



NEW JERSEY  
PERINATAL QUALITY  
COLLABORATIVE

# A Crisis Agenda: The State of Maternal Health and Perinatal Safety Priorities

---

JUNE 4<sup>TH</sup>, 2018

# STEERING COMMITTEE LEADS

---



**Andrew Rubenstein, MD**  
NJPQC Steering Committee Chair  
NTSV Initiative Clinical Co-Lead



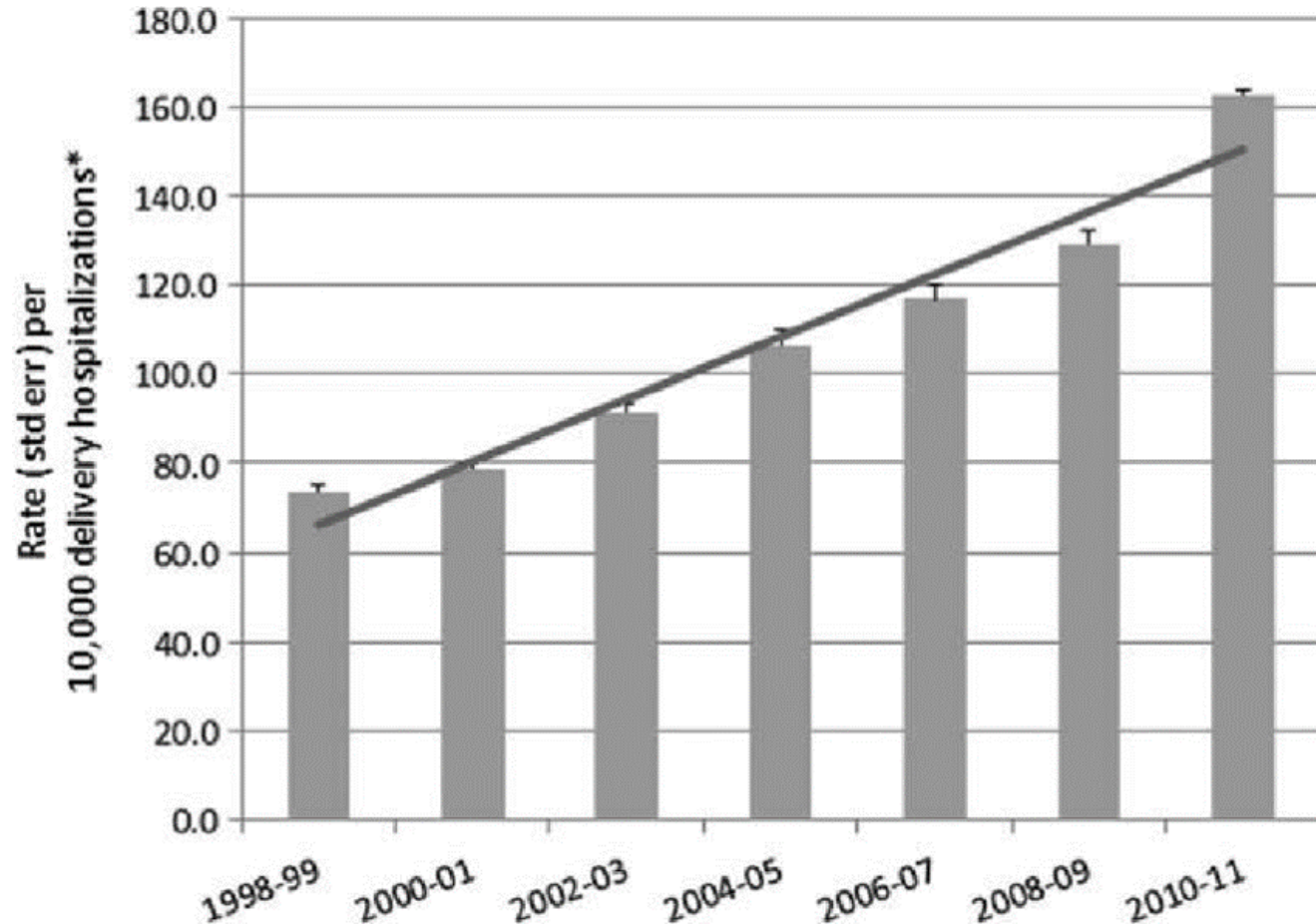
**Robyn D'Oria MA, RNC, APN**  
NJPQC Steering Committee Co-Chair  
NJ AIM Initiative Clinical Co-Lead

# Changing Landscape

---

- ❖ Deliveries of minority women represent about 55% of all NJ births in 2017
- ❖ Rising single and multiple co-morbidities
- ❖ Maternal age
- ❖ Non-standardized practice within obstetrics and the postpartum period

# Trends in severe maternal morbidity during delivery hospitalizations in the US, 1998-2011

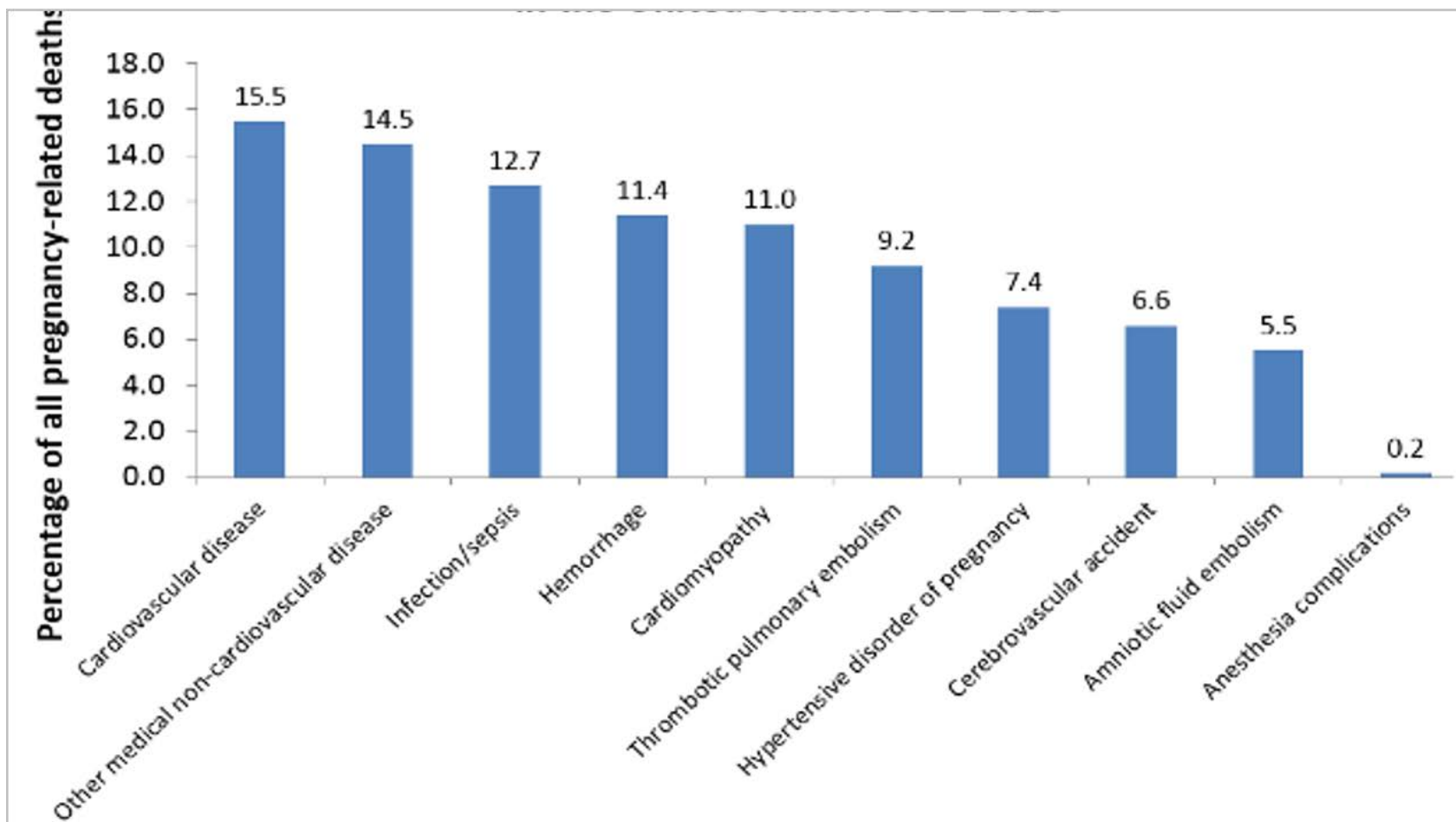


According to CDC, about 700 women die each year in the United States as a result of pregnancy or delivery complications

Women in the US are more likely to die from childbirth or pregnancy-related causes than other women in the developed world

Research suggests that half of these deaths are preventable

# Causes of Pregnancy-related Deaths, 2011-2013



CDC Pregnancy  
Mortality  
Surveillance  
System

# Disparities in Mortality

The US pregnancy-related mortality ratios: (deaths per 100,000 births)

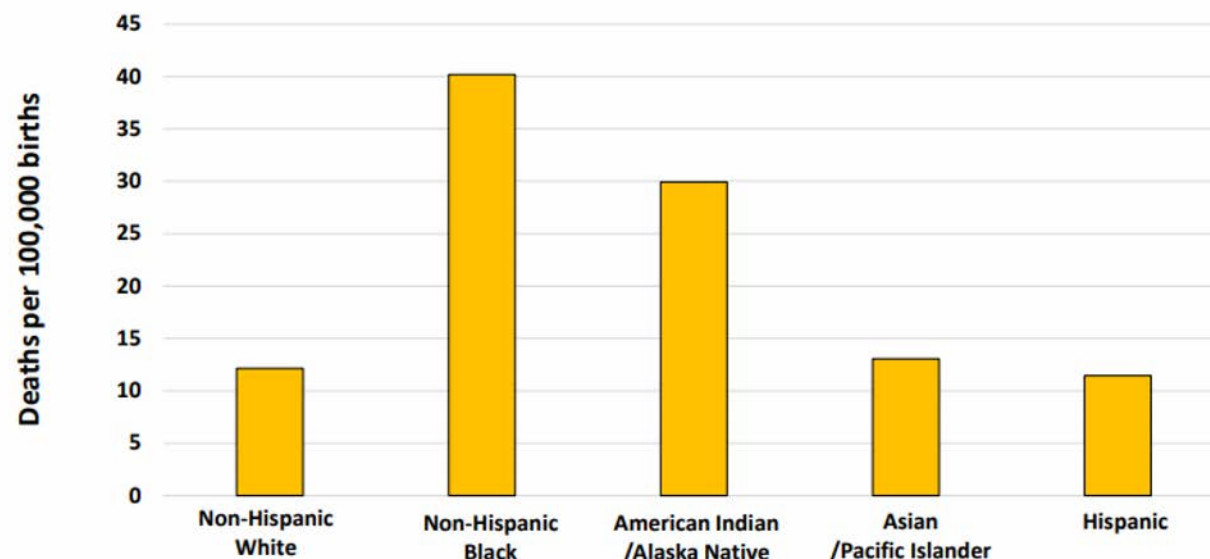
2011	2012	2013
17.8	15.9	17.3

During 2011–2013, the pregnancy-related mortality ratios by race/ethnicity were:

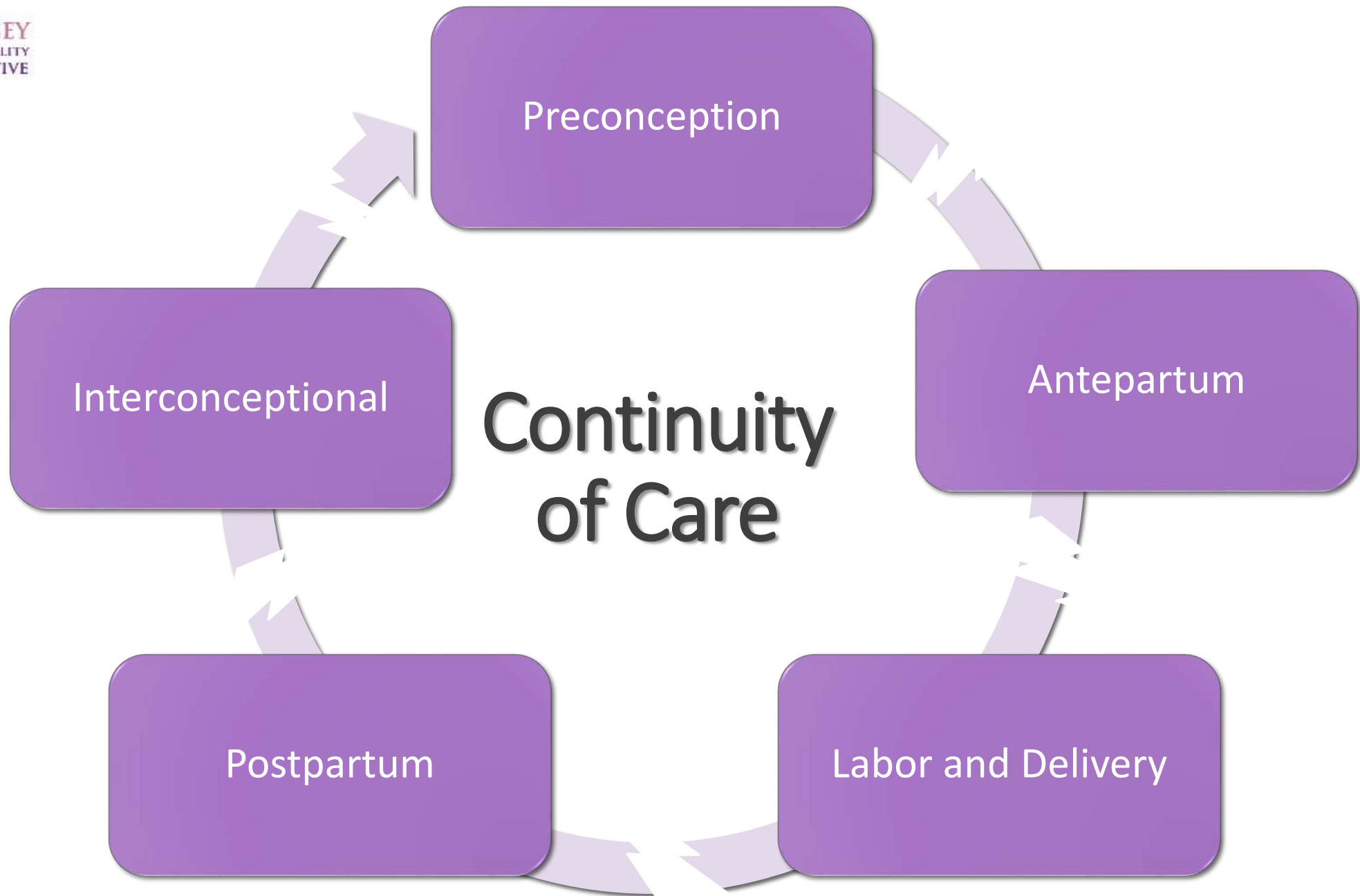
White	Black	Other Races
12.7	43.5	14.4

Racial/ethnic disparities exist in obstetric care, maternal morbidity and maternal mortality

