South Carolina Birth Outcomes Initiative Presents:

Should We Worry About C-section Rates in South Carolina?

August 26, 2014

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Healthy Connections MOMS & BABIES

SOUTH CAROLINA
Healthy Connections

Should We Worry About C-section Rates in South Carolina?

SC Birth Outcomes Initiative
August 26, 2014

Bz Giese, BSN, RN
Director, SC Birth Outcomes Initiative

DISCLAIMER

Disclaimer: The information in this webinar is for educational purposes only, and is not meant to substitute for medical or professional judgment. Medical information changes constantly. Therefore the information contained in this webinar or on the linked websites should not be considered current, complete or exhaustive.

This webinar is being recorded

OBJECTIVES

- Recognize the role of SC BOI in improving birth outcomes in SC
- Describe trends in the rate of Cesarean Delivery (CD) in the US over the past 50 years
- Identify factors contributing to higher rates of CD in the US
- Describe similarities between SC trends and national trends in rates of CD
- Understand the elements of the BOI hospital dashboard report
- Interpret the data in the hospital dashboard in order to understand how hospital-level changes are measured
- Compare risks and benefits for women and infants of CD and vaginal birth

AGENDA

I. **National Trends in Cesarean Deliveries**
Amy H. Picklesimer, MD, MSPH

II. **South Carolina Trends in Cesarean Deliveries**
Sarah Gareau, DrPH, MEd, MCHES

III. **Benefits and Risk of Cesarean Deliveries**
Judith T. Burgis, MD, FACOG

IV. **Structure of the BOI SVB**
Rick Foster, MD

V. **Q & A**

VI. **Survey**

Healthy Connections

Trends in Cesarean Delivery

Amy H. Picklesimer, MD, MSPH

Associate Professor

Maternal Fetal Medicine, Obstetrics and Gynecology

University of South Carolina School of Medicine - Greenville

The first cesarean section?

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Suetonius' Lives of the Twelve Caesars, 1506 woodcut.

International rates of CD

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"Underuse:" Nigeria, Ethiopia, Kenya, Haiti, Mongolia, Pakistan, Philippines, India

CD Rates	Countries	Annual Births (thousands)	Annual CD (thousands)
<10%	54 (39.4%)	77,417 (65%)	4,556 (24.7%)
10%-15%	14 (10.2%	3,177 (2.5%)	414 (2.2%)
>15%	69 (50%)	48,390 (37.5%)	13, 479 (73.1%)

"Overuse:" Brazil, Mexico, Italy, Iran, Argentina, Korea, United States

Gibbons 2010

Rates of CD
United States 1970 - 2010

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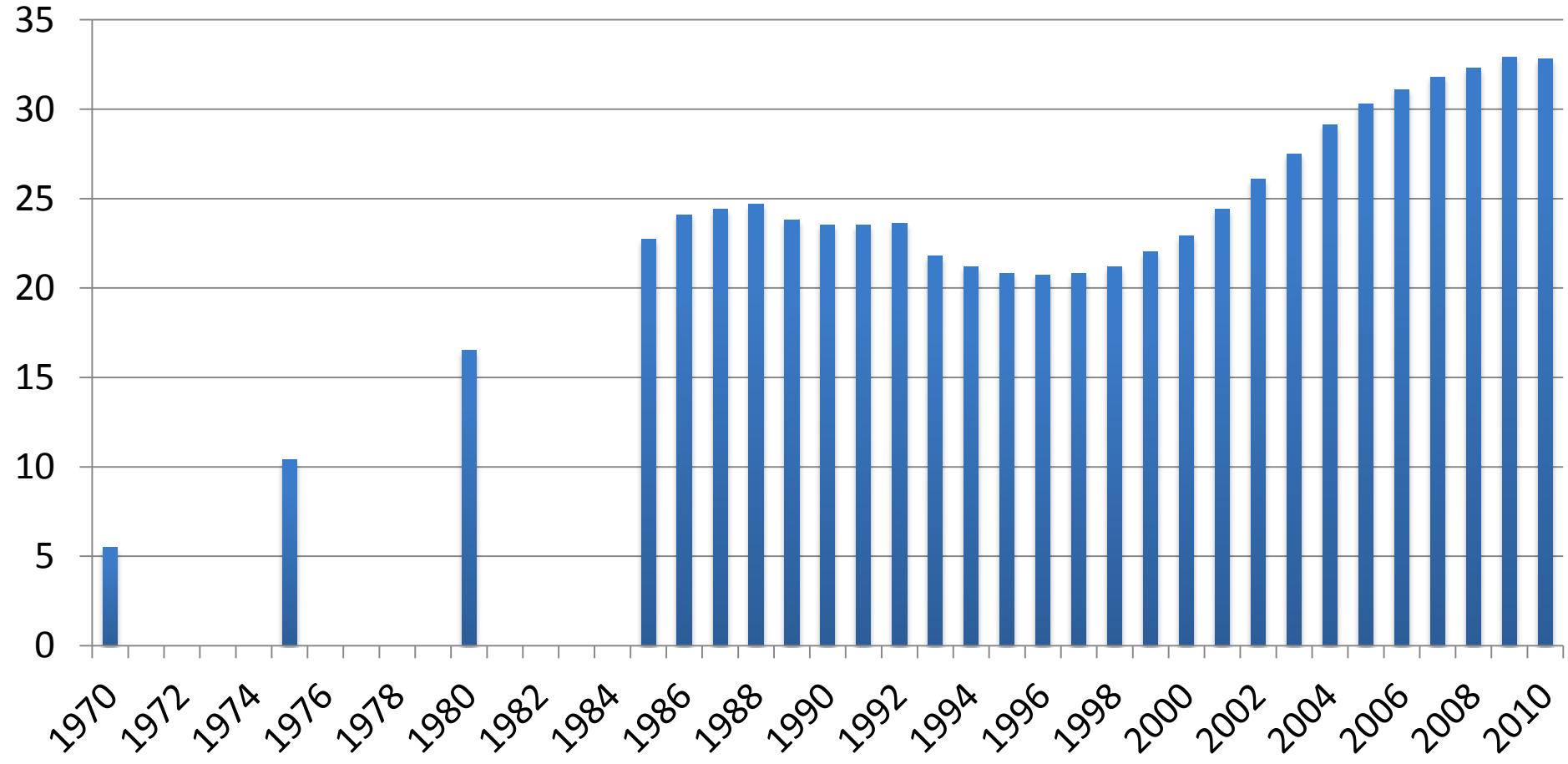
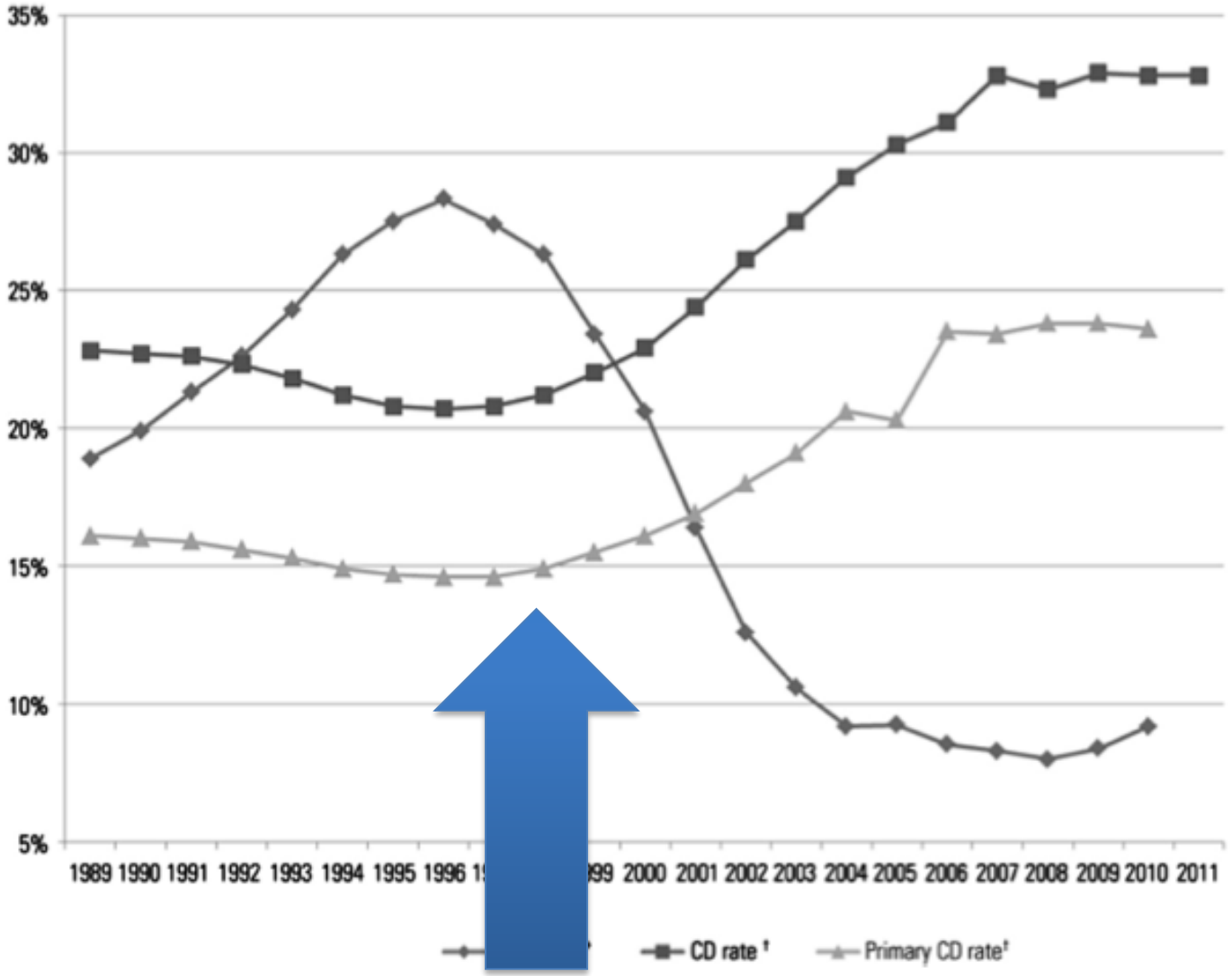


Martin 2012

FIGURE 1

US delivery rates, 1989 through 2011



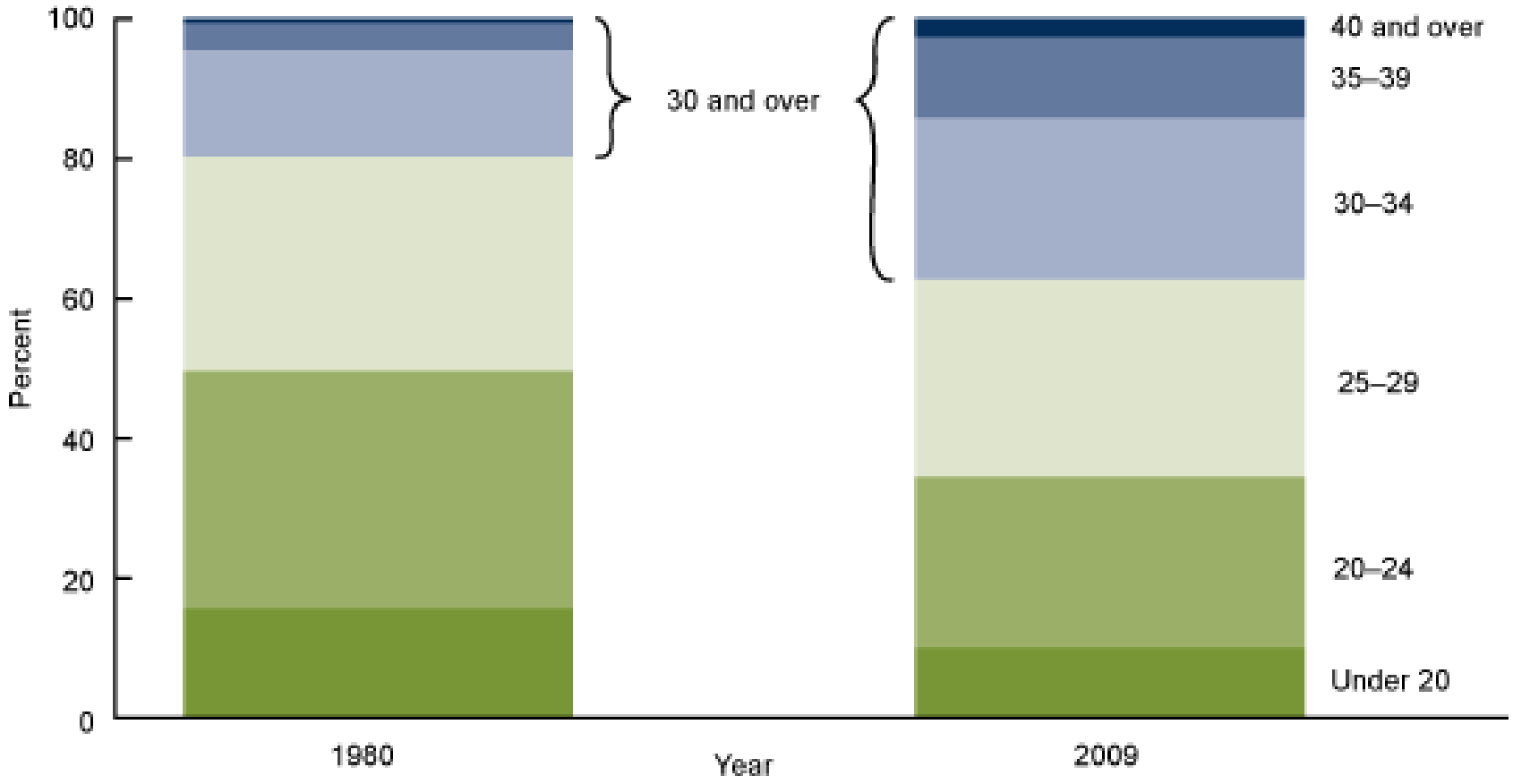
CD, cesarean delivery; *VBAC*, vaginal birth after cesarean delivery.

*Percent of women who have VBAC; †Rate based on total number of deliveries.

Data from National Vital Statistics and from Martin et al.[77]

ACOG. Safe prevention of primary cesarean delivery. Am J Obstet Gynecol 2014.

