



# Reducing Labor (Primary) Cesarean Section Rates

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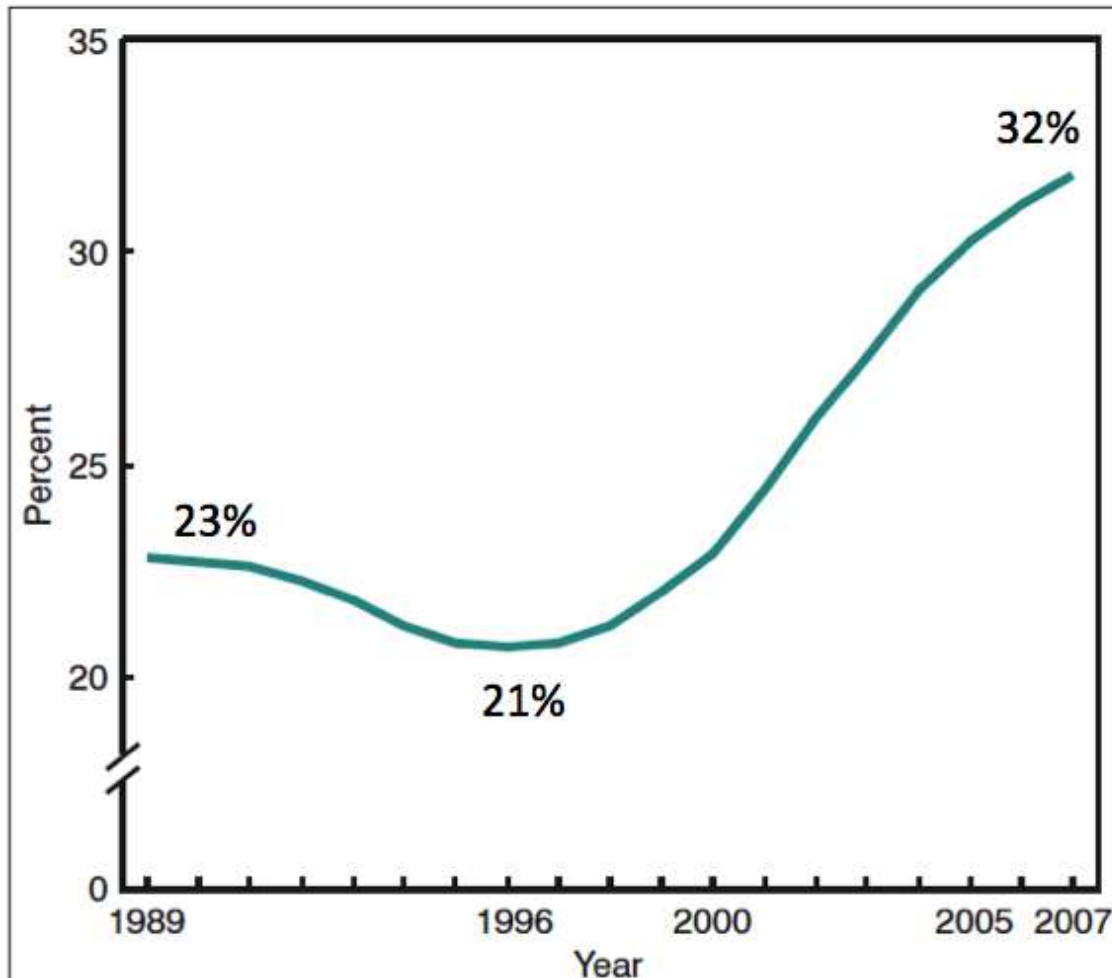
California Pacific Medical Center

San Francisco

## Discussion:

- What are the drivers for the rise in Primary CS?
- Marked Variation in Primary CS rates
- NTSV as the focus for CS Quality Improvement (Nulliparous, Term Singleton, Vertex)
- Importance of L&D culture & Labor practices
- Multi-strategy approach to lower primary (NTSV) CS rates

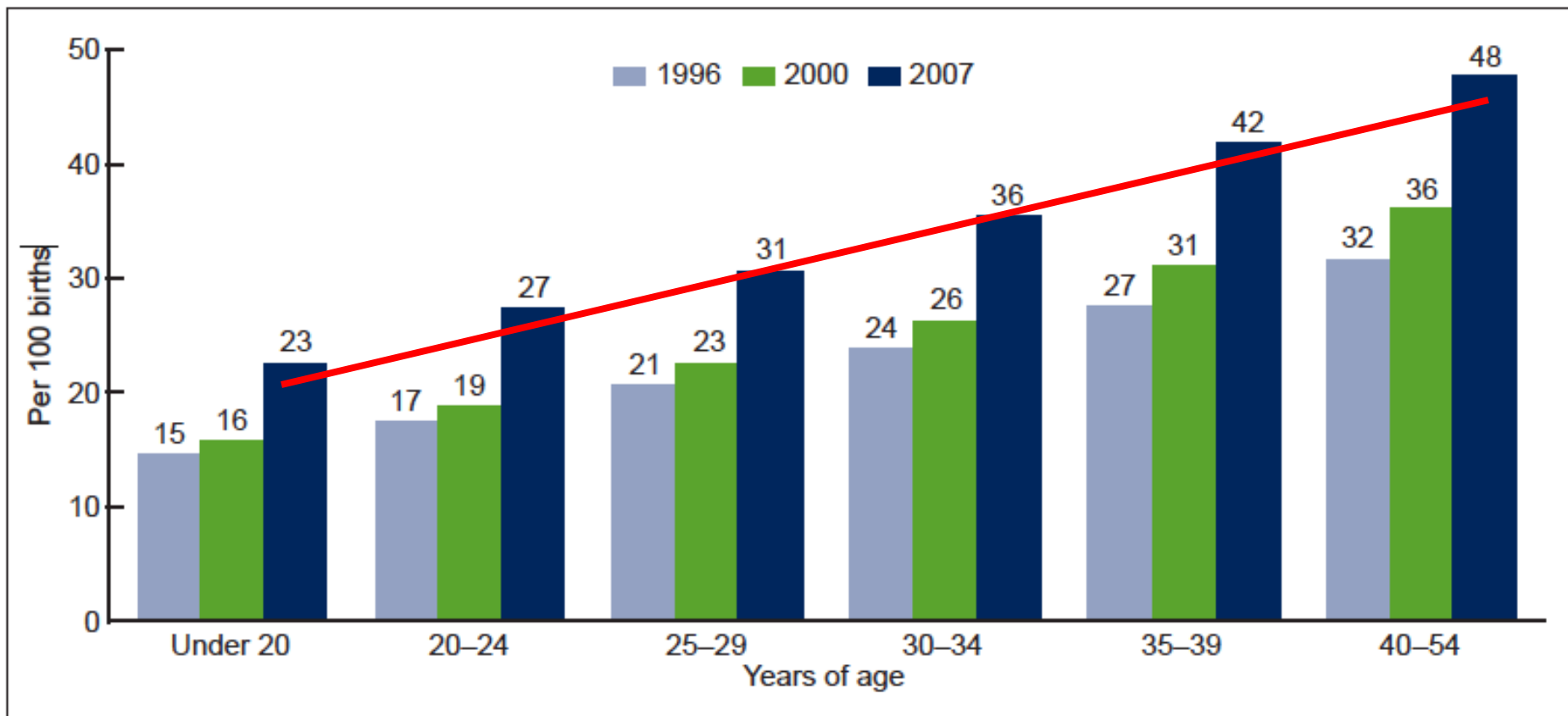
# Cesarean Births Have Risen by Over 50% in the Last 10 years