## Pregnancy-related Mortality by Race and Hispanic Ethnicity, 2006–2013



PMSS: Pregnancy Mortality Surveillance System



New Jersey Perinatal Quality  
Collaborative  
Steering Committee

Staff

NTSV  
C-section  
Advisory Work  
Group

AIM Advisory  
Work Group

Data Advisory  
Work Group

Opioid Advisory  
Work Group  
(TBD)

PFE Advisory  
Work Group  
(TBD)

Disparities  
Work Group

Hospital Subgroup

Community Subgroup



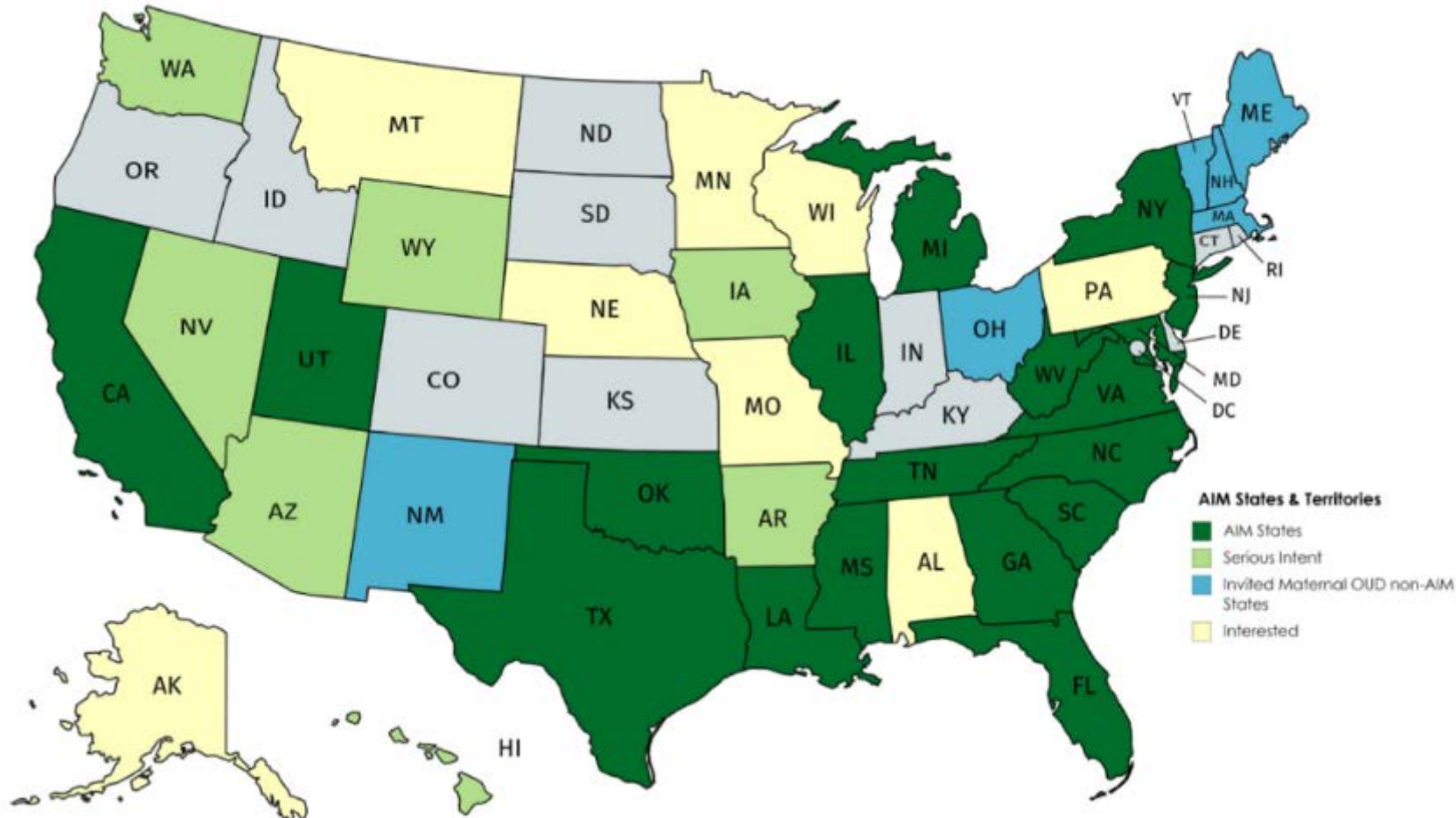
# What is AIM?

---

- AIM is funded through a cooperative agreement with the Maternal and Child Health Bureau (MCHB)-Health Resource Services Administration.
- The purpose of the AIM program is to equip, empower and embolden every state, perinatal quality collaborative, hospital network/system, birth facility and maternity care provider in the U.S to significantly reduce severe maternal morbidity and maternal mortality through proven implementation of consistent maternity care practices that are outlined in maternal safety bundles (action systems)

<http://safehealthcareforeverywoman.org>

# AIM States



1. CALIFORNIA
2. FLORIDA
3. GEORGIA
4. ILLINOIS
5. LOUISIANA
6. MARYLAND
7. MICHIGAN
8. MISSISSIPPI
- 9. NEW JERSEY**
10. NEW YORK
11. NORTH CAROLINA
12. OKLAHOMA
13. SOUTH CAROLINA
14. TENNESSEE
15. TEXAS
16. UTAH
17. VIRGINIA
18. WEST VIRGINIA

# National Improvement Video Challenge

---

There's still time to submit a video for the National Improvement Video Challenge!

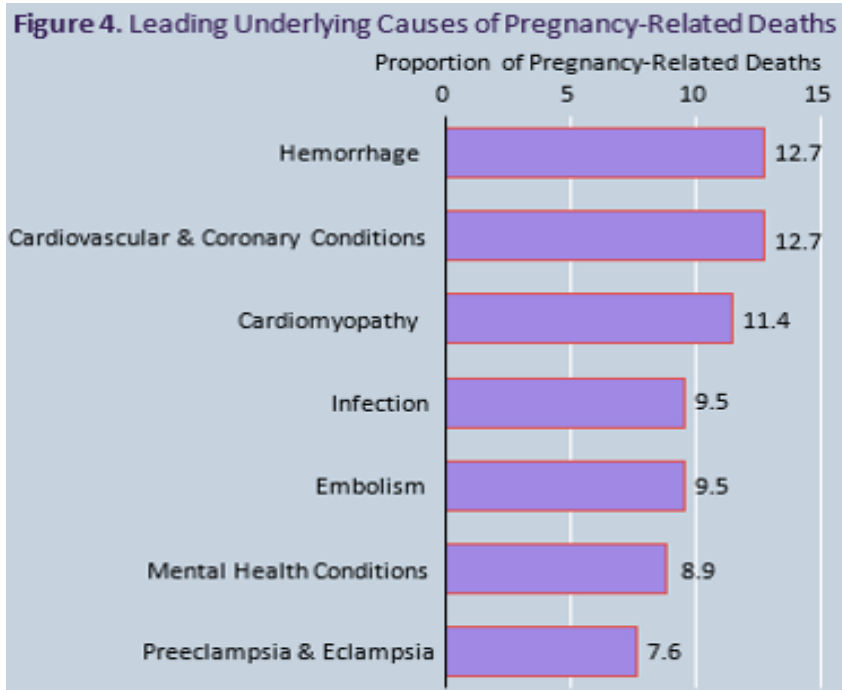
The National Improvement Video Challenge is an innovative opportunity to showcase how your institution implements a component of a patient safety bundle.

Submissions are due **June 15, 2018**



# 2017 Report from Maternal Mortality Review Committees: A View Into Their Critical Role

Seven causes account for 72.2% of all pregnancy-related deaths



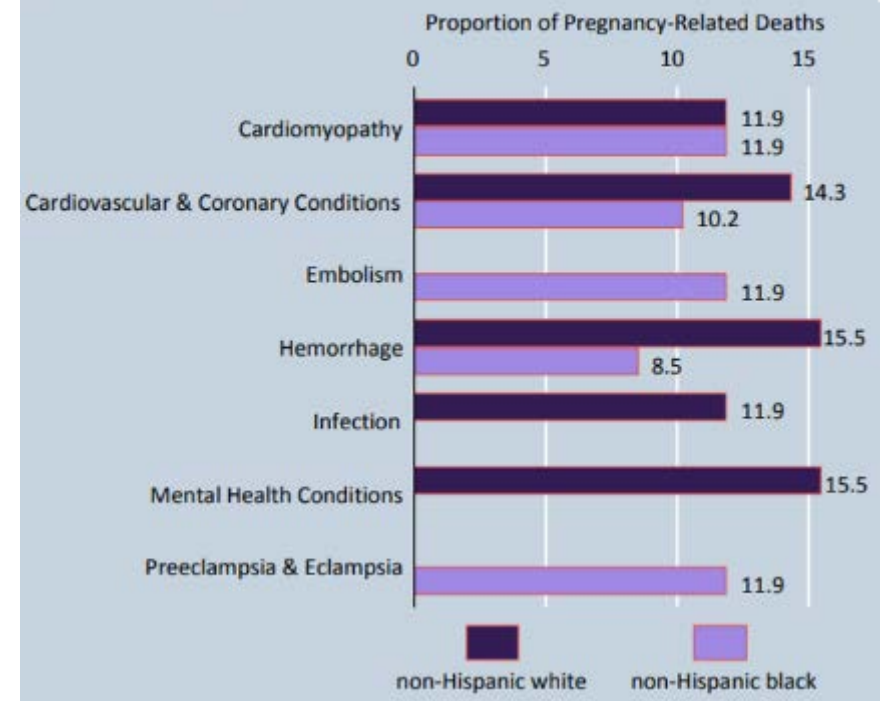
**Non-Hispanic white:**

- Hemorrhage, mental health conditions
- Cardiovascular and coronary conditions
- Cardiomyopathy, infection

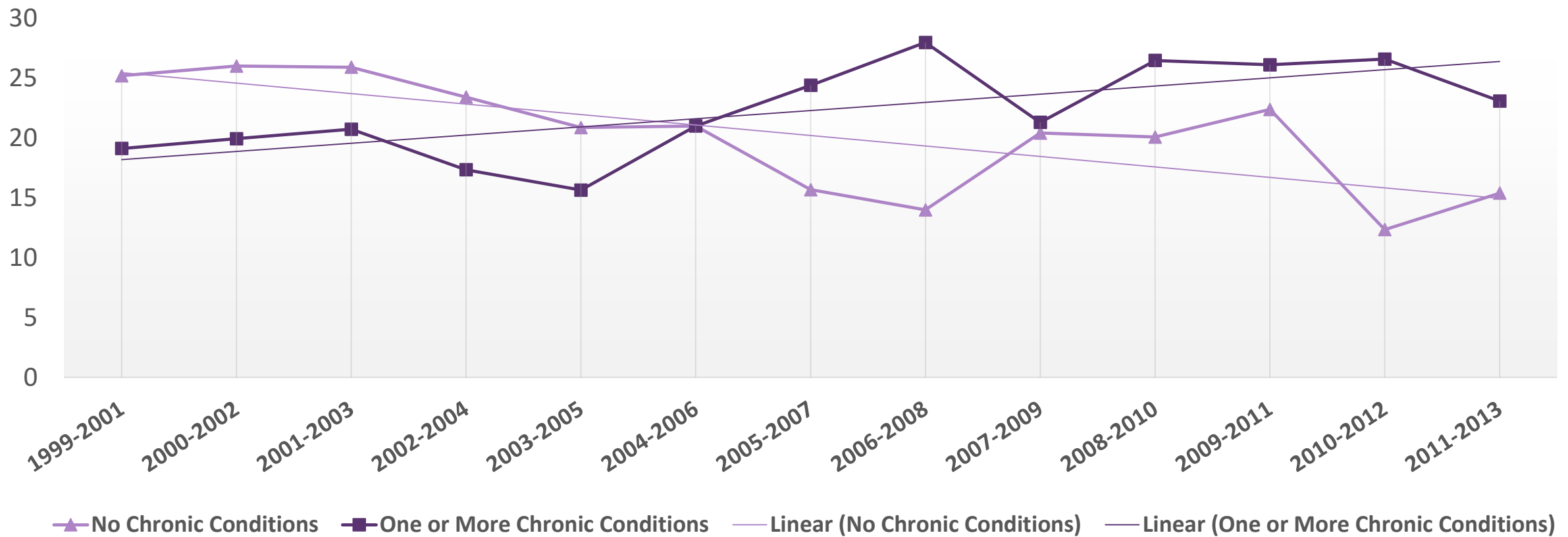
**Among non-Hispanic Black:**

- Cardiomyopathy, embolism, preeclampsia and eclampsia
- Cardiovascular and coronary conditions
- Hemorrhage