Distribution of all births by age of mother, United States 1980 and 2009



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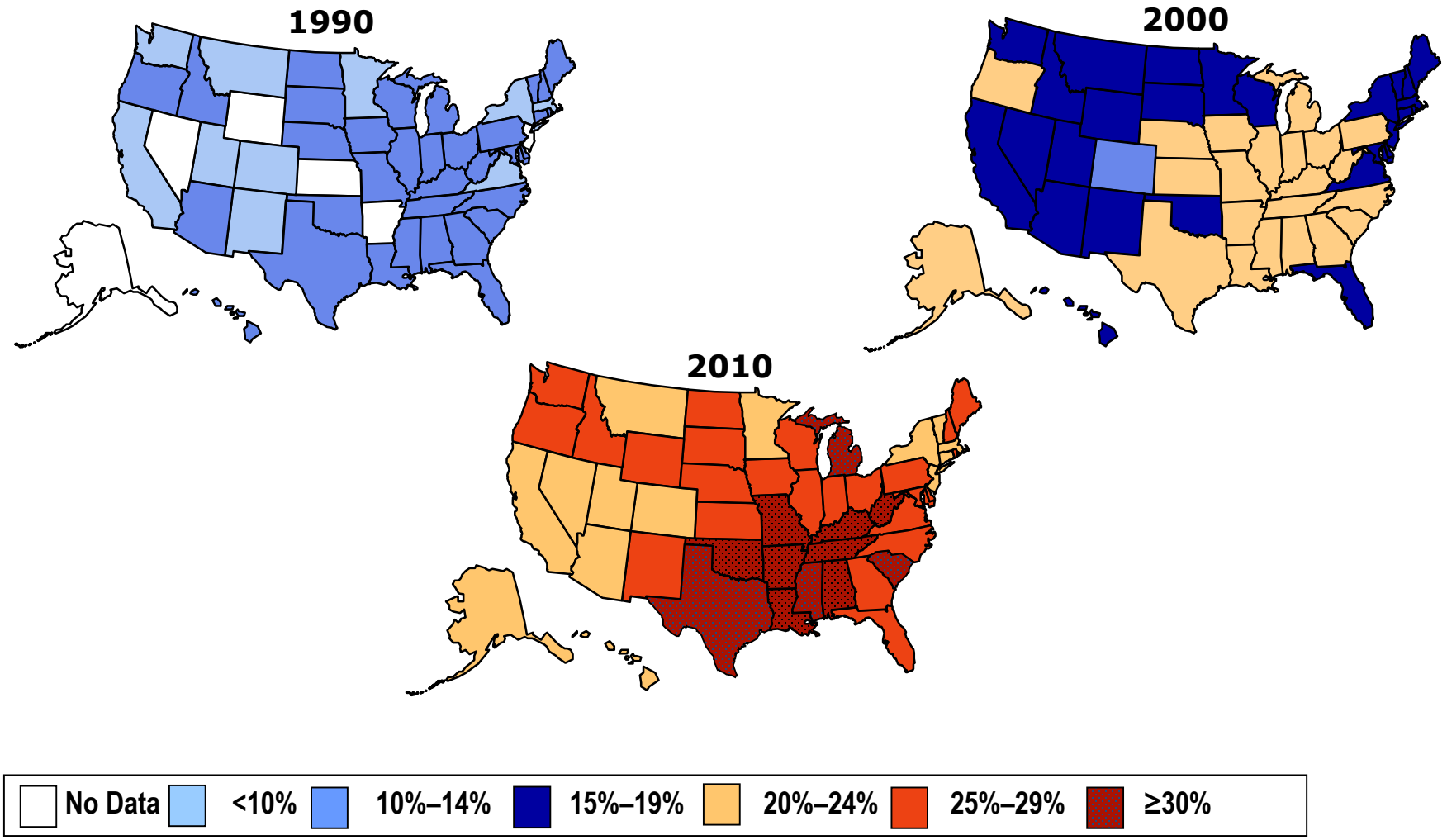
Obesity Trends* Among U.S. Adults
BRFSS, 1990, 2000, 2010

(*BMI ≥30, or about 30 lbs. overweight for 5' 4" person)



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Number and rate of twin births: United States 1980-2009

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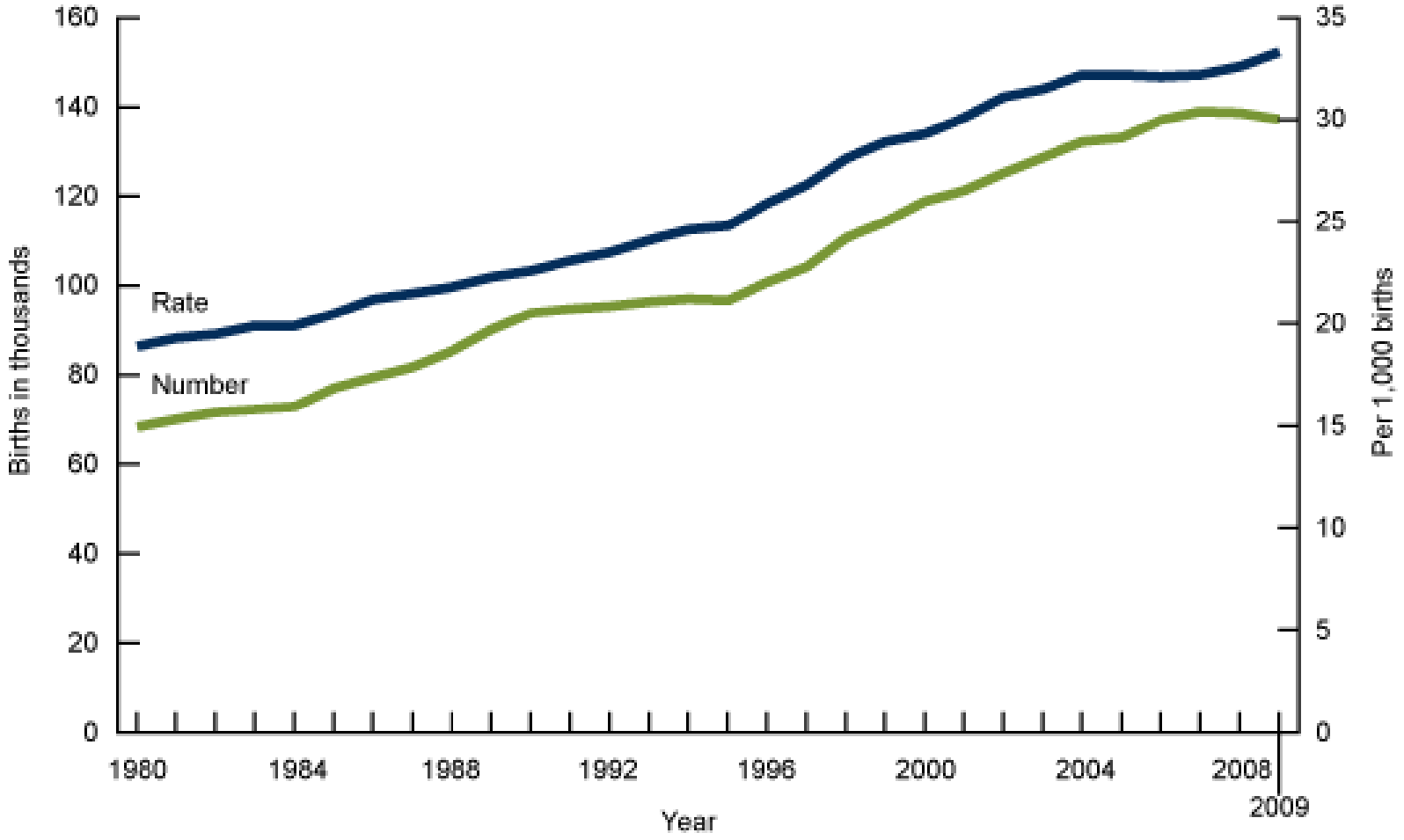

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Changing patient desires

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

COMMITTEE OPINION

Number 559 • April 2013

Committee on Obstetric Practice

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.

Cesarean Delivery on Maternal Request

ABSTRACT: *Cesarean delivery on maternal request* is defined as a primary prelabor cesarean delivery on maternal request in the absence of any maternal or fetal indications. Potential risks of cesarean delivery on maternal request include a longer maternal hospital stay, an increased risk of respiratory problems for the infant, and greater complications in subsequent pregnancies, including uterine rupture, placental implantation problems, and the need for hysterectomy. Potential short-term benefits of planned cesarean delivery compared with a planned vaginal delivery (including women who give birth vaginally and those who require cesarean delivery in

Changes in medical practice

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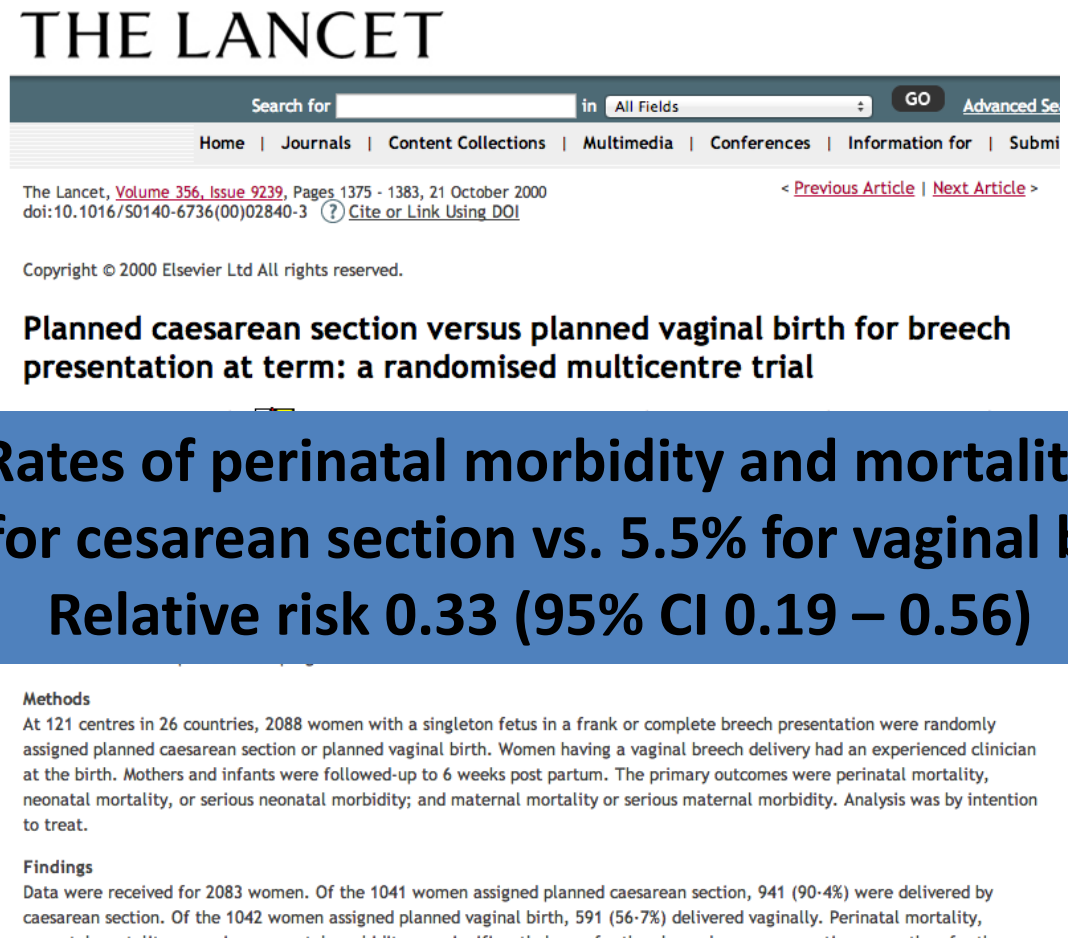

THE LANCET

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The Lancet, Volume 356, Issue 9239, Pages 1375 - 1383, 21 October 2000
doi:10.1016/S0140-6736(00)02840-3 Cite or Link Using DOI

< Previous Article | Next Article >

Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial

Rates of perinatal morbidity and mortality
1.6% for cesarean section vs. 5.5% for vaginal breech
Relative risk 0.33 (95% CI 0.19 – 0.56)

Methods
At 121 centres in 26 countries, 2088 women with a singleton fetus in a frank or complete breech presentation were randomly assigned planned caesarean section or planned vaginal birth. Women having a vaginal breech delivery had an experienced clinician at the birth. Mothers and infants were followed-up to 6 weeks post partum. The primary outcomes were perinatal mortality, neonatal mortality, or serious neonatal morbidity; and maternal mortality or serious maternal morbidity. Analysis was by intention to treat.

Findings
Data were received for 2083 women. Of the 1041 women assigned planned caesarean section, 941 (90·4%) were delivered by caesarean section. Of the 1042 women assigned planned vaginal birth, 591 (56·7%) delivered vaginally. Perinatal mortality,

Changes in medical practice

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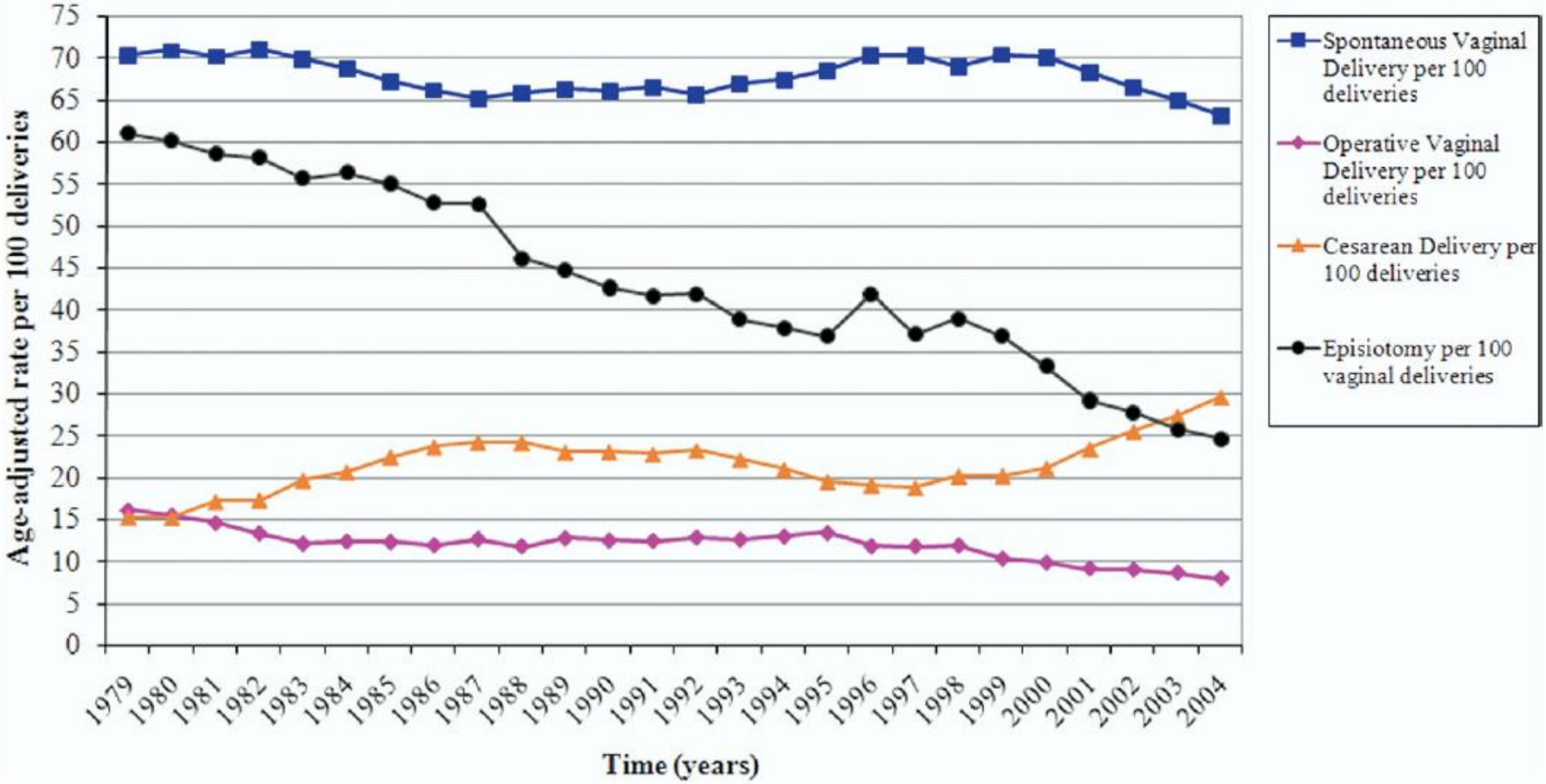
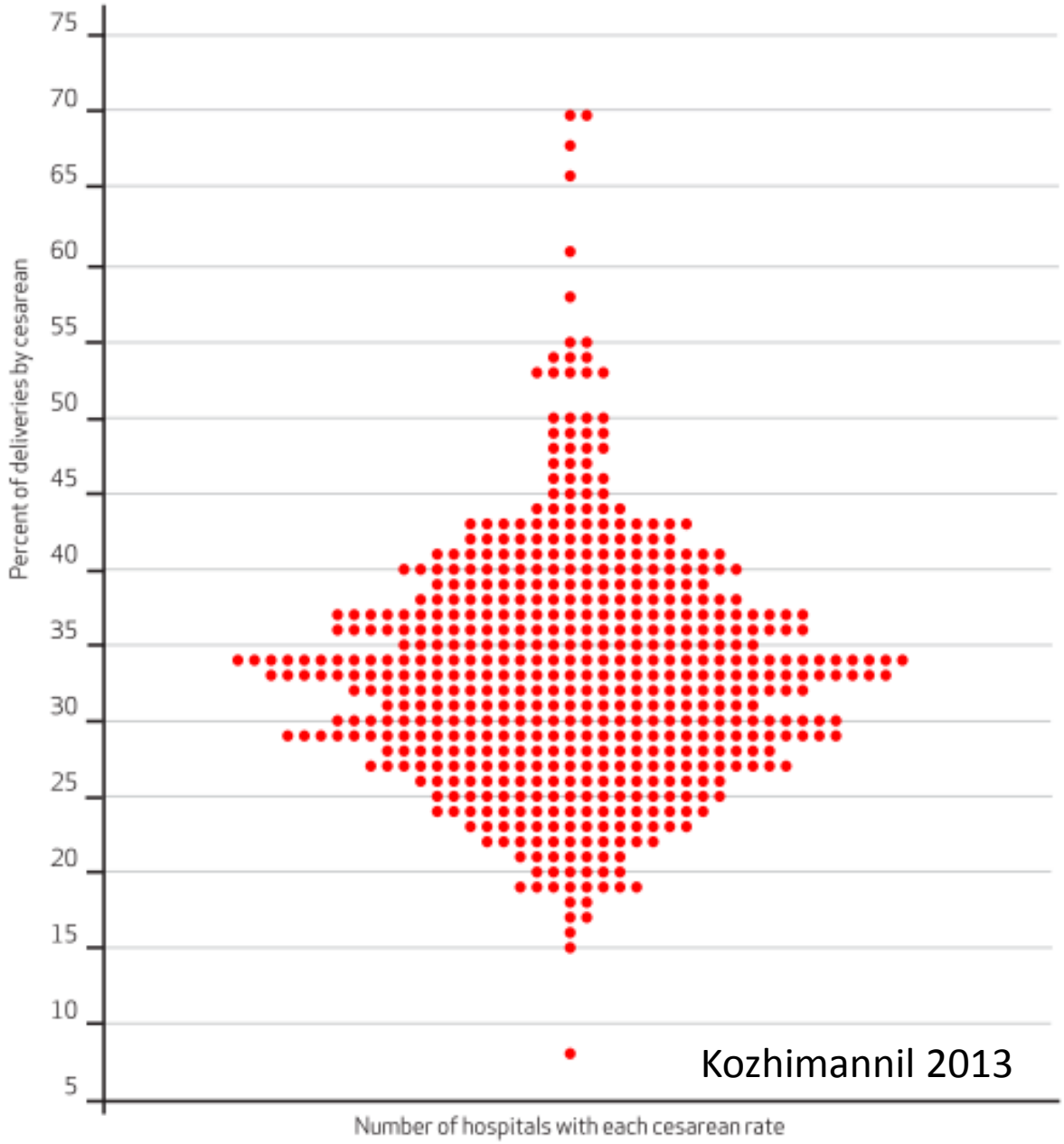


Frankman. Episiotomy in the United States: has anything changed? Am J Obstet Gynecol 2009.

