



# Perinatal Quality Indicators (PQI): Differences in Perinatal Outcomes Dashboard

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# Agenda

1. Background and Context
2. Overview the Perinatal Quality Indicator Report
3. Differences in Perinatal Outcomes Dashboard: Identifying Differences
4. Interpretation and Actionable Insights
5. Q&A
6. Conclusion and Next Steps

# FPQC's Vision & Values

*“All of Florida’s mothers, infants & families will have the best health outcomes possible through receiving respectful, equitable, high quality, evidence-based perinatal care.”*



- Voluntary
- Data-Driven
- Population-Based
- Evidence-Based
- Equity-Centered
- Value-Added

# FPQC Partners & Funders



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



Mission to Care. Vision to Lead.



**AWHONN**  
FLORIDA  
PROMOTING THE HEALTH OF  
WOMEN AND NEWBORNS



AGENCY FOR HEALTH CARE ADMINISTRATION



ALLIANCE FOR INNOVATION  
ON MATERNAL HEALTH



Florida Society of Neonatologists

Advancing the Care of Neonates in the Sunshine State



FLORIDA ACADEMY OF  
FAMILY PHYSICIANS  
SUPPORT FLORIDA'S FAMILY PHYSICIANS



# Perinatal Quality Indicators (PQI)

- **Supports hospital QI efforts by:**
  - ✓ Providing periodic hospital-specific reports of perinatal indicators and corresponding data quality reports
  - ✓ Hospitals do not submit any data for PQI to FPQC
- Indicators have been chosen and adapted from measures provided by leading national groups



# Perinatal QI Indicator Sets

1. Non-medically indicated early-term deliveries—PC-01
2. Nulliparous, term, single, vertex cesareans—PC-02
3. NTSV cesarean comparative measure—CMQCC-TJC-SMFM
4. Failed inductions of labor
5. Severe Maternal Morbidity—CDC – AIM-PC-07
6. Unexpected Newborn Complications—PC-06-CMQCC
7. Severe Hypertension/Preeclampsia—AIM
8. Obstetric Hemorrhage—AIM
9. Neonatal Abstinence Syndrome Length of Stay

# Perinatal Quality Indicators

Monitoring and improving maternal and infant health outcomes

Identifying variations in care

Promoting fair access and quality of healthcare for all

Guiding quality improvement initiatives

Informing policy and resource allocation

# Supporting Research

## Maternal and Hospital Characteristics of Non-Medically Indicated Deliveries Prior to 39 Weeks

Lindsay S. Womack · William M. Sappenfield · Cheryl L. Clark · Washington C. Hill · Robert W. Yelverton · John S. Curran · Linda A. Detman · Vani R. Bettgowda



## Hospital variation in cesarean delivery rates: contribution of individual and hospital factors in Florida

Yuri V. Sebastião, MPH; Lindsay Womack, MPH; Cheryl A. Vamos, PhD, MPH; Judette M. Louis, MD, MPH; Funmilayo Olaoye, MPH; Taylor Caragan, BS, CLC; Omonigho M. Bubu, MD, MPH; Linda A. Detman, PhD; John S. Curran, MD; William M. Sappenfield, MD, MPH

## Hospital Variations in Unexpected Complications Among Term Newborns

Yuri V. Sebastião, PhD, MPH,<sup>a,b</sup> Lindsay S. Womack, MPH,<sup>a</sup> Humberto López Castillo, MD, PhD, MPH,<sup>c,d</sup> Maya Balakrishnan, MD,<sup>a</sup> Karen Bruder, MD, FACOG,<sup>e</sup> Paige Alitz, MPH, MPH,<sup>a</sup> Linda A. Detman, PhD,<sup>g</sup> Emily A. Bronson, MA, MPH,<sup>g</sup> John S. Curran, MD, FAAP,<sup>h,i</sup> William M. Sappenfield, MD, MPH, MPH,<sup>e,g</sup>



## Multilevel factors associated with length of stay for neonatal abstinence syndrome in Florida's NICUs: 2010–2015

Chinyere N Reid <sup>1, 2</sup>, Tara R Foti <sup>3, 4</sup>, Alfred K Mbah <sup>3</sup>, Mark L Hudak <sup>5</sup>, Maya Balakrishnan <sup>3</sup>, Russell S Kirby <sup>3, 4</sup>, Roneé E Wilson <sup>3, 4</sup>, William M Sappenfield <sup>3, 4</sup>



## Race and Ethnicity Misclassification in Hospital Discharge Data and the Impact on Differences in Severe Maternal Morbidity Rates in Florida

Chinyere N Reid <sup>1</sup>, Renice Obure <sup>1</sup>, Jason L Salemi <sup>1</sup>, Chinwendu Ilonzo <sup>1</sup>, Judette Louis <sup>2</sup>, Estefania Rubio <sup>1</sup>, William M Sappenfield <sup>1</sup>





# Data Sources

## Hospital Code: 591-002

### Birth Certificate – Data through April 2023

Low-Risk Cesarean Deliveries

### Inpatient Hospital Discharge – Data through Q3 2022

Neonatal Abstinence Syndrome

Severe Maternal Morbidity (No Blood Transfusions)

Severe Hypertension/Preeclampsia

Obstetric Hemorrhage

### Linked Birth Certificate and Hospital Dis. – Data through 2021

Non-medically Indicated (Elective) Early-term Deliveries

Induction of Labor and Failed Inductions of Labor

Comparative NTSV cesarean- BC-JC-MFM

Unexpected Complications of the Newborn

# PQI sections

Data quality dashboard

Hospital Profile

Summary dashboard

Differences in Perinatal Outcomes dashboard

Indicator-specific and supporting graphs

- Variation, quartiles, time trends, and disaggregation

# Data Quality Dashboard

## Identify over reporting “unknown”

### % Unknown/Missing in the Birth Certificate

		2018	2019	2020	2021	2022	2023
<b>Maternal Characteristics</b>	Maternal race	●	●	●	●	●	● 0.1%
	Maternal ethnicity	●	●	●	●	●	● 0.1%
	Insurance	●	●	●	●	●	● 0.0%
<b>Risk Factors</b>	BMI	●	●	●	●	●	● 4.7%
	Prior live births dead	●	●	●	●	●	● 0.1%
	Prior live births living	●	●	●	●	●	● 0.0%
	Plurality	●	●	●	●	●	● 0.0%
	Gestational age	●	●	●	●	●	● 0.0%
<b>Delivery</b>	Fetal presentation	●	●	●	●	●	● 0.1%
	Delivery route	●	●	●	●	●	● 0.1%

● ≥5% unknown    
 ● 1.1-4.9% unknown    
 ● ≤1% unknown

# Data Quality Dashboard

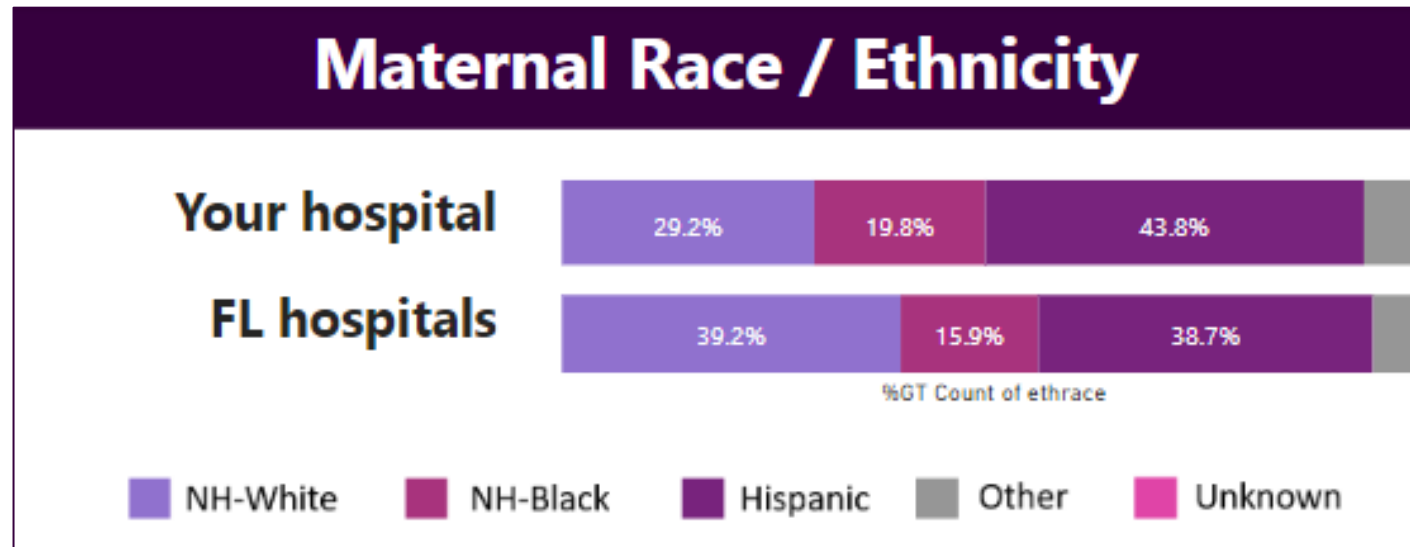
Assess if data reported in the BC agrees with data reported in the inpatient hospital discharge

## % Agreement in the Linked File

		2018	2019	2020	2021
<b>Maternal Characteristics</b>	Maternal race	●	●	●	● 66%
	Maternal ethnicity	●	●	●	● 89%
	Payer	●	●	●	● 80%
<b>Risk Factors</b>	Singleton	●	●	●	● 100%
	Born at term	●	●	●	● 84%
	Not in vertex position	●	●	●	● 91%
<b>Delivery</b>	Cesarean delivery	●	●	●	● 96%