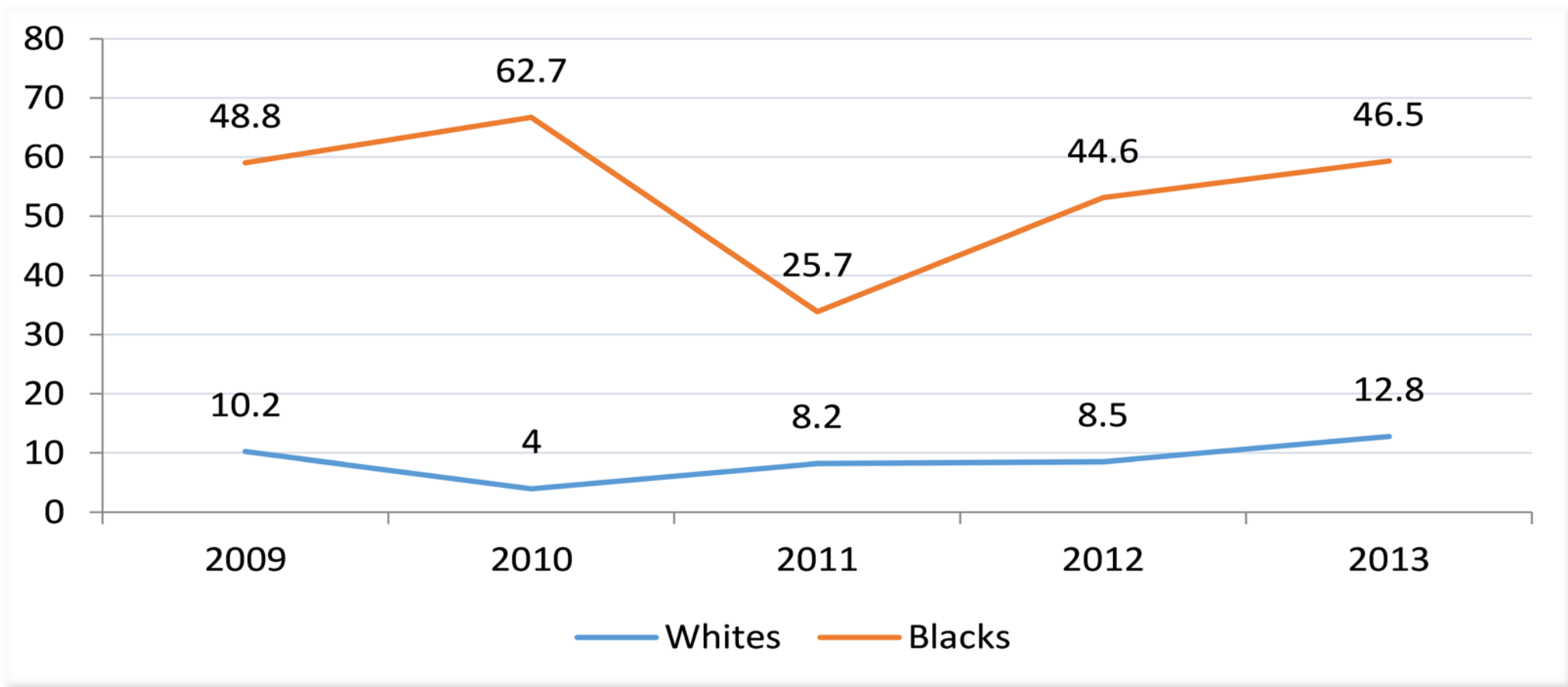
**Figure 5. Leading Underlying Causes of Pregnancy-Related Deaths by Race-Ethnicity**



# Maternal Mortality and Comorbidity-NJ 1999-2013



# Pregnancy-related Maternal Death Rate by Race, 2009-2013



# New Jersey AIM Initiative

---

As an AIM state, NJPQC will be supporting New Jersey birthing hospitals to reduce maternal morbidity and mortality through the implementation of the **Obstetric Hemorrhage** and **Severe Hypertension** bundles.

## Goals:

- To reduce severe maternal morbidity and mortality related to obstetric hemorrhage and hypertension among women who give birth in New Jersey
- To guide and support obstetric care providers and birthing facilities in New Jersey in implementing evidence-based, collaborative, patient-centered practices to prevent and manage obstetric hemorrhage and hypertension

Participation with the New Jersey AIM project is voluntary. Hospitals are open to focus on either hemorrhage, hypertension, or both safety bundles. Participating hospitals will receive expert guidance, tools, data reports and resources.

# NJ AIM Participating Hospitals

## 26 Hospitals

AtlantiCare Regional Medical Center, Mainland Campus	Jersey City Medical Center
CarePoint Health Christ Hospital	Monmouth Medical Center
CarePoint Health Hoboken University Medical Center	Morristown Medical Center
CentraState Healthcare System	Our Lady of Lourdes Medical Center
Chilton Medical Center	Penn Medicine Princeton Medical Center
Clara Maass Medical Center	Robert Wood Johnson University Hospital
Community Medical Center	Robert Wood Johnson University Hospital Somerset
Cooper University Health Care	Saint Barnabas Medical Center
Hackensack Meridian Health Hackensack University Medical Center	St. Joseph's University Medical Center
Hackensack Meridian Health JFK Medical Center	The Valley Hospital
Hackensack Meridian Health Raritan Bay Medical Center Perth Amboy	University Hospital
Hackensack Meridian Health Riverview Medical Center	Virtua Memorial
Holy Name Medical Center	Virtua Voorhees



# NJ AIM Plan

---

- Bi-monthly content webinars covering different elements of each safety bundle
- As a data-driven initiative, the team will track:
  - Structure Measures – collected only once
  - Process Measures – collected quarterly
  - Outcome Measures – ICD 10 codes, from the New Jersey Discharge Data Collection System
- Quarterly hospital Severe Maternal Morbidity data reports
  - among all, OB hemorrhage, and severe hypertension cases
  - Broken down by maternal race/ethnicity, age, payer, and primary language

# NJ AIM Structure & Process Measures

---

## Structure (once):

### Completion/Start date for:

- Patient, Family & Staff Support
- Formal debrief process
- Multidisciplinary case reviews
- Hemorrhage cart
- Severe HTN policy and procedure
- EHR integration of recommended bundle processes

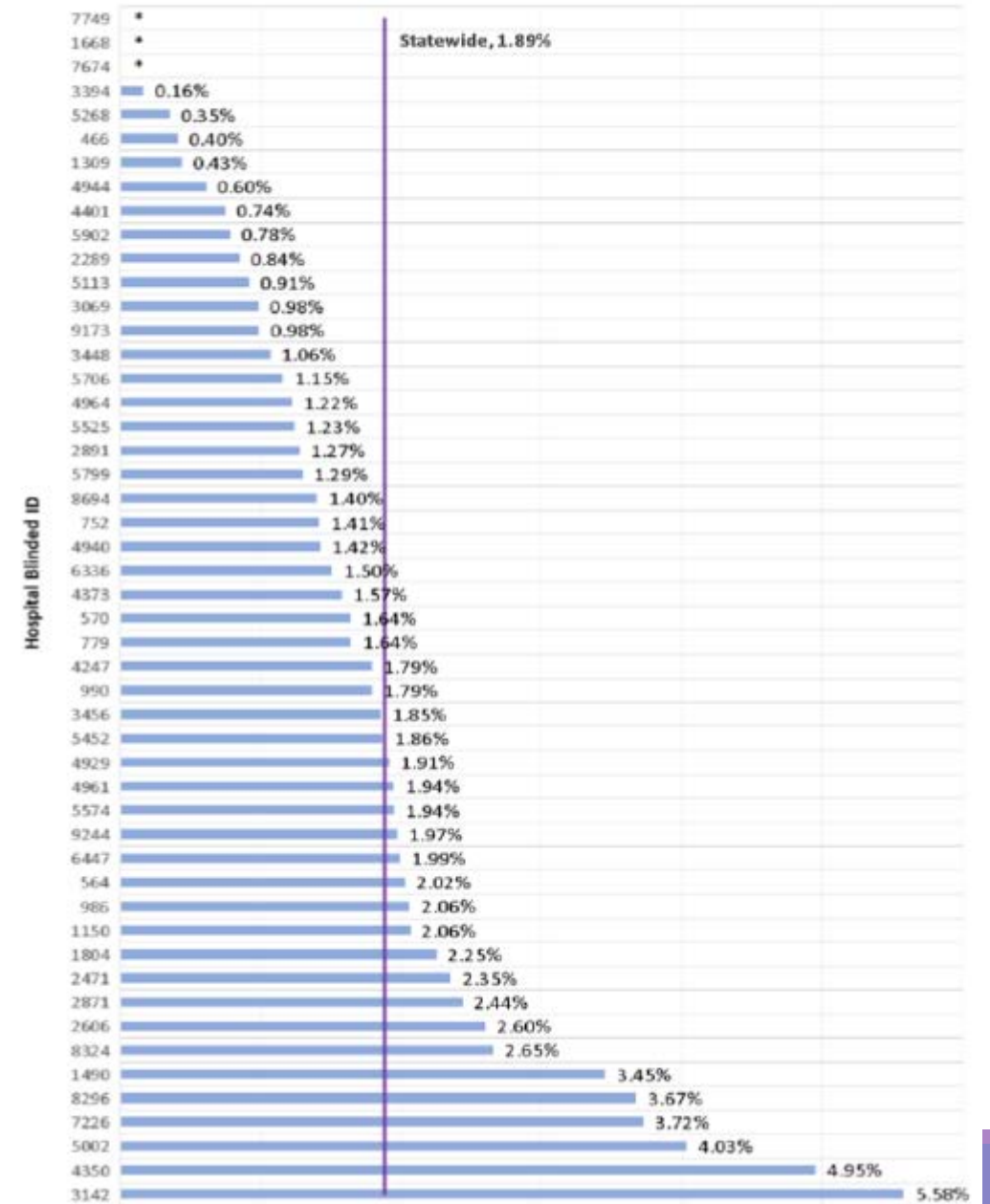
## Process (quarterly):

### Number of/estimated percent of:

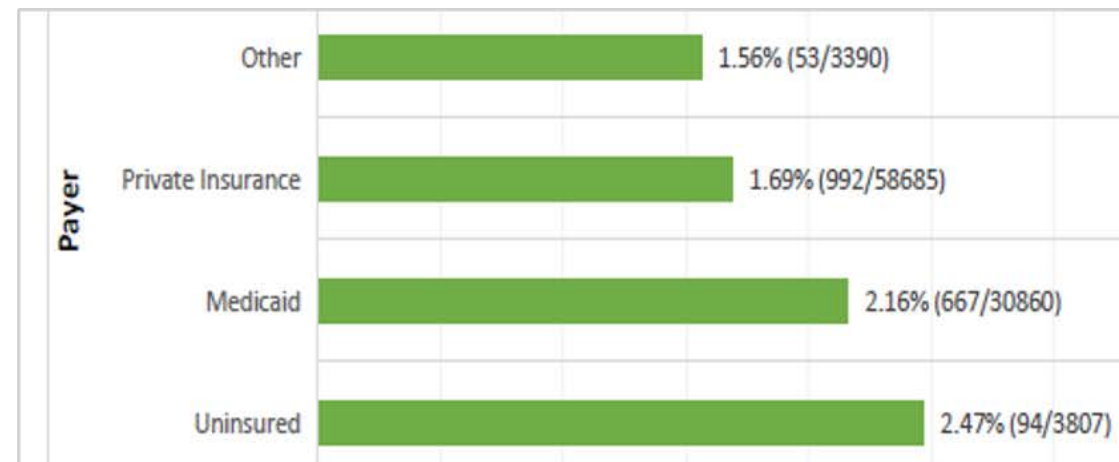
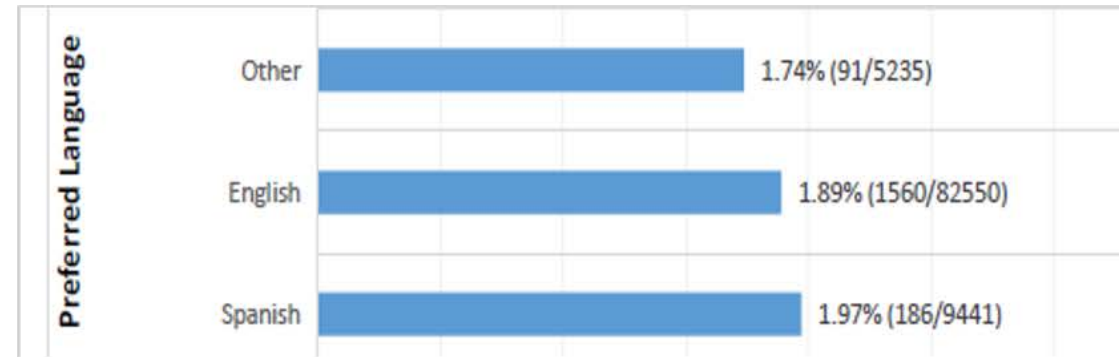
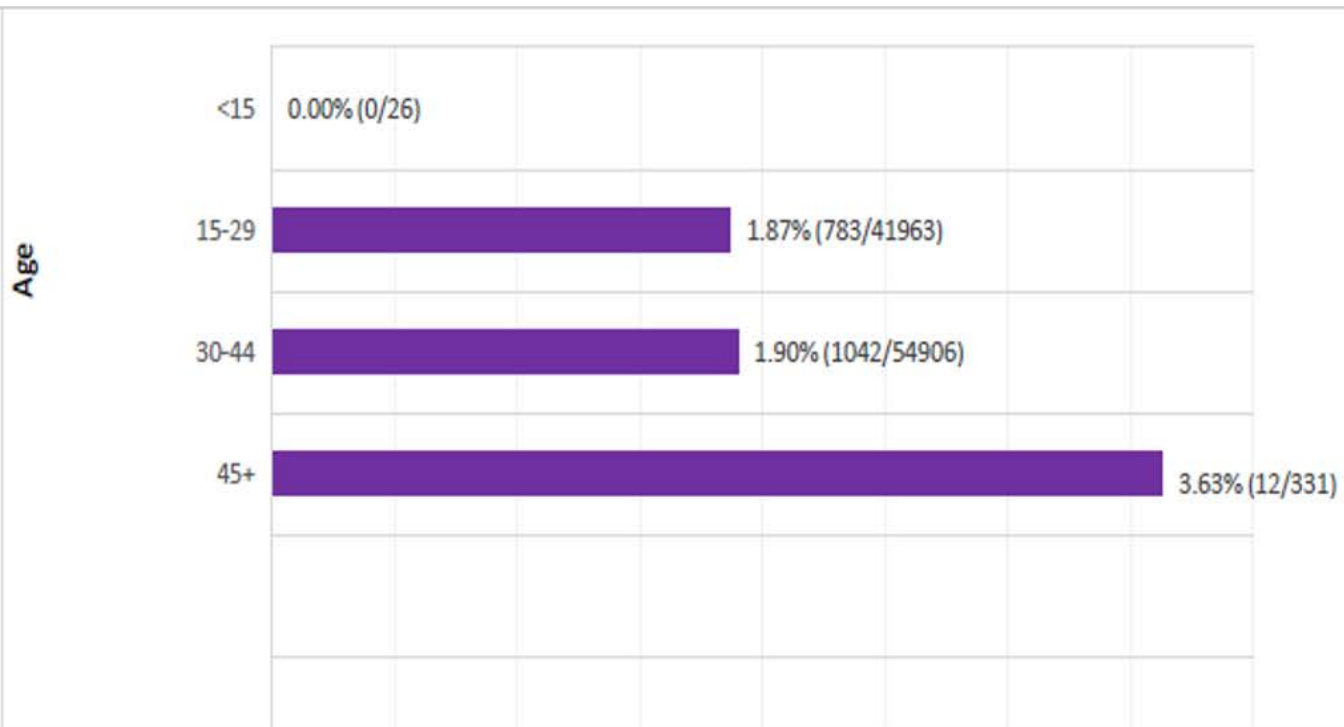
- Unit drills & topics
- Provider education
- Nursing education
- Hemorrhage risk assessments
- QBL technique used
- Treatment of Severe HTN