EXHIBIT 1

Distribution Of Cesarean Rates In US Hospitals, 2009



ACOG/SMFM OBSTETRIC CARE CONSENSUS

Safe prevention of the primary cesarean delivery

This document was developed jointly by the American College of Obstetricians and Gynecologists (the College) and the Society for Maternal–Fetal Medicine with the assistance of Aaron B. Caughey, MD, PhD; Alison G. Cahill, MD, MSCI; Jeanne-Marie Guise, MD, MPH; and Dwight J. Rouse, MD, MSPH

Background

In 2011, 1 in 3 women who gave birth in the United States did so by cesarean delivery.[1] Even though the rates of primary and total cesarean delivery have plateaued recently, there was a rapid increase in cesarean rates from 1996 through 2011 (Figure 1). Although cesarean delivery can be lifesaving for the fetus, the mother, or both in certain cases, the rapid increase in the rate of cesarean births without evidence of concomitant decreases in maternal or neonatal morbidity or mortality raises significant concern that cesarean delivery is overused.[2] Therefore, it is important for health care providers to understand the short-term and long-term tradeoffs between cesarean and vaginal delivery, as well as the safe and

In 2011, 1 in 3 women who gave birth in the United States did so by cesarean delivery. Cesarean birth can be lifesaving for the fetus, the mother, or both in certain cases. However, the rapid increase in cesarean birth rates from 1996 through 2011 without clear evidence of concomitant decreases in maternal or neonatal morbidity or mortality raises significant concern that cesarean delivery is overused. Variation in the rates of nulliparous, term, singleton, vertex cesarean births also indicates that clinical practice patterns affect the number of cesarean births performed. The most common indications for primary cesarean delivery include, in order of frequency, labor dystocia, abnormal or indeterminate (formerly, nonreassuring) fetal heart rate tracing, fetal malpresentation, multiple gestation, and suspected fetal macrosomia. Safe reduction of the rate of primary cesarean deliveries will require different approaches for each of these, as well as other, indications. For example, it may be necessary to revisit the definition of labor dystocia because recent data show that contemporary labor progresses at a rate substantially slower than what was historically taught. Additionally, improved and standardized fetal heart rate interpretation and management may have an effect. Increasing women's access to nonmedical interventions during labor, such as continuous labor and delivery support, also has been shown to reduce cesarean birth rates. External cephalic version for breech presentation and a trial of labor for women with twin gestations when the first twin is in cephalic presentation are other of several examples

Safe prevention of the primary cesarean section

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Webinar 1: Should we worry about rates of cesarean delivery in South Carolina?

Webinar 2: An ounce of prevention is worth a pound of cure. Antepartum strategies to prevent primary CD

Webinar 3: The role of the labor and delivery patient care team in the safe prevention of the primary cesarean delivery

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10. Hannah et al. The Lancet, Volume 356, Issue 9239, Pages 1375 - 1383, 21 October 2000.
11. ACOG Committee Opinion #549. January 2013.

SC BIRTH OUTCOMES INITIATIVE DATA TEAM

Using Data to Support Vaginal Birth

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Senior Research Associate
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Division of Medicaid Policy Research

Medicaid Policy Research at the USC Institute for Families in Society

SOUTH CAROLINA Healthy Connections MEDICAID

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South Carolina C-Section Trends

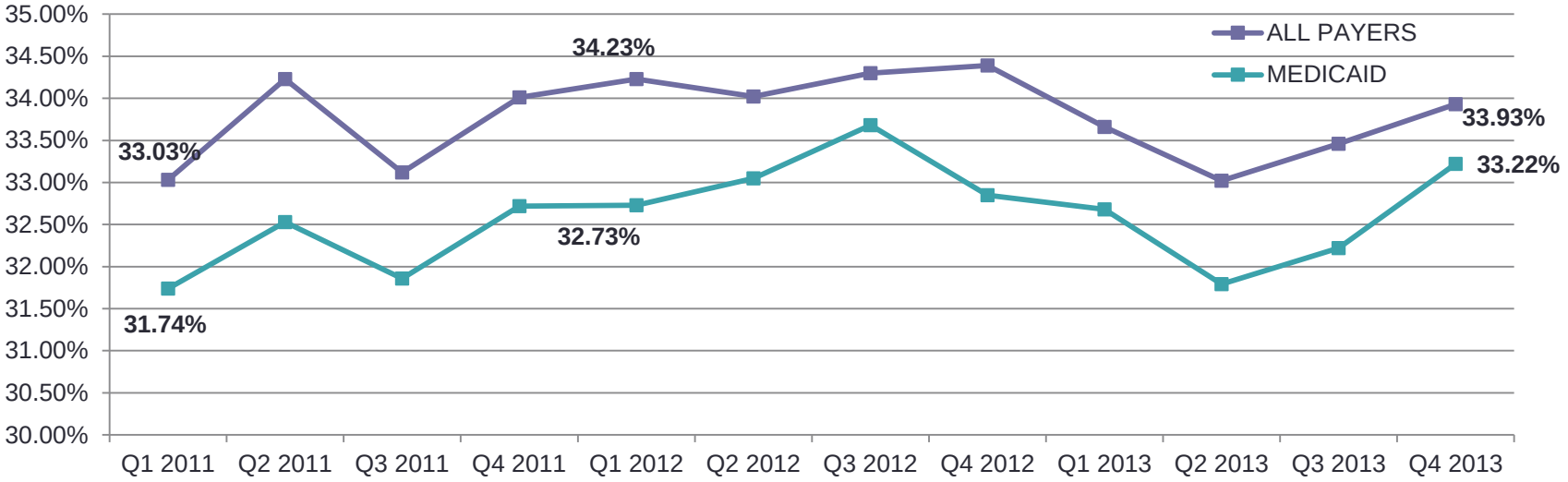
State C-Section Measures 2011-2013

C-Section Measures

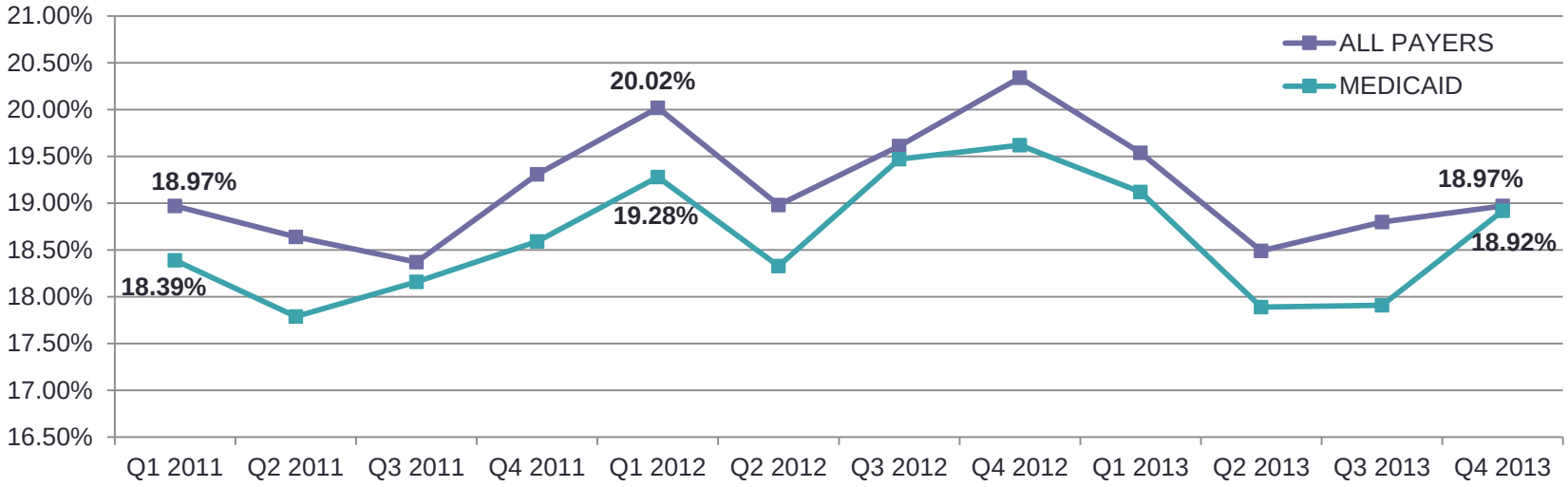
- Total C-Sections
- Total C-Sections with Exclusions Applied*
- Primary C-Sections for First-Time Mothers at 37+ Weeks Gestation
- Primary C-Sections for First-Time Mothers at 37+ Weeks Gestation with Exclusions Applied*
- Primary C-Sections at 39-40 Weeks Gestation for First-Time Mothers
- Primary C-Sections at 39-40 Weeks Gestation for First-Time Mothers with Exclusions Applied*
- Repeat C-Sections

* For the C-Section measures with exclusions applied, ICD-9 codes included in The Joint Commission *Table Number 11.09: Contraindications to Vaginal Delivery* were removed. This table is included in the *Specifications Manual for Joint Commission National Quality Measures (v2013A1)* and is part of the Perinatal Care measure set for the PC-02 measure (Cesarean Section).

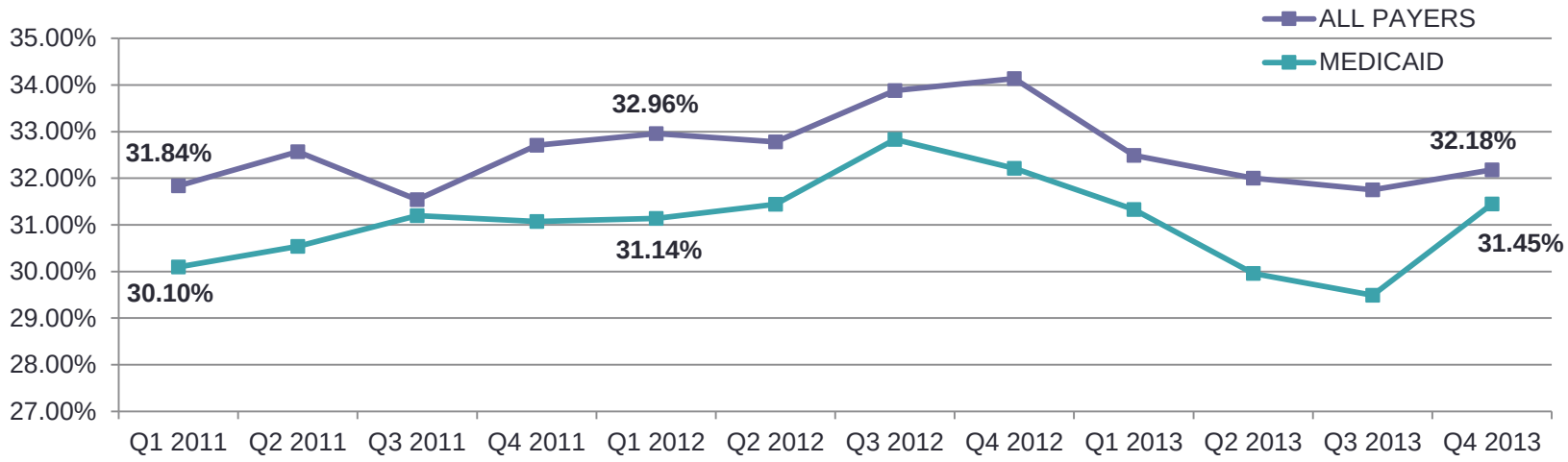
Total C-Sections



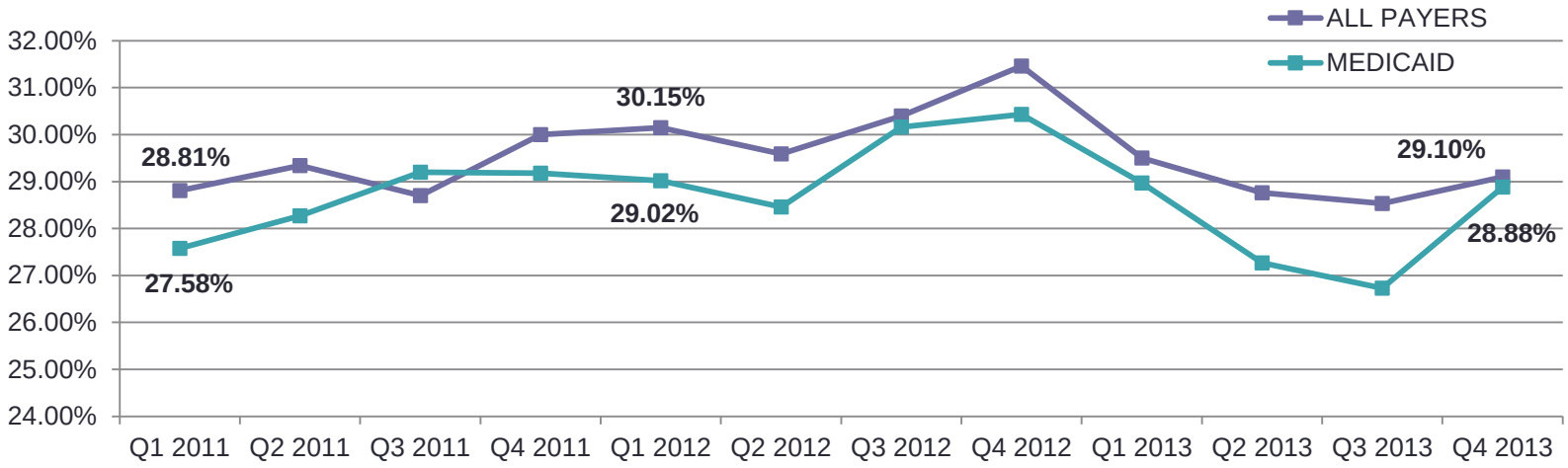
Total C-Sections with Exclusions Applied

