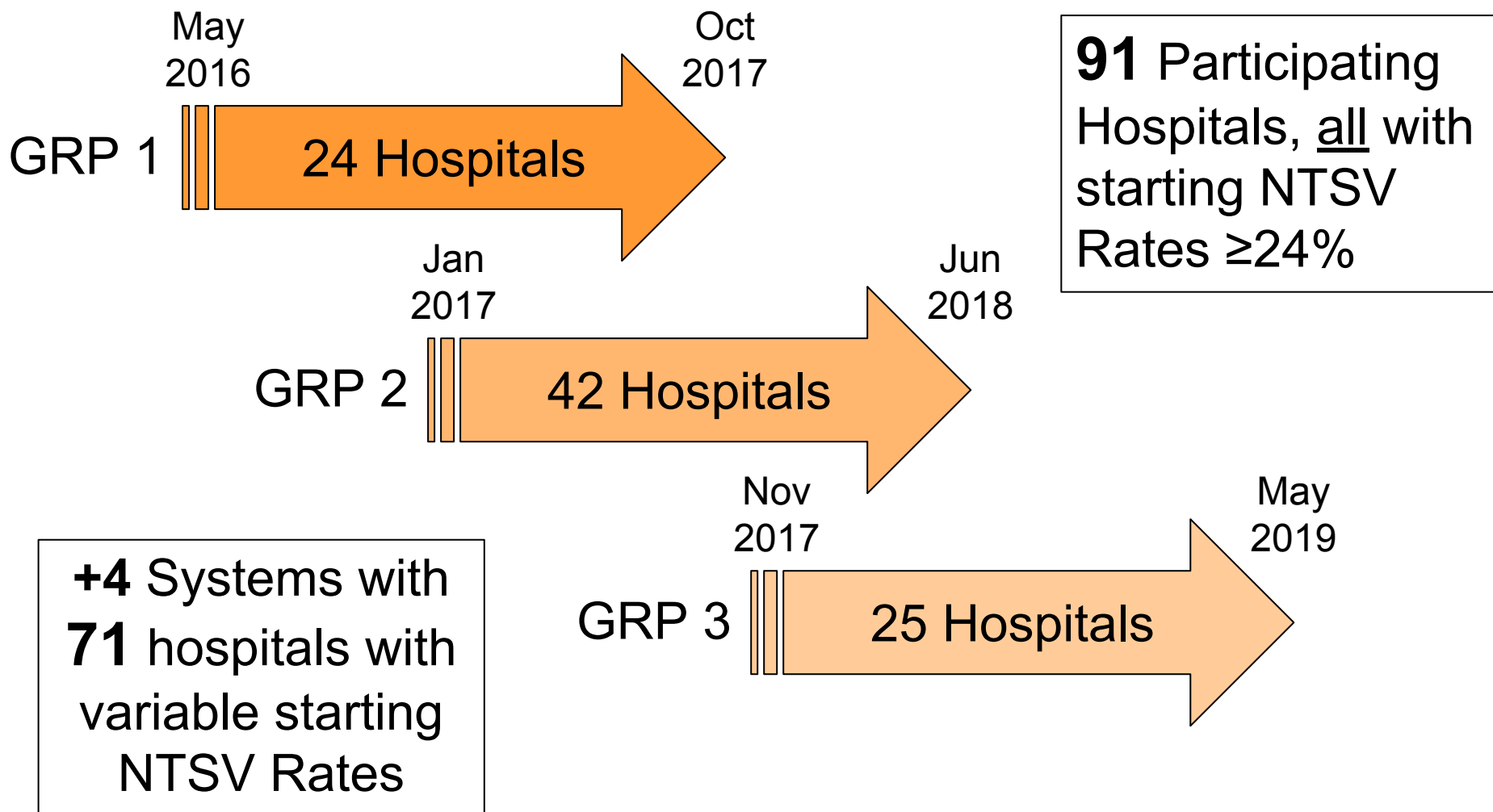
*This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.*

## Approaches to Limit Intervention During Labor and Birth

**ABSTRACT:** Obstetrician–gynecologists, in collaboration with midwives, nurses, patients, and those who support them in labor, can help women meet their goals for labor and birth by using techniques that are associated with minimal interventions and high rates of patient satisfaction. Many common obstetric practices are of limited or uncertain benefit for low-risk women in spontaneous labor. For women who are in latent labor and are not admitted, a process of shared decision making is recommended. Admission during the latent phase of labor may be necessary for a variety of reasons. A pregnant woman with term premature rupture of membranes (also known as prelabor rupture of membranes) should be assessed, and the woman and her obstetrician–gynecologist or other obstetric care provider should make a plan for expectant management versus admission and induction. Data suggest that in women with normally progressing labor and no evidence of fetal compromise, routine amniotomy is not necessary. The widespread use of continuous electronic fetal heart-rate monitoring has not improved outcomes when used for women with low-risk pregnancies. Multiple nonpharmacologic and pharmacologic techniques can be used to help women cope with labor pain. Women in spontaneously progressing labor may not require routine continuous infusion of intravenous fluids. For most women, no one position needs to be mandated nor proscribed. Nulliparous women who have an epidural and no indication for expeditious delivery may be offered a period of rest for 1–2 hours before initiating pushing efforts. Obstetrician–gynecologists and other obstetric care providers should be familiar with and consider using low-interventional approaches for the intrapartum management of low-risk women in spontaneous labor.