# NJ Severe Maternal Morbidity

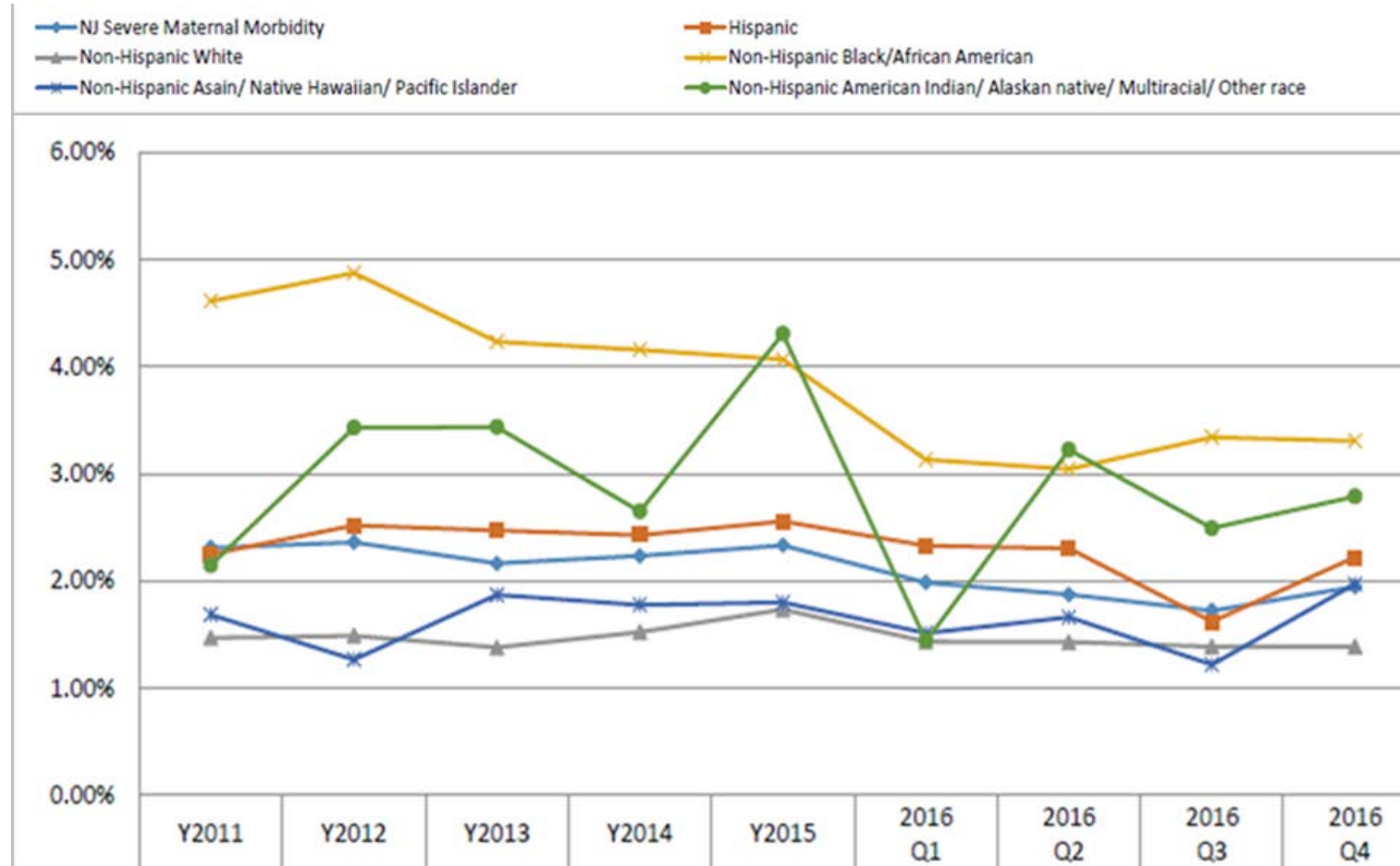
- In 2016, the overall rate of severe maternal morbidity in NJ was 1.9%
- Range among hospitals: 0.16 – 5.6%
- Some studies, by Dr. Callaghan estimate severe maternal morbidity occurring at a rate of 0.5-1.3% of US pregnancies



# 2016 NJ Severe Maternal Morbidity by Age, language, and payer



# 2016 NJ Severe Maternal Morbidity by Race/Ethnicity



# NJ AIM Webinar Recordings

---

## **AIM Kick-off webinar**

December 6, 2017

[Recording](#)

## **AIM Data webinar**

January 29, 2018

[Recording](#)

## **AIM Sorting out the Debrief webinar**

March 26, 2018

[Recording](#)

## **Update on the NJ Perinatal Quality Improvement Maps Project**

May 29, 2018

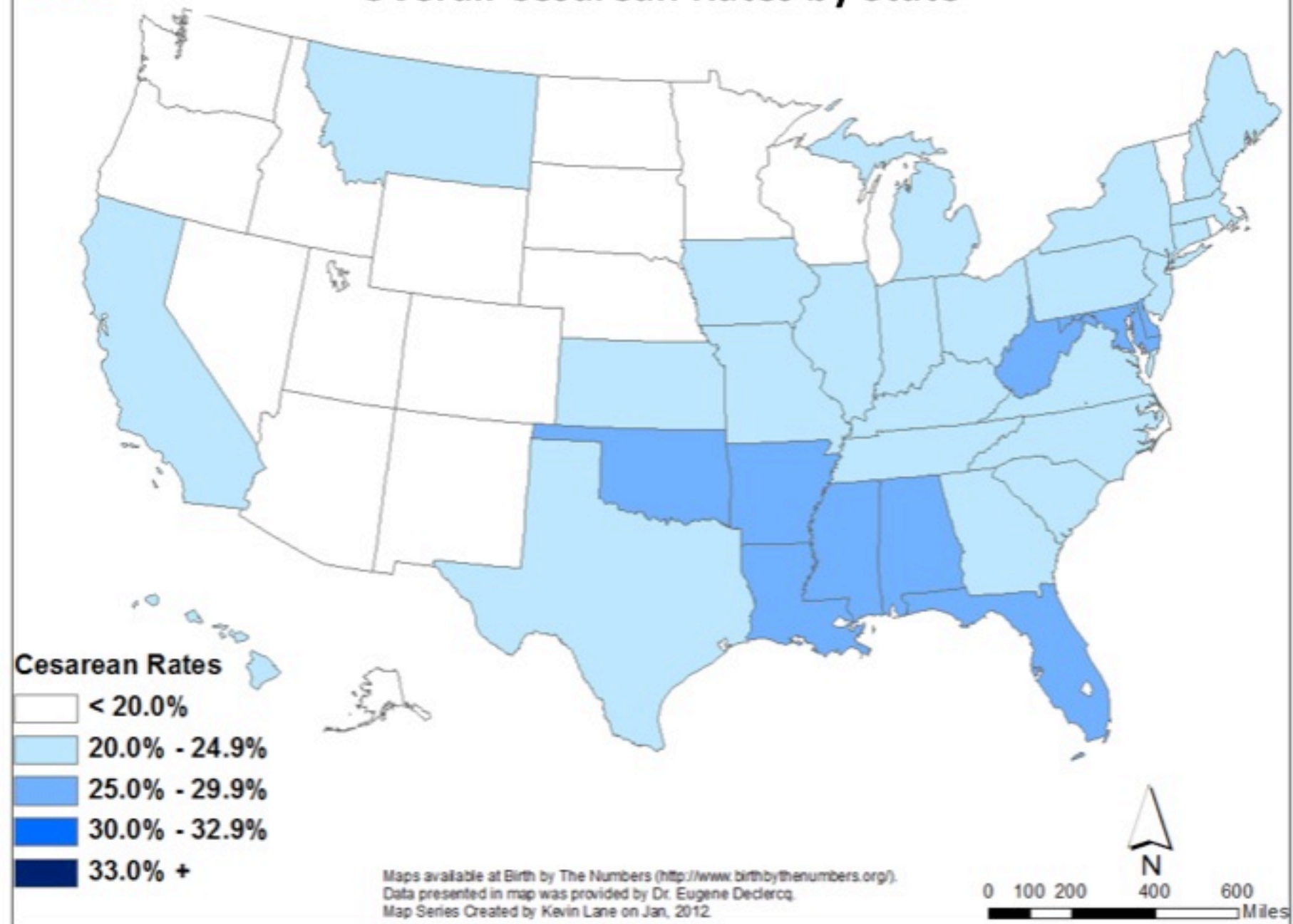
[Recording](#)