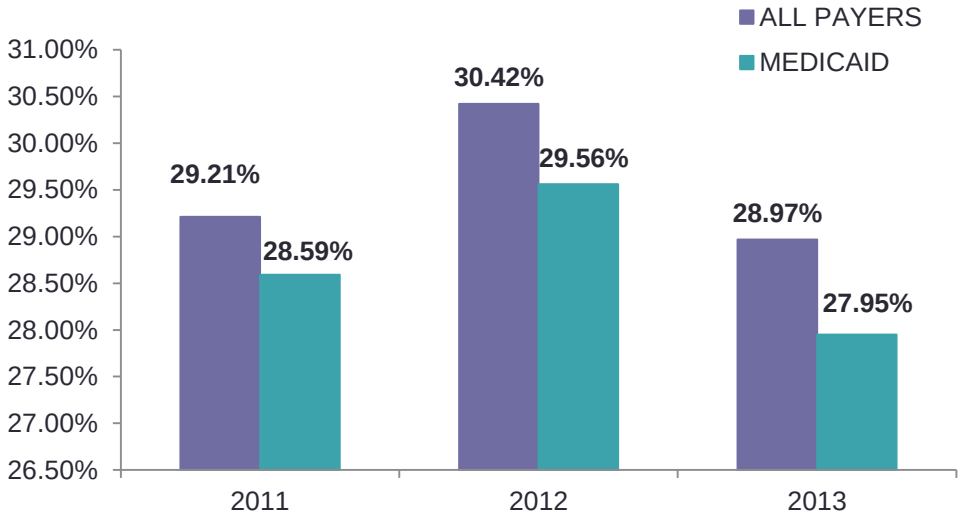


Primary C-Sections at 37+ Weeks Gestation for First-Time Mothers

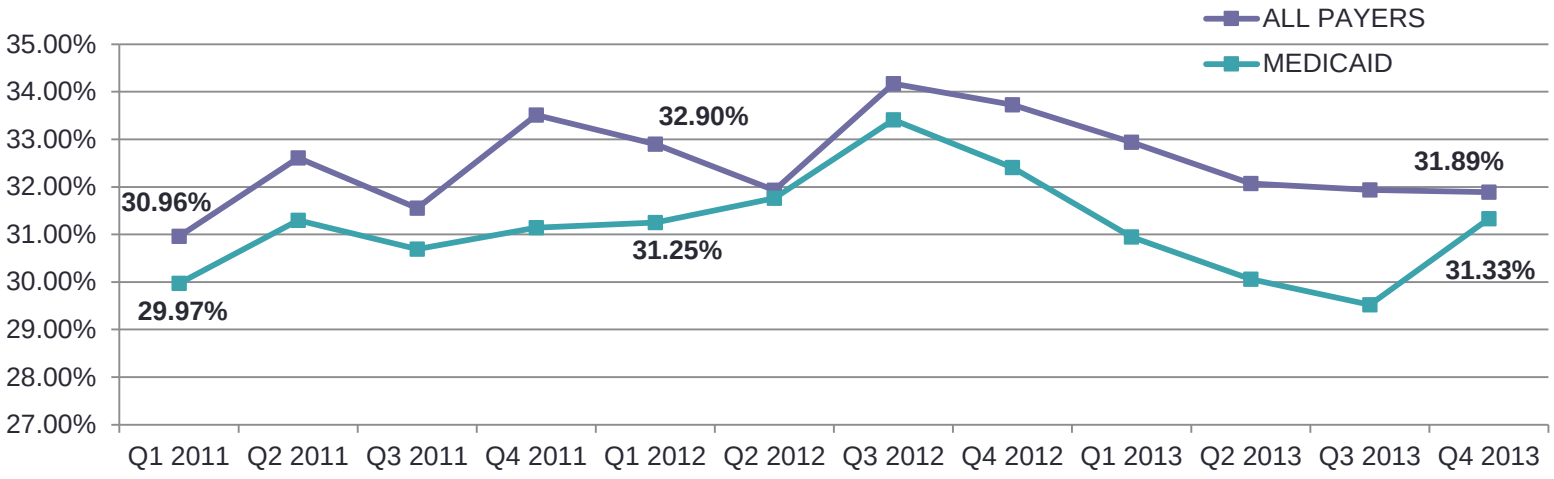


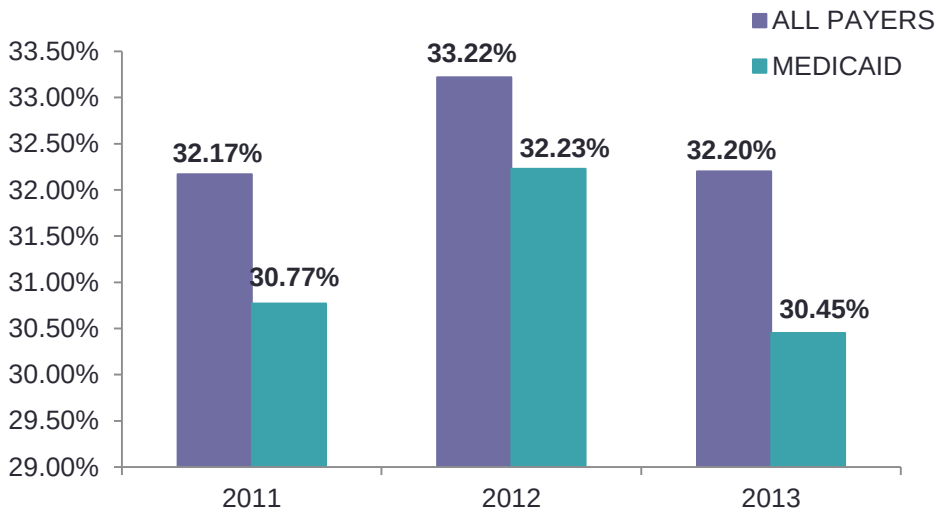
Primary C-Sections at 37+ Weeks Gestation for First-Time Mothers with Exclusions Applied



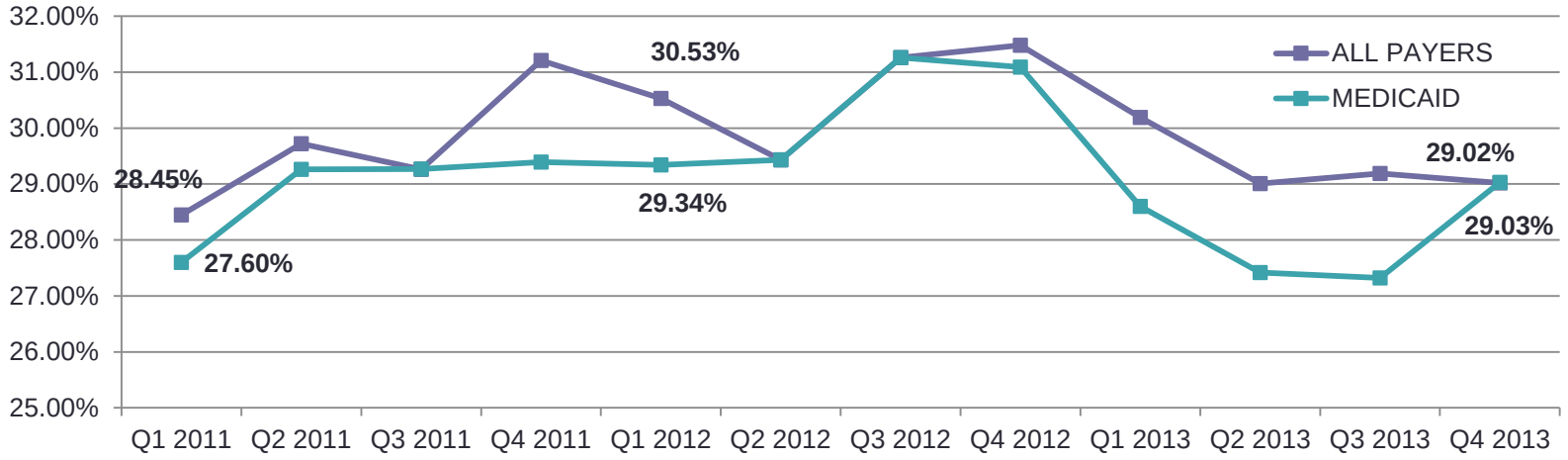


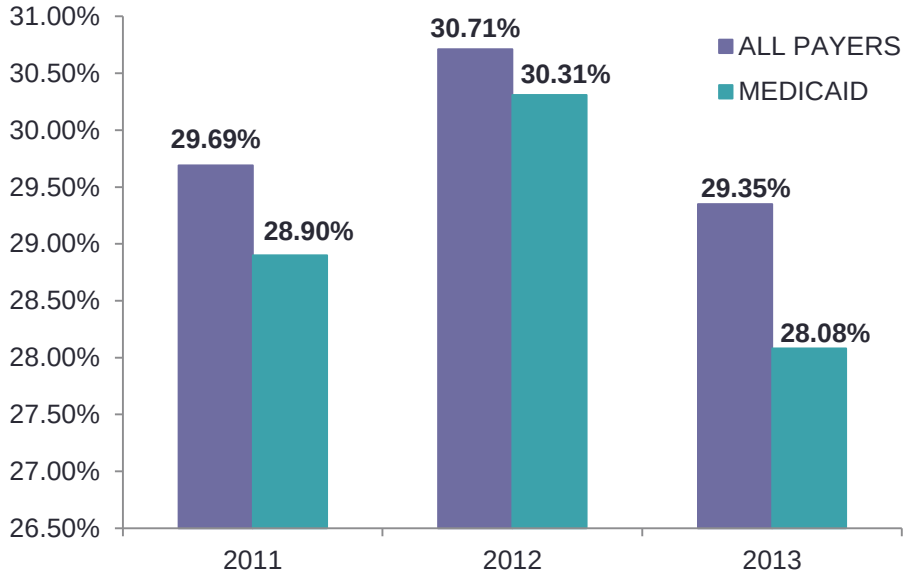
Primary C-Sections at 39-40 Weeks for First-Time Mothers



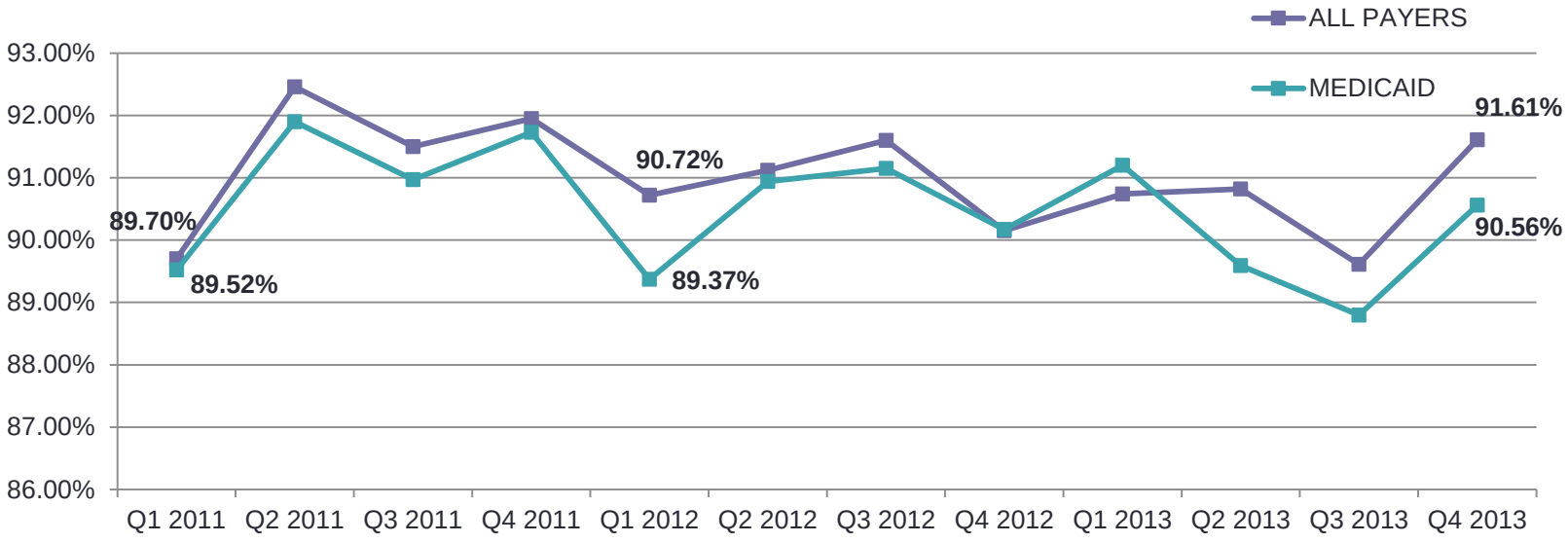


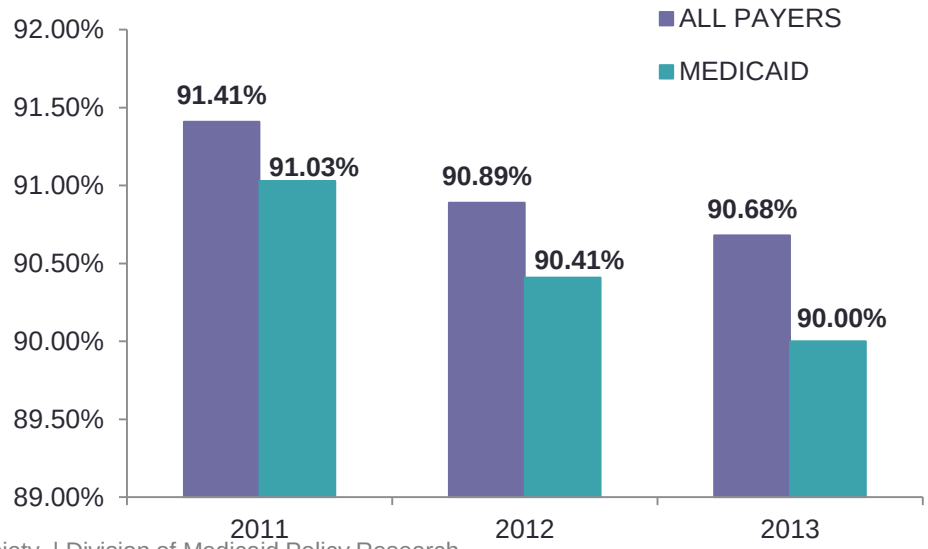
Primary C-Sections at 39-40 Weeks for First-Time Mothers with Exclusions Applied





Repeat C-Sections





Comparison of State and National Trends

- **Total C-Section:** According to the Centers for Disease Control and Prevention (Dec, 2013), in 2012, 32.8% of U.S. births were delivered by C-Section, which compares to 34.2% in 2012 and 33.5% in 2013 for SC births delivered by C-Section.

- **Primary C-Section:** The Primary C-Section rate for the 38 states, District of Columbia, and New York City that were using the revised certificate by January 1, 2012, was 21.5%. This compares to a SC Primary C-Section rate of 33.5% in 2012 and 32.1% in 2013.* (Source: CDC, Jan, 2014)

* SC percentages may vary from national reporting, as they do not include births occurring outside of a SC hospital, such as those at a freestanding birthing center or home births. Likewise, the SC Primary C-Section rate is limited to 37+ weeks gestation.

SC BOI Quarterly and Annual Hospital Report

Interpreting the data in the hospital dashboard to improve birth outcomes through quality improvement

Purpose

- Focus on supporting intended vaginal delivery
- Continue tracking progress through quarterly hospital reports with the goal of decreasing the **% of Primary C-Sections for first-time mothers overall and at 39-40 weeks gestation**

Contents

- Definitions
- Notes for the interpretation of findings
- Quarterly comparisons for a specific birthing facility and the state (summary report and data tables)
- Provided only in August: annual comparisons for a specific birthing facility and the state (summary report and data tables)
- Detailed information on The Joint Commission criteria and data sources
- Quartile information for the perinatal level of the hospital being reported

Definitions (Page 1)

- Birth Facility
- Difference
- Induction
- NICU Stays
- Pay Source
- Quarter
- Relative Percentage Change
- The Joint Commission Exclusion Criteria

DEFINITIONS USED IN THIS REPORT:

Birth Facility - SC hospital where the birth occurred. This definition only includes SC birthing hospitals and does not include freestanding birthing centers or home births.

Difference between Q4 2013 and Q1 2011 represents the difference between the percentage in Quarter 4, 2013, the last quarter of data currently available, and the percentage in Quarter 1, 2011, the first quarter of data collected. **Difference between 2013 and 2011** represents the difference between the annual percentages for these two years.

Induction - In the tables on pages 5-6 and 11-12, this measure represents all births at 37-38 weeks gestation which had the induction indicant on the vital records. In the early elective delivery tables on pages 7-8 and 13-14, inductions are defined as the following ICD-9 procedure codes: 73.01 (induction labor by artifical rupture of membranes), 73.1 (surgical induction of labor, NEC), and 73.4 (medical induction of labor).

NICU Stays represent stays in nursery level III (revenue code 0173) or IV (revenue code 0174) for deliveries without a medical indication for an induction at 37-38 weeks gestation.