# CMQCC Supporting Vaginal Birth Quality Collaborative: 3 Cohorts as of 2/20



## Examples of Shared Practices

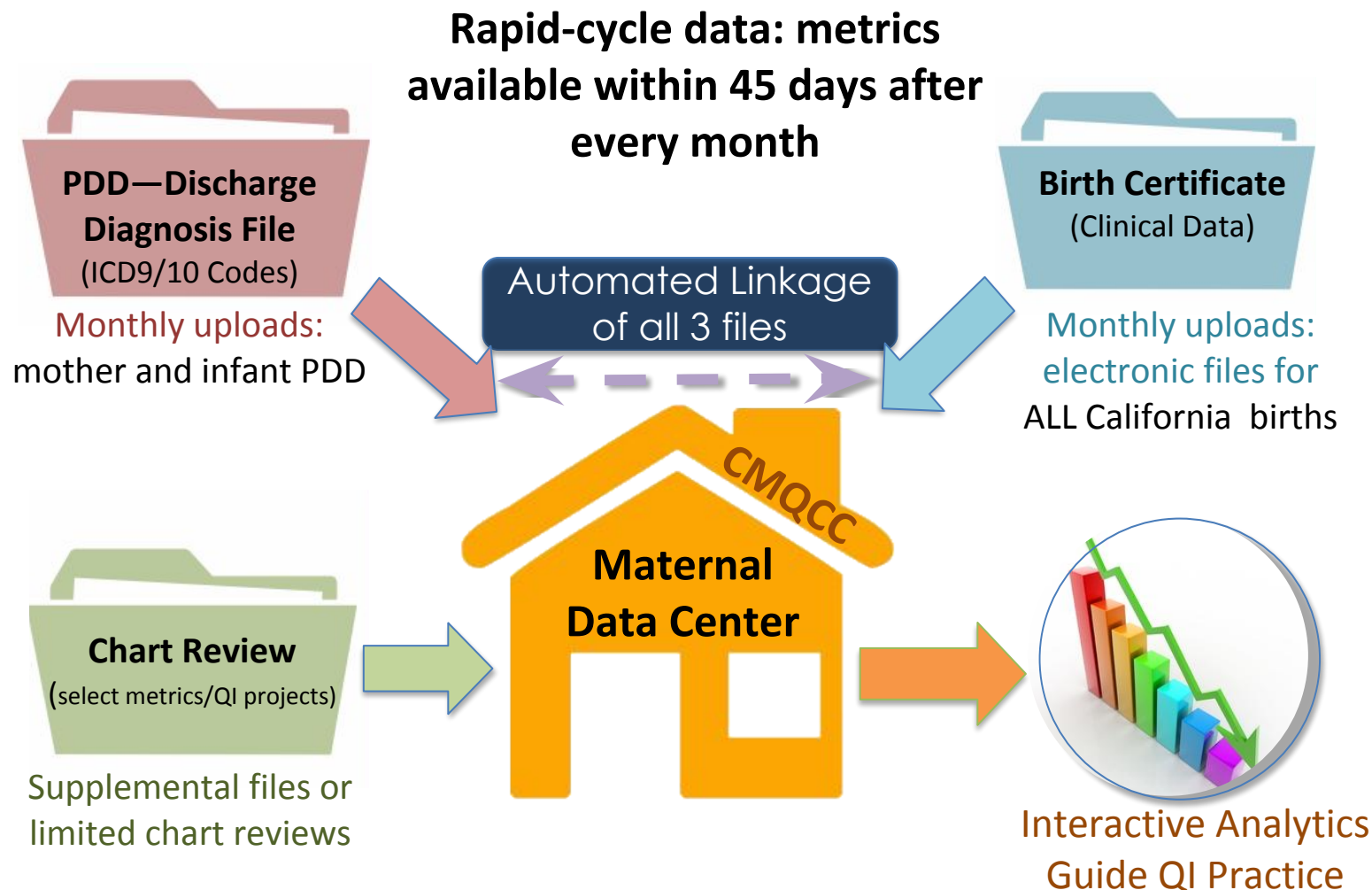
- Introduced “Lets take a LAP” (Labor Assessment and Plan)—any staff member can ask gather to discuss the patients progress and ensure all interventions have been tried
- A star is put on the white board with the names of the primary nurse and physician team that delivered a NTSV mother vaginally
- In white board reviews, NTSV mothers are discussed by all staff to review the plan and review all of the labor options
- The unit project is labelled “6 is the new 4” and staff wear buttons saying “6 is the new 4—ask me”
- Every hospital with success shares the provider NTSV CS rates

# Example of Team Brainstorming on How to Get the Word Out: FTP/CPD Diagnosis Badge Cards





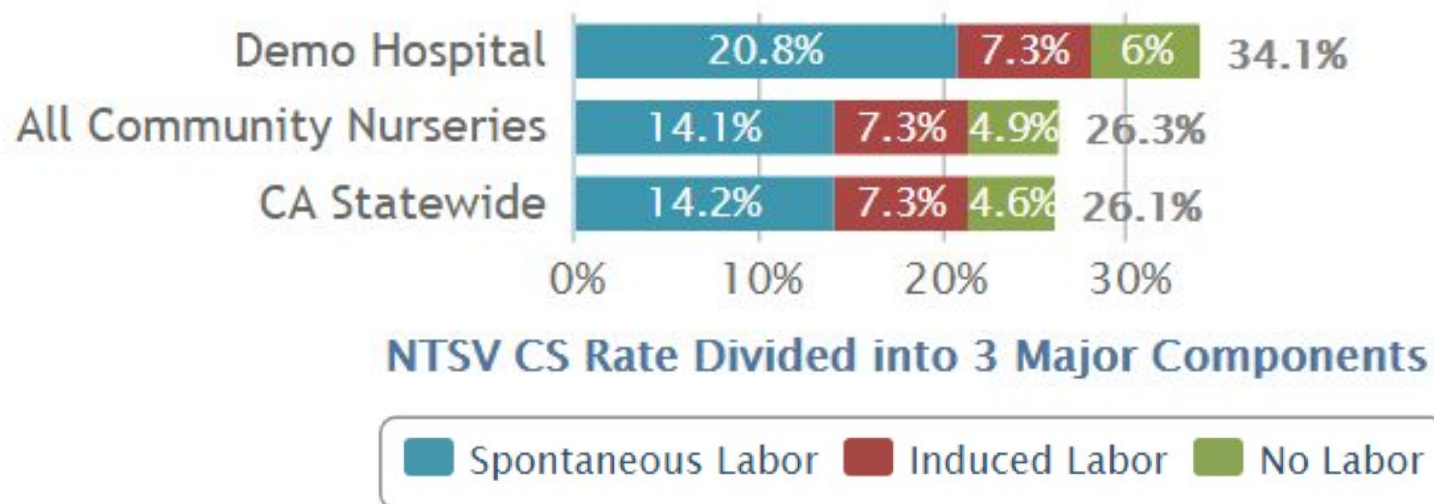
# CMQCC Maternal Data Center



Links over 1,000,000 mother/baby records each year!

## Measure Analysis: Identify “Drivers” of the CS Rate

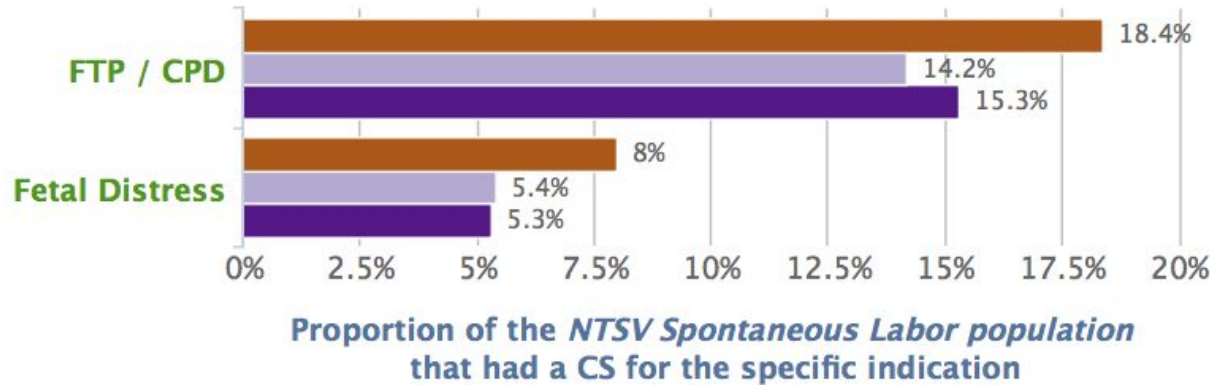
What Drives Our Nulliparous Term Singleton Vertex (NTSV) CS Rate?