NOTE: The total cesarean delivery rate is the percentage of all live births by cesarean delivery.

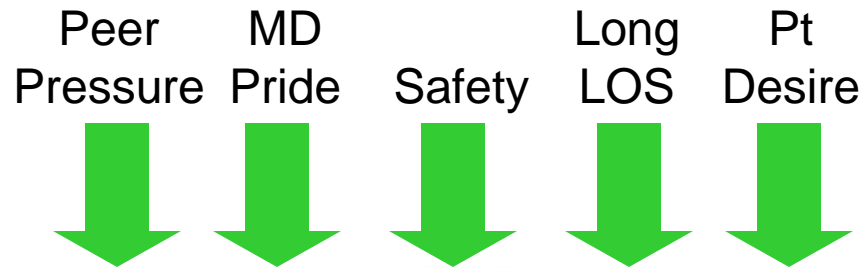
SOURCE: CDC/NCHS, National Vital Statistics System.

# US CS rates By Maternal Age



SOURCE: CDC/NCHS, National Vital Statistics System.

# Why Have Primary CS Rates Risen?



What happens if no one cares about the rate?



# Risks of Being a Prior Cesarean...

- Decisions around VBAC-TOL vs. Rpt CB
- Risk of Uterine Rupture
- Risk of Hemorrhage/Transfusions
- Epidemic of Placenta Previas
- Epidemic of Placenta Accretas
- Marked Increase of Peripartum Hysterectomies

# Consequences...

- Neonatal Outcomes NOT improved
- Maternal Outcomes raise concern
  - Mortality increasing
  - Morbidity increasing
- What is really driving the change?
  - Unit culture

## What are the Indications for Cesarean Section?

CS Indication	Proportion of <u>Overall</u> CS Rate	Proportion of <u>Primary</u> CS Rate	CS Rate for <u>this</u> Indication
Repeat (prior)	30-35%		90+%
“Abnormal Labor” (CPD/FTP)	25-30%	35-45%	variable
“Fetal Distress”	10-15%	15-20%	variable
Breech/Malpres.	10%	15-20%	98%
Multiple Gestation	5-9%	10-15%	60-80%
Other: Placenta Previa, Herpes, etc	~5%	~10-15%	90%

# Importance of the First Birth

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

*A Classic Example of “Path Dependency”*

How do we focus QI activity on preventing First-birth (Primary) Cesarean sections?

# NTSV Cesarean Section Rate: Quality Measure

- Widely Adopted
  - ACOG: Task Force on Cesarean Section rates (2000)
  - DHHS: Healthy Person 2010 and 2020
  - NQF, Joint Commission
  - Similar to AHRQ Inpatient Quality Indicator (IQI #33: Low-risk Primary Cesarean Delivery Rate) (also includes MTSV)
  - Medicaid programs in California, Washington, others