Pay Source - Pay source is the expected pay source listed on the birth certificate. In order to ensure that the birth certificate data submitted to DHEC by delivering hospitals were reconciled with Medicaid eligibility, Medicaid was verified as the actual payer by linking to SC DHHS, Medicaid Claims data.

Quarter - Calendar year quarter for which the date of birth occurs

Relative percentage change provides a measure of the relative change taking into account the quantities in Q1 2011 and Q4 2013 (or 2011 and 2013). As an example, the equation used for the quarters was (Q4 2013-Q1 2011)/Q1 2011. If there were no data provided for the relative percentage change, the value for Q1 2011 was 0.00%, or there were 0 births in either Q1 2011 or Q4 2013. With the exception of the normal birthweight measure and 39+ weeks gestation measure, **a negative percentage change indicates a better outcome.**

The Joint Commission Exclusion Criteria - For the C-Section measures with exclusions applied on pages 5-6 and 11-12, ICD-9 codes included in the *Table Number 11.09: Contraindications to Vaginal Delivery* were removed. For the early elective delivery measures on pages 7-8 and 13-14, ICD-9 codes included in *Table Number 11.07: Conditions Possibly Justifying Elective Delivery Prior to 39 Weeks Gestation* were removed. These tables are included in the *Specifications Manual for Joint Commission National Quality Measures (v2013A1)* and are part of the Perinatal Care measure set for measures PC-01 (elective delivery) and PC-02 (Cesarean Section). For more information on these criteria, please see **Appendix A**.

Notes for the Interpretation of Findings (Page 2)

- Number of deliveries
- Hospitals serving fewer patients
- Comparing two stand-alone quarters

NOTES FOR THE INTERPRETATION OF FINDINGS:

• The number of deliveries occurring across each quarter varies. This variation may account for inflated differences from Quarter 1, 2011 to Quarter 4, 2013 in hospitals with fewer deliveries. Likewise, the number of deliveries used to calculate each of the measures may vary based on whether the measure was restricted to certain gestational weeks or exclusions were applied. This report compares **Quarter 1, 2011**, prior to the start of the Birth Outcomes Initiative **(525 births, 301 to Medicaid recipients)**, to **Quarter 4, 2013**, the last quarter of data available from linked datasets **(577 births, 291 to Medicaid recipients)**, and **2011 (2,218 births, 1,246 to Medicaid recipients)** to **2013 (2,325 births, 1,267 to Medicaid recipients)**.

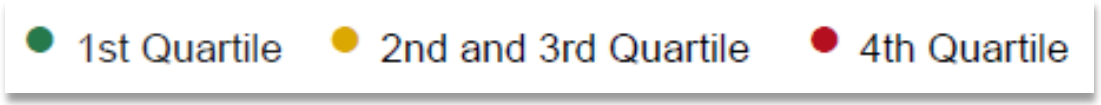
• For hospitals serving fewer patients, 0.00% may represent that there were zero births in the quarter or year matching the measure criteria rather than an actual value of zero for a specific table result. For instance, if a hospital has a 0% Primary C-Section rate in a quarter, this may be because there were 0 deliveries that qualified for a Primary C-Section, rather than an actual decrease in the percentage of Primary C-Sections.

• It is important to remember that when comparing two stand-alone quarters rather than annual trends (or other longer time periods), differences across quarters in the number of deliveries and patient characteristics, such as their level of risk, may exist. Therefore, prior to targeting interventions based on data from a specific quarter, each quarter's data should be reviewed.

Summary of Results (Pages 4 & 10)

- These summary reports provide information on how your hospital compared to hospitals at the same perinatal level for the following measures for all payers in Q4 2013 or 2013:
  - Elective Inductions at 37-38 Weeks
  - Joint Commission Early Elective Delivery Measure
  - Primary C-Sections at 37+ weeks with the exclusions applied
  - Primary C-Sections at 39-40 weeks with the exclusions applied

- **Quartiles:** The quartiles of a ranked set of data values divide the data set into four equal groups. Typically, each group represents 25% of hospitals for each perinatal level.
  - The fourth Quartile represents the highest 25% of hospitals, or the highest set of percentages for a specific measure.
  - The first Quartile represents the lowest 25%, or the lowest set of percentages for a specific measure.



Hospital Results (Pages 5, 7, 11, & 13)

Report the following measures:

- Birthweight
- Gestation
- Overall Inductions at 37-38 Weeks
- Primary C-Sections at 37+ weeks with and without exclusions applied
- Primary C-Sections at 39-40 weeks with and without exclusions applied
- Repeat C-Sections
- Total C-Sections with and without exclusions applied
- Elective Inductions*
- NICU Stays Among Deliveries at 37-38 Weeks (for deliveries with and without an induction and overall)**
- The Joint Commission Early Elective Delivery (PC-01) Measure*

* Disclaimer: Exclusions cannot be made for active labor, spontaneous rupture of membranes, clinical trials and prior uterine surgery. For the purposes of the Hospital Engagement Network, some facilities have reviewed this DHEC/ORS elective delivery data and made edits where necessary to account for the exclusions mentioned above. The rates presented in this data report are not reflective of the hospital's research of the cases that met exclusion criterion (see http://manual.jointcommission.org/releases/TJC2013A/MIF0166.html).

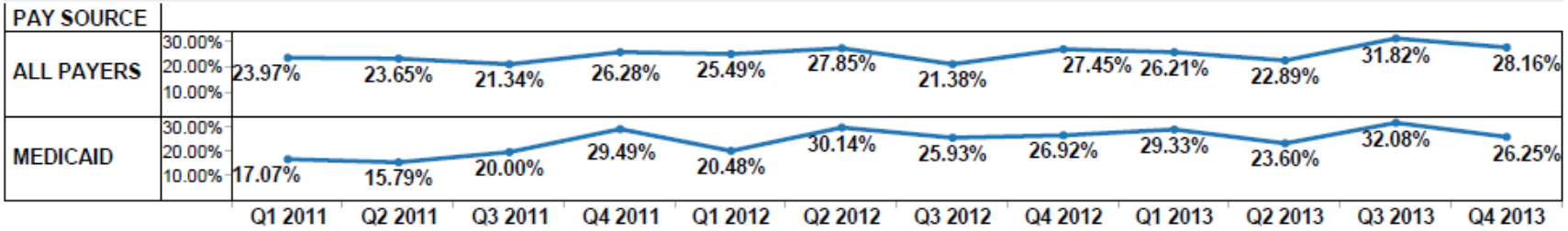
** Based on the Joint Commission criteria, this measure represents NICU stays among patients who did not have a medical indication for an induction and did not have an induction.

Hospital Results

SAMPLE HOSPITAL
A COMPARISON OF QUARTER 1, 2011 (JANUARY - MARCH, 2011) TO QUARTER 4, 2013 (OCTOBER - DECEMBER, 2013)

		Q1 2011		Q4 2013		Difference Between Q4 2013 and Q1 2011		Relative Percentage Change (Qtrs)	
MEASURE*	BIRTH OUTCOME	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID
BIRTHWEIGHT	VERY LOW BIRTHWEIGHT %	7.81%	9.63%	8.15%	7.22%	0.34%	-2.41%	4.35%	-25.03%
	MODERATELY LOW BIRTHWEIGHT %	12.95%	15.61%	15.08%	19.24%	2.13%	3.63%	16.45%	23.25%
	NORMAL BIRTHWEIGHT %	79.24%	74.75%	76.78%	73.54%	-2.46%	-1.21%	-3.10%	-1.62%
GESTATION	<37 WEEKS GESTATION %	24.38%	28.24%	24.26%	25.77%	-0.12%	-2.47%	-0.49%	-8.75%
	37 OR 38 WEEKS GESTATION %	32.00%	30.56%	27.90%	28.87%	-4.10%	-1.69%	-12.81%	-5.53%
	39+ WEEKS GESTATION %	43.62%	41.20%	47.83%	45.36%	4.21%	4.16%	9.65%	10.10%
INDUCTIONS	INDUCTIONS AT 37-38 WEEKS %	12.27%	10.99%	20.89%	16.87%	8.62%	5.88%	70.25%	53.50%
PRIMARY C-SECTIONS FOR FIRST-TIME MOTHERS	PRIMARY C-SECTION %	27.88%	19.78%	31.52%	28.05%	3.64%	8.27%	13.06%	41.81%
	PRIMARY C-SECTION % w/ exclusions	23.97%	17.07%	28.16%	26.25%	4.19%	9.18%	17.48%	53.78%
	PRIMARY C-SECTION 39-40 Weeks %	26.17%	20.75%	31.09%	28.85%	4.92%	8.10%	18.80%	39.04%
	PRIMARY C-SECTION 39-40 Weeks % w/ excl.	22.92%	17.39%	28.32%	26.00%	5.40%	8.61%	23.56%	49.51%
REPEAT C-SECTIONS	REPEAT C-SECTION %	78.79%	75.76%	80.30%	66.67%	1.51%	-9.09%	1.92%	-12.00%
TOTAL C-SECTIONS	TOTAL C-SECTION %	30.98%	24.07%	32.04%	28.24%	1.06%	4.17%	3.42%	17.32%
	TOTAL C-SECTION % w/ exclusions	17.82%	13.45%	19.66%	17.61%	1.84%	4.16%	10.33%	30.93%

Percentage of Primary C-Sections for First-Time Mothers with Exclusions Removed

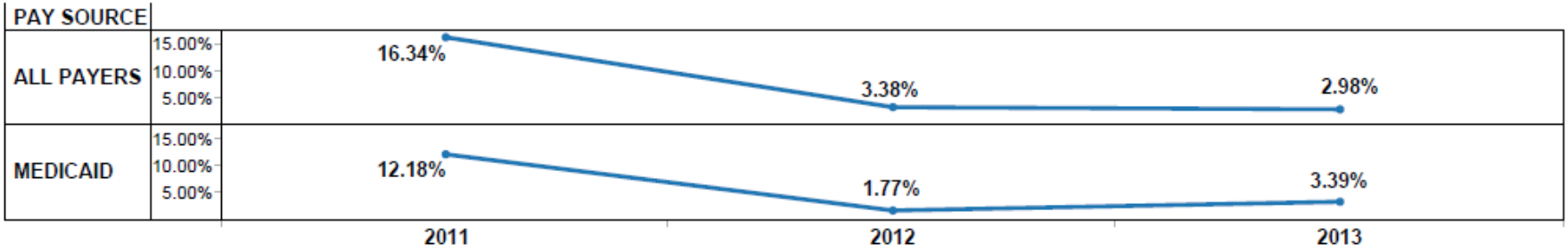


Example Hospital Results:
Early Elective Delivery Measures

SAMPLE HOSPITAL: EARLY ELECTIVE DELIVERY MEASURES
A COMPARISON OF 2011 TO 2013

EARLY ELECTIVE DELIVERY MEASURE*	BIRTH OUTCOME	2011		2013		Difference Between 2013 and 2011		Relative Percentage Change (Years)	
		ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID
ELECTIVE INDUCTIONS AT 37-38 WEEKS GESTATION	Elective Induction %	16.34%	12.18%	2.98%	3.39%	-13.36%	-8.79%	-81.76%	-72.17%
NICU STAYS AMONG DELIVERIES AT 37-38 WEEKS GESTATION WITHOUT A MEDICAL INDICATION FOR AN INDUCTION	NICU, Induction %	8.00%	10.53%	14.29%	25.00%	6.29%	14.47%	78.63%	137.42%
	NICU, No Induction %**	10.16%	10.22%	4.39%	3.51%	-5.77%	-6.71%	-56.79%	-65.66%
	NICU, Total %	9.80%	10.26%	4.68%	4.24%	-5.12%	-6.02%	-52.24%	-58.67%
THE JOINT COMMISSION MEASURE	The Early Elective Delivery (PC-01) Measure %	36.93%	27.56%	20.43%	19.49%	-16.50%	-8.07%	-44.68%	-29.28%

Percentage of Elective Inductions at 37-38 Weeks Gestation

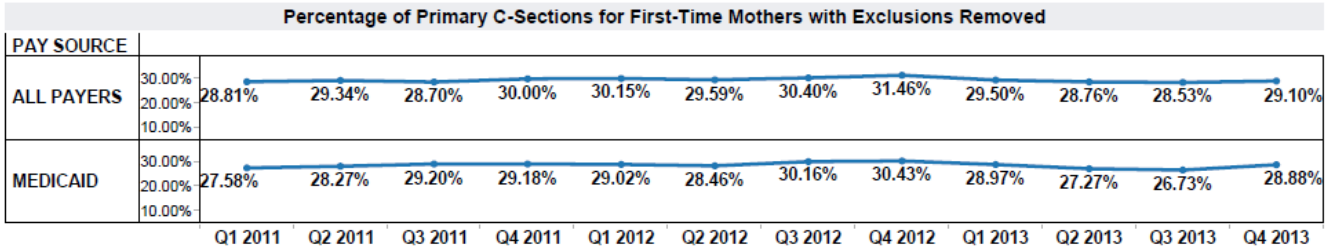


State Results (Pages 6, 8, 12, & 14)

The same tables and charts are provided for All SC Birthing Facilities so that a specific hospital's results may be compared to state-level results.

ALL SC BIRTHING HOSPITALS
A COMPARISON OF QUARTER 1, 2011 (JANUARY - MARCH, 2011) TO QUARTER 4, 2013 (OCTOBER - DECEMBER, 2013)

		Q1 2011		Q4 2013		Difference Between Q4 2013 and Q1 2011		Relative Percentage Change (Qtrs)	
MEASURE*	BIRTH OUTCOME	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID	ALL PAYERS	MEDICAID
BIRTHWEIGHT	VERY LOW BIRTHWEIGHT %	1.89%	2.18%	1.98%	1.91%	0.09%	-0.27%	4.76%	-12.39%
	MODERATELY LOW BIRTHWEIGHT %	7.84%	9.30%	8.19%	9.41%	0.35%	0.11%	4.46%	1.18%
	NORMAL BIRTHWEIGHT %	90.27%	88.52%	89.83%	88.68%	-0.44%	0.16%	-0.49%	0.18%
GESTATION	<37 WEEKS GESTATION %	11.32%	12.36%	11.85%	12.56%	0.53%	0.20%	4.68%	1.62%
	37 OR 38 WEEKS GESTATION %	29.70%	29.85%	25.65%	26.24%	-4.05%	-3.61%	-13.64%	-12.09%
	39+ WEEKS GESTATION %	58.98%	57.79%	62.50%	61.20%	3.52%	3.41%	5.97%	5.90%
INDUCTIONS	INDUCTIONS AT 37-38 WEEKS %	23.82%	23.37%	19.39%	19.06%	-4.43%	-4.31%	-18.60%	-18.44%
PRIMARY C-SECTIONS FOR FIRST-TIME MOTHERS	PRIMARY C-SECTION %	31.84%	30.10%	32.18%	31.45%	0.34%	1.35%	1.07%	4.49%
	PRIMARY C-SECTION % w/ exclusions	28.81%	27.58%	29.10%	28.88%	0.29%	1.30%	1.01%	4.71%
	PRIMARY C-SECTION 39-40 Weeks %	30.96%	29.97%	31.89%	31.33%	0.93%	1.36%	3.00%	4.54%
	PRIMARY C-SECTION 39-40 Weeks % w/ excl.	28.45%	27.60%	29.02%	29.03%	0.57%	1.43%	2.00%	5.18%
REPEAT C-SECTIONS	REPEAT C-SECTION %	89.70%	89.52%	91.61%	90.56%	1.91%	1.04%	2.13%	1.16%
TOTAL C-SECTIONS	TOTAL C-SECTION %	33.03%	31.74%	33.93%	33.22%	0.90%	1.48%	2.72%	4.66%
	TOTAL C-SECTION % w/ exclusions	18.97%	18.39%	18.97%	18.92%	0.00%	0.53%	0.00%	2.88%



Appendices

- **Appendix A:** Detailed Information about The Joint Commission Criteria
- **Appendix B:** Data Sources
  - SC DHEC, Division of Biostatistics, Birth Certificate Data
  - Linkage of the UB-04 all-payer database and the Vital Records birth file
  - All data sources are linked to Medicaid recipient records.
- **Appendix C:** Quartile information for the hospital summary reports
  - Minimum
  - First Quartile
  - Median
  - Third Quartile
  - Maximum

For more information:

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Risks and Benefits of Cesarean Delivery