● ≤90% agreement   ● 90.1-94.9% agreement   ● ≥95% agreement

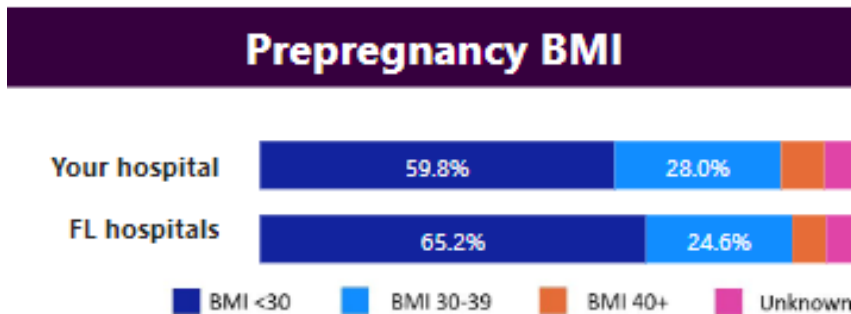
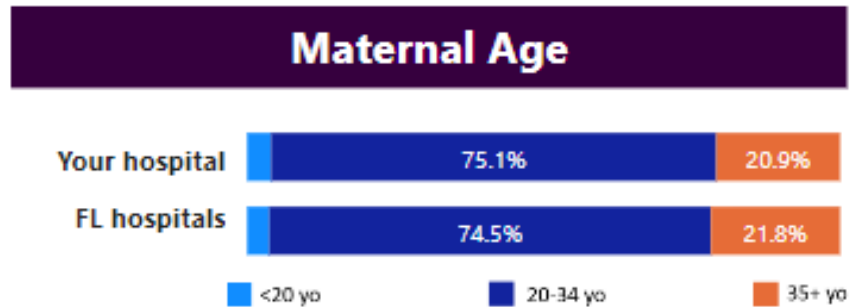
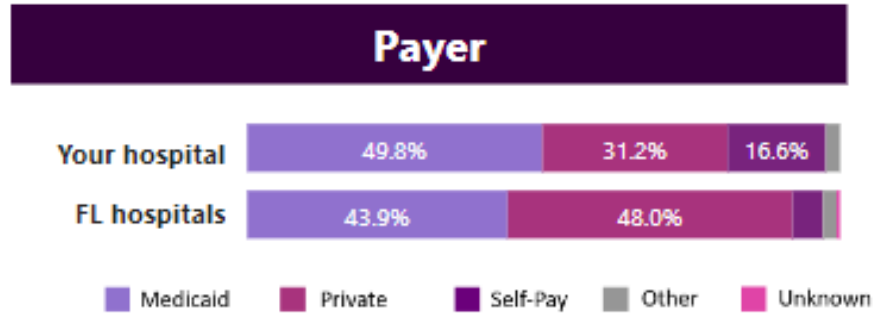
# Hospital Profile



Hospital X serves a higher percentage of NH-black and Hispanic individuals compared to all Florida hospitals

# Hospital Profile Elements

- Maternal Race/Ethnicity
- Payer
- Maternal Age
- Maternal Education
- Prior Live Births
- Fetal Presentation
- Method of Delivery
- Pre-pregnancy BMI
- Gestational Age
- Birth Weight Distributions
- Multiple Gestation



### BIRTH YEAR

- 2019
- 2020
- 2021
- 2022
- 2023

### NICU LEVEL

- 1
- 2
- 3

### Race-ethnicity

- NH-White
- NH-Black
- Hispanic

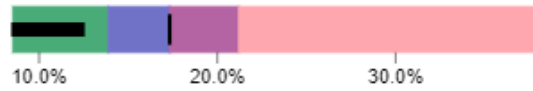
### Payor

- Medicaid
- Private
- Self-Pay



# Summary Profile

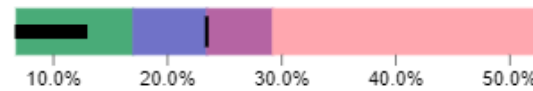
% Non-medically Indicated Early-term Deliveries



Your Hospital

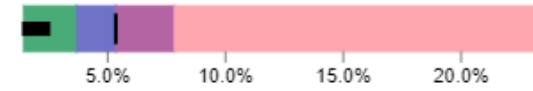
12.5%

% Non-Medically Indicated Induction of Labor Among Singleton, Vertex Births at 39-40 Weeks of Gestation



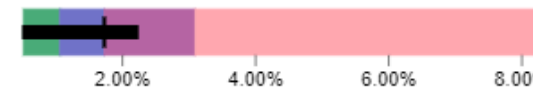
12.9%

% Cesarean Among Singleton, Vertex, Non-Medically Indicated Inductions at 39-40 Weeks of Gestation



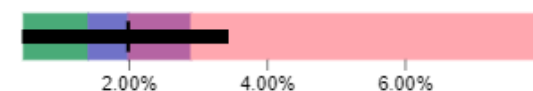
2.5%

% Severe unexpected complication of the term newborn



2.24%

% Moderate unexpected complication of the term newborn



3.43%

Data Source: Linked Birth Certificate to Hospital Discharge

Data Quality Issue

Agreement Unknown

Agreement Unknown

Agreement Unknown

■ Your Hospital %

Your hospital is among...

- The highest 25% of hospitals
- The highest 50% of hospitals
- The lowest 50% of hospitals
- The lowest 25% of hospitals

| Median

**NICU LEVEL**

- 1
- 2
- 3

**Race-ethnicity**

- NH-White
- NH-Black
- Hispanic

**Payor**

- Medicaid
- Private
- Self-Pay

**Education**

- < than HS
- Bachelor's +
- HS/some college

# Mother-Focused Care Approaches Using PQI



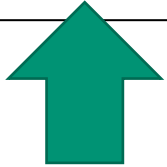
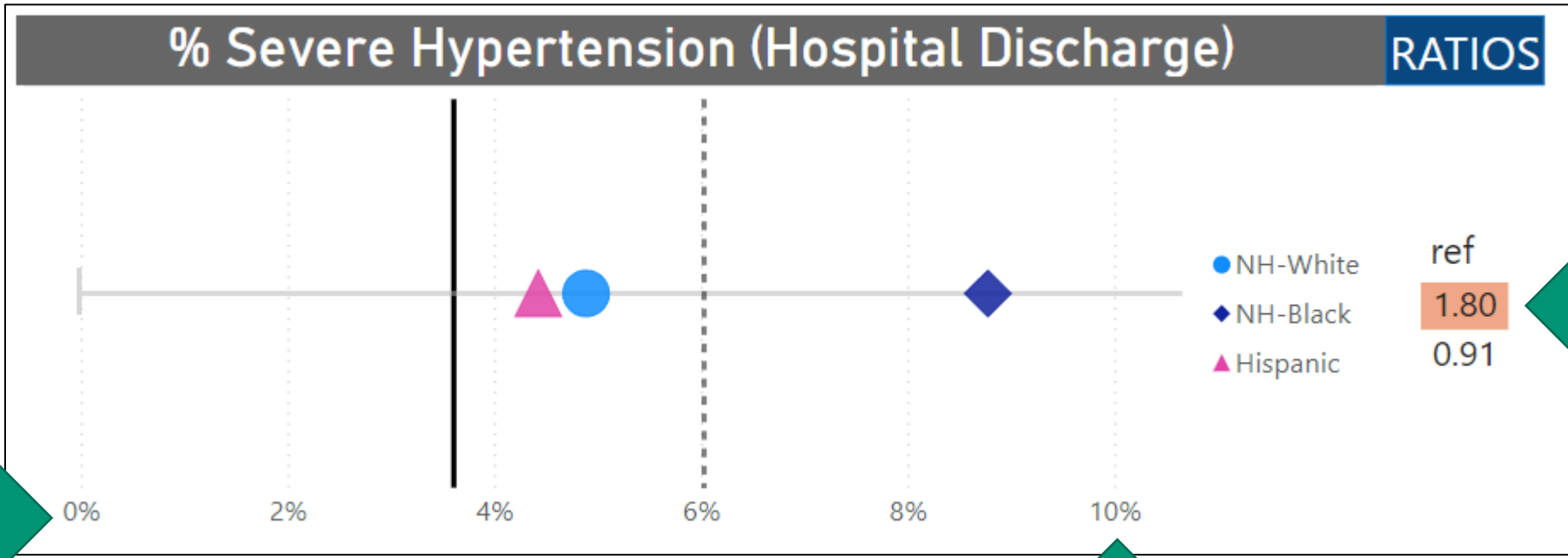
**Across Outcomes:  
Examine Differences in  
Perinatal Outcomes**