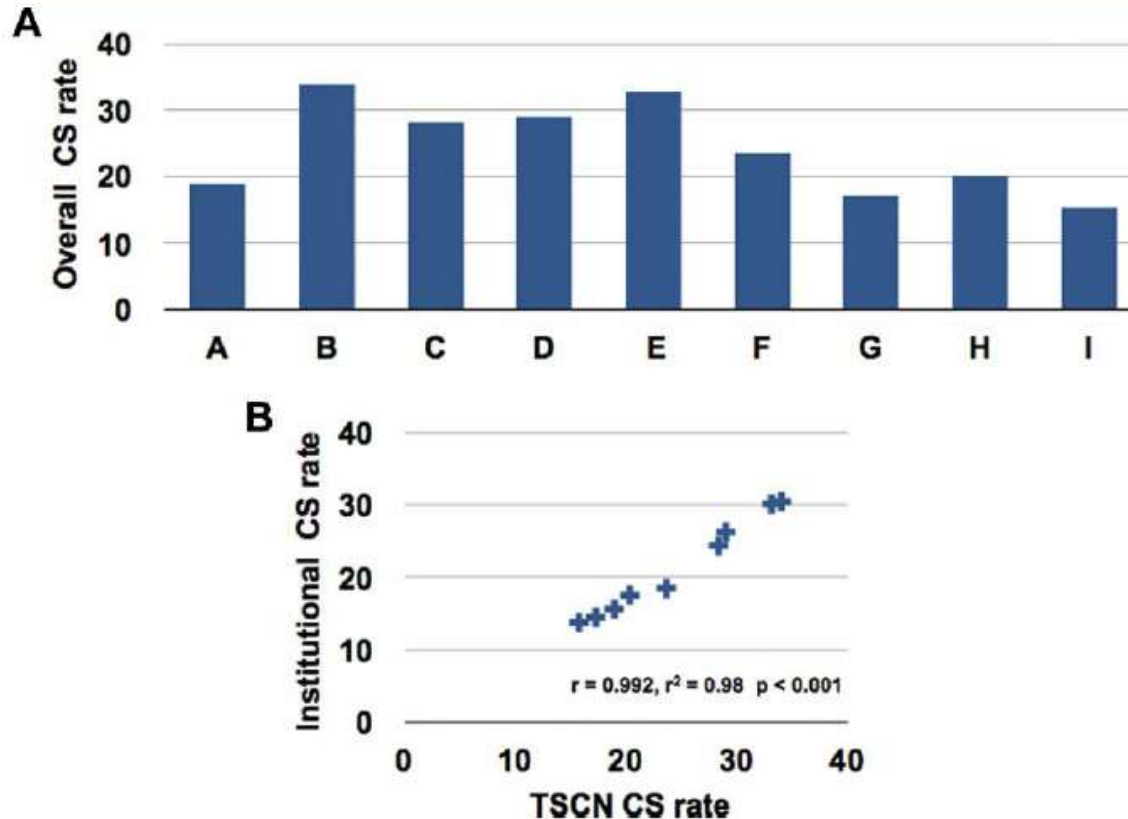
# NTSV Cesarean Section Rate: Strengths

- Simple
- Focuses on the main source of variation
- Focuses on the first birth, and therefore her entire reproductive future
- Focuses on labor management

# Importance of NTSV population to the CS rate

FIGURE 1

Overall CS rates and term singleton cephalic nullipara CS rates



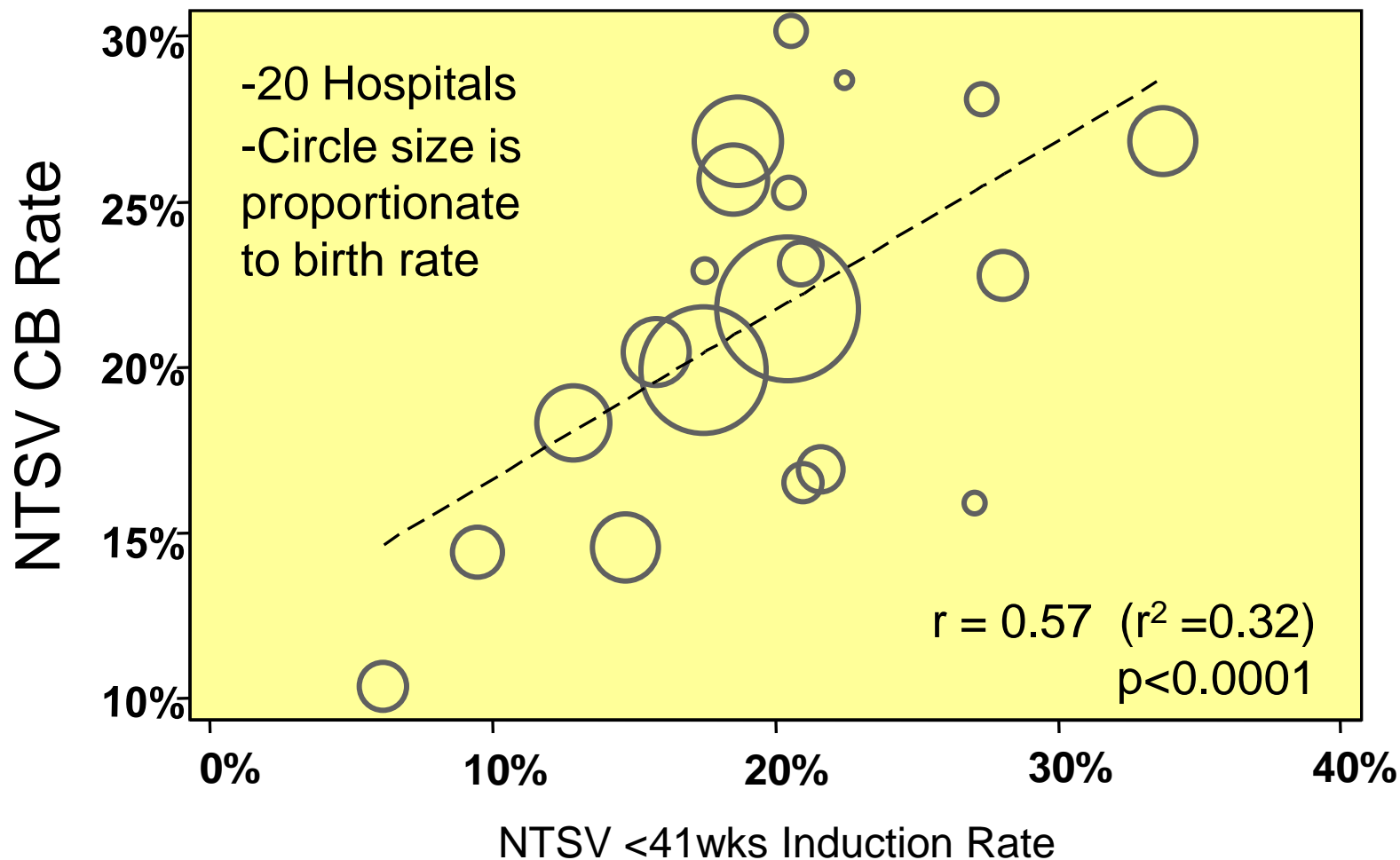
- 98% of inter-institutional variation in overall CS rates can be attributed to NTSV (TSCN) rates

A, Overall CS rates in 9 obstetric cohorts and B, correlation between overall CS rates and TSCN CS rates.