---

# US Cesarean Map Series

1990

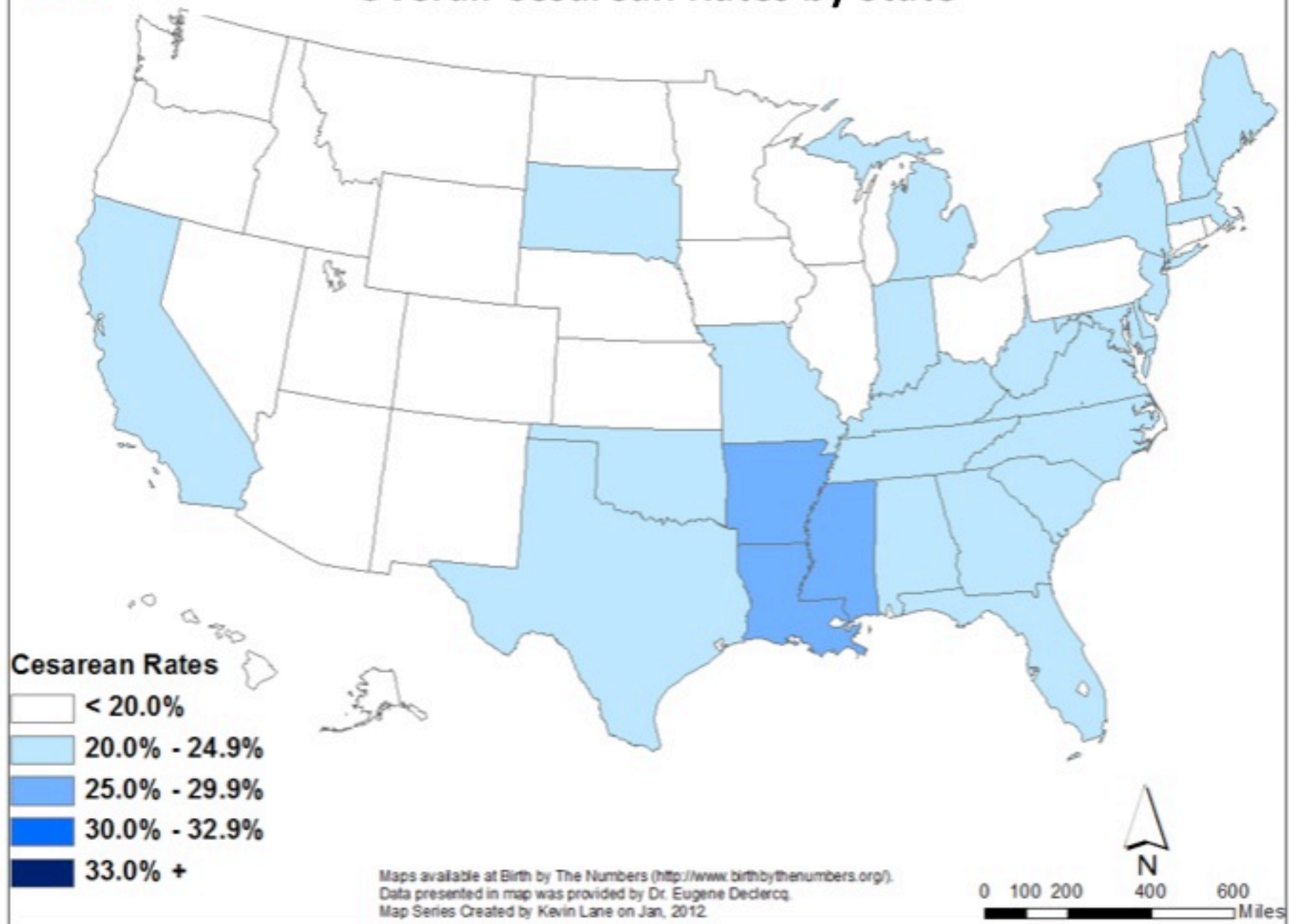
## Overall Cesarean Rates by State





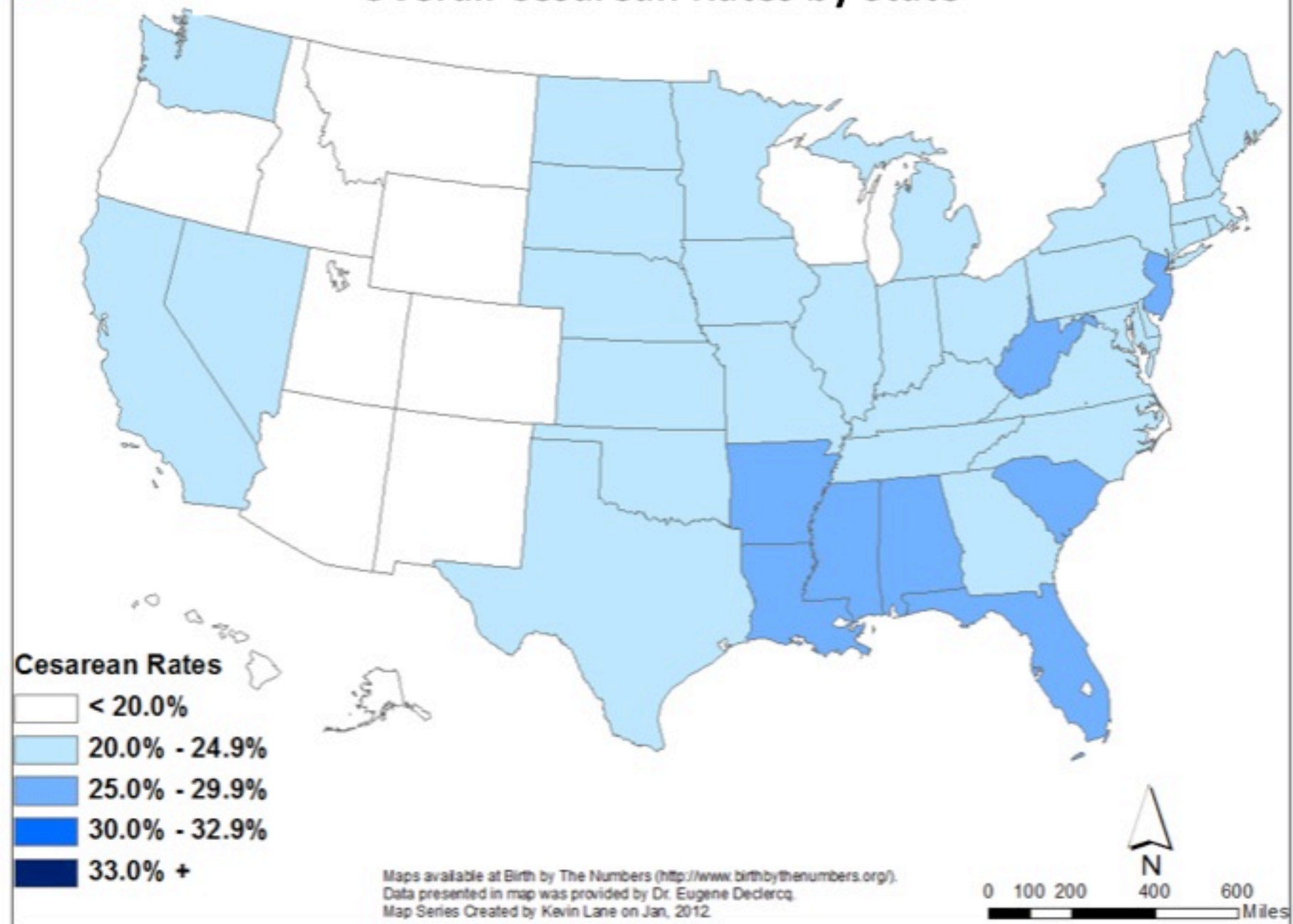
1995

## Overall Cesarean Rates by State



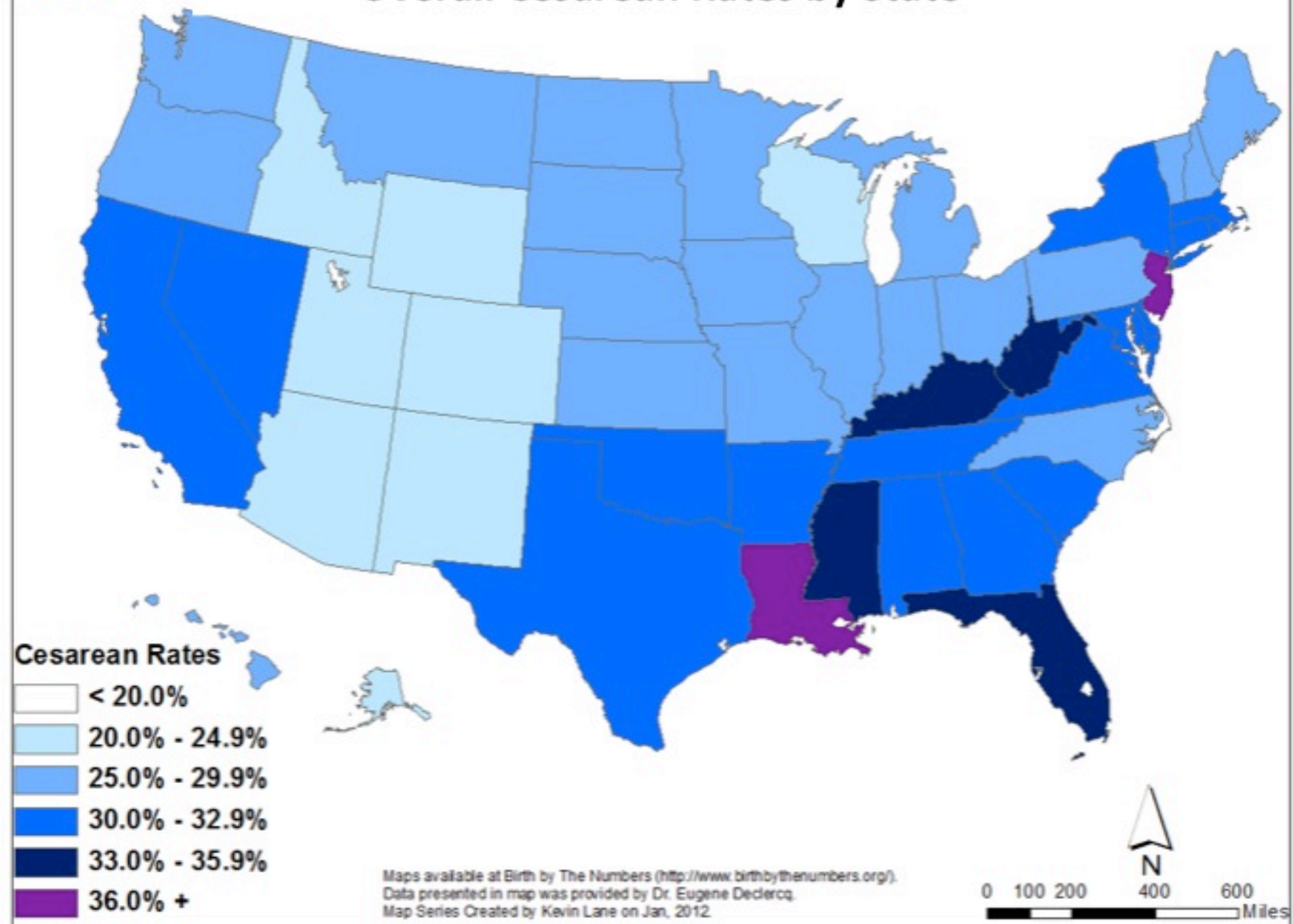
**2000**

## Overall Cesarean Rates by State



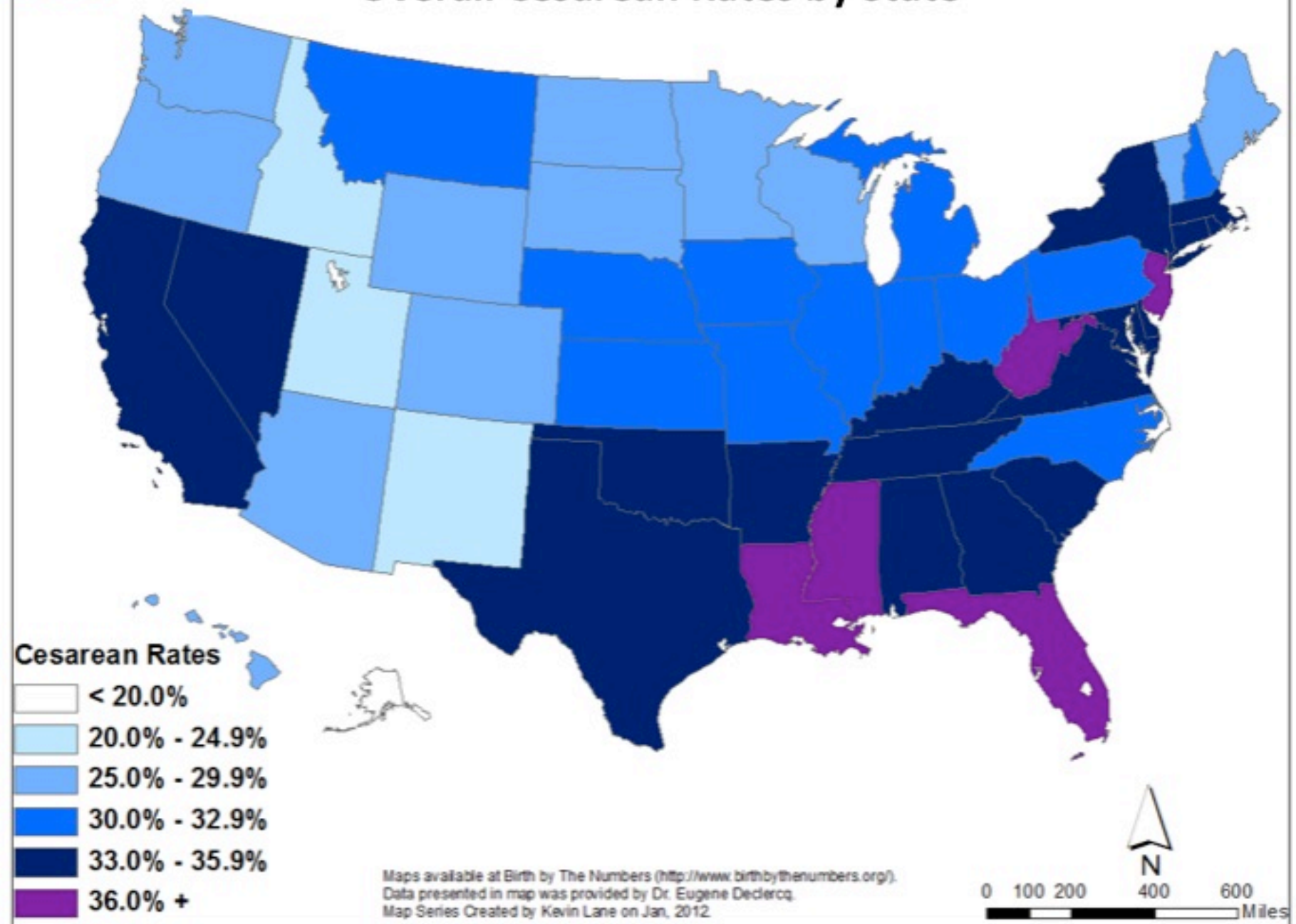
2005

## Overall Cesarean Rates by State

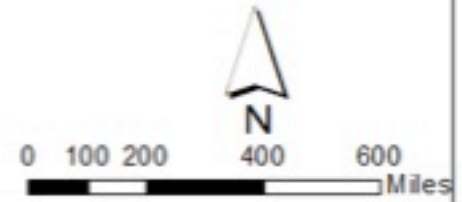


2010

# Overall Cesarean Rates by State

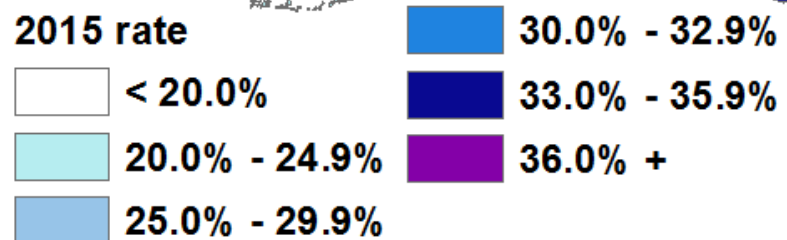
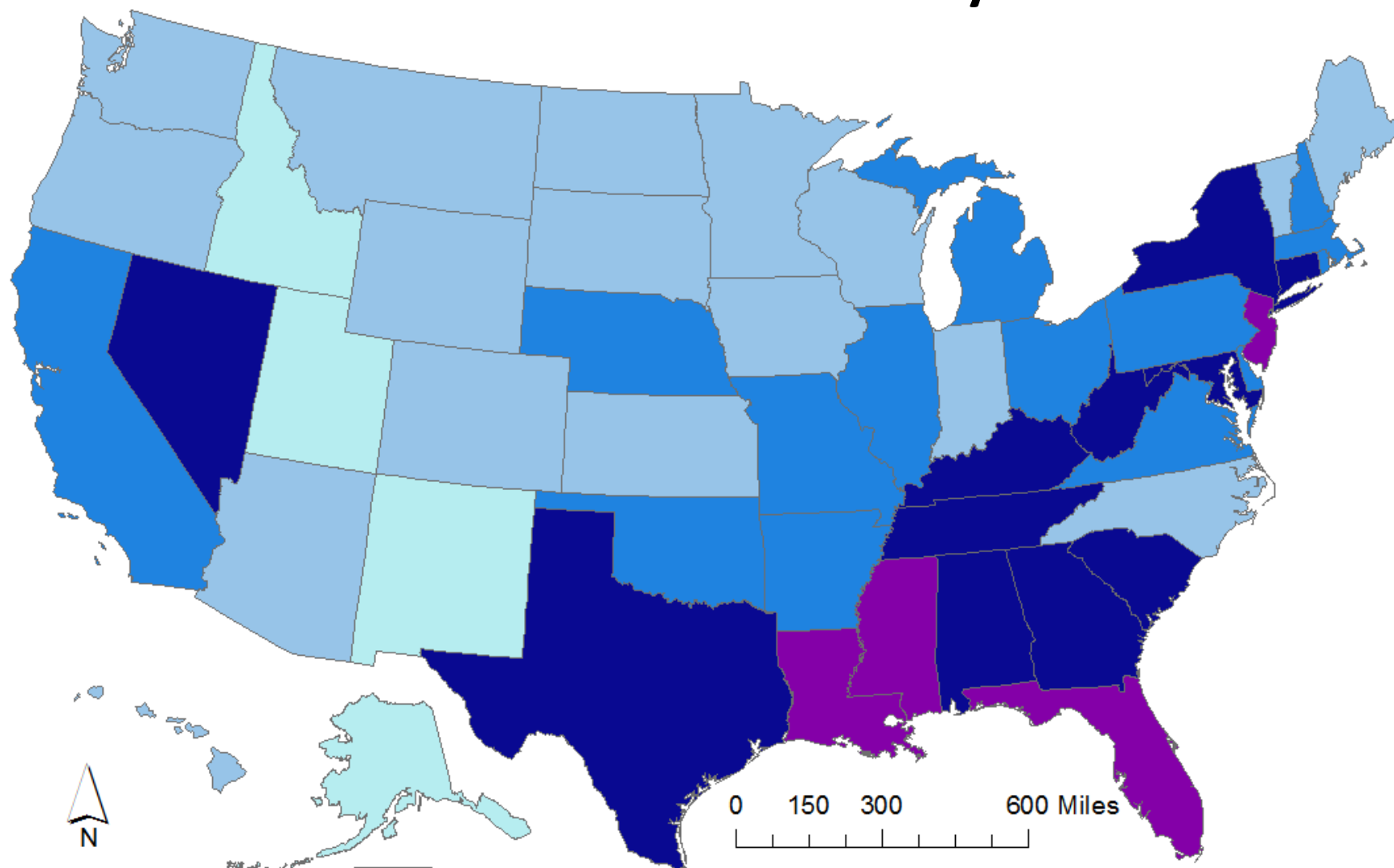


Maps available at Birth by The Numbers (<http://www.birthbythenumbers.org>).  
Data presented in map was provided by Dr. Eugene Declercq.  
Map Series Created by Kevin Lane on Jan, 2012.