**Within An Outcome:  
Examine Differences by  
Perinatal Outcomes**



# Differences in Perinatal Outcomes Dashboard

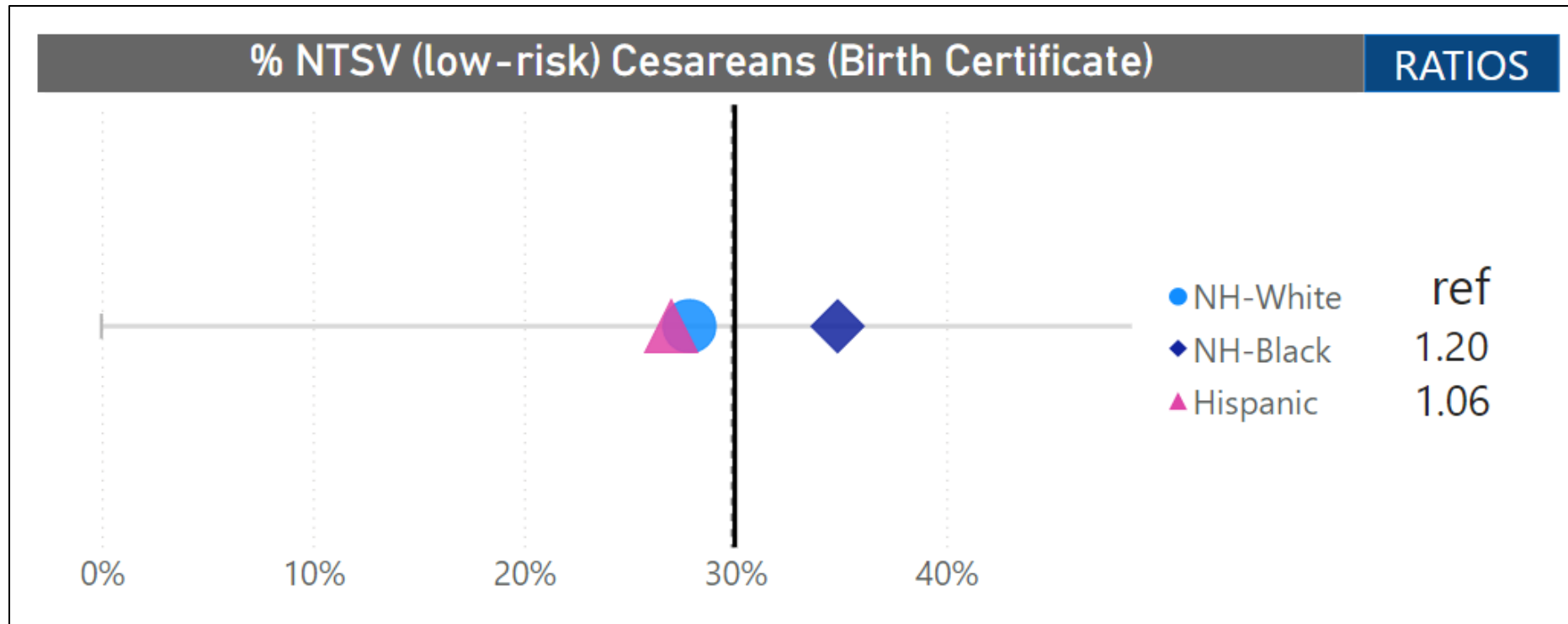
| % State | % Hospital



# Differences in Perinatal Outcomes Dashboard

| % State

| % Hospital



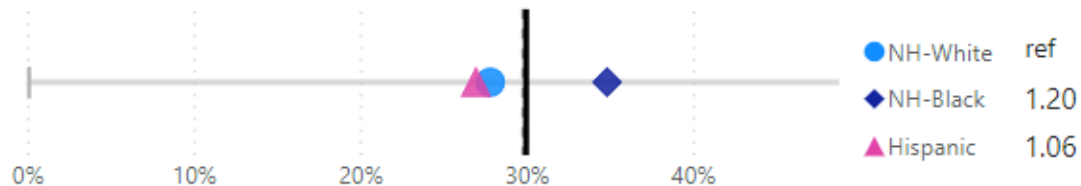
NH-black women have a 20% higher likelihood of undergoing a cesarean section in hospital X compared to NH-white women

# Differences in Perinatal Outcomes Dashboard (last 12 Months of available data)

% State | % Hospital

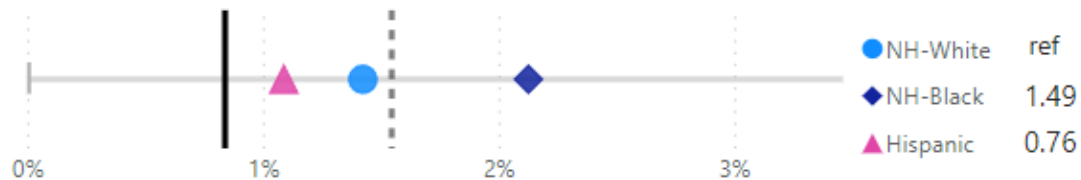
% NTSV (low-risk) Cesareans (Birth Certificate)

RATIOS



% SMM- w/o BT (Hospital Discharge)

RATIOS



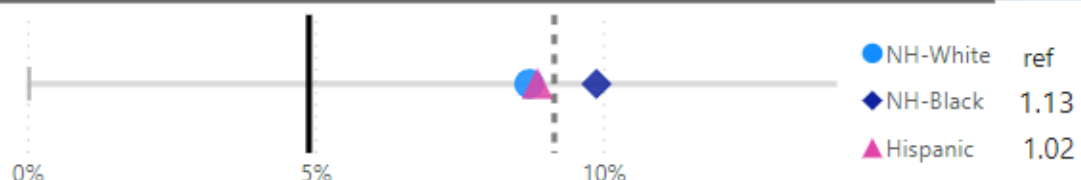
% Severe Hypertension (Hospital Discharge)

RATIOS



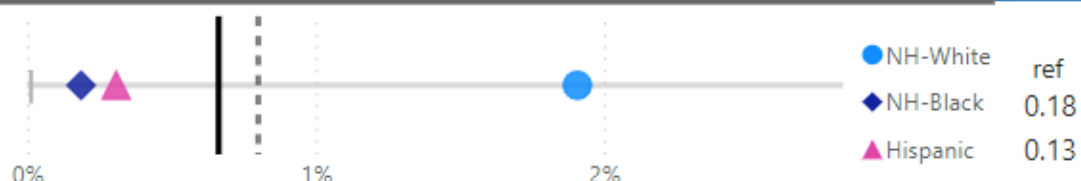
% Obstetric Hemorrhage (Hospital Discharge)

RATIOS



% Neonatal Abstinence Syndrome (Hosp. Discharge)

RATIOS



Race-Ethnicity

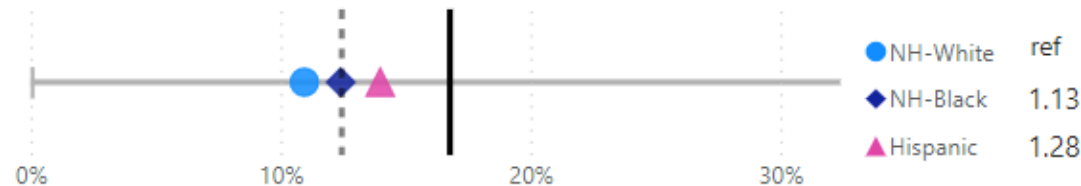
Insurance

Education

BMI

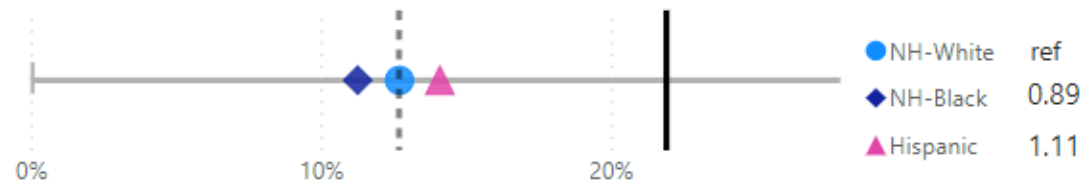
% Non-medically Indicated Early-term Deliveries (Linked)

RATIOS



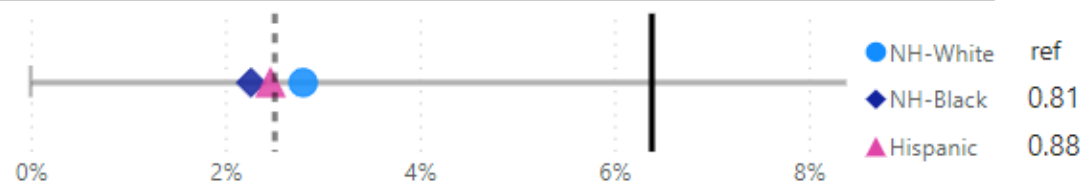
% Low Risk Non-Medically Indicated (NMI) Induction (Linked)

RATIOS



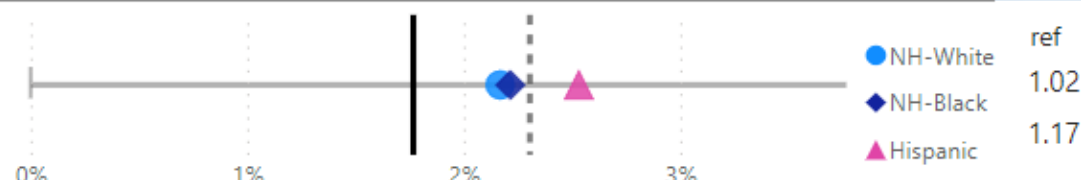
% Low risk Cesarean NMI Inductions (Linked)

RATIOS



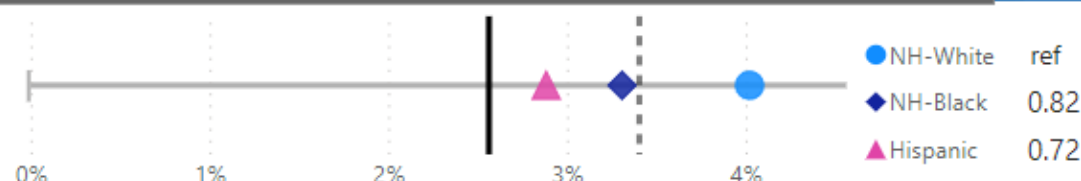
% Severe Unexpected Complication of the Newborn (Linked)