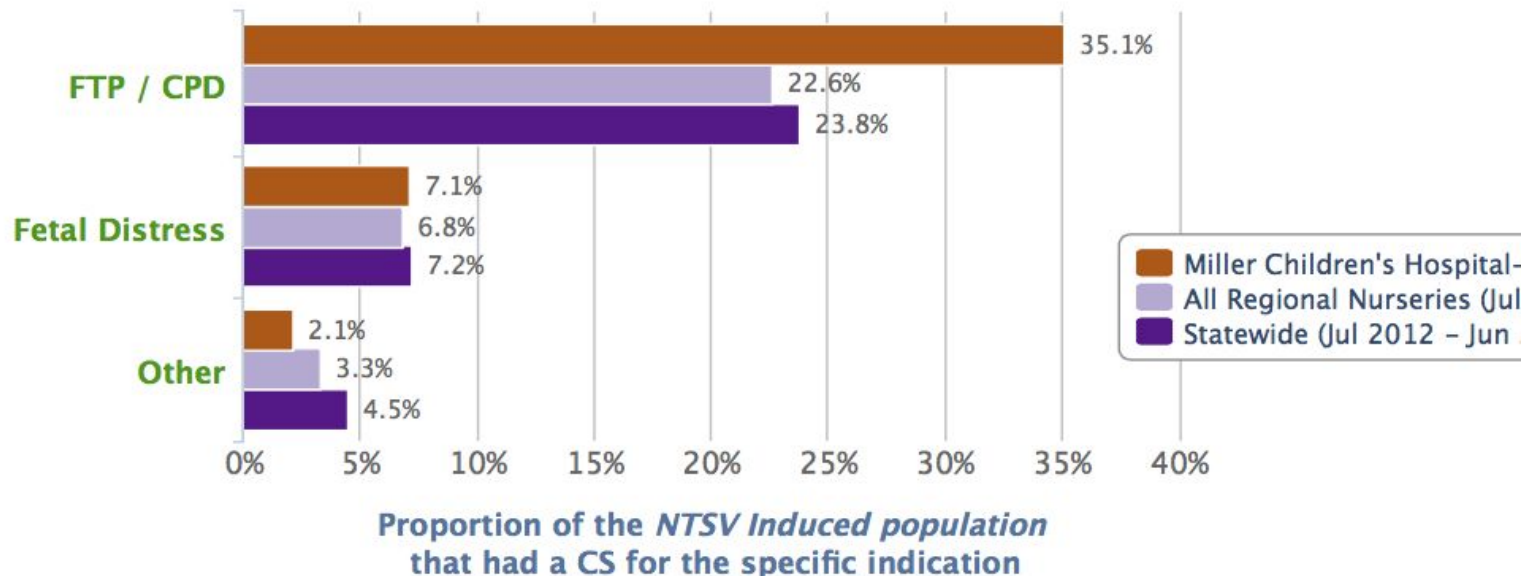
Screen Shot from the CMQCC Maternal Data Center