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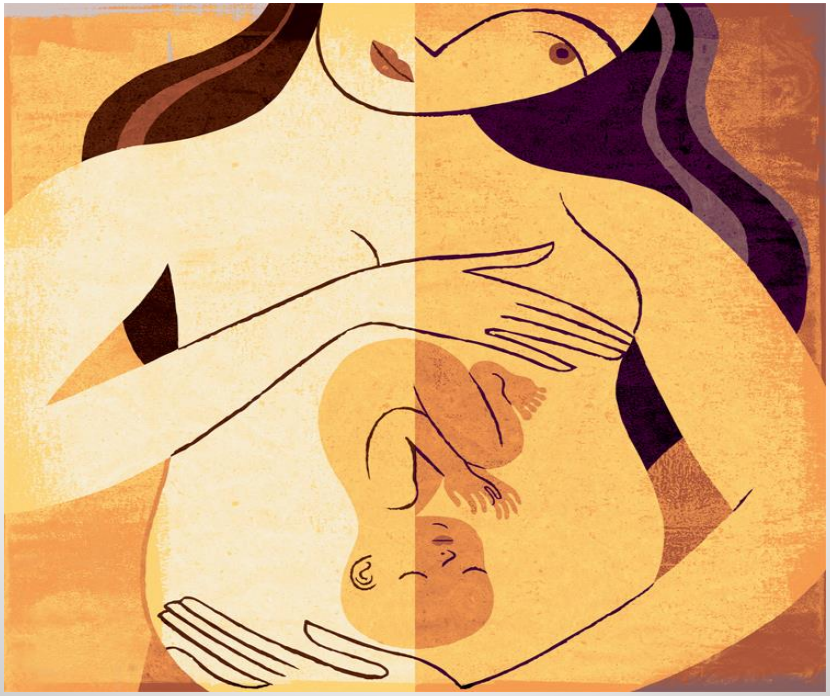
Professor and Department Chair
Obstetrics and Gynecology
University Of South Carolina School Of Medicine



Risks and Benefits of Cesarean Delivery

Learning Objectives

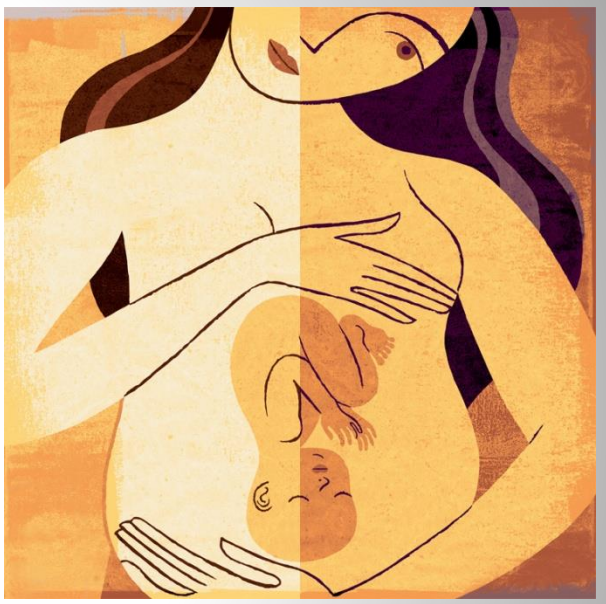
1. State the trends in Cesarean delivery
2. List the indications for Cesarean delivery
3. Describe the risks and benefits for the mother and the fetus
4. State the complications of Cesarean delivery

Cesarean: An evolving role

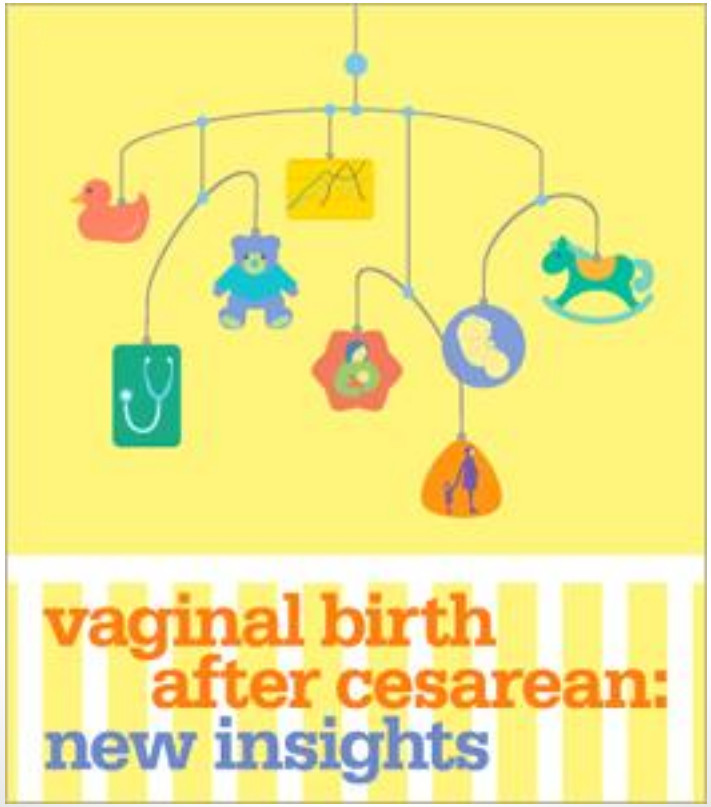
- **Past**
  - Post-mortem Cesarean, forceps, breech vaginal deliveries
- **Present**
  - 29.1% Cesarean rate in 2004, most common major abdominal surgery, limited information of risks and benefits
  - 31.1% in 2006, continues to rise
- **Future**
  - research: focus, resources, and meaningful data

NIH State of the Science Conference on CDMR

- March 27-28, 2006
- March 29, 2006, draft report at NIH website
- June 2006, published in the Green Journal



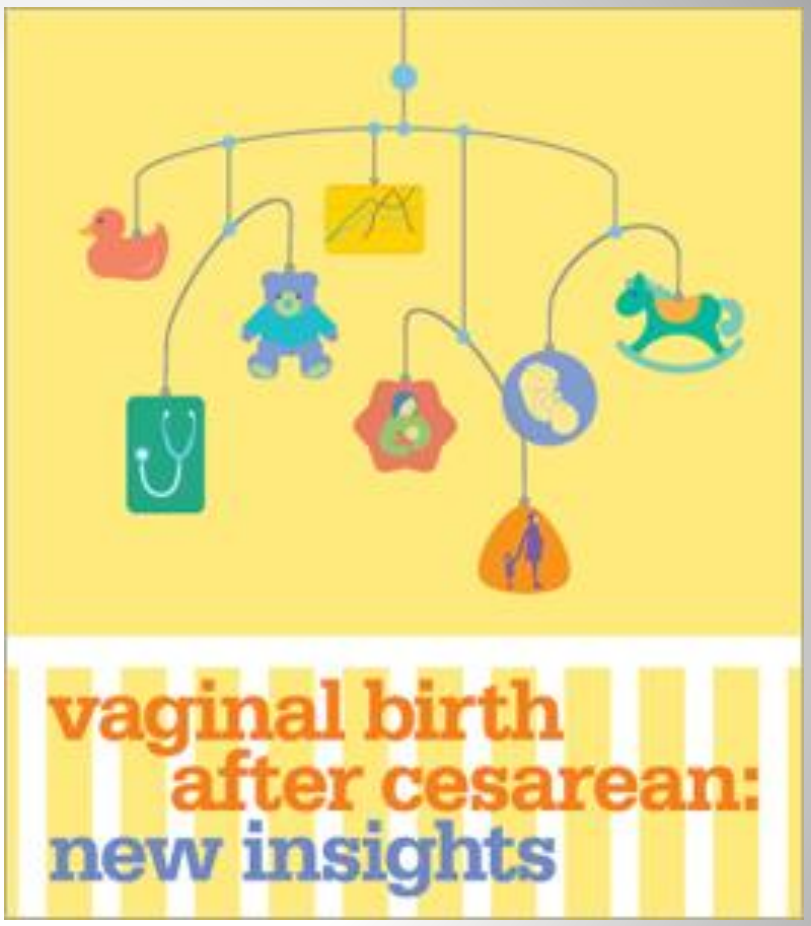
NIH Consensus Development Conference Statement on



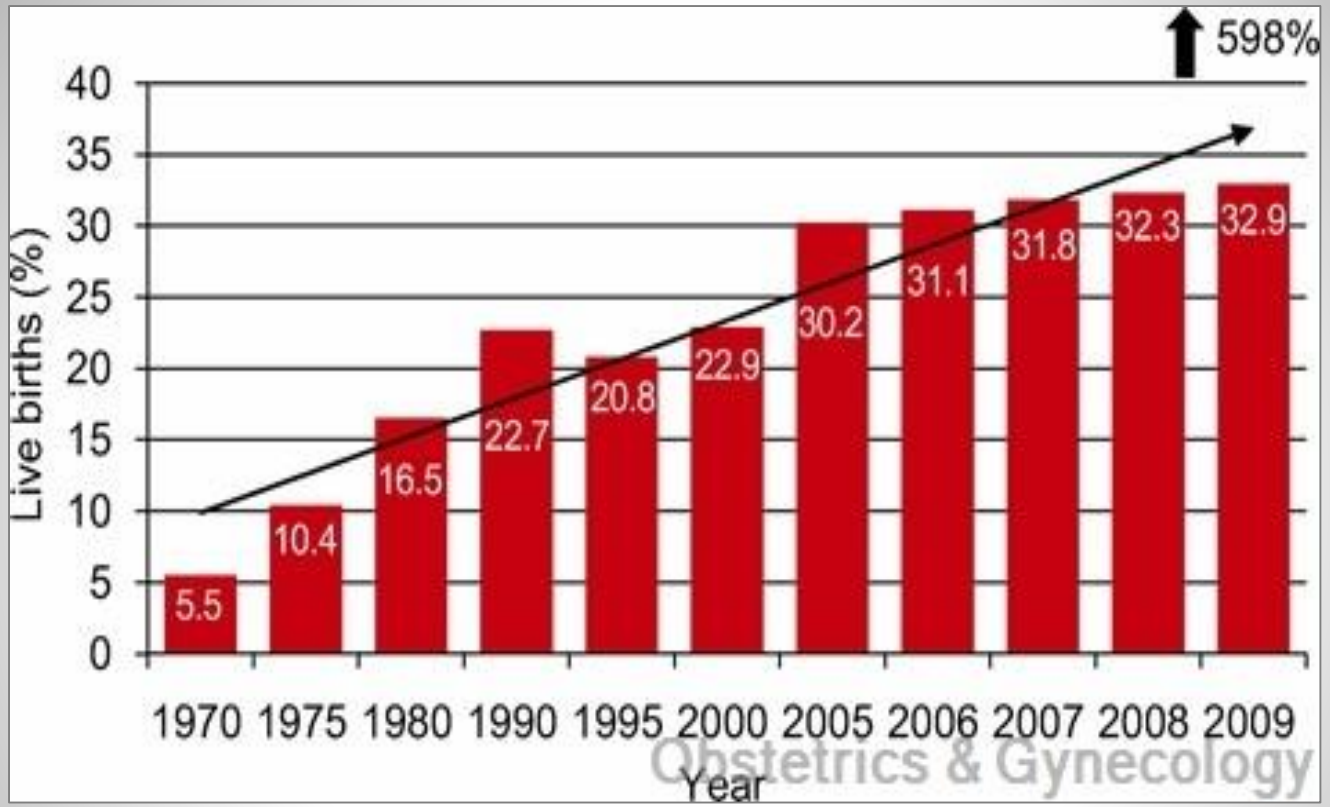
NIH Consensus Development Conference Statement

- **March 2010**

- 15 member panel
- 20 experts from related fields presented evidence
- Systematic review of evidence
- http://consensus.nih.gov



Cesarean Deliveries are Rising!



Cesarean delivery rates from 1970 to 2009. (Data from http://www.cdc.gov/nchs/nvss.htm , courtesy of Caroline Signore, MD, MPH.).Scott. VBAC: A Common-Sense Approach. Obstet Gynecol 2011.

Scott, James R.
Obstetrics & Gynecology. 118(2, Part 1):342-350, August 2011.
doi: 10.1097/AOG.0b013e3182245b39

Cesarean Deliveries are Rising!

- Suspected Fetal Compromise
- Arrest of labor
- Fetal malpresentation
- Continuous electronic FHR monitor
  - Has not improved perinatal outcomes
  - Has not lowered the cerebral palsy rates

Cesarean Deliveries are Rising!

- Non obstetric indications
- Some women perceive CD as better
  - Easier
  - More convenient
  - Cesarean delivery on maternal request (CDMR)

Factors Responsible for Increasing Cesarean Deliveries

- **Obstetrical Factors**

  Increased primary cesarean delivery rate

  – Failed induction and increased use of induction of labor
  – Decreased use of operative vaginal delivery
  – Increased macrosomia and cesarean delivery for macrosomia
  – Decline in vaginal breech delivery

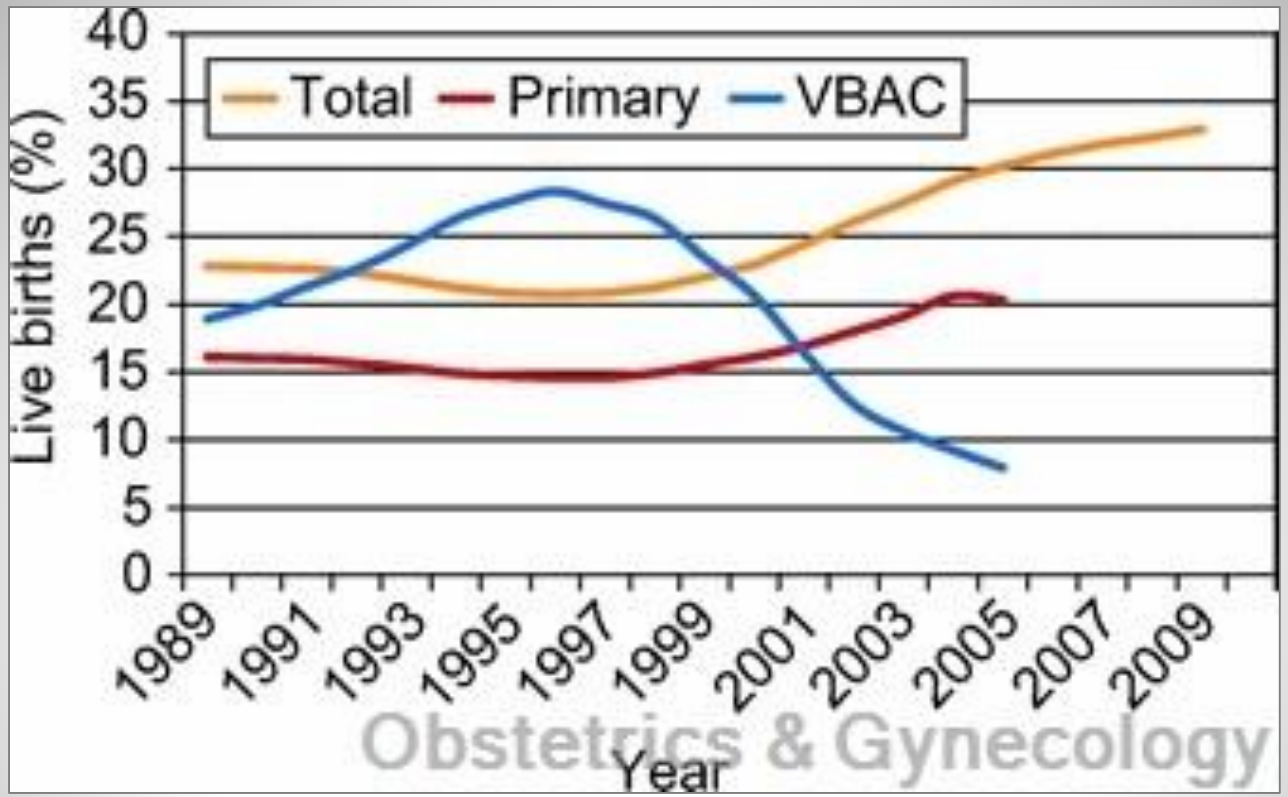
  Increased repeat cesarean delivery rate

  – Decreased use of vaginal birth after cesarean delivery (VBAC)

- **Maternal Factors**
  - Increased proportion of women older than 35 years
  - Increased proportion of nulliparous women
  - Increased primary cesarean deliveries on maternal request

- **Physician Factors**
  - Malpractice litigation concerns

VBAC has Declined!