2015

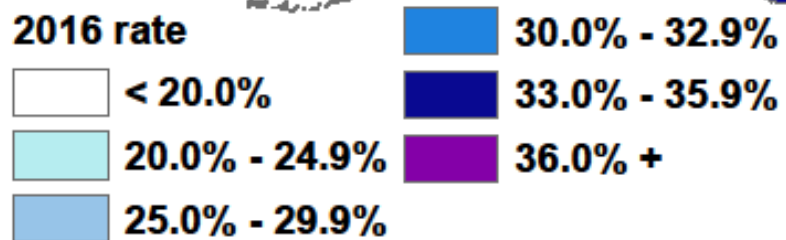
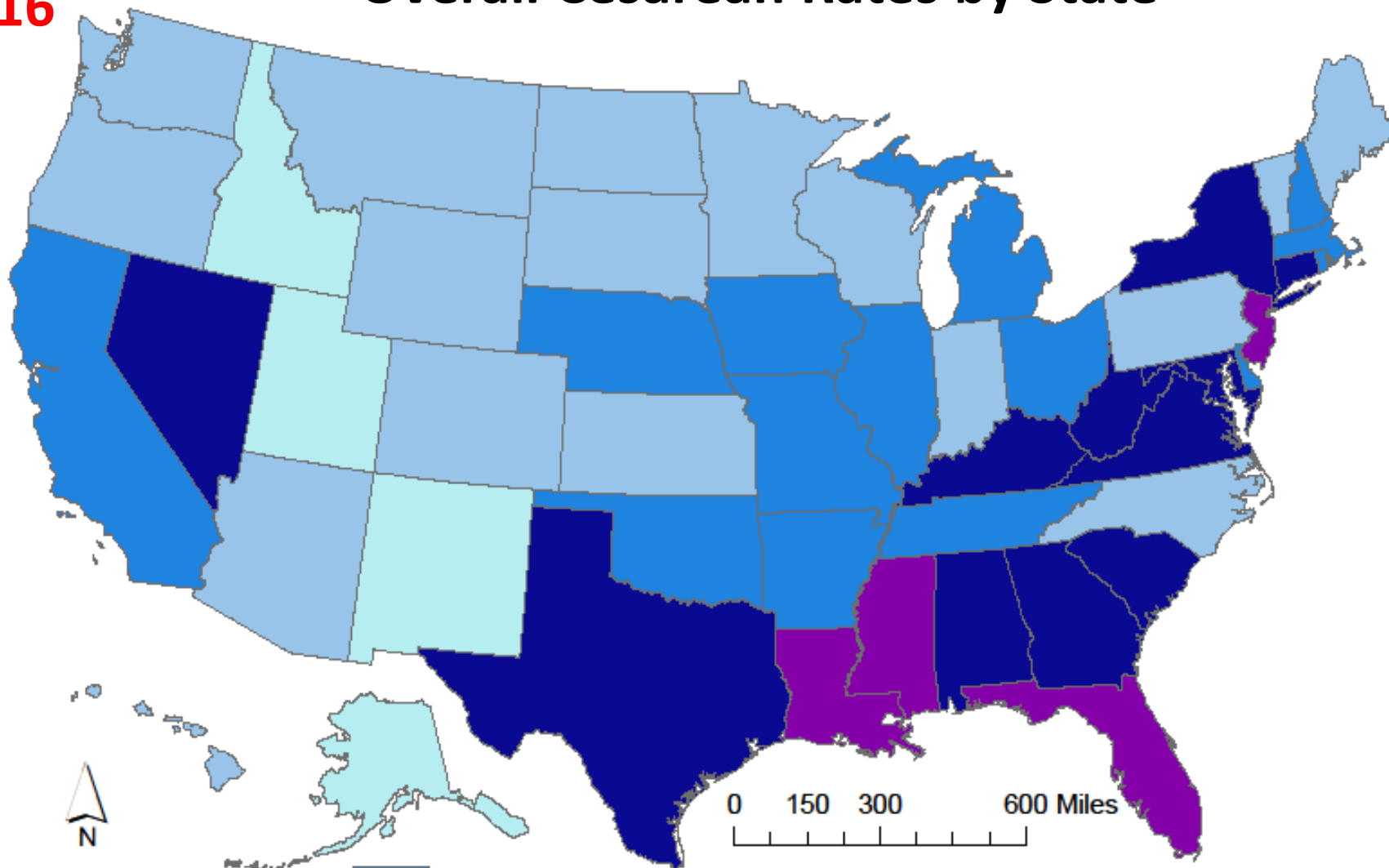
# Overall Cesarean Rates by State



Maps available at Birth by the Numbers ([www.birthbythenumbers.org](http://www.birthbythenumbers.org)).  
Data presented in the map were provided by Dr. Eugene Declercq.  
Map created by Dr. Veronica Vieira, July 2016.

Preliminary  
2016

# Overall Cesarean Rates by State



0 150 300 600 Miles

Maps available at Birth by the Numbers ([www.birthbythenumbers.org](http://www.birthbythenumbers.org)).  
Data presented in the map were provided by Dr. Eugene Declercq.  
Map created by Dr. Veronica Vieira, July 2017.

50% rise in CS rates over a 10 year period

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

Cesarean is the most common hospital surgery in the US!

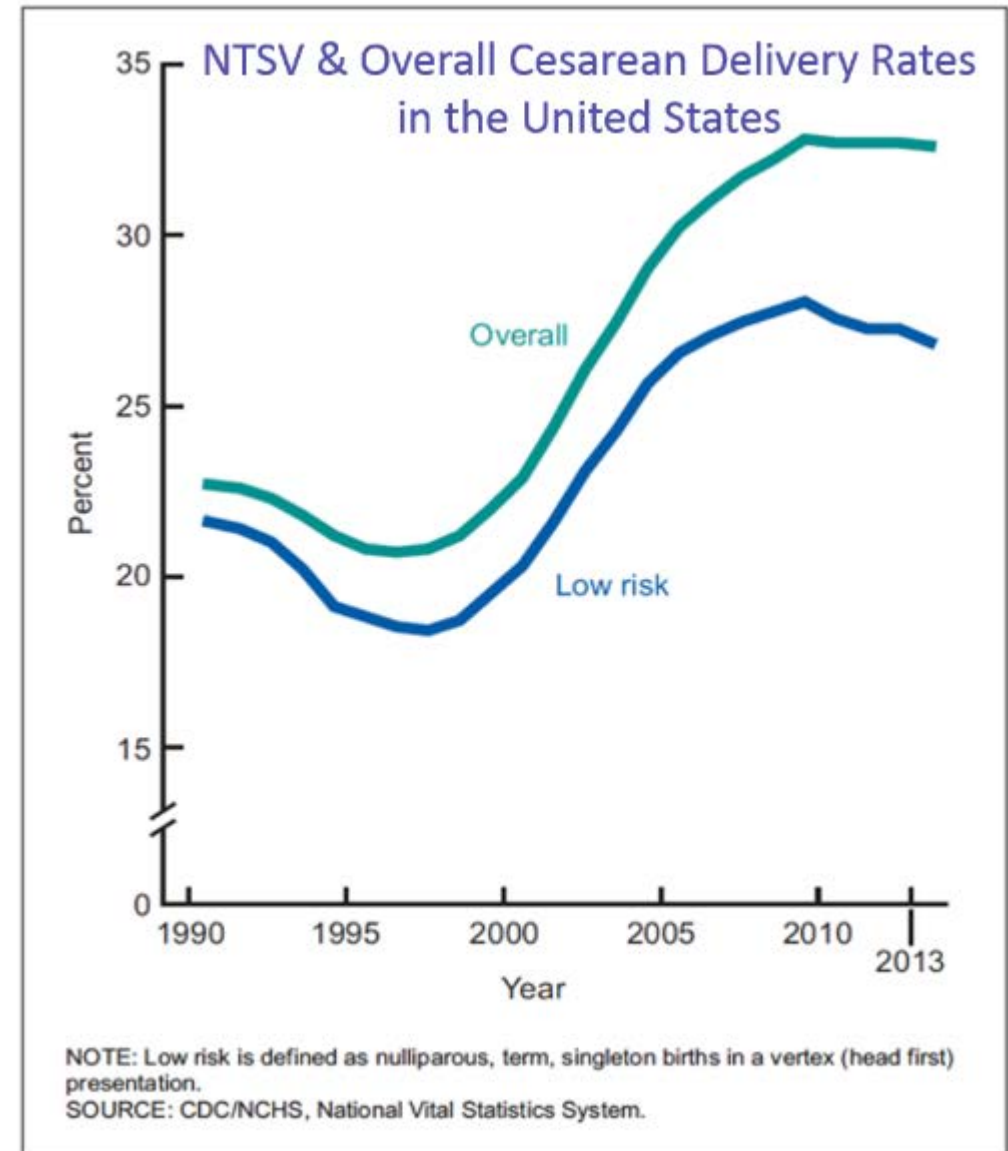


Figure 1. Overall cesarean delivery and low-risk cesarean delivery: United States, final 1990–2012 and preliminary 2013

# Why Focus on the NTSV Rate

---

- Nulliparity is a critical risk adjuster because it creates a standardized population that can be compared between providers, hospitals, states, etc.
- NTSV CS measure is already risk stratified
- NTSV is special in that it technically represents the most favorable conditions for vaginal birth, but also the most difficult labor management
- The NTSV population is the largest contributor to the recent rise in cesarean rates
- The NTSV population exhibits the greatest variation for all sub-populations of cesarean births for both hospitals and providers



# “Still... my NTSV Patients are Higher Risk...”

---

- NTSV CS measure is already risk stratified
- However, African-American women continue to have higher NTSV cesarean rates than white women
- Age and BMI clearly impact an individual's CS risk
- Formal risk-adjustment analysis using both age and BMI shows that over 2/3 hospitals realize less than 2% change
- Age and BMI effects may be provider dependent (more patience for obese women's 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.

**DOI:** 10.1377/hlthaff.2012.1030  
HEALTH AFFAIRS 32,  
NO. 3 (2013): 527-535  
©2013 Project HOPE—  
The People-to-People Health  
Foundation, Inc.

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

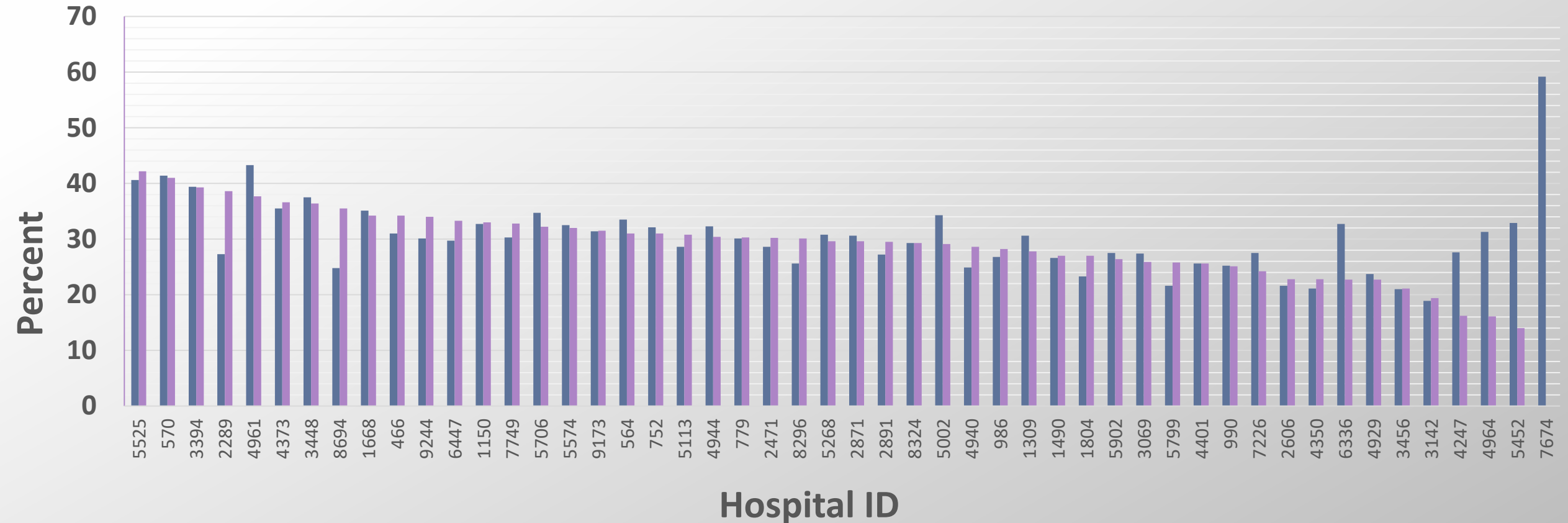
**Michael R. Law** is an assistant professor in the Centre for Health Services and Policy Research, School of Population and Public Health, at the University of British Columbia, in Vancouver.