# Comparison Rates for the 3 Major NTSV Drivers

## Spontaneous Labor

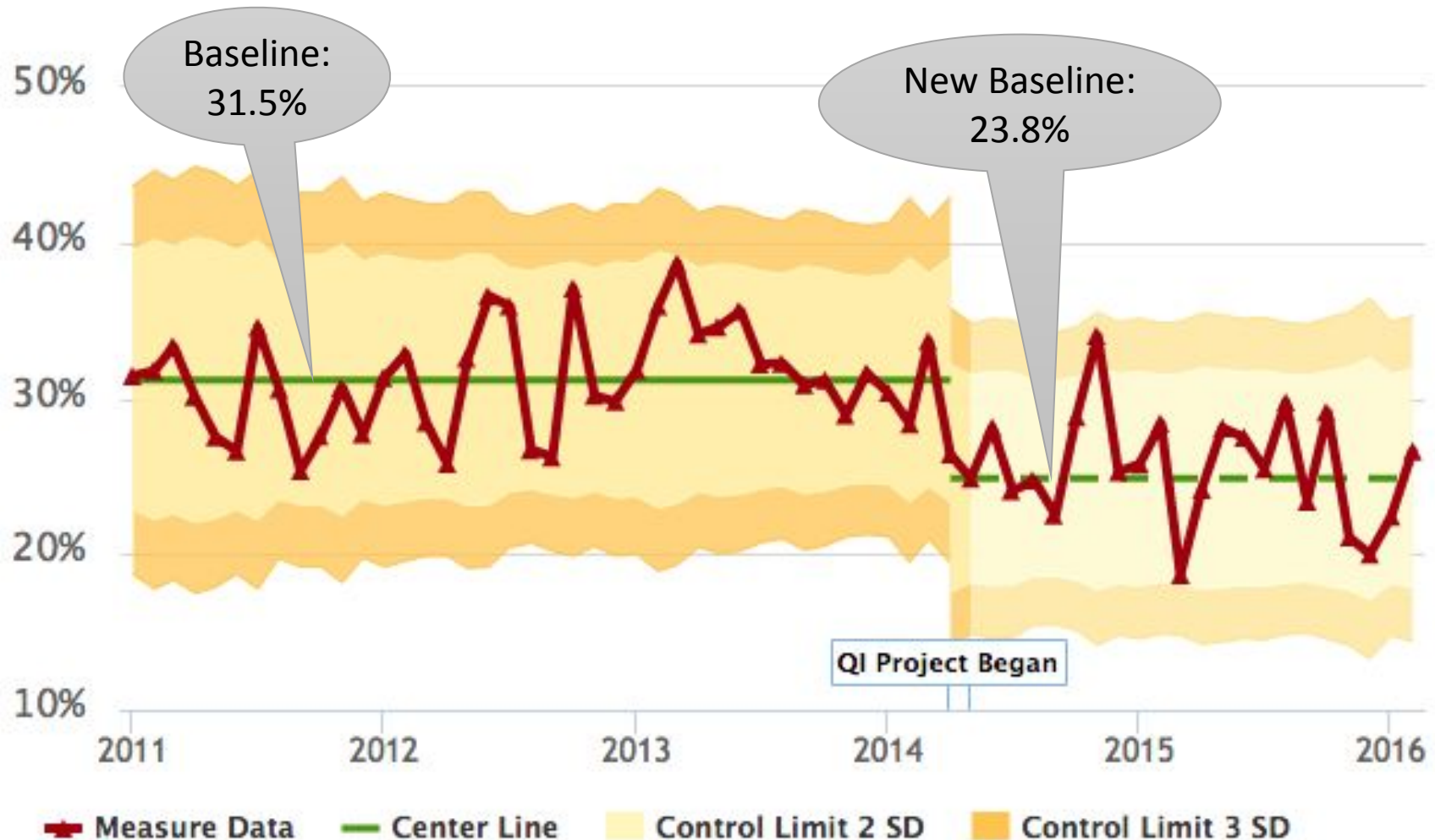


## Induced Labor

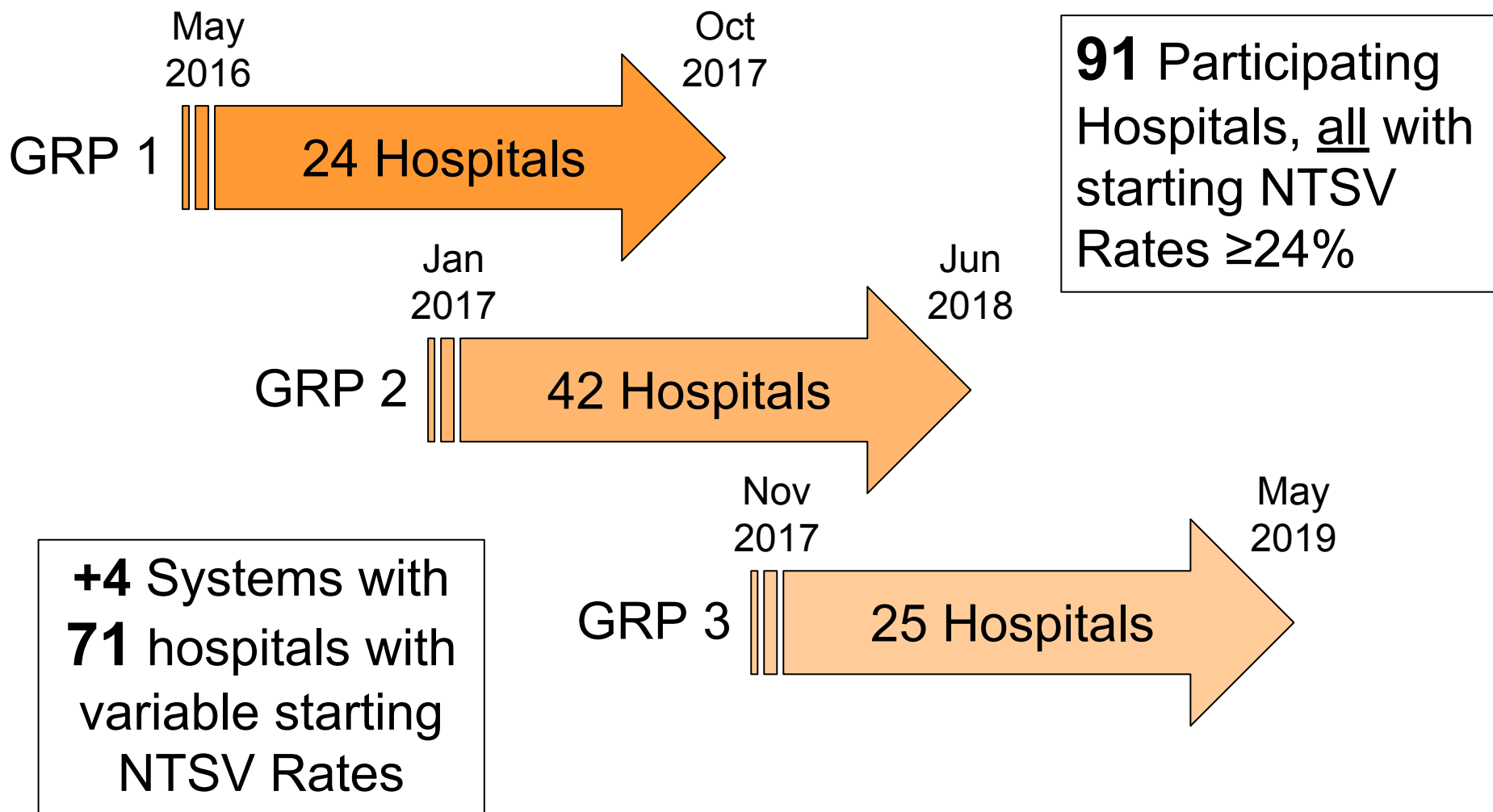


## Monthly QI Control Chart: NTSV CS Pilot Project

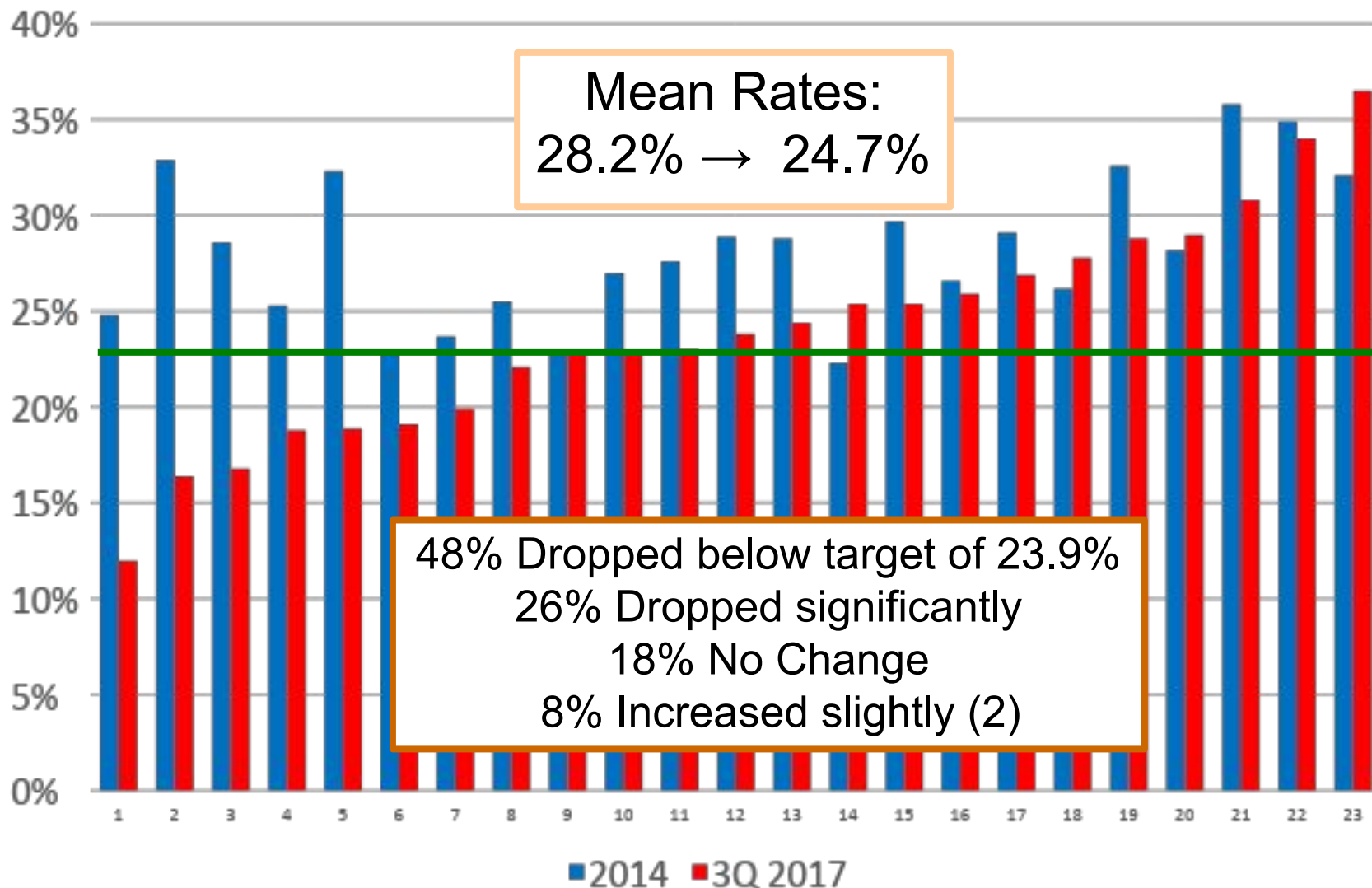
Cesarean Birth: Low Risk-NTSV (PC-02)



# CMQCC Supporting Vaginal Birth Quality Collaborative: 3 Cohorts as of 2/20

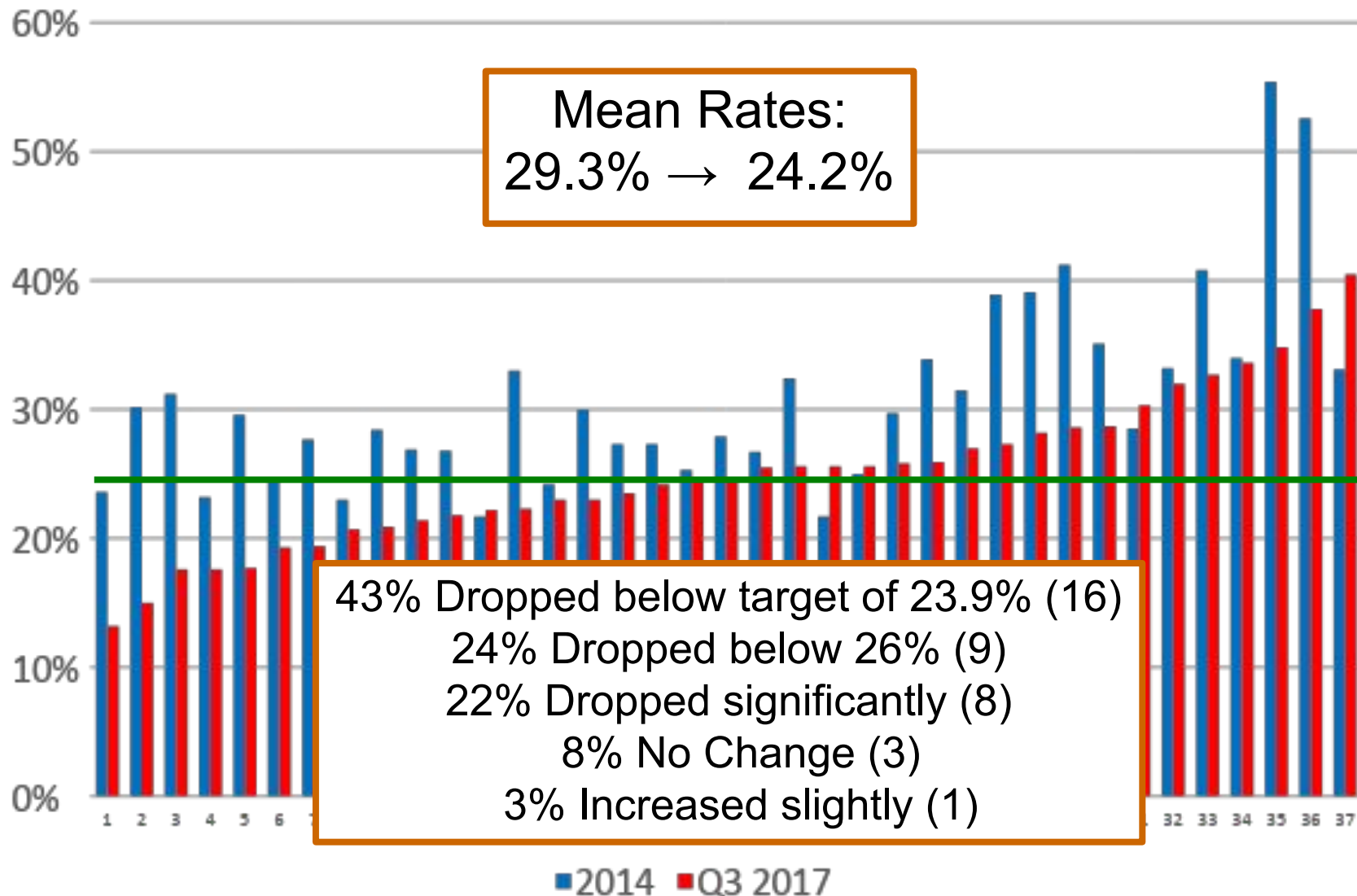


# Cohort 1: NTSV CS Rates





# Cohort 2: NTSV CS Rates



## Any Downsides?

- Balancing measures are very important
- 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
- Most important measure is Healthy Babies
  - NQF measure “Healthy Term Newborns” (#0716) recently reconfigured as “Unexpected Newborn Complications”
  - Asks whether term babies without preexisting conditions had any major complications during birth or neonatal period