Rates of total cesarean deliveries (1998–2009), primary cesarean deliveries (1998–2007), and vaginal births after cesarean (VBAC) (1998 to 2007). (Data from http://www.cdc.gov/nchs/nvss.htm , courtesy of Caroline Signore, MD, MPH.).Scott. VBAC: A Common-Sense Approach. Obstet Gynecol 2011.

Scott, James R.
Obstetrics & Gynecology. 118(2, Part 1):342-350, August 2011.
doi: 10.1097/AOG.0b013e3182245b39

VBAC has Declined

- 28% in 1996
- <10% in 2006
- One third of hospitals and one half of MDs cannot comply with “immediate availability”
- Between 2003 and 2006, 26% ACOG fellows stopped offering TOLAC

When Compared to Vaginal Delivery, Cesarean Delivery

- More Blood loss
- Longer Recovery
- More neonatal respiratory distress
- More maternal bladder and ureteral injuries
- More postpartum infections
- More Thromboembolism
- More rehospitalization

Common Indications for Cesarean Delivery

- **Maternal-Fetal**
  - **Cephalopelvic disproportion**
  - Placental abruption
  - Placenta previa
  - **Repeat cesarean delivery**
  - Cesarean delivery on maternal request
- **Maternal**
  - Specific cardiac disease (e.g., Marfan syndrome, unstable coronary artery disease)
  - Specific respiratory disease (e.g., Guillain-Barré Syndrome)
  - Conditions associated with increased intracranial pressure
  - Mechanical obstruction of the lower uterine segment (tumors, fibroids)
  - Mechanical vulvar obstruction (e.g. extensive condylomata)
- **Fetal**
  - Non-reassuring fetal status
  - Breech or transverse lie
  - maternal herpes
  - Congenital anomalies

Complications of Cesarean Delivery

- **Intraoperative complications**

- Uterine lacerations
- Bladder injury
- Ureteral injury
- GI tract injury
- Uterine atony
- Placenta accreta

Risk of Placenta Accreta

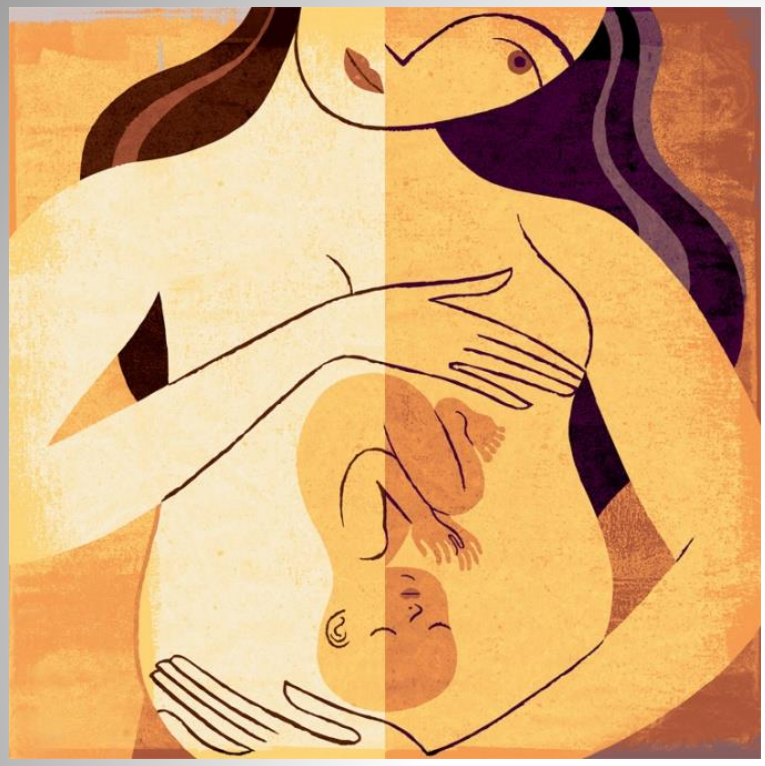
Cesarean #	Clark, 1985 Previa %	Clark 1985 Previa-accreta %	MFMU, 2006 Previa-accreta %
Primary	0.26	5	3.3
Second	0.65	24	11
Third	1.8	47	40
Fourth	3	40	61
Fifth	10	67	67
≥ *Sixth*	-	-	-

Complications of Cesarean Delivery

- Maternal mortality
  - numbers vary

Maternal postoperative morbidity

- endomyometritis
- wound infection
- thromboembolic disease
- septic pelvic thrombophlebitis



Prevention of the first Cesarean Section is the KEY!!

SOUTH CAROLINA BIRTH OUTCOMES INITIATIVE

SUPPORTING VAGINAL BIRTH

RICK FOSTER, MD

SENIOR VICE PRESIDENT
QUALITY & PATIENT SAFETY
SOUTH CAROLINA HOSPITAL ASSOCIATION

SC BIRTH OUTCOMES INITIATIVE

- a public/private partnership led by DHHS focused on improving health and healthcare for all moms and babies in our state
- led by a core vision team w/ senior representatives from key stakeholders
- workgroups for each major improvement aim
- unified data management team supporting each workgroup
- strong focus on shared accountability and savings

SC BOI- SPECIFIC WORKGROUPS

- care coordination: LARC coverage; post-partum checklist; standardized 17P coverage
- quality and patient safety: EED; SVB; peri-partum immunizations; neonatal QI initiatives
- health disparities: Centering Pregnancy
- mental and behavioral health: SBIRT and NAS
- breastfeeding awareness/promotion: Baby Friendly initiative (6 hospitals- >21% births); Human Milk Bank
- data management/support: quarterly hospital performance dashboards

SC BOI QUALITY AND PATIENT SAFETY WORKGROUP

Reduction of Early Elective Deliveries prior to 39 Weeks Initiative

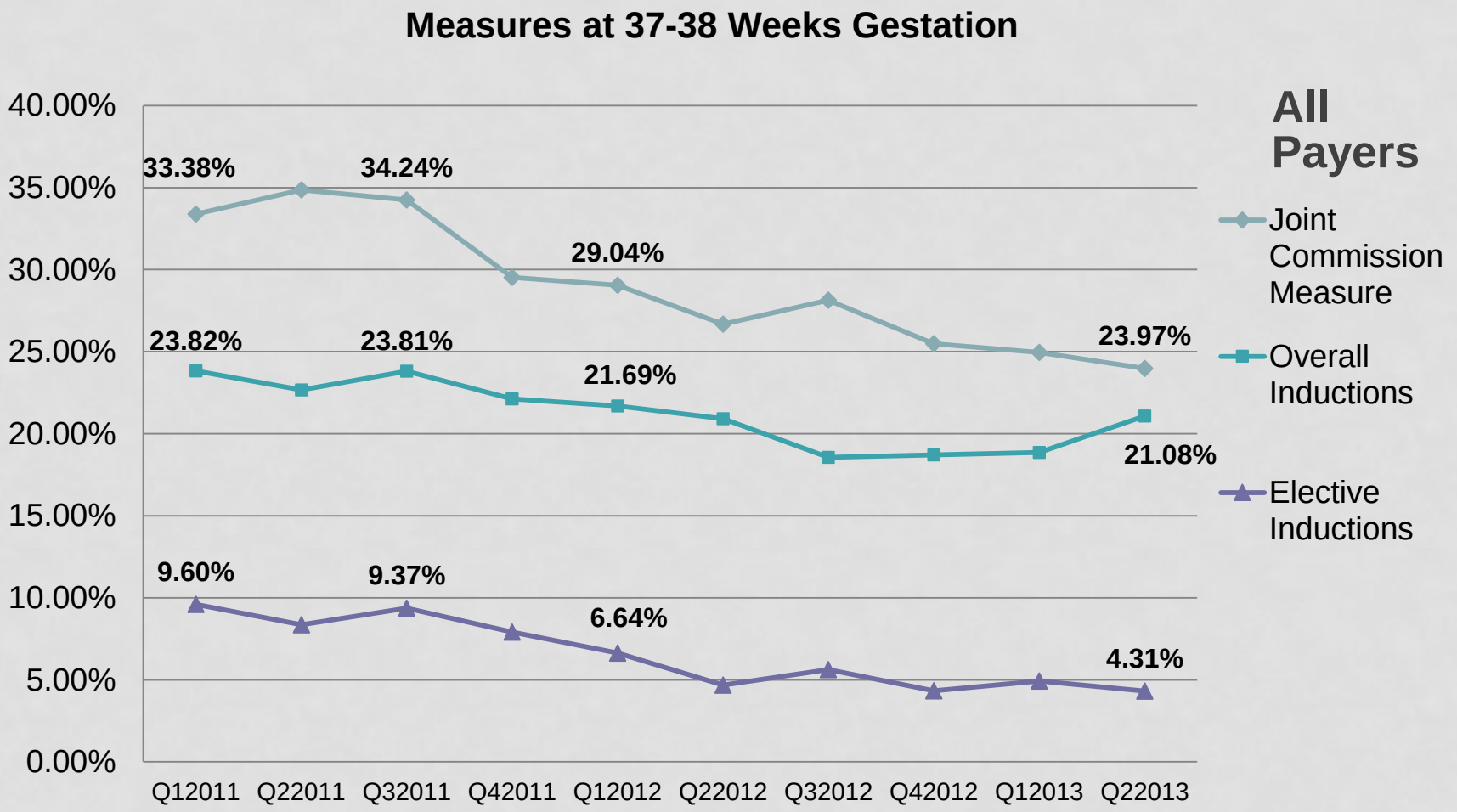
↓

Supporting Vaginal Birth → Reducing Primary C-Sections Initiative

↓

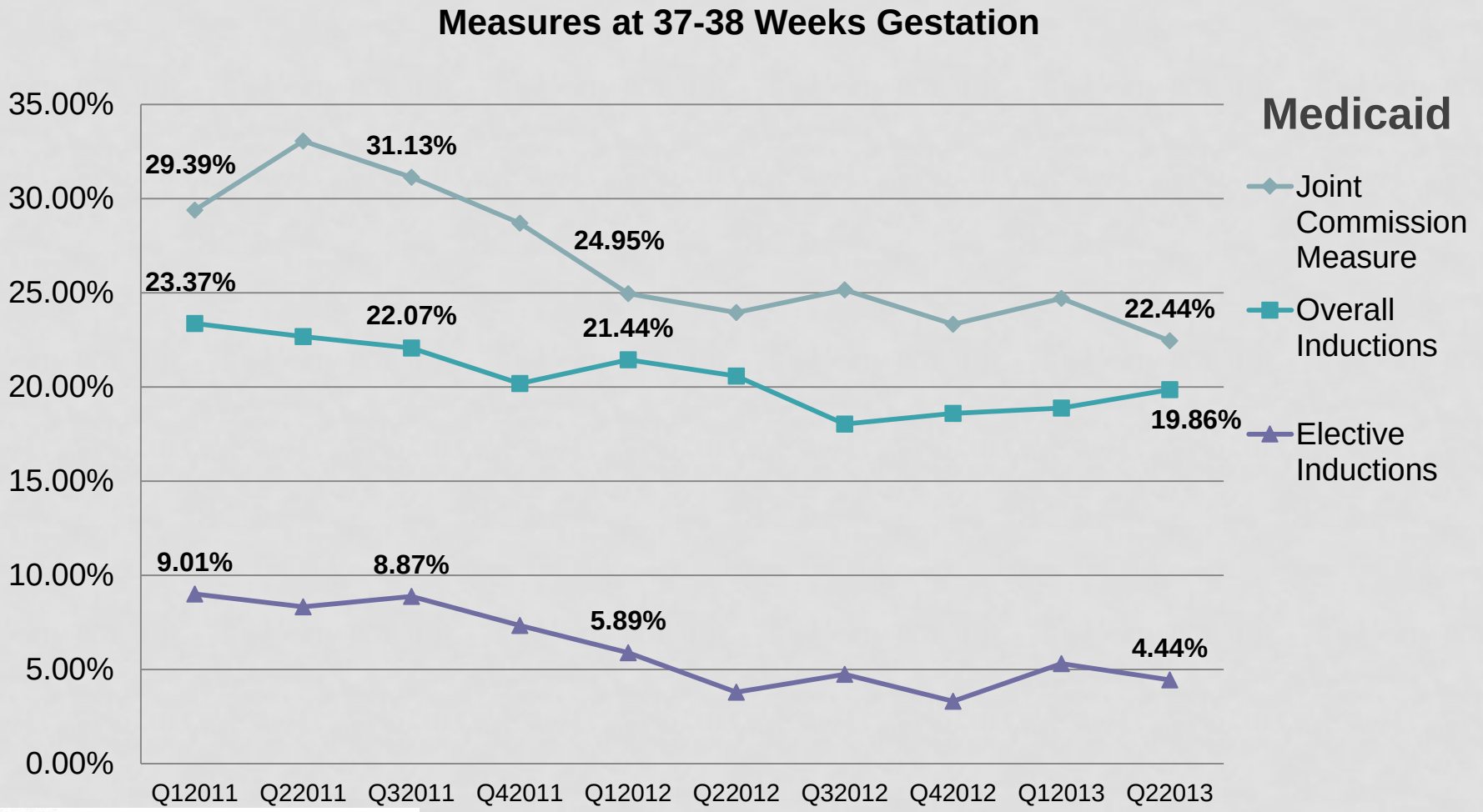
Safe, evidence-based peripartum care

EARLY ELECTIVE DELIVERIES: ALL PAYERS



Medicaid Policy Research at the USC Institute for Families in Society

EARLY ELECTIVE DELIVERIES: MEDICAID



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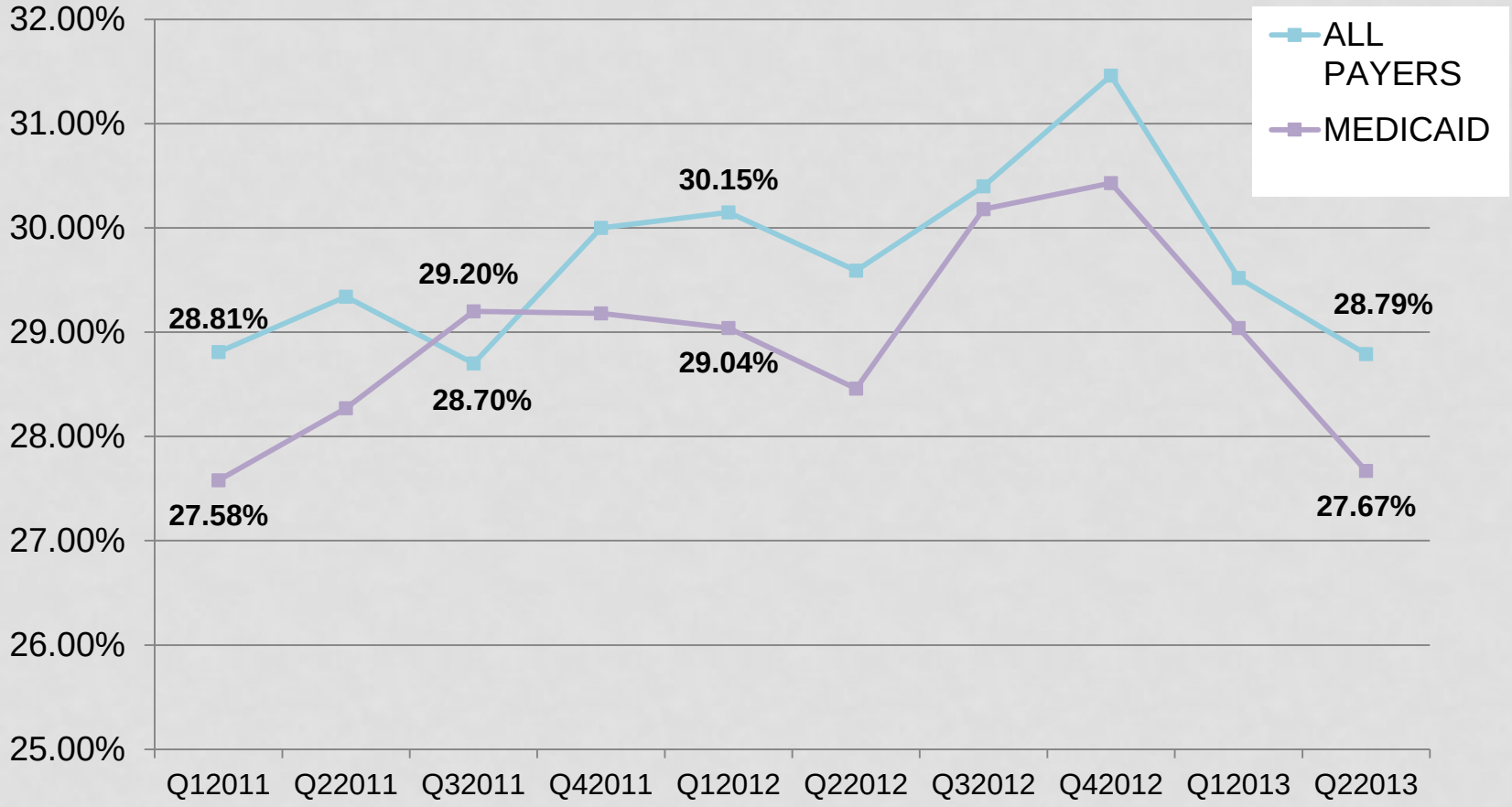
PRIMARY C-SECTIONS FOR FIRST-TIME MOTHERS WITH EXCLUSIONS REMOVED