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

# 2016 NTSV C-sections

## Percent of Low Risk C-section Deliveries by NJ Birthing Hospital *Birth Certificate / Leapfrog Data*

■ State BC Data (Avg= 30.3%)    ■ Leapfrog Data (Avg= 29.3%)



# Commonly Used Explanations for High C-Section Rate

---

- ❖ Mothers are getting older
- ❖ More multiples being born
- ❖ Babies are getting bigger
- ❖ Maternal health is worse: *obesity, diabetes & hypertension*
- ❖ Maternal request

# Older Mothers?

## Older Mothers?

Total Cesarean Rates (per 100 births) by Age of Mother: United States, 1996 and 2012



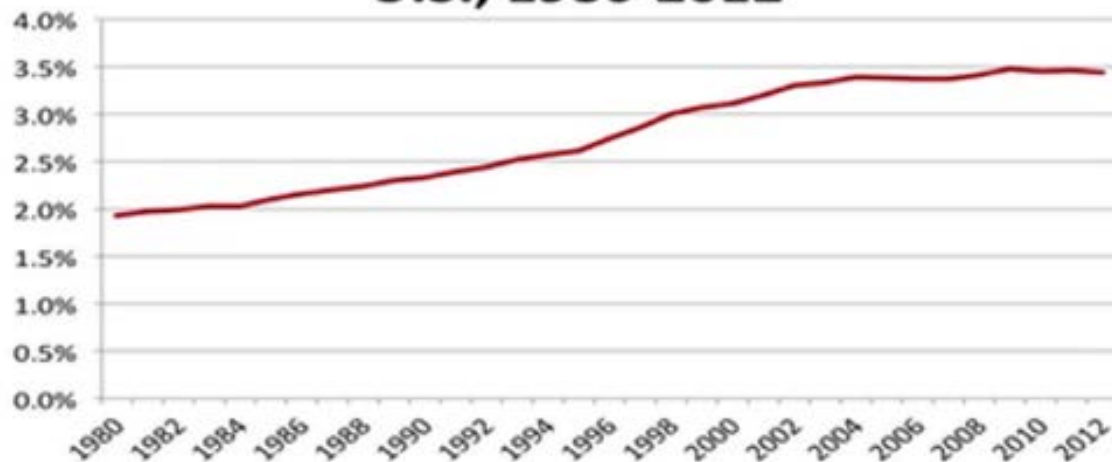
Source: National vital statistics system, NCHS, CDC.

[BirthByTheNumbers.org](http://BirthByTheNumbers.org)

# More Multiples Being Born?

## Multiple Births?

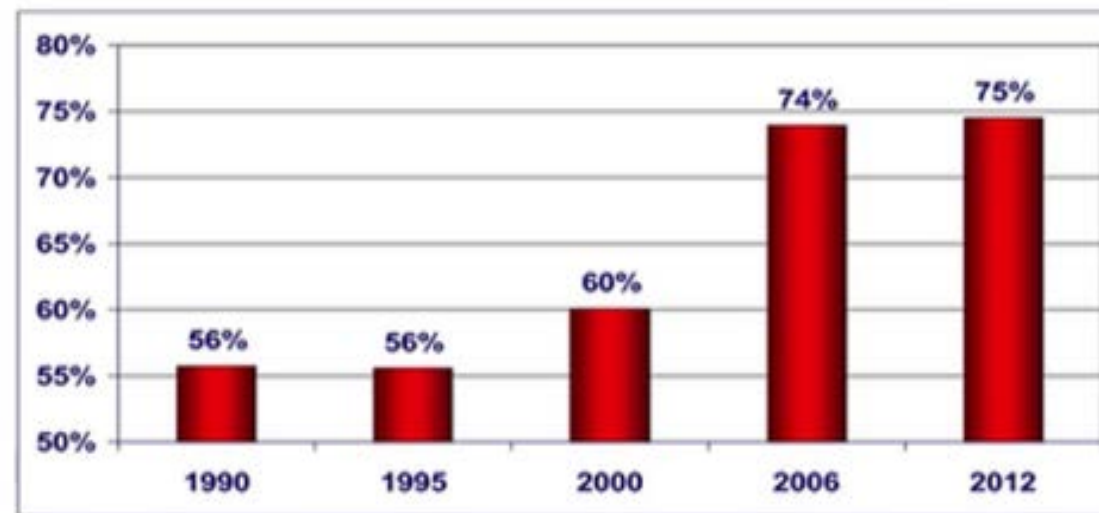
Proportion of all babies in multiple births,  
U.S., 1980-2012



Source: National Center for Health Statistics Annual Birth Reports

[BirthByTheNumbers.org](http://BirthByTheNumbers.org)

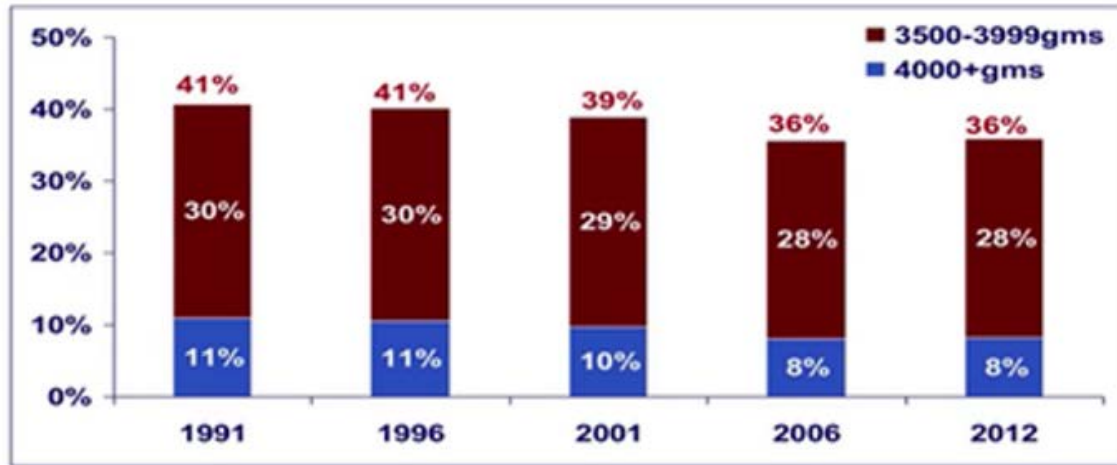
## Cesarean Rates for Multiple Births, U.S. 1990-2012



# Are Babies Getting Bigger?

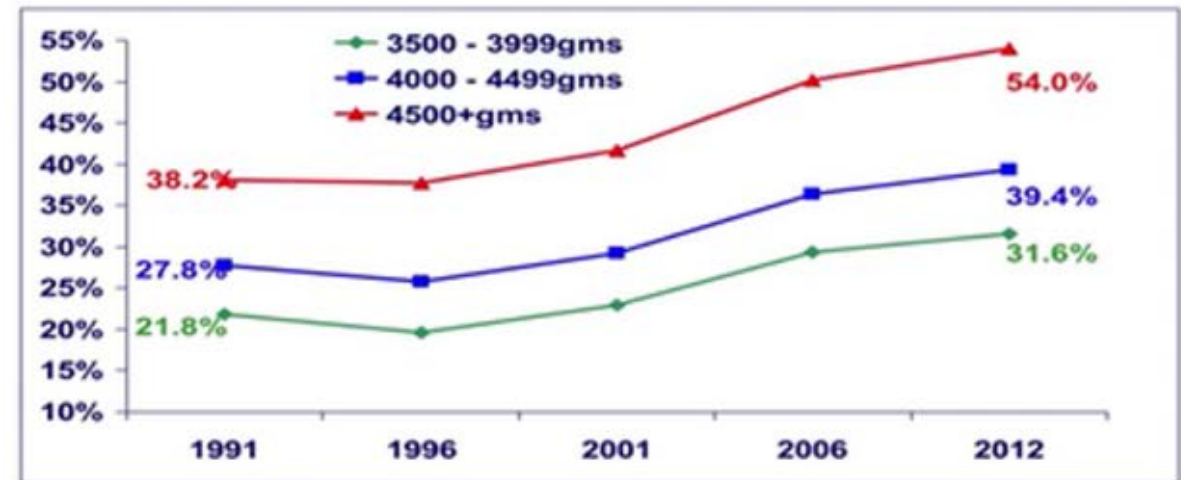
## Are Babies Getting Bigger?

% Singleton Babies by Birthweight, U. S., 1991-2012



BirthByTheNumbers.org

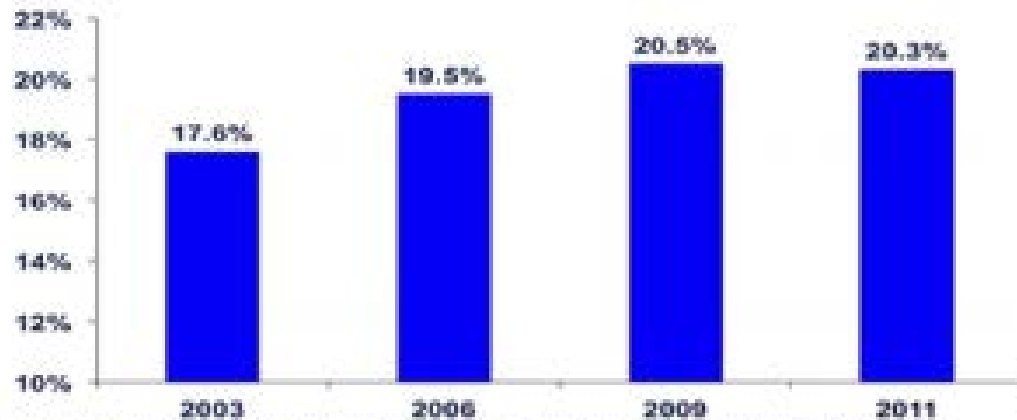
## % Cesareans in Singleton Births, U.S. by Birthweight, 1991-2012



# What about Mother's Health?

## Mothers' Health?

*Prepregnancy Obesity, U.S. 2003, 2006, 2009, 2011*

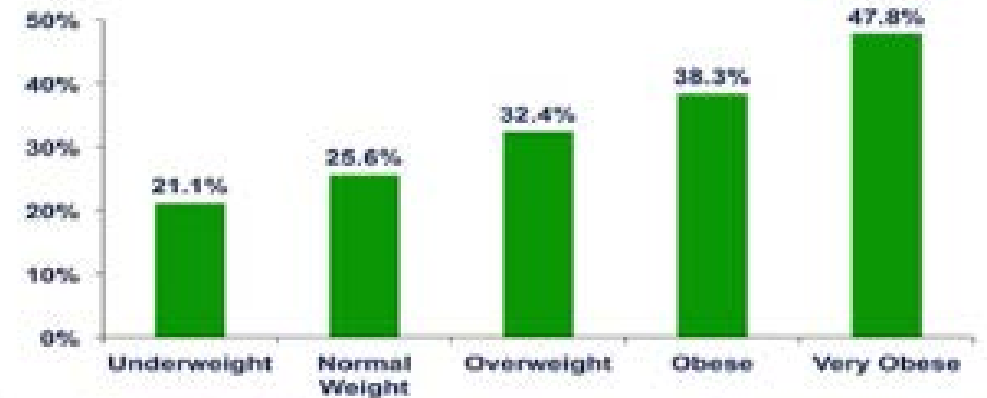


Sources: 2003-2009 – S. Fisher. Is obesity still increasing among pregnant women? *Preventive Medicine* 2013; 56: 372-378; 2011 – CDC VitalStats.

[BirthByTheNumbers.org](http://BirthByTheNumbers.org)

## Mothers' Health?

*Cesarean Rate Singleton Births by Prepregnancy Weight Range, U.S. 2012*



Source: CDC VitalStats, 2012.

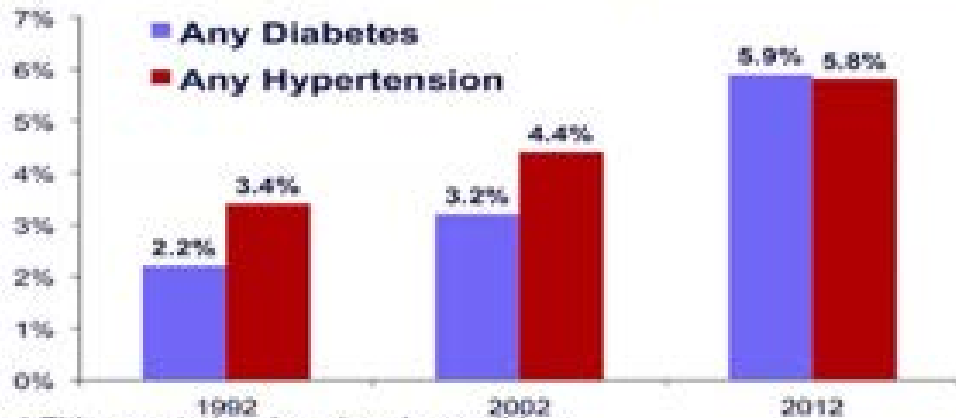
[BirthByTheNumbers.org](http://BirthByTheNumbers.org)



# What about Mother's Health?

## Mothers' Health?

### Diabetes\* & Hypertension\*, 1992, 2002, 2012



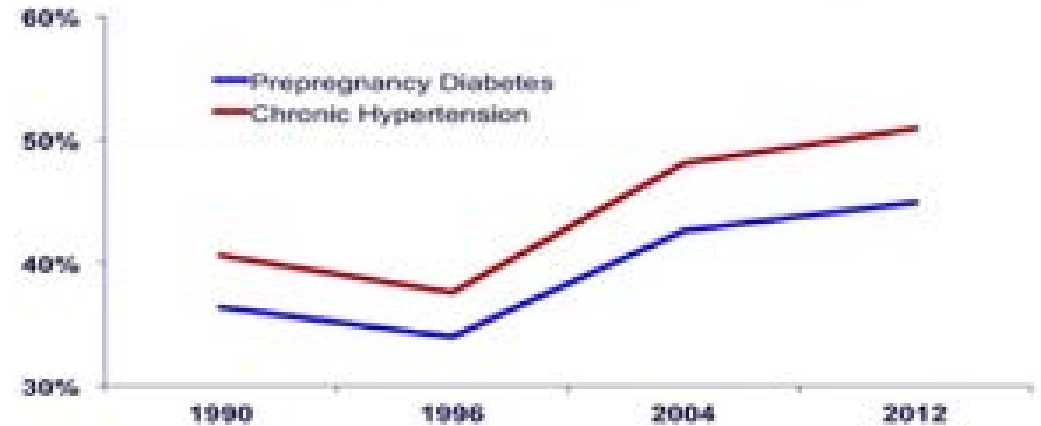
\* Either gestational or chronic condition

Source: CDC VitalStats, selected years.