RATIOS



% Moderate Unexpected Complication of the Newborn (Linked)

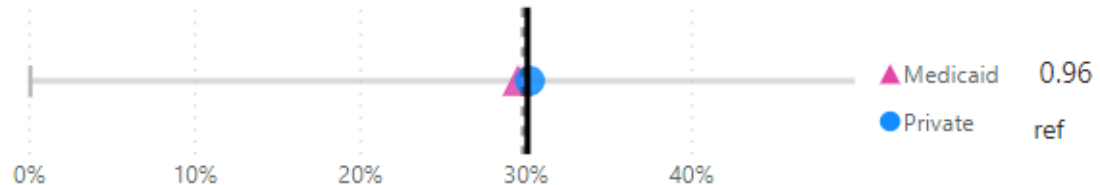
RATIOS



# Differences in Perinatal Outcomes Dashboard (last 12 Months of available data)

% State | % Hospital

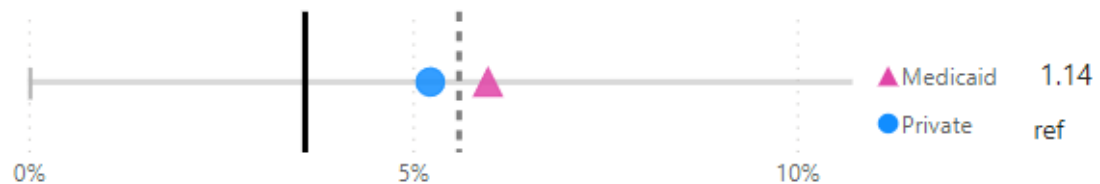
## % NTSV (low-risk) Cesareans (Birth Certificate) RATIOS



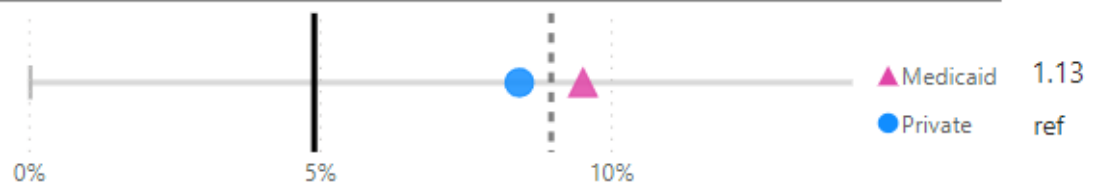
## % SMM- w/o BT (Hospital Discharge) RATIOS



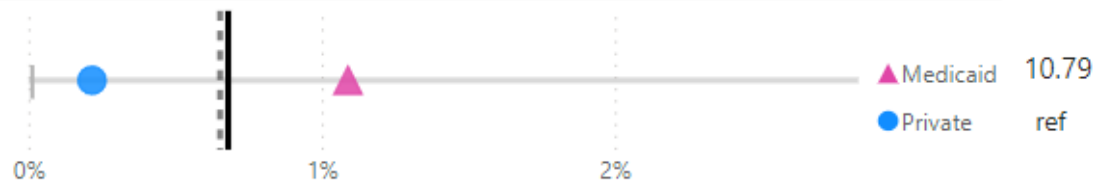
## % Severe Hypertension (Hospital Discharge) RATIOS



## % Obstetric Hemorrhage (Hospital Discharge) RATIOS



## % Neonatal Abstinence Syndrome (Hosp. Discharge) RATIOS



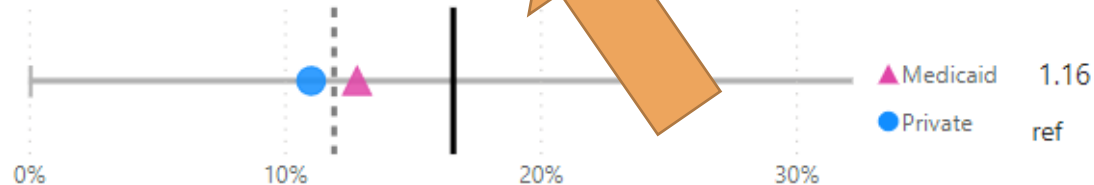
Race-Ethnicity

Insurance

Education

BMI

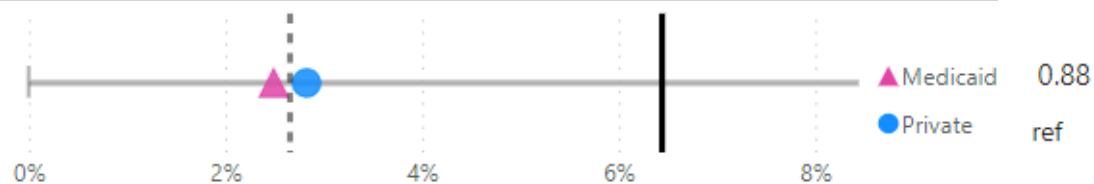
## % Non-medically Indicated Early Deliveries (Linked) RATIOS



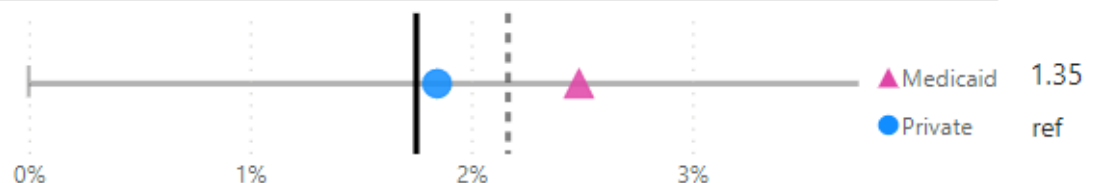
## % Low Risk Non-Medically Indicated (NMI) Induction (Linked) RATIOS



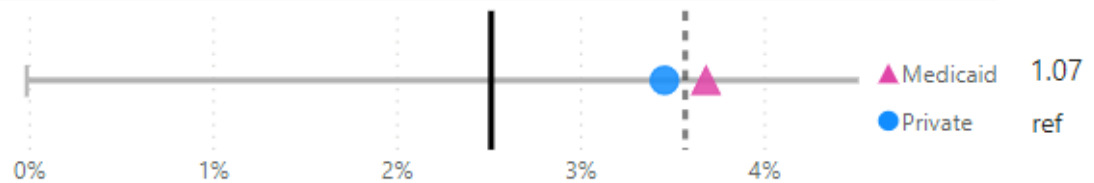
## % Low risk Cesarean NMI Inductions (Linked) RATIOS



## % Severe Unexpected Complication of the Newborn (Linked) RATIOS



## % Moderate Unexpected Complication of the Newborn (Linked) RATIOS



# Questions

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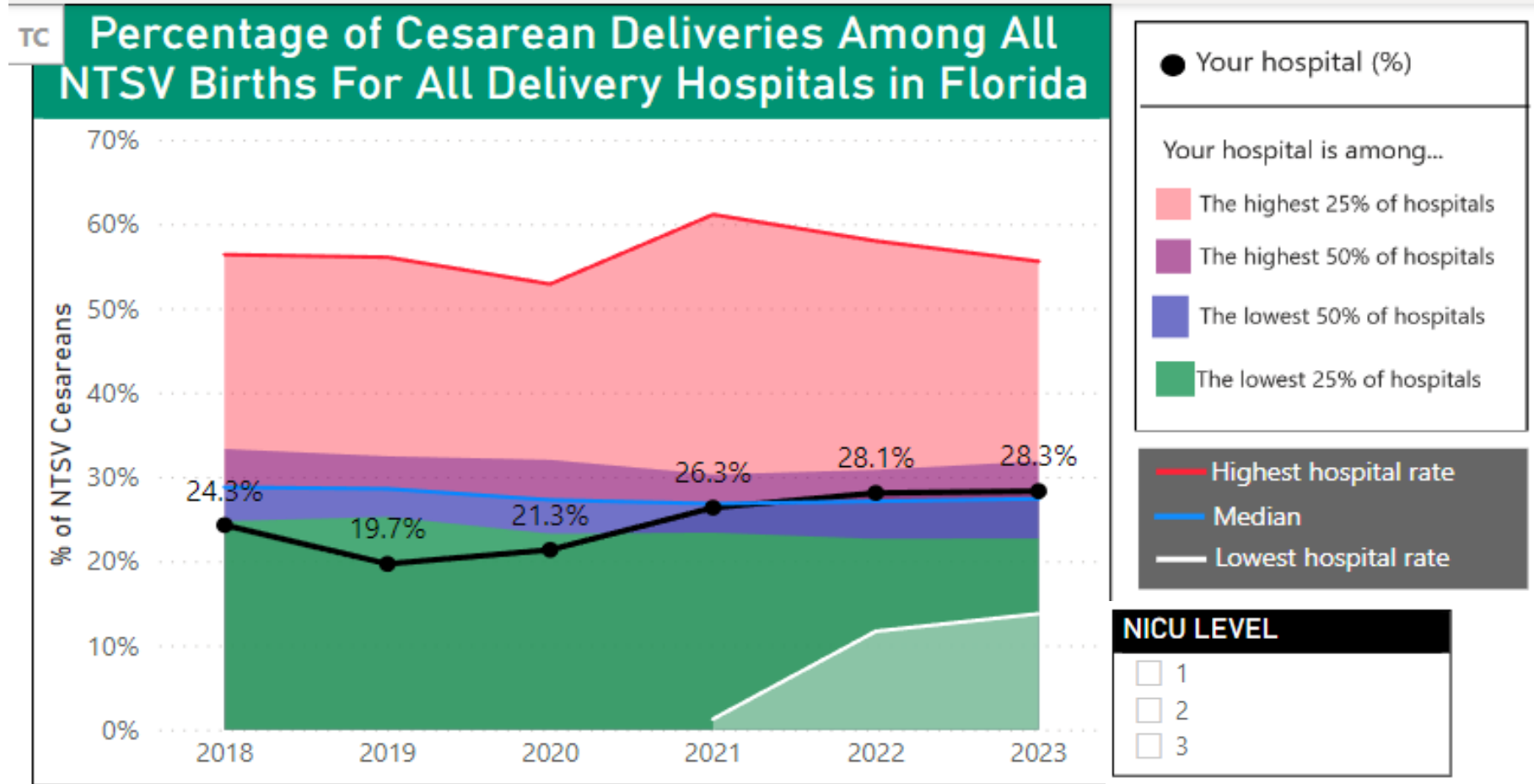
# Mother-Focused Care Approaches Using PQI