Medicaid Policy Research
at the USC Institute for Families in Society

PRIMARY REFERENCES FOR SAFE CESAREAN REDUCTION WORK

- ACOG/SMFM Consensus Statement "Safe Prevention of the Primary Cesarean Delivery"
- CMQCC White Paper: Cesarean Deliveries, Outcomes, and Opportunities for Change in California
- Preventing the First Cesarean Delivery: Summary of a joint *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, SMFM, and ACOG workshop
- The Joint Commission PC-02 Measure – Cesarean Section

SC BOI 2014 SURVEY OF SC BIRTHING HOSPITALS

31 of 46 hospitals participated

Goal:

- To gather baseline information on SC hospital practices mentioned in the reference documents
- To help guide content development for webinars and other education
- To assess hospital barriers and readiness for this work

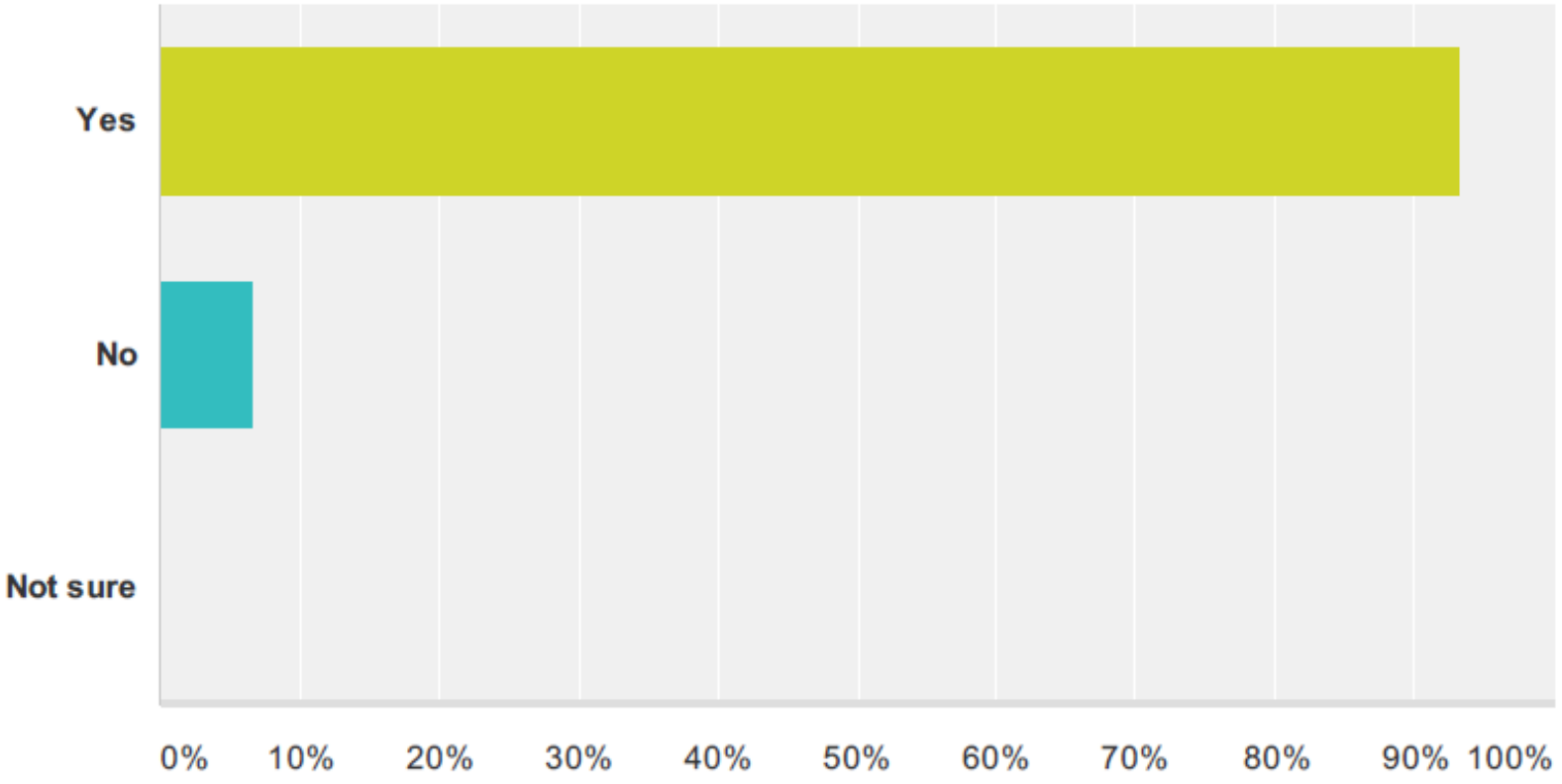
2014 SURVEY OF SC BIRTHING HOSPITALS

Topics :

- Inductions before and after 39 weeks gestation
- Use of Bishop score
- Electronic fetal monitoring training
- Use of doulas for labor support
- Operative vaginal delivery practices
- VBAC (Vaginal Birth after Cesarean) capabilities
- Current strategies to reduce primary C-Sections
- Challenges to reducing primary C-Sections

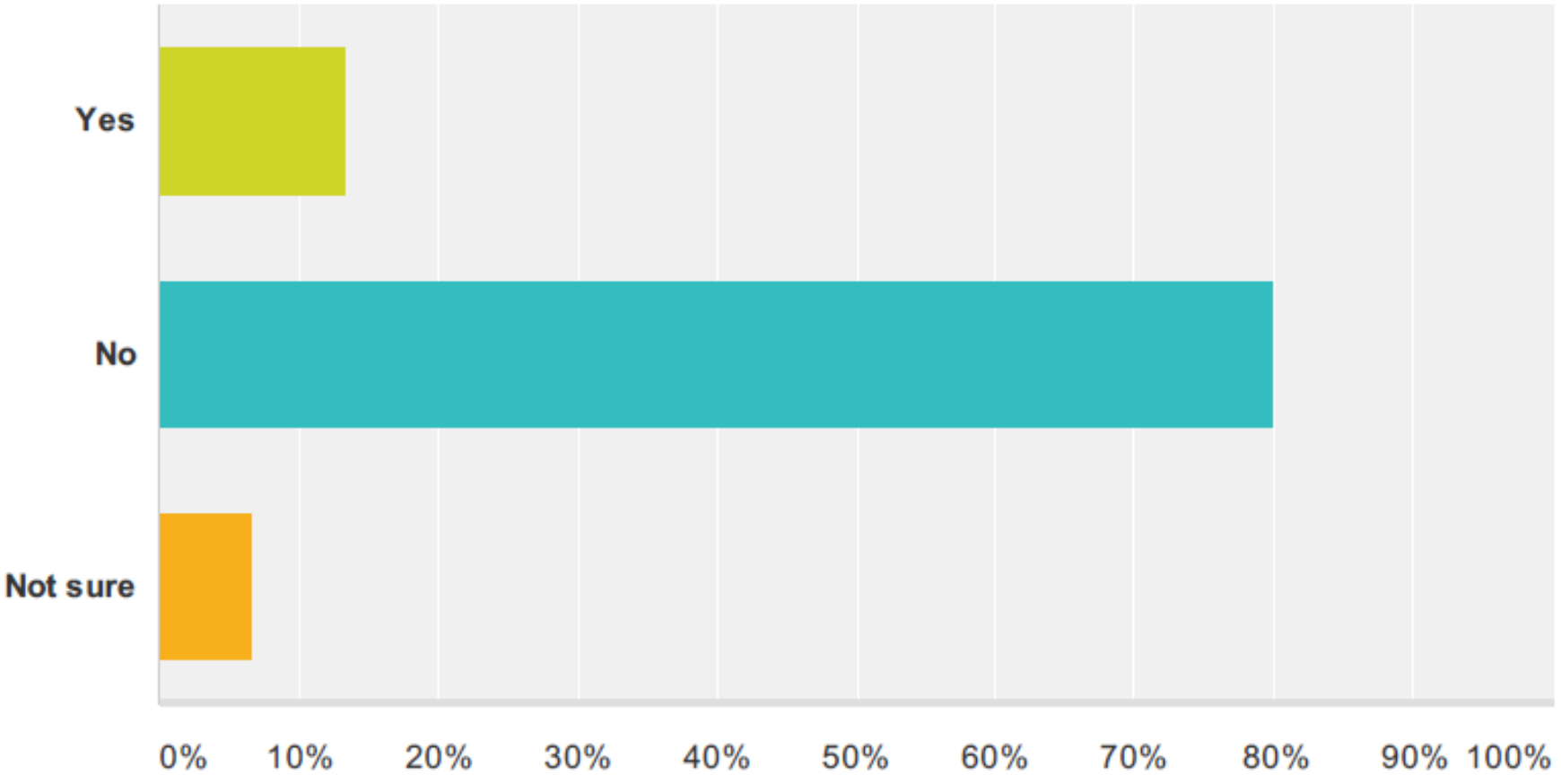
Q1 Does your hospital have a protocol in place to ensure that all inductions prior to 39 weeks have a medical indication?

Answered: 30 Skipped: 0



Q3 Does your hospital require that inductions of labor at 39-40 weeks have a medical indication?

Answered: 30 Skipped: 0



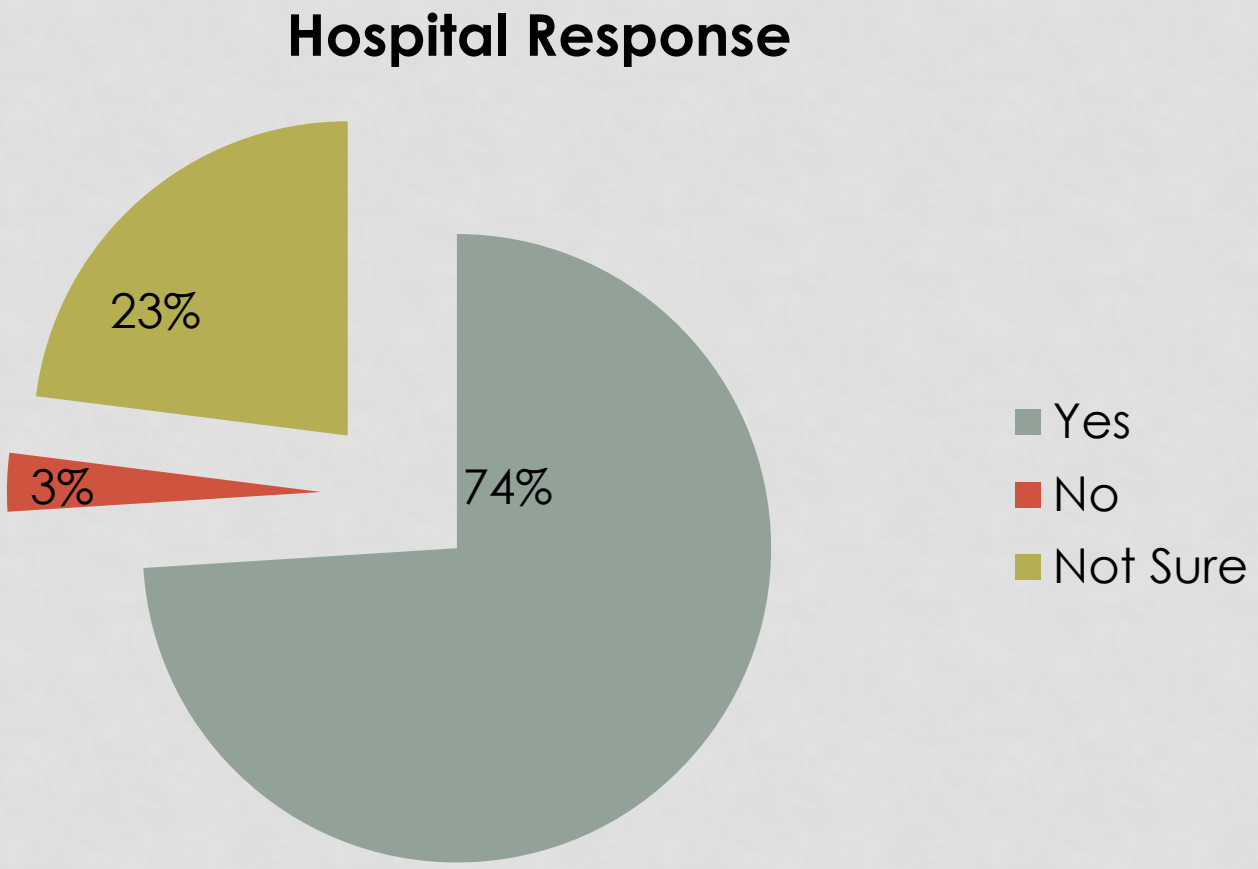
EXISTING SC BEST PRACTICES FOR SUPPORTING VAGINAL BIRTH

- Hard-stop for non-medically indicated inductions after 39 weeks
- Use of Bishop score less than 8 as a hard-stop for scheduling inductions
- Advanced fetal monitoring training for all L&D staff
- Active doula program
- More than 15 VBACs per year
- Mandatory review of all non-emergent C-Sections (including 2nd opinion)

HOSPITAL CHALLENGES TO SUPPORTING VAGINAL BIRTH

- Allowing patients adequate labor time before diagnosing "arrest of labor"
- Patient expectations
- Inconsistent use of Bishop Score
- Engaging physicians in changes related to patient management
- Variability between EFM training for nurses and physicians

CAN PRACTICE MANAGEMENT CHANGES DECREASE THE PRIMARY C-SECTION RATE AT YOUR HOSPITAL?



SC BOI PLAN OF ACTION

SUPPORTING VAGINAL BIRTH

SC BOI PLAN FOR SUPPORTING VAGINAL BIRTH (SVB)

- Data Measurement and dissemination quarterly of dashboard to each hospital (2013-14)
- Signed CEO & Clinical Champion Hospital Commitment - June 2014
- Educational Component - 2014
  - Hospital Survey
  - Webinar Series
  - Simulation training
  - Symposium Provider Education Materials
  - Patient Education Materials
- Medicaid Payment Change for hospitals – January 2015

DATA MEASUREMENT STRATEGY

- Focus on first-time, low-risk mother with a single baby in vertex position (TJC PC-02 Measure)
- SC BOI Data Team compiles Hospital Dashboards and disseminates quarterly to all SC hospitals (gives comparison of hospital to statewide rate for multiple variables)

HOSPITAL COMMITMENT TO SUPPORT VAGINAL BIRTH

- OB Physician champions from each hospital named
- 100% Commitment from SC birthing hospitals (46)

EDUCATIONAL COMPONENT

- Hospital Survey (completed)

- Webinar Series (August – Oct)
  - #1 Background and Data: Should SC worry about their C-Section rate?
  - #2 Antepartum strategies to prevent primary Cesarean
  - #3 Intrapartum strategies – role of L&D patient team

- Mobile Simulation education at regional sites (Sept – Oct)

- BOI Symposium (November)

- Provider Education Materials (pocket cards - July)

- Patient Education Materials (in development)

HOW DO WE ENSURE SUSTAINABILITY OF PERINATAL IMPROVEMENT EFFORTS?

- What types of statewide standards and expectations do we set?
- How do we match patient/provider education with behavior change?
- How to best help hospitals who are lagging behind?

HOW DO WE ENSURE SUSTAINABILITY OF PERINATAL IMPROVEMENT EFFORTS?

- How to best share data and use for improvement purposes?
- Role of Simulation Training?
- How to connect Quality and Safety work with policy/payment incentives?

QUESTIONS?

SC Birth Outcomes Initiative

Healthy Connections