[BirthByTheNumbers.org](http://BirthByTheNumbers.org)

## Mothers' Health?

### Cesarean Rates, Singleton Births, U.S., 1996, 2004, 2012



Source: CDC VitalStats, selected years.

[BirthByTheNumbers.org](http://BirthByTheNumbers.org)

# Maternal Request?

---

- The incidence of cesarean delivery on maternal request and its contribution to the overall increase in the cesarean delivery rate are not well known, but it is estimated that 2.5% of all births in the United States are cesarean delivery on maternal request - ACOG
- Studies from England, Canada, and the US confirm very low rates of maternal request cesareans

# Commonly Used Explanations for High C-Section Rate

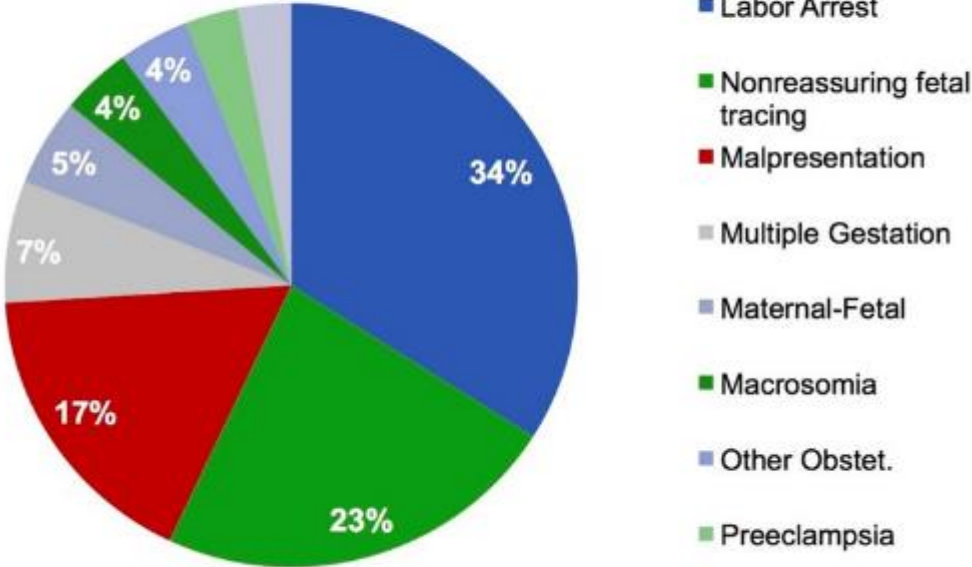
---

- ❖ Mothers are getting older - **NO**
- ❖ More multiples being born - **NO**
- ❖ Babies are getting bigger - **NO**
- ❖ Maternal health is worse: *obesity, diabetes & hypertension* - **SOME**
- ❖ Maternal request - **NO**

# Leading Indications for Cesareans

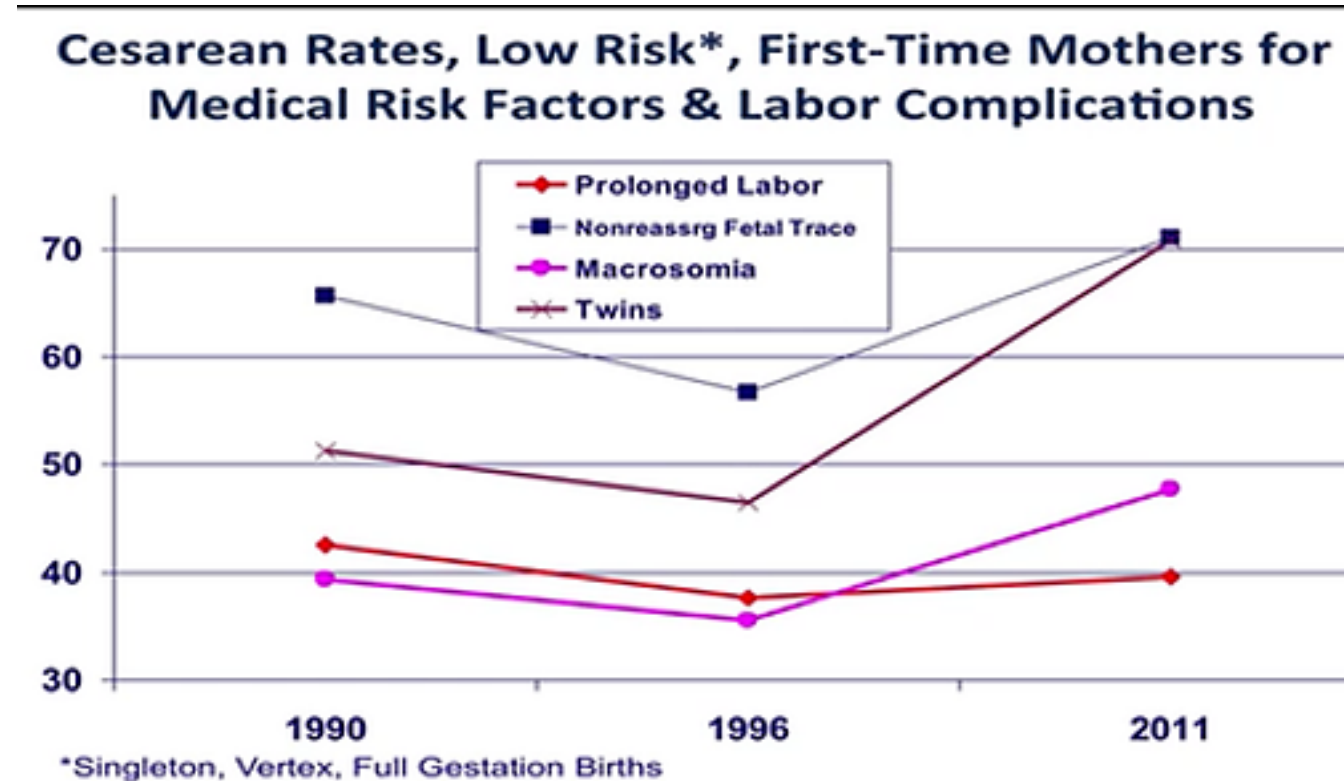
---

## Leading Indications for Cesareans



Source: ACOG & SMFM. *Safe Prevention of Primary Cesarean Delivery*. 3/2014.

# Women have not changed nearly as much as practice patterns have



**This is about culture of practice**

# The NTSV Initiative

---

C-sections account for more than 30 percent of births nationally and in N.J., with some NJ hospitals reporting rates of over 40 percent

NTSV C-Section births in New Jersey have increases from 23.5 percent in 1990 to **30.3** percent in 2016, far from the Healthy People 2020 target of 23.9 percent

- **Initiative's goal:**

- Reduce NTSV C-Section births by 10 percent within 18 months
- Improve safety culture and teamwork / communication between hospital staff

- **Structure:** Virtual collaborative, with content or coaching webinars  
First Monday of every other month

**48 out of the 49 birthing hospitals have signed letters of participation**

# Two Areas of Focus

---

- Hospital-subgroup
  - ***The hospital stay***, which includes policies promoting best practices to support vaginal birth, education for nursing staff on labor support skills, pain management, etc.
- Community-subgroup
  - ***The perinatal phase***, which includes appropriate care for mom and baby; childbirth; and breastfeeding education to optimize patient and family engagement in education, informed consent and shared decision-making about normal healthy labor and birth throughout the maternity care cycle.

# NTSV Initiative Timeline

Tasks	Target
Kick off webinar – <a href="#">Recording Link</a>	<b>Feb 21, 2018</b>
NTSV Coaching Webinar	<b>April 28, 2018</b>
Recruit team and identify senior leader; review baseline data. Team members review the NYSV C-section toolkit on the CMQCC site.	<b>May. 1, 2018</b>
Complete initial chart audits; compile summary and submit to NJPQC in de-identified format. Perform 20 chart audits per month for three months. Designate an area for communication about this initiative (white board, bulletin board) and post baseline data for staff, medical staff and administration to review.	<b>June. 1, 2018</b>
Using AHRQ tool, have all staff, including physicians, nurse midwives, residents, complete one. Submit de-identified copies to NJPQC for aggregation and feedback.	<b>June 1, 2018</b>
Review all policies and procedures and make revisions as needed to ensure they support best practices in obstetrics, safely reduce routine interventions in low-risk women and consistently support vaginal birth. Also, develop processes to standardize responses to labor challenges to prevent cesarean.	<b>July – Aug, 2018</b>



# NTSV Initiative Timeline (cont.)

Tasks	Target
Educate staff on all policies and procedures. Make available webinars on CMQCC site at <a href="https://www.cmqcc.org/resources-tool-kits/webinars">https://www.cmqcc.org/resources-tool-kits/webinars</a>	<b>Sept 2018</b>
Hold first meeting of your team to review audits and safety survey results. Define aim. Plan first PDSA cycle using worksheet.	<b>July 15, 2018</b>
First face-to-face learning session	<b>TBD</b>
Monthly meeting of teams to review data, review monthly chart audits, internal data on C-sections, plan improvements or changes to plan using PDSA performance improvement strategies	<b>ongoing</b>
Using results of AHRQ survey, provide education to all staff on communication, teamwork, SBAR, safety culture. Arrange for TeamSTEPPS training if needed.	<b>ongoing</b>
Conference calls with NJPQC and AIM staff	<b>As Needed</b>
All Collaborative webinar (two hours) – every team prepares one slide with summary of activities to date, progress, barriers – each team will have no more than two min. to present	<b>TBD</b>
Second face-to-face learning session	<b>TBD</b>
Continue work into 2019	

# NTSV Webinar Recordings

---

## **NTSV C/S Initiative Kick-off webinar**

February 21, 2018

[Recording](#)

## **NTSV C/S Coaching Webinar**

April 24, 2018

[Recording](#)

**Next webinar: June 25<sup>th</sup>** – registration link coming soon

# Contact Us

---

## NJPQC Steering Committee

- Andrew Rubenstein, MD  
[Andrew.Rubenstein@hackensackmeridian.org](mailto:Andrew.Rubenstein@hackensackmeridian.org)
- Robyn D'Oria MA, RNC, APN  
[rdoria@cjfhc.org](mailto:rdoria@cjfhc.org)

## NJPQC Data

- Angela Centellas, MPH  
[Acentellas@njha.com](mailto:Acentellas@njha.com)

## NTSV

- Suzanne Sernal, APN, MSN, RNC-OB, CBC  
[Suzanne.Sernal@rwjbh.org](mailto:Suzanne.Sernal@rwjbh.org)

## NJ AIM

- Kathy Mahoney, PhD, MSN, RNC-OB, APN, C.  
[kmahoney@cjfhc.org](mailto:kmahoney@cjfhc.org)

# The Labor RNs Study

Kathleen Rice Simpson  
Joanne Spetz  
Audrey Lyndon

Audrey Lyndon  
[LaborRNs@ucsf.edu](mailto:LaborRNs@ucsf.edu)  
415-502-3504



University of California  
San Francisco

# Purpose



- To determine relationships between nursing care during labor and birth and patient outcomes:
  - Relationships between nurse-sensitive quality indicators, nurse staffing, and patient safety and quality in medical-surgical and critical care hospital settings are well established in the US, Canada, Europe, and Australia
  - The extent to which nurse staffing affects childbirth outcomes and the degree to which missed nursing care during labor and birth might affect complications, patient satisfaction, or health disparities is unknown
  - Nurse staffing ratios for labor and birth are based on standards of care
  - *There is a critical knowledge gap in understanding relationships between nurse staffing levels during labor and birth, nursing care provided during labor and birth, patient outcomes, and patient safety*

# Previous Research w/AWHONN

- Secondary analysis of 884 AWHONN members' responses to online survey about nurse staffing (<https://www.ncbi.nlm.nih.gov/pubmed/27234155> )
  - Discovered numerous potential consequences of missed care during labor and birth
- Adapted an existing nursing care instrument using 11 focus groups of labor and delivery nurses (N=71) speaking about their contributions to patient outcomes and the consequences of missed care
  - Consequences included: fluid overload, negative birth experience, unplanned cesarean birth, maternal morbidity, and poor breastfeeding (<https://www.ncbi.nlm.nih.gov/pubmed/27557294> ; <https://www.ncbi.nlm.nih.gov/pubmed/27879502> )
- Further focus groups were conducted with new mothers (N=23) and physicians who attend births (N=9) regarding labor nurses and their contribution to patient outcomes – consensus on NTSV & breastfeeding as nurse-sensitive outcomes (<https://www.ncbi.nlm.nih.gov/pubmed/28428245>)
- Field-tested survey in 40 hospitals in 3 states



# What Will We Measure?



Confidential survey – we will know the facility where nurses work, but we will not be able to link personal information – survey distribution is separated from the responses, which are stored without identifiers

- Nurse report:
  - How often aspects of nursing care are missed (“delayed, unfinished, or completely omitted”) on their unit during labor and birth
  - How frequently their unit meets the AWHONN recommended staffing guidelines
- Safety Climate scale; Burnout scale; Intention to leave within the next year
- Basic demographics (experience, age, education, race, ethnicity)
- Aggregate nursing care measures to hospital level
- Link hospital level measures of nursing care to publically available birth outcomes

# We Need Your Help!



- Breaking new ground in evaluating the relationships between nurse staffing, missed nursing care, and patient outcomes
  - Determining how nursing care during labor and birth influences maternal and infant outcomes, including NTSV cesarean rate and exclusive breastfeeding rate
- Developing new evidence-based approaches to improve the quality and safety of maternity care
- Recruiting labor nurses from hospitals that provide obstetric care in 15 jurisdictions, including New Jersey – *our target is to include all New Jersey birth hospitals (except those that participated in previous field test)*



# Our Ask:



## NURSE LEADERS

*Host the study at your facility – we do all the data collection*

- Distribute the survey to nurses directly using email scripts and materials provided by LaborRNs team or provide the team email address list of labor and delivery nurse staff in your hospital
- Answer 7 basic questions on facility staffing patterns

## LABOR NURSES

*Ask about hosting the study at your facility*

*Participate in the study when hosted:*

- Distributed by email from LaborRNs or your nurse leader
- 10-15 minute confidential online survey
- Option to enter a drawing for an Amazon gift card