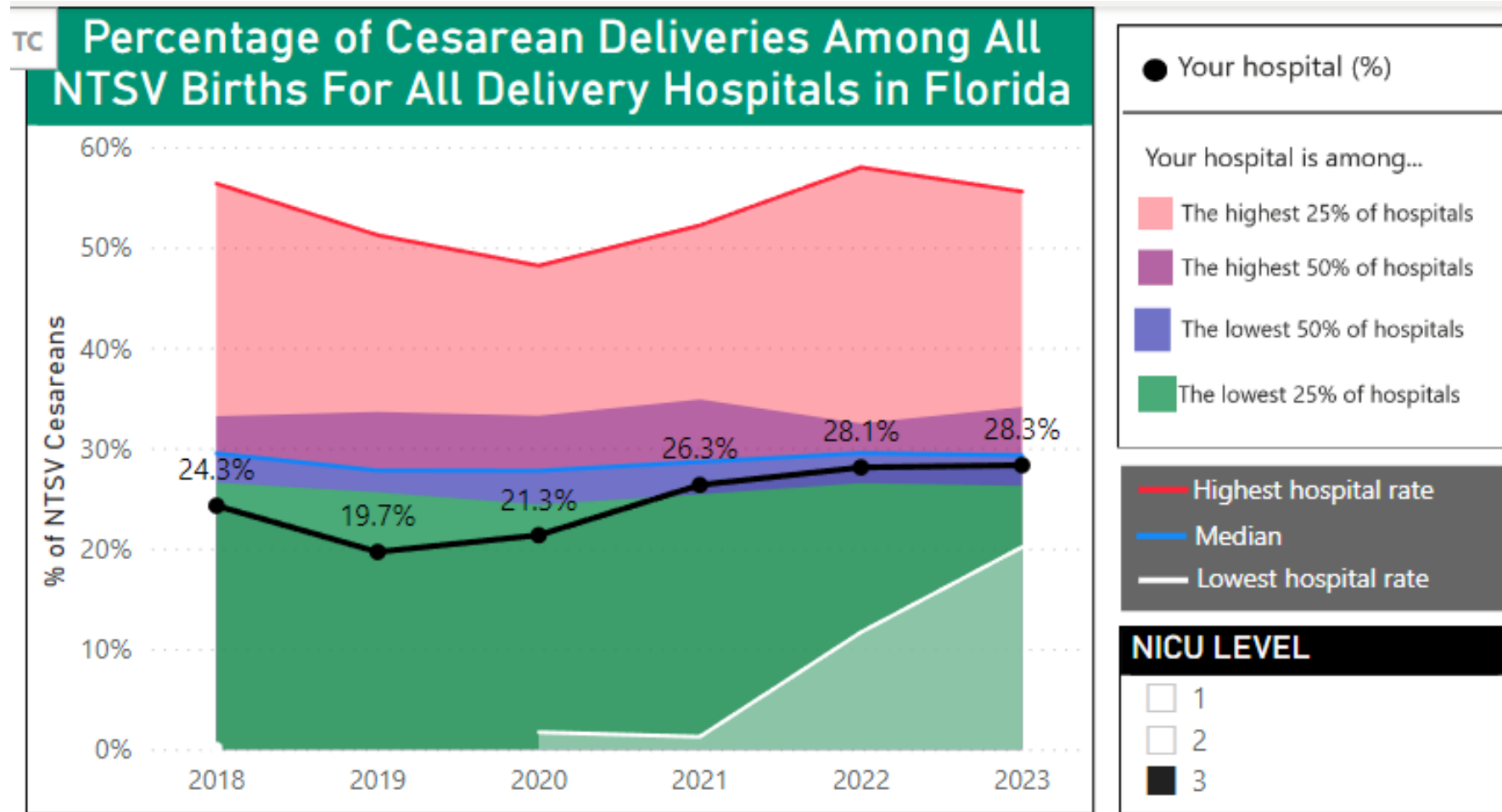
**Across Outcomes:  
Examine Differences in  
Perinatal Outcomes**