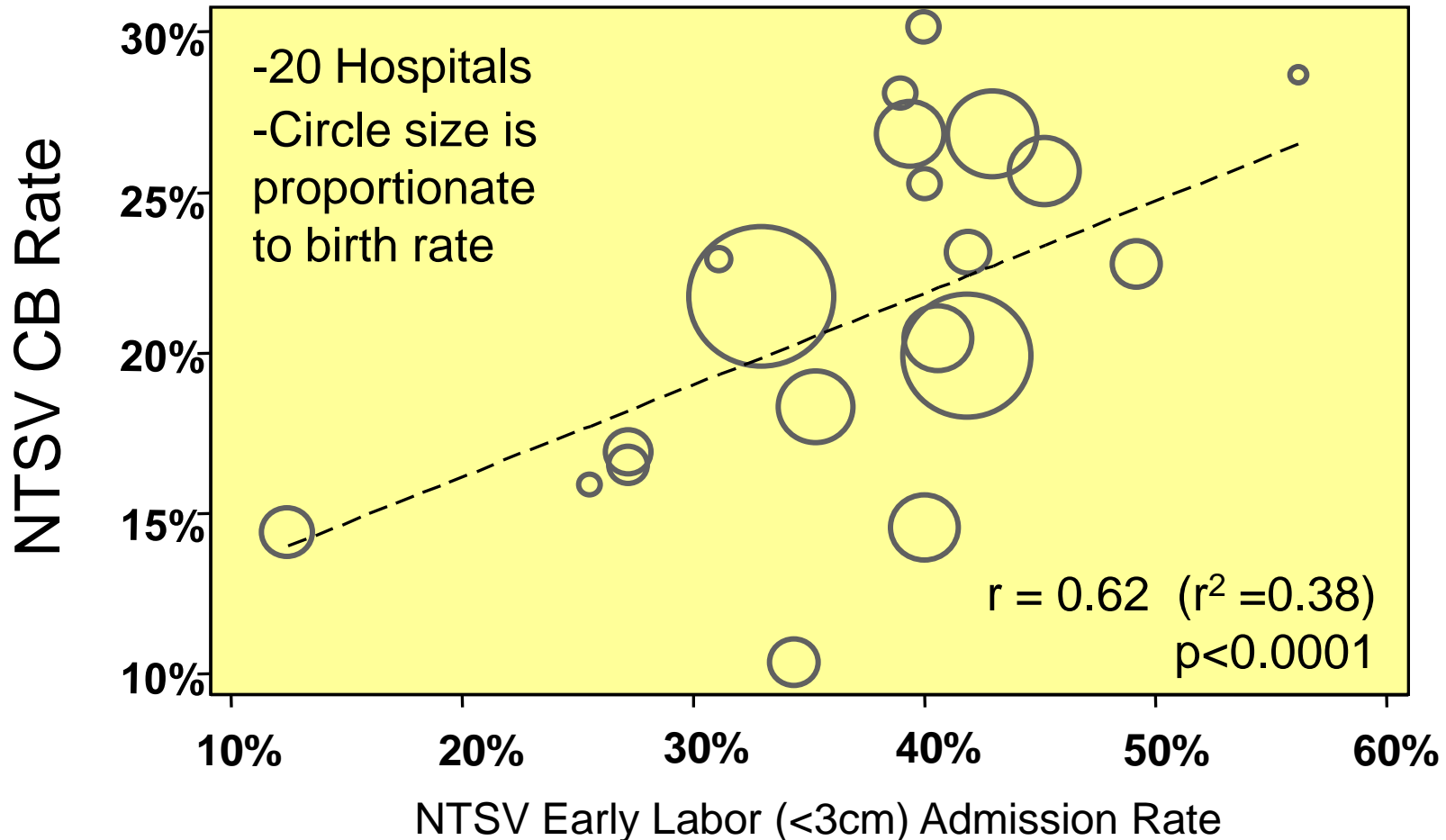
CS, cesarean section; TSCN, term singleton cephalic nullipara.

Brennan. International cesarean rates using 10-group classification. *Am J Obstet Gynecol* 2009.