**Balancing Measure:**  
**Severe Unexpected Newborn Complications**  
(monitoring for unintended consequences)

**Cohort 2 Hospitals**

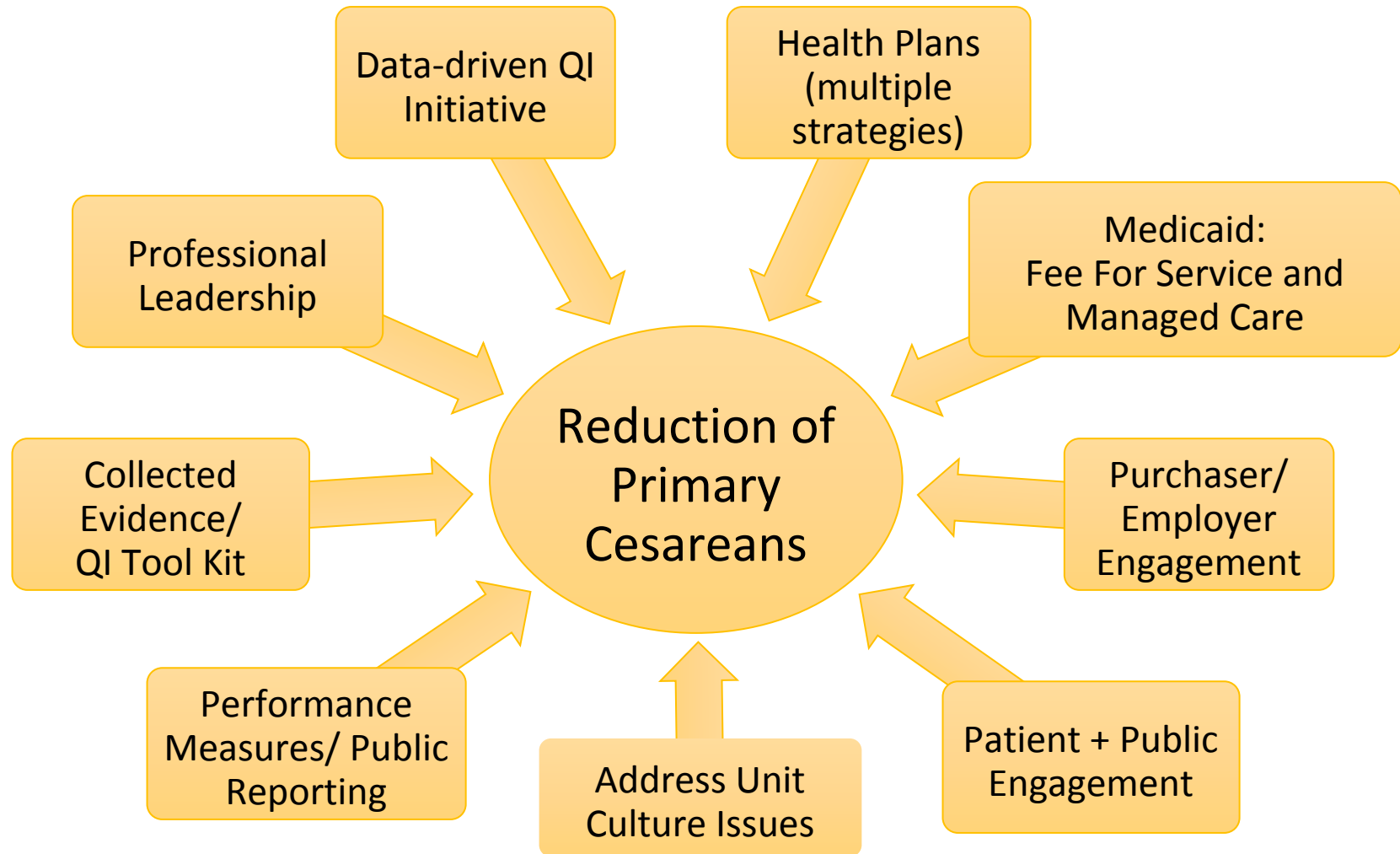
<u>Baseline (2014-5)</u>		<u>2017 Q1-3</u>
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<b>4.2%</b>		
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=>

	<b>2.3%</b>
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# Collaborative Action : Collective Impact`



Multiple Leverage Points are much more effective than one or two alone

# CMQCC Labor Culture and Attitudes Survey Background

- Staff from 80 California hospitals including CMQCC Supporting Vaginal Birth Collaborative
- Clinicians: 714 Nurses, 202 Doctors, 19 CNM
- 2/3 of questions from previously validated surveys, 1/3 newly validated.
- Electronic Survey: Able to link all RN/MD/CNM to their hospital and then to the hospital NTSV CS rate (range: 15-45%)
- Able to link MD to their individual NTSV CS rate (anonymized)



# Key Survey Findings

1. RN's and MD's have some insight into their hospitals' performance
2. RN's and MD's have different concepts of patient preparedness for labor (more later)
3. It matters (i.e. associated with lower rates):
  - That physicians welcome oversight (case reviews) and feedback
  - That physicians agree with best practices to reduce intervention
  - That physicians believe that maternal agency is important
4. There is significantly more fear of vaginal birth at (some) underperforming hospitals

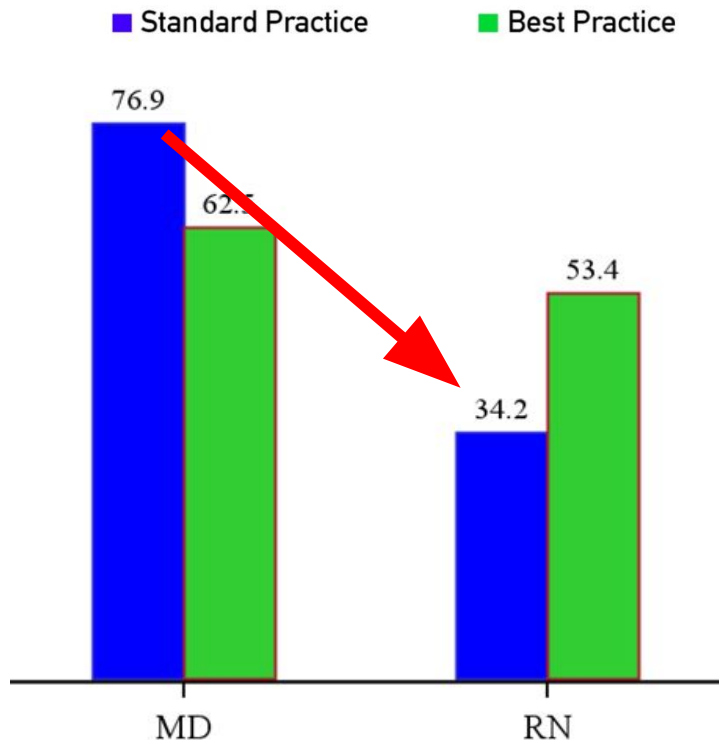
## Key Survey Findings(con't)

5. Some physicians at underperforming hospitals believe that cesarean is safer for babies and just as safe for mothers
6. Nurses more often have attitudes that align with Top Quartile hospitals across the board.
  - But remember that each hospital has a range of responses
  - Attitude/Culture misalignment between nurses and physicians is associated with higher cesarean rates.