**Within An Outcome:  
Examine Differences in  
Perinatal Outcomes**

# Compare Your Hospital Rate to Others in the State

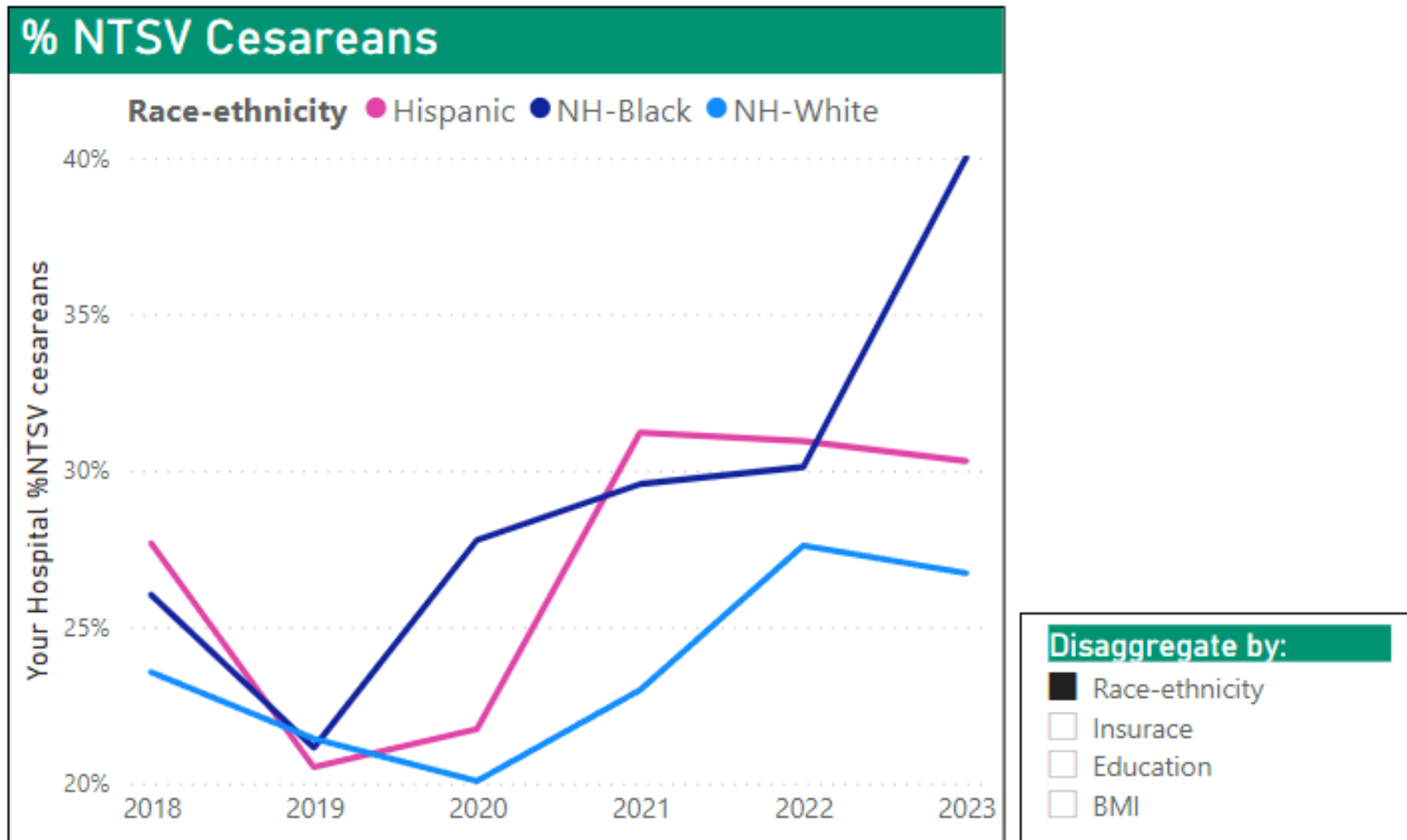


# Compare Your Hospital Rate to Others in the State

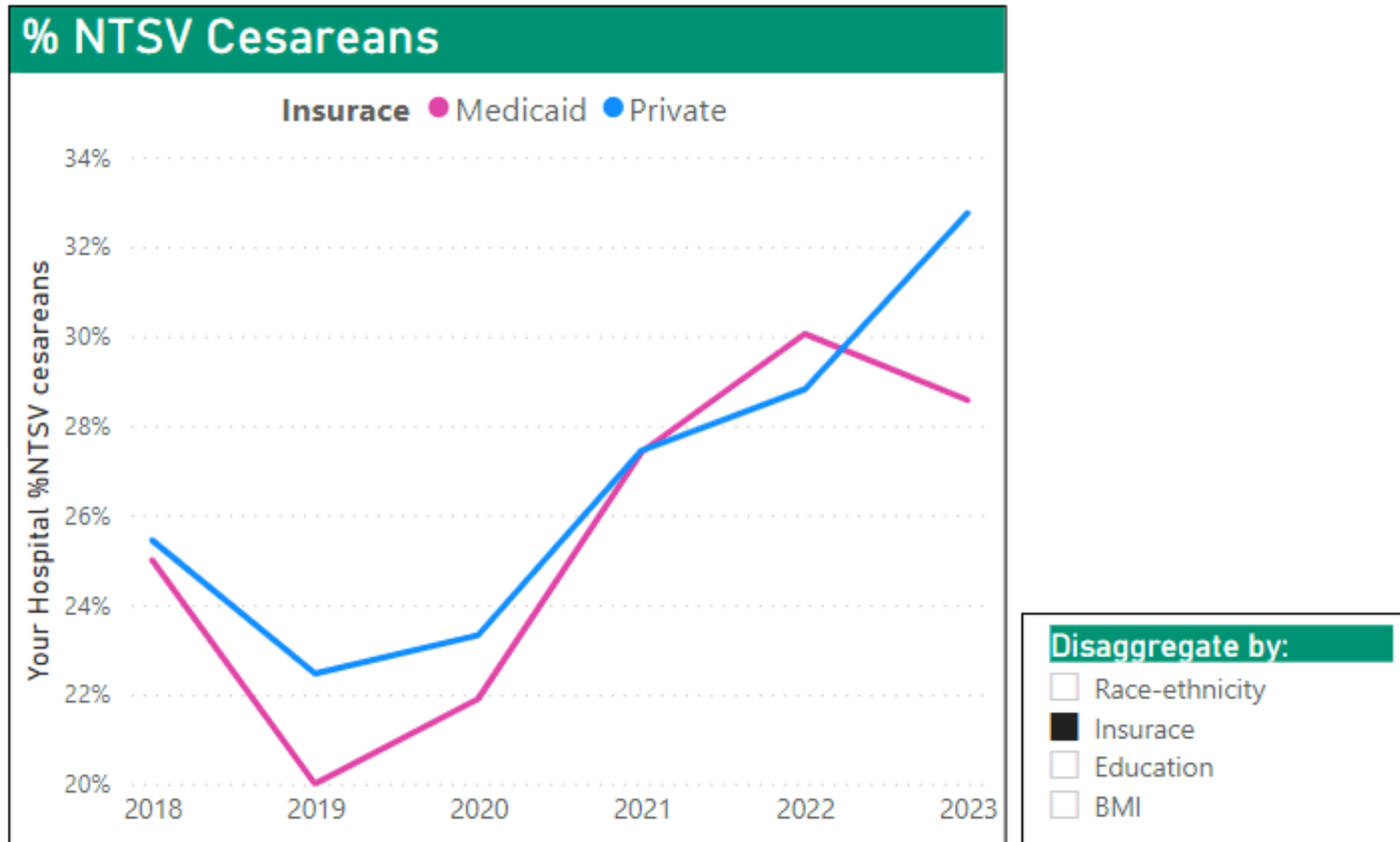




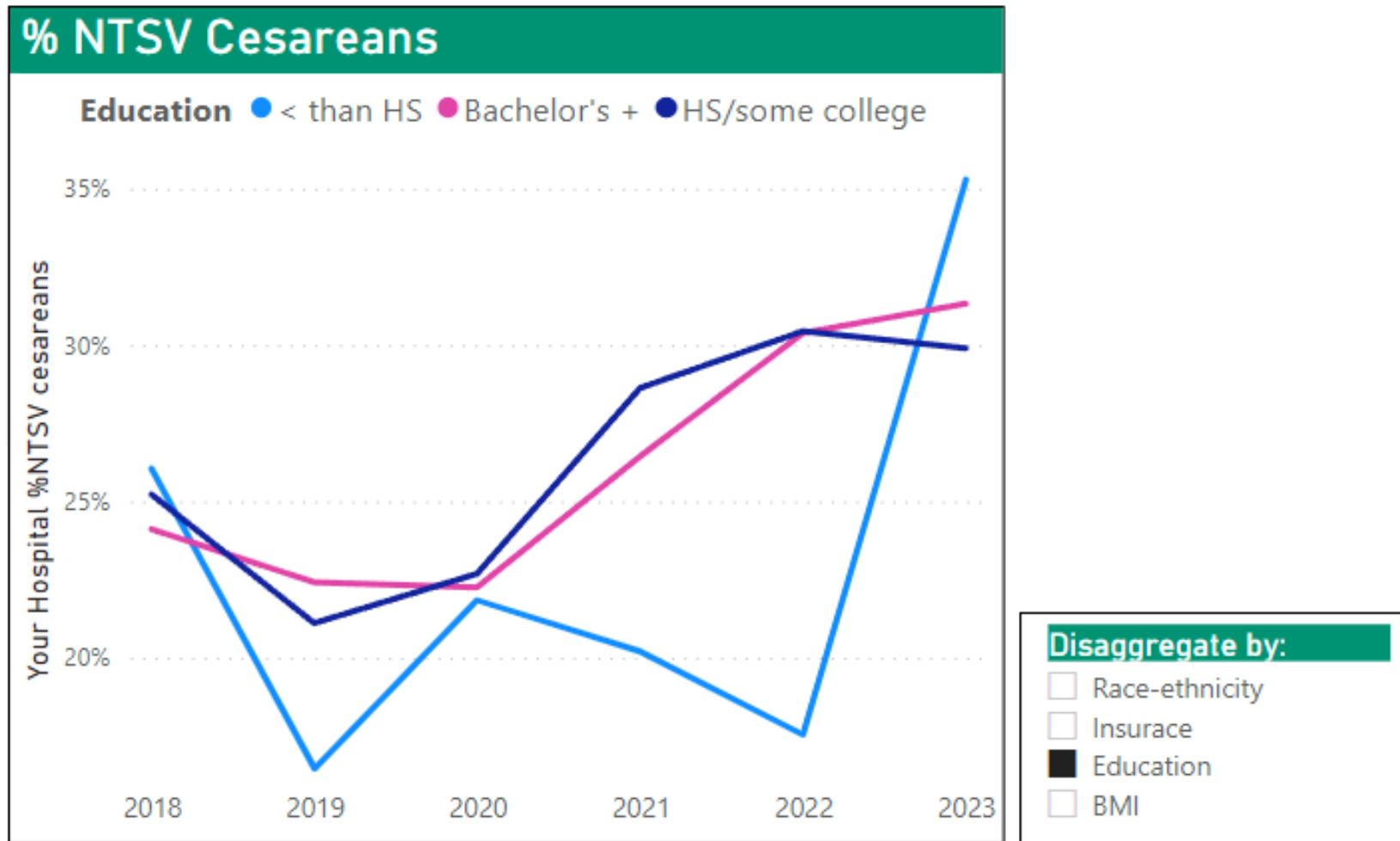
# Disaggregate Your Rate



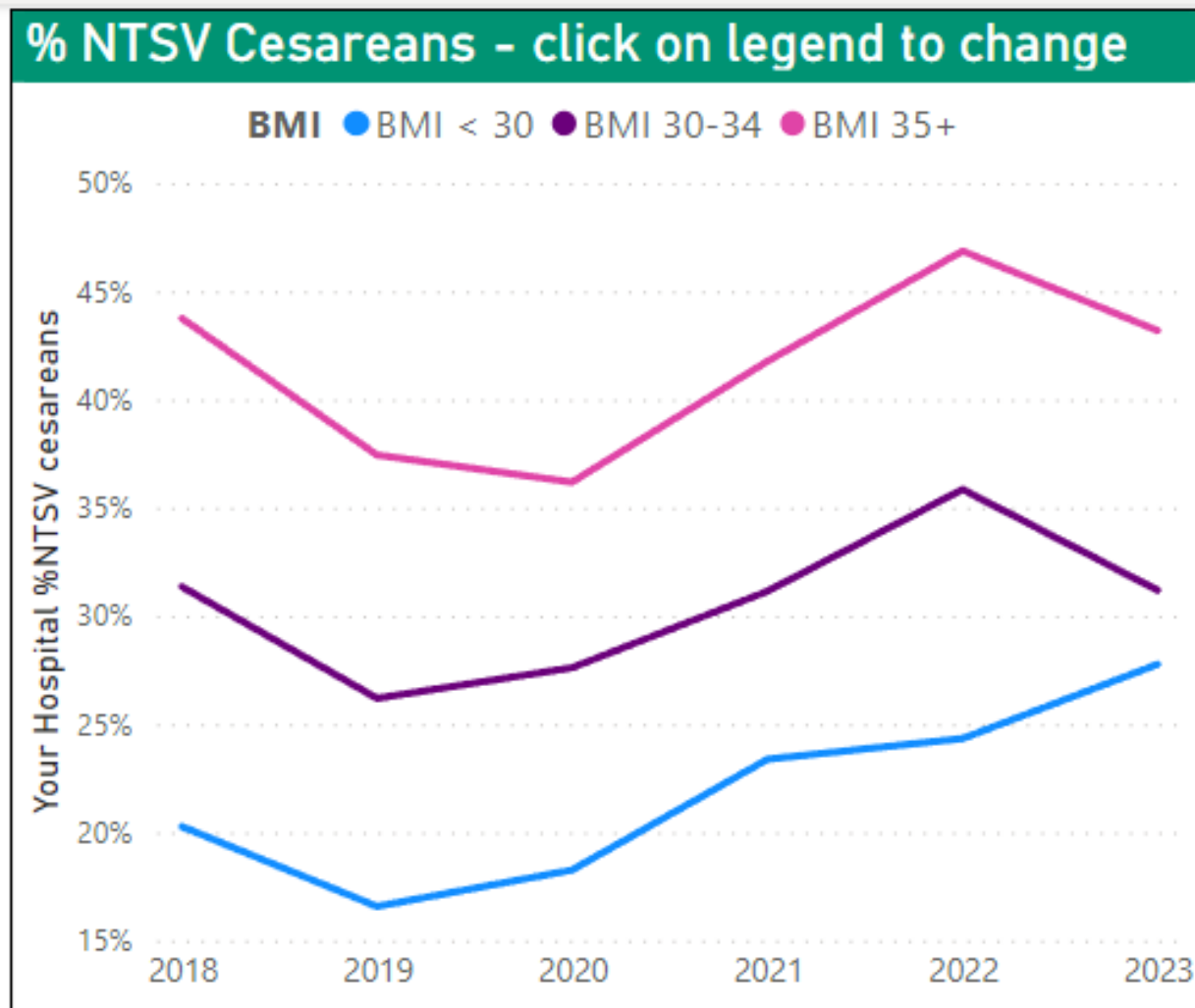
# Disaggregate Your Rate



# Disaggregate Your Rate



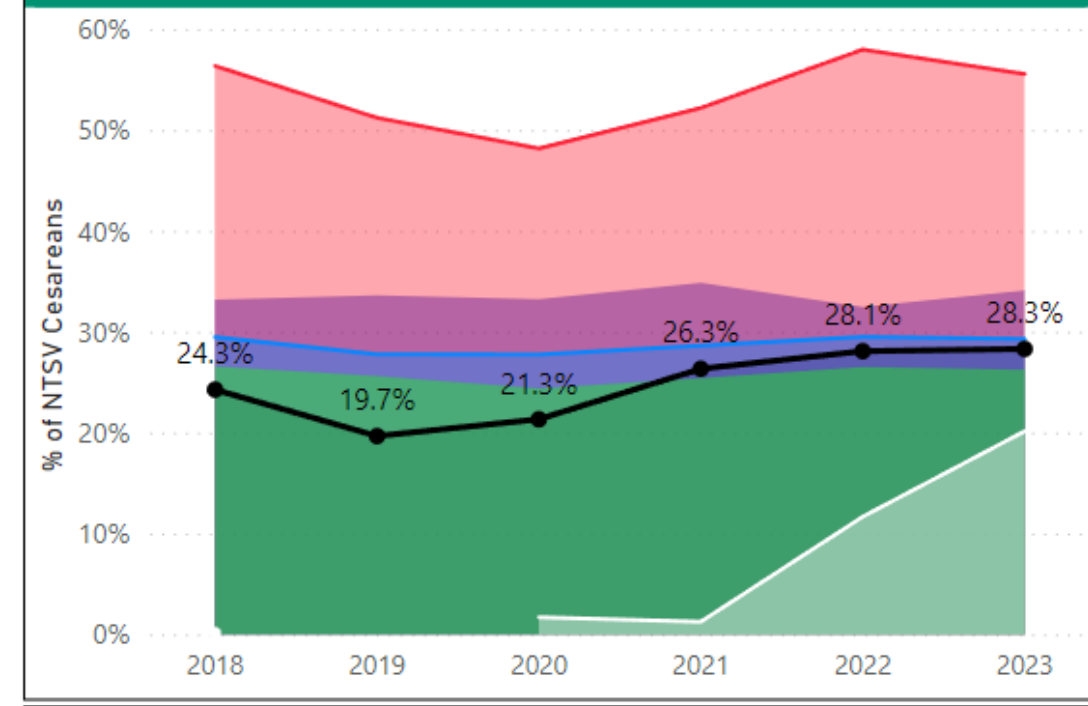
# Disaggregate Your Rate



**Disaggregate by:**

- Race-ethnicity
- Insurance
- Education
- BMI

# TC Percentage of Cesarean Deliveries Among All NTSV Births For All Delivery Hospitals in Florida



**Your hospital is among...**

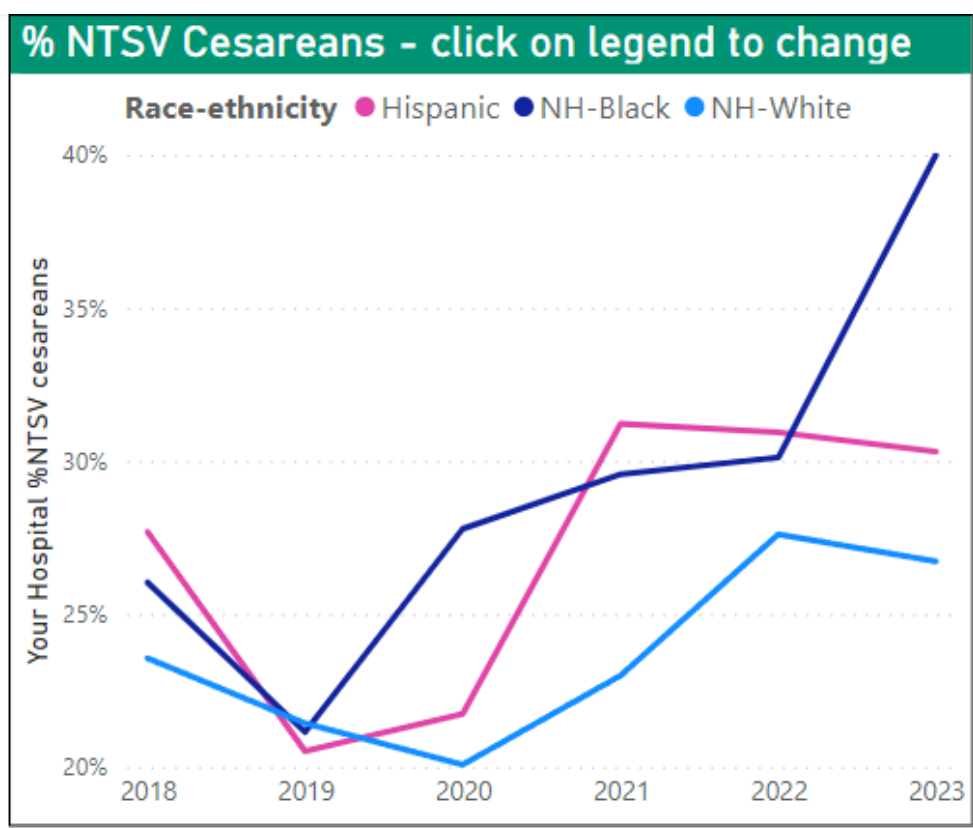
- The highest 25% of hospitals
- The highest 50% of hospitals
- The lowest 50% of hospitals