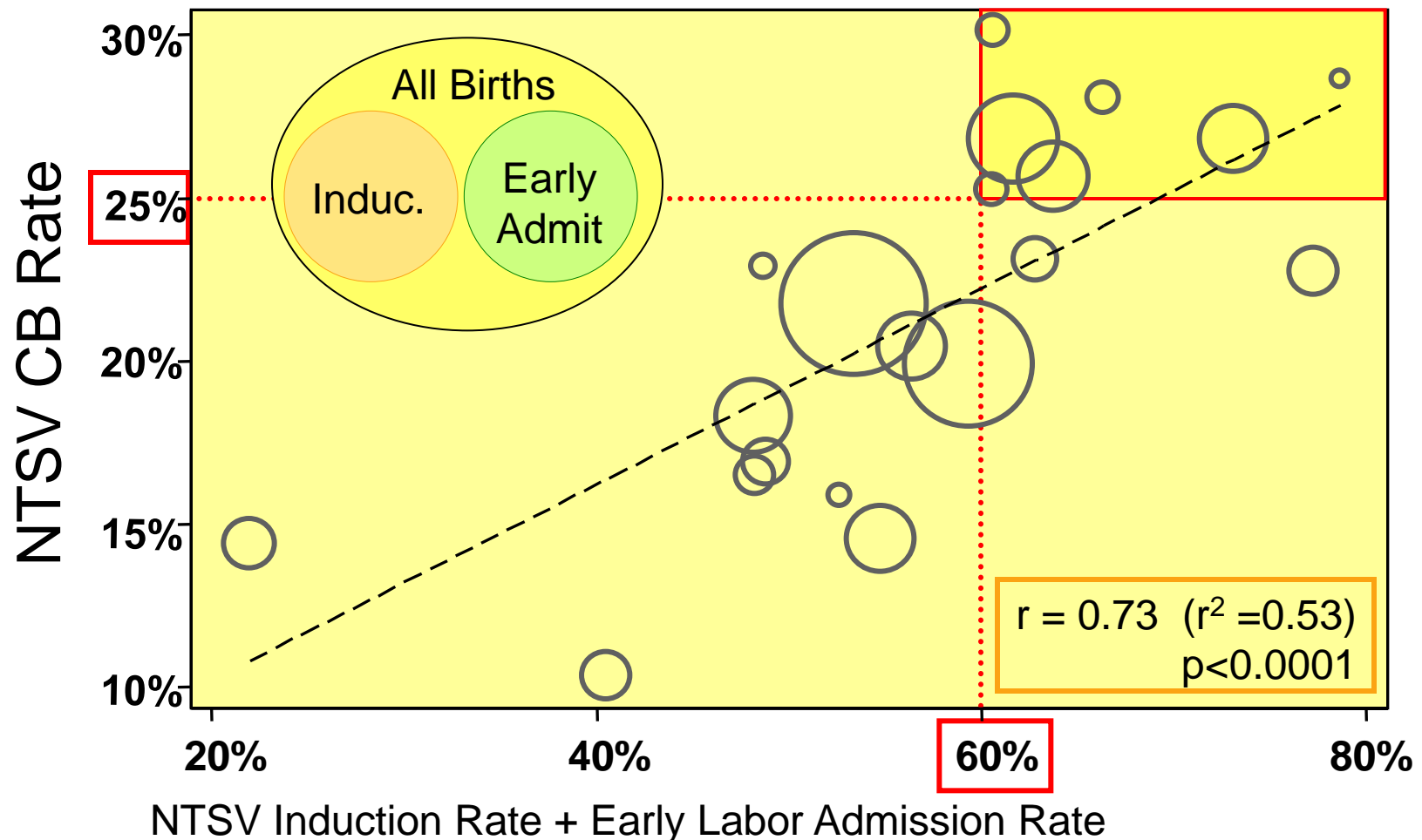
# NTSV Induction Rate Correlates with NTSV Cesarean Rate



# NTSV Early Labor Admit Rate Correlates with NTSV Cesarean Rate



# Combined Induction+Early Admit Rate Correlates BEST with NTSV Cesarean Rate



# Draft Labor Cesarean “Phenotypes”

- Latent phase admission
- Nullip labor induction
  - esp with unfavorable cx
- Dystocia/Failure to progress
  - Arrest or protraction disorder
- Non-reassuring Fetal Status
- Oxytocin/misoprostol associated tachysytole
- 2<sup>nd</sup> Stage (failure of descent)
- Patient choice

A start...

## Evaluation of Primary (Labor) CS

Inclusion: >37wk, vertex, singleton, and no prior CS or contraindication for labor (eg. placenta previa)

- Was she admitted in latent phase? (Early Labor: <3cm dilation, intact membranes)**  
Was her cervix <3cm dilated on admission? Cm dilated \_\_\_\_\_  
If < 3cm, what was reason for admission? \_\_\_\_\_  
Did she have regular hard contractions? Contraction frequency: \_\_\_\_\_  
What was the duration of observation before admission? \_\_\_\_\_ min
- Was her labor induced? (Focus on Nullips and unripe cervix)**  
What was the Bishop score? \_\_\_\_\_ (minimum of 8 recommended for elective induction)  
Was cervical ripening used? Y / N (Not recommended for elective inductions)  
What agents were used?  misoprostol,  cervidil,  balloon  
Did she get beyond 4cm before the CS? Y / N  
Cervical dilation at delivery: \_\_\_\_\_ cm
- Was the CS for Dystocia/FTP? (arrest or protraction of active phase labor)**  
How long as there absence of cervical dilation? \_\_\_\_\_ hrs (ACOG: >2 hours , more recent > 4 hours)  
Was she in active labor? Y / N (active labor: Dilation>=4cm AND adequate frequency and intensity of contractions (ACOG 2002))  
Were the membranes ruptured membranes (before the arrest time started)? Y / N (ACOG)  
Was Oxytocin administered for inadequate contractions? Y / N (ACOG)  
What was the cervical dilation at delivery? \_\_\_\_\_ cm
- Was the CS for Fetal Status? (Category III or II fetal monitoring pattern)**  
Was the fetal heart rate Category one of the following? Y / N (ACOG)
  - Non-correctable Category III pattern.
  - Non-correctable Category II pattern with absent or minimal variability
  - Sinusoidal patternIf not one of these , what was the indication? \_\_\_\_\_  
Was there fetal recovery after corrective actions taken? Y / N (ACOG)  
What resuscitative actions were taken (and documented)?
  - Repositioning of patient
  - Administration of O2 to mother
  - Discontinuation of uterine stimulants
  - Correction of maternal hypotension
- Was there oxytocin or misoprostol-related tachysystole? (in the hour prior to birth)**  
Were contractions closer than Q3 min (10 in 30min)? Y / N For how long? \_\_\_\_\_ min  
Were contractions closer than Q2.5 min (12 in 30min)? Y / N For how long? \_\_\_\_\_ min  
Was there discontinuation of uterine stimulants? Y / N For how long prior to CS? \_\_\_\_\_ min
- Was the CS done in 2<sup>nd</sup> Stage (Failure of Descent)?**  
How long was there no descent of presenting part (with adequate labor)? \_\_\_\_\_ min  
(at least 1 hour (ACOG) or \_\_\_\_\_ hours (citation))  
Oxytocin infusion for inadequate contractions (ACOG)  
Duration of pushing \_\_\_\_\_ Duration of passive descent \_\_\_\_\_  
Station when pushing started \_\_\_\_\_ Station when passive descent started \_\_\_\_\_
- Was the CS scheduled without labor (patient choice or medical indication)?**  
What was the indication? \_\_\_\_\_  
Was there a discussion of the risks, benefits and alternatives? Y / N (ACOG)