- What is actionable?
- What would have the greatest impact?

# Opportunity for Better Childbirth Preparation!

Most of my patients have sufficient knowledge about vaginal and cesarean birth to make informed choices.



- Nurses and Doctors had very different assessments of women's knowledge base for making informed childbirth decisions
- This was especially true in the non-top performing hospitals
- This was a very common finding

# CHCF Patient Engagement Video: “My Birth Matters”



MyBirthMatters.org  
Coming in April 2018

# HUDLS: Hands-On, Understanding and Demonstration of Labor Support

Goal: to develop a series of web based tools by re-designing the Labor Support Workshop content to be presented in brief periods of instruction (Huddles)



- Timeline 1/1/17 – 12/31/18
- Team Leaders: Jan Trial, USC, Christa Sakowski, CMQCC



# CA Secretary of HHS Annual Hospital Awards: NTSV CS Rates <23.9%



SMARTCARE  
CALIFORNIA

**General Hospital**


**2016 Achievement Award**

**For Meeting or Exceeding the Healthy People 2020 Goal  
for Low-Risk, First-Birth Cesarean Deliveries**

To receive this award, a California hospital must achieve a Cesarean section (C-section) rate of 23.9 percent or lower for low-risk, first-birth deliveries. The award is based on 2015 data reported by hospitals to the Office of Statewide Health Planning and Development and the California Department of Public Health-Vital Records.

Diana S. Dooley  
Secretary, California Health and Human Services Agency

# Yelp Maternity Data (live 7/24/17)



Find hospital

Near San Jose, CA

Search icon

Sign Up

🍴 Restaurants

🌃 Nightlife

🔧 Home Services

Write a Review

Events

Talk

Log In

## El Camino Hospital

✓ Claimed

★ ★ ★ ★ ☆ 140 reviews

Details

Write a Review


Add Photo

Share

Bookmark

Hospitals

Edit



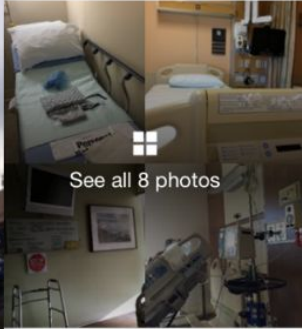
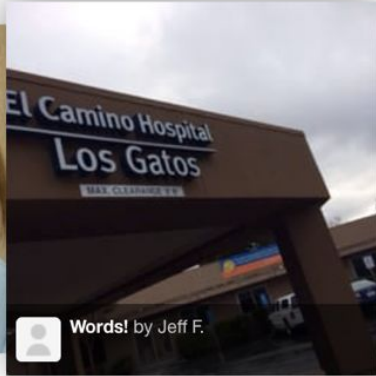

815 Pollard Rd  
Los Gatos, CA 95032

Get Directions

(408) 378-6131


elcaminohospital.org

Send to your Phone




See all 8 photos


Words! by Jeff F.



"I was planning a natural delivery and every nurse there was so accommodating and helpful during each part of **labor**." in 15 reviews



"I wanted an all natural **birth** and the nurses and staff were such a help and totally respected my wishes." in 23 reviews



"My husband, our sweet baby Ruby, and I felt so welcome and very well **taken care** of :)" in 5 reviews

Ad Action Health

★ ★ ★ ★ ☆ 3 reviews

Ali S. said "I used a service similar to this once before. I had a positive experience with the other service and I guess they have since changed names. I was staying up

Maternity Care Data

View More

Based on data from Cal Hospital Compare

C-Section Rate

Below Average Rate

Breastfeeding Rate

Well Above Average Rate

Episiotomy Rate

Average Rate

VBAC Routinely Available

## Summary

- Extreme variation among hospitals
- Rapid rise of rates without neonatal or maternal benefits (indeed can have complications)
- Significant consequences for future pregnancies
- Labor management techniques together with provider and patient education can lead to rapid change without effecting baby outcomes

*Getting the balance right: cesarean births can be life-saving and they have an absolute role in Obstetrics—but they shouldn't be taken lightly"*