- The lowest 25% of hospitals

**Hospital Rate Legend:**

- Highest hospital rate
- Median
- Lowest hospital rate

**NICU LEVEL**

- 1
- 2
- 3



**Note: Data included on this page is through April 2023**

### Your Hospital

	2018	2019	2020	2021	2022	2023
Percentage	24.3%	19.7%	21.3%	26.3%	28.1%	28.3%
Numerator						
Denominator						

**Disaggregate by:**

- Race-ethnicity
- Insurance
- Education
- BMI

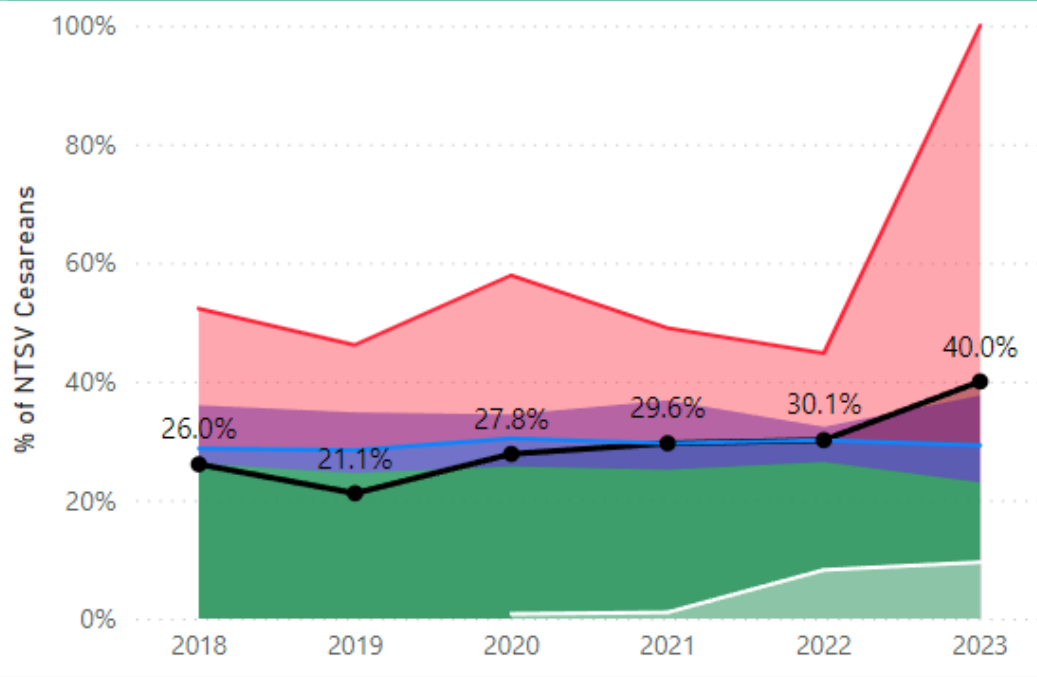
### All delivery Hospitals

	2018	2019	2020	2021	2022	2023
Percentage	30.9%	29.5%	28.9%	30.1%	30.5%	30.8%
Numerator	11829	11279	10864	11479	12541	4106
Denominator	38252	38230	37555	38163	41088	13320

### DATA QUALITY ISSUE

Agreement    Unknown

# TC Percentage of Cesarean Deliveries Among All NTSV Births For All Delivery Hospitals in Florida



● Your hospital (%)

Your hospital is among...