**Was her labor induced? (Focus on Nullips and unripe cervix)**

What was the Bishop score? \_\_\_\_\_ (minimum of 8 recommended for elective induction)

Was cervical ripening used? Y / N (Not recommended for elective inductions)

What agents were used?  misoprostol,  cervidil,  balloon

Did she get beyond 4cm before the CS? Y / N

Cervical dilation at delivery: \_\_\_\_ cm

**Was the CS for Dystocia/FTP? (arrest or protraction of active phase labor)**

How long as there absence of cervical dilation? \_\_\_\_\_ hrs (ACOG: >2 hours , more recent > 4 hours)

Was she in active labor? Y / N (active labor: Dilation $\geq$ 4cm AND adequate frequency and intensity of contractions (ACOG 2002)

Were the membranes ruptured membranes (before the arrest time started)? Y / N (ACOG)

Was Oxytocin administered for inadequate contractions? Y / N (ACOG)

What was the cervical dilation at delivery? \_\_\_\_\_ cm



# Marked Variation in Primary Cesarean Sections



# Virginia Health Information

FROM NUMBERS TO KNOWLEDGE

Home > [Obstetrics Introduction](#) > [Compare Hospitals](#) > [Obstetric Report Results](#)

## Virginia Obstetrics Reports

Click here for printer friendly version

Performance Staffing and Services Features Prenatal Care Postpartum and Discharge

Click any column to sort

= Better than expected performance

Hospital Name (click for all hospital information)	Deliveries Total	Cesarean			Episiotomy		Hospital Length of Stay		Average Hospital Charge	
		Primary Act. Rate	Primary Rating	Repeat Rating	Vaginal Deliveries	Episiotomy Rates	Vaginal Rating	Cesarean Rating	Vaginal Rating	Cesarean Rating
<a href="#">Inova Alexandria Hospital</a>	3,563	28.43%			2,209	19.96%				
<a href="#">Inova Fair Oaks Hospital</a>	3,559	26.09%			2,204	22.23%				
<a href="#">Inova Fairfax Hospital</a>	11,673	30.10%			6,890	20.51%				
<a href="#">Inova Loudoun Hospital</a>	2,227	19.19%			1,573	16.21%				
<a href="#">Potomac Hospital</a>	2,641	17.85%			1,926	16.77%				
<a href="#">Prince William Hospital</a>	2,442	16.31%			1,990	20.05%				
<a href="#">Reston Hospital Center</a>	3,014	33.51%			1,684	18.05%				
<a href="#">Virginia Hospital Center</a>	3,218	30.71%			1,933	20.28%				

### OBSTETRICS CARE GUIDE

- INTRODUCTION
- ABOUT THIS GUIDE
- TYPES OF DELIVERY: VAGINAL
- TYPES OF DELIVERY: CESAREAN
- ABOUT THE DATA
- HOW MUCH WILL I PAY?
- YOUR HEALTH INSURANCE
- OB TERMS
- LEARN MORE
- COMPARE HOSPITALS**
- COMPARE PHYSICIANS
- COINSURANCE
- STATEWIDE SUMMARIES
- TECHNICAL REPORT

Is this information helpful?