# Thank You!



## Visit: [CMQCC.org](https://CMQCC.org)

Transforming Maternity Care

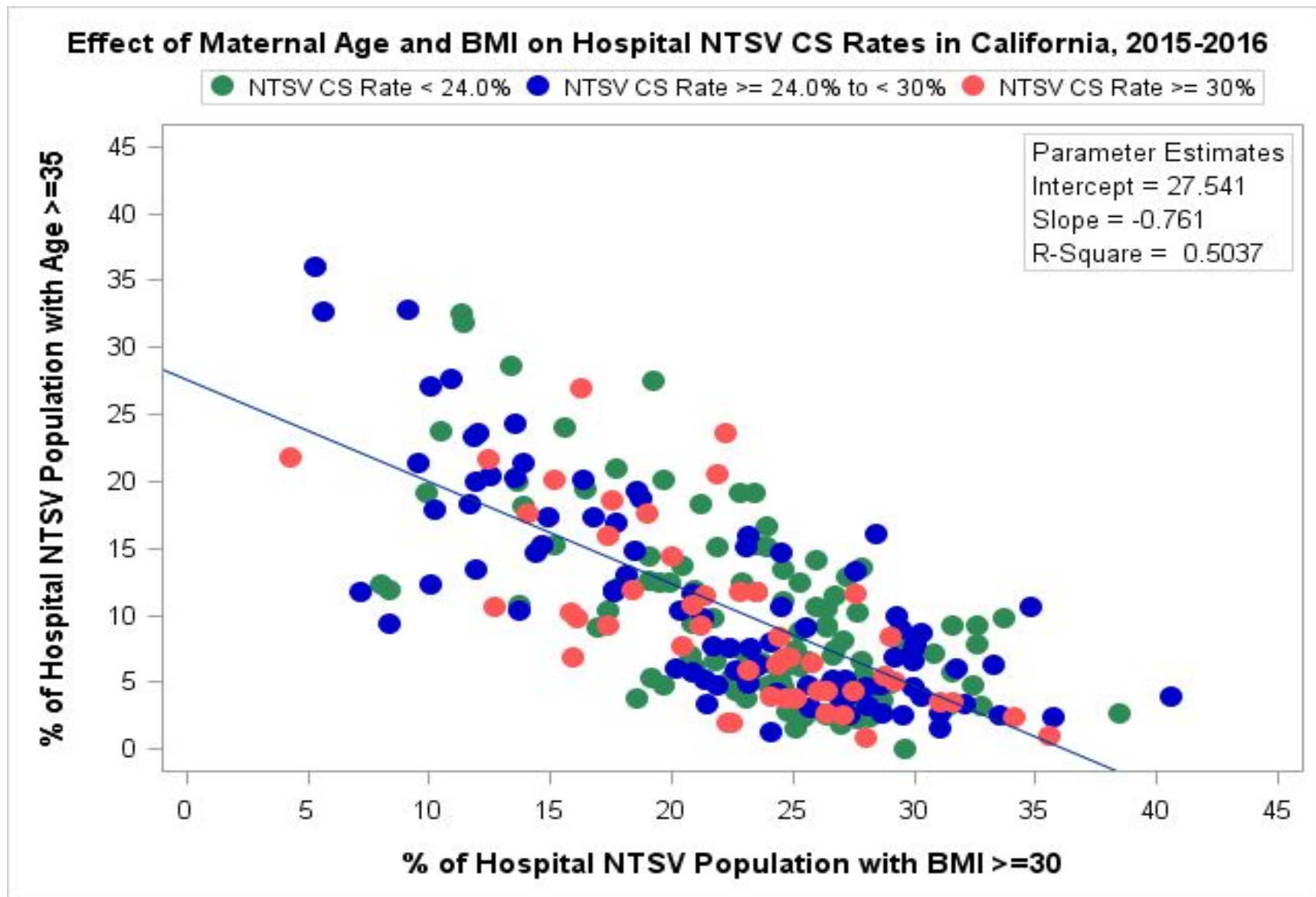
A Toolkit to Support Vaginal Birth and Reduce Primary Cesareans

# How do Hospital Rates of High Maternal Age and High Maternal BMI Interact?

- Compare outcomes of hospitals with like populations of high BMI and high Maternal Age
- Do hospitals with similar rates of high BMI or High Maternal Ages behave same or differently?

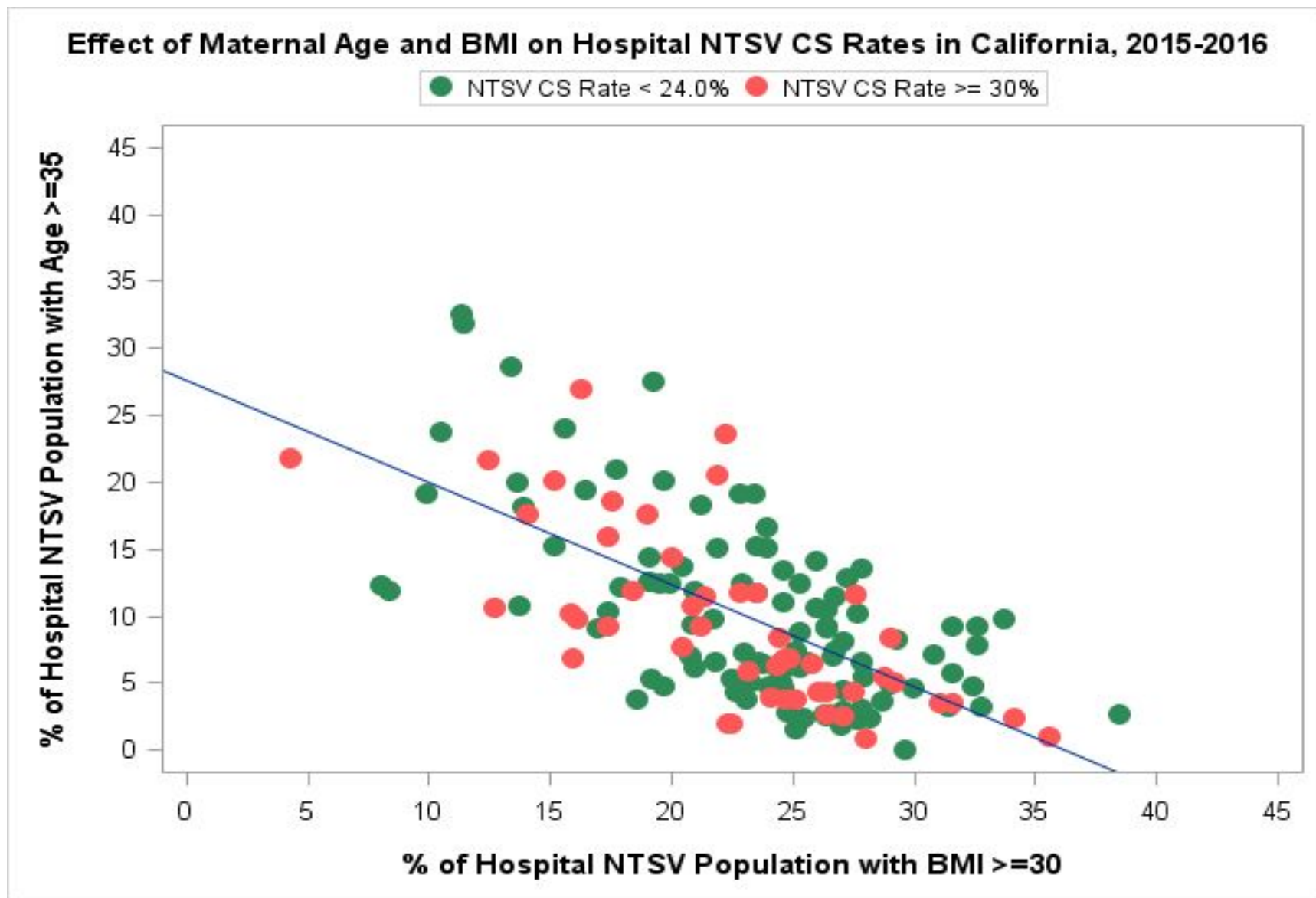


# Correlation of High Age and Low BMI Hospital Populations and Spread of High Medium and Low NTSV Hospitals



Data from 242 California Hospitals that were continually open between 2015-2016 and had an average  $\geq 100$  annual deliveries

# Overlap of High and Low NTSV Hospitals for Similar Age and BMI Populations



Data from CMQCC, manuscript in preparation