- The highest 25% of hospitals
- The highest 50% of hospitals
- The lowest 50% of hospitals
- The lowest 25% of hospitals

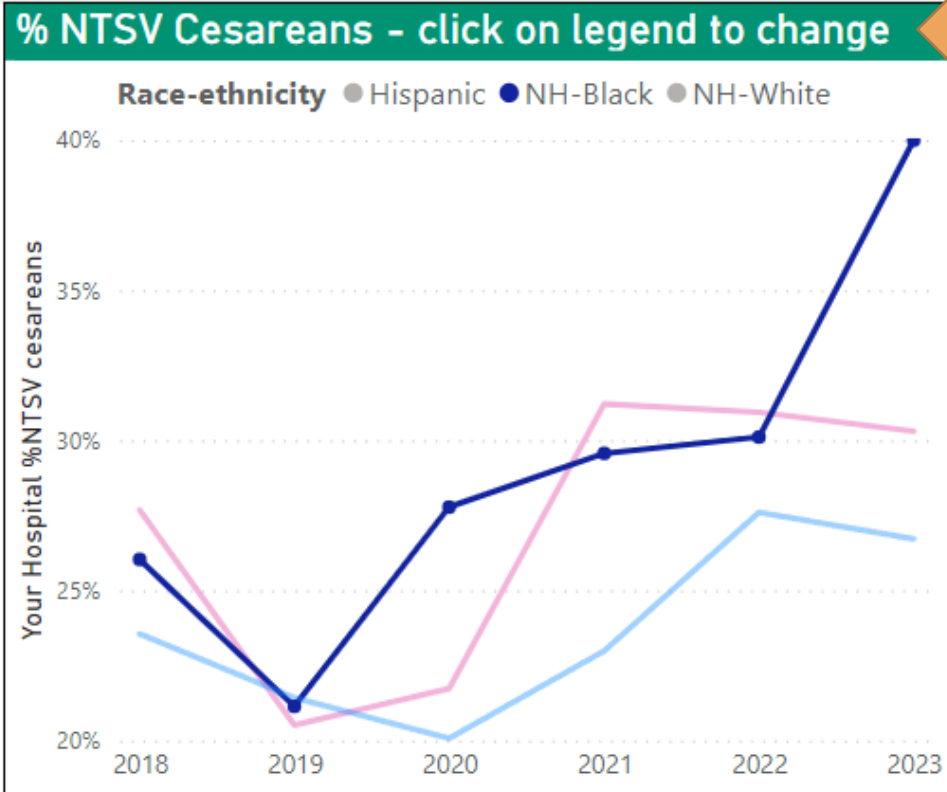
— Highest hospital rate

— Median

— Lowest hospital rate

**NICU LEVEL**

- 1
- 2
- 3



Note: Data included on this page is through April 2023

Your Hospital						
	2018	2019	2020	2021	2022	2023
Percentage	26.0%	21.1%	27.8%	29.6%	30.1%	40.0%
Numerator						
Denominator						

All delivery Hospitals						
	2018	2019	2020	2021	2022	2023
Percentage	30.5%	28.8%	29.6%	30.3%	29.6%	29.9%
Numerator	1635	1596	1619	1645	1677	518
Denominator	5366	5545	5477	5435	5660	1734

**Disaggregate by:**

- Race-ethnicity
- Insurance
- Education
- BMI

**DATA QUALITY ISSUE**

Agreement Unknown

# Use of PQI Dashboard and Differences in Perinatal Outcomes

## Physician practices and individual hospitals

- Understand the population being served and the extent to which their needs are being met
- Address differences in care
- Monitor improvements over time

## Health plans or states

- Make cross-institutional comparisons to detect variations in quality of care between entities serving similar populations
- Funding and state led interventions!

## National reporting and aggregation

- Population data can indicate where consistent differences in care exist nationally

# Framework for Reducing Differences in Outcomes in Health Care Systems

## DETECTING

- Define differences in outcomes
- Define vulnerable populations
- Measure differences in outcomes in vulnerable populations
- Consider selection effects and confounding factors

## UNDERSTANDING

- Identifying differences in perinatal outcomes at the following levels:
  - Patient/individual
  - Provider
  - Clinical encounter
  - Health care system

## REDUCING

- Intervene
- Evaluate
- Translate and disseminate
- Change policy

[Source: Kilbourne et al., 2006](#)



# Examples of Potential Interventions

Example of Activities	Examples of Who it Can Impact
Cultural competency training	Providers; clinical staff
Language and literacy service enhancement	Patients
Restructuring care team or department	Microsystem (departments or care teams)
Providing financial incentives	Organization
Engaging the community; establishing community partners or participating in community coalitions	Community



**In-person**



**Telecommunications**



**Print**



**Internet**



**Information technology**



**Multimedia**

# Next Mother-Focused Care Steps

## Each hospital should:

1. Identify differences in one perinatal outcome and the specific population(s) of focus
2. Set an improvement goal
3. Create strategies and resources needed to achieve the goal, and
4. Establish a process to monitor and report progress

**Aligned with TJC accreditation requirement**

# Questions

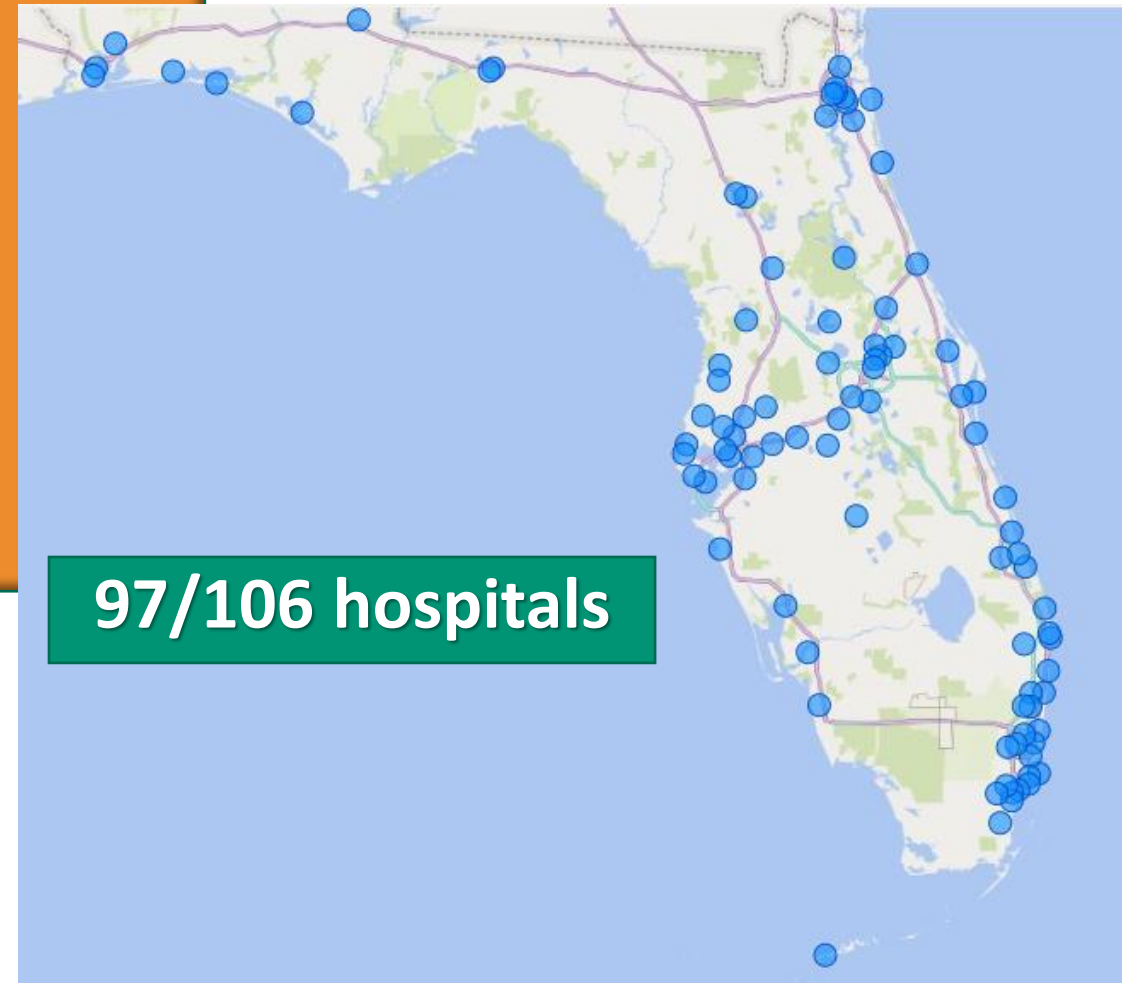
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# PQI Engagement

## Participating hospitals must:

- ✓ Assign a permanent PQI contact
- ✓ Comply with training requirements
- ✓ Participate in 2 short surveys per year
- ✓ Review your PQI report quarterly
- ✓ Promote a quality improvement effort



[fpqc@usf.edu](mailto:fpqc@usf.edu)

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 Florida Perinatal Quality Collaborative

 Florida Perinatal Quality Collaborative

 @TheFPQC

 @thefpqc



Florida Perinatal  
Quality Collaborative