Yes

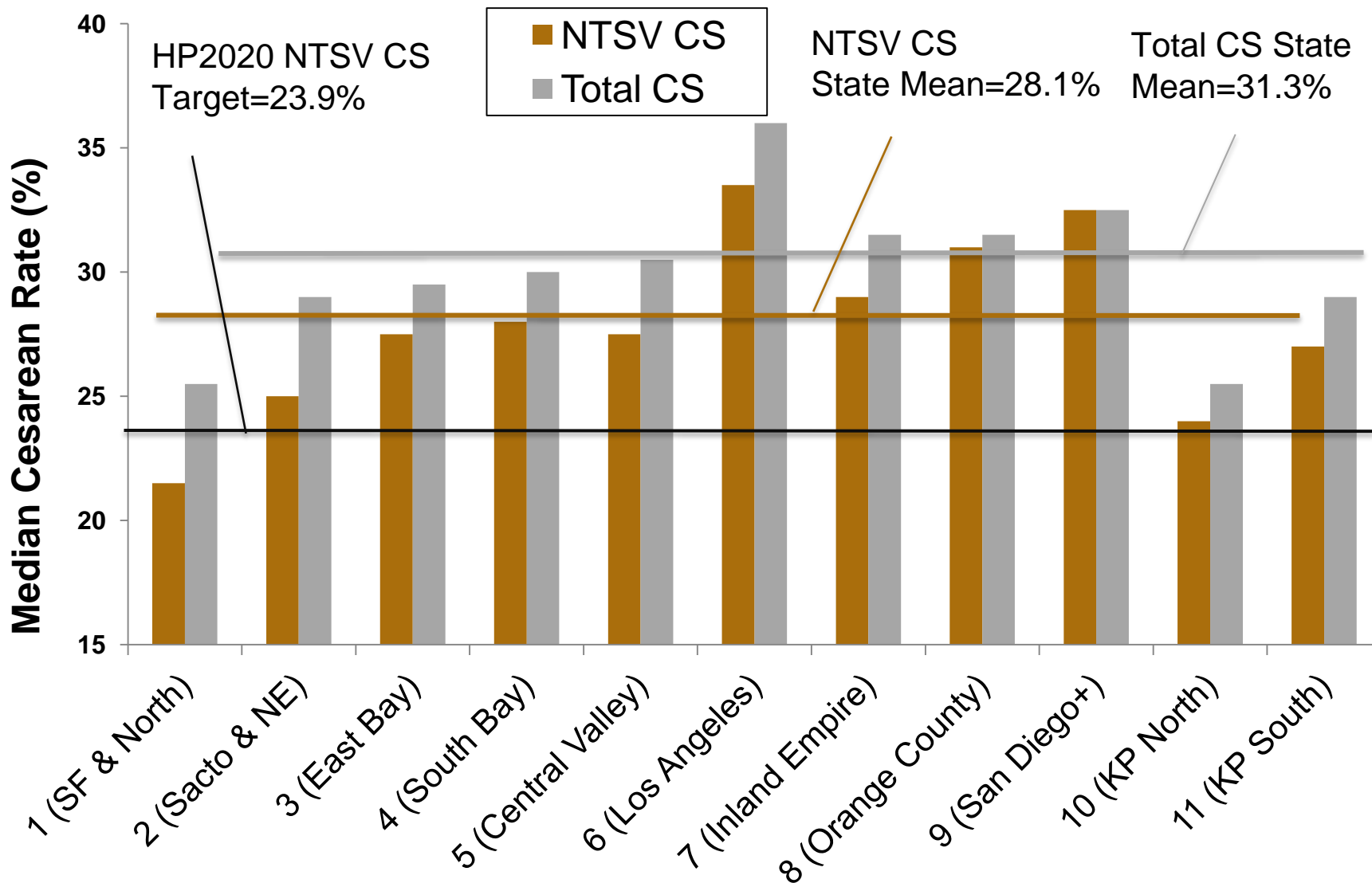
No

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# Variation in California CS Rates by Region



# In Effort to Limit C-Sections, Two Methods Yield Different Results on Staten Island

Susan Dominus NYT April 19, 2010

- Staten Island University Hospital
  - 23.2% Cesarean rate
  - Strong leadership and determination
  - No elective inductions prior to 41 wks
  - No elective CS
  - Non-interventionist policy
- Richmond University Medical Center
  - 48.3% Cesarean rate
  - “Perinatal Center” ( for high-risk pregnancies)
  - “Peer Review” to reduce CS
  - 2nd opinions for elective CS (half-hearted?)

# So what do we mean by “culture” (1)

“The way we do things around here”

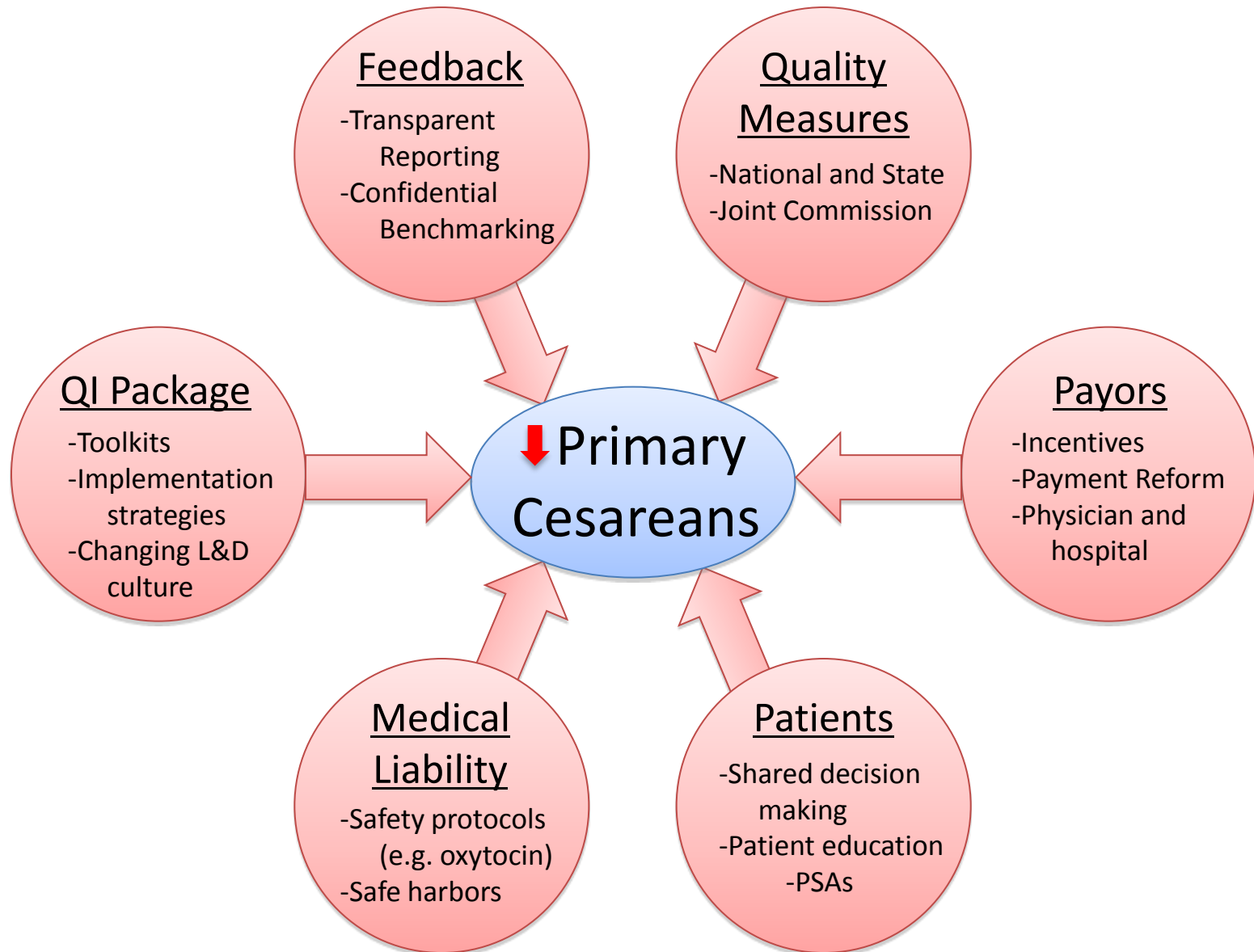
- Nursing culture is about...
  - Experience in managing labor (versus charting, caring for complications and FHR interpretation)
  - Value seen for vaginal birth
  - Importance of labor support
  - Flexibility and patience
- OB culture is about...
  - All of the above, *and...*
  - Outside pressure (back to the office or family)
  - Perception of liability risk

# So what do we mean by “culture” (2)

“The way we do things around here”

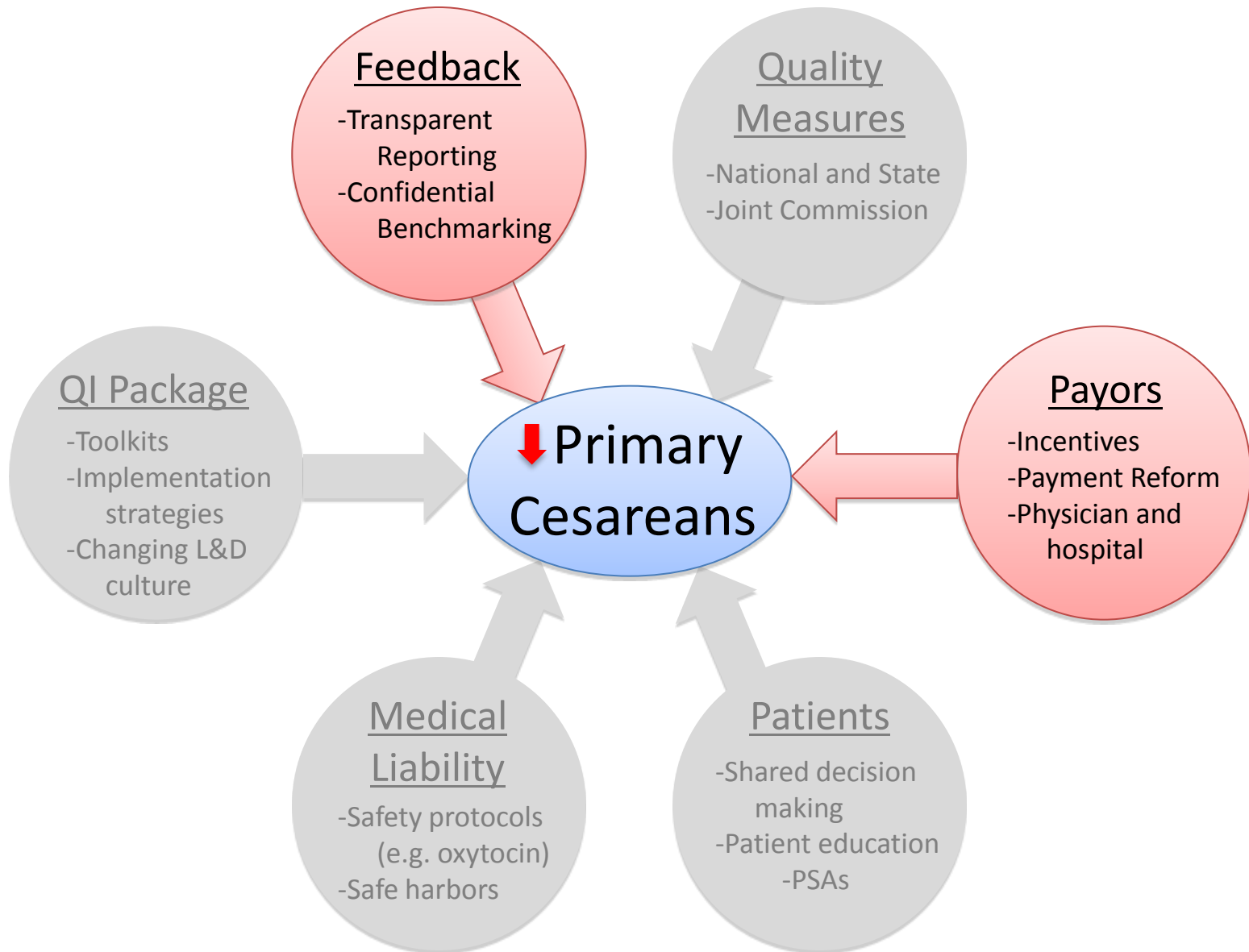
- Leadership (MD and Admin) culture is about...
  - All of the above, *and...*
  - Does anyone care?
  - Do leaders feel they have leverage?
- Patient culture is about...
  - Value of vaginal birth (friends, family, and Hollywood)
  - Fear of pain, vaginal birth (for mother and baby), and vaginal cosmesis
  - Childbirth preparation

# Reduction of Primary Cesarean Births: 6 Key Strategies for a Successful Initiative



# Reduction of Primary Cesarean Births:

Principle 1: One or even two strategies alone will not lead to change



# Conclusions:

- We should not focus directly on CS but on improving Labor Management (think phenotypes)
- More interventions = More labor problems
- Current nurses and doctors need more experience in normal labor
- Patience!
- Multi-strategy approach to lower primary (NTSV) CS rates

# Thank You!



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CMQCC: **Transforming Maternity Care**

# What are the Payers thinking?

- Provider payments identical for vaginal and Cesarean births *(little change seen by Commercial payers)*
- Hospital payments identical for vaginal and uncomplicated Cesarean births (DRG 371) *(underway in several states)*
- Consider Elective Primary Cesarean Sections an uncovered procedure or require prior approval
- Actively discourage elective inductions in nullips with an unfavorable cervix
- Promote more direct patient education and shared decision making
- NTSV Cesarean Section rate transparency for all providers