Understanding the Need for Change:
Trends & Challenges in Perinatal Care
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College of Public Health, University of South Florida
FPQC

Learning Objectives

1. Describe 1 or more trends in perinatal care impacting maternal and infant health.
2. Identify 1 or more strategy for fostering multidisciplinary collaboration in maternal and infant health QI.

Tampa Bay Times

FLORIDA'S BEST NEWSPAPER tampabay.com ★★★★ Sunday, August 28, 2022 | $3

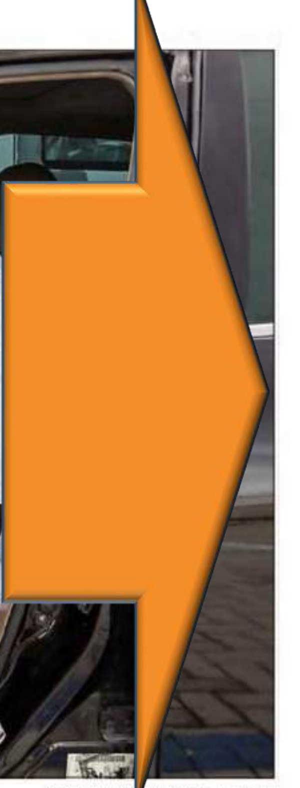
U.S. Has The Worst Rate Of Maternal Deaths In The Developed World

May 12, 2017 · 10:28 AM ET

NINA MARTIN, PROPUBLICA RENEE MONTAGNE

The story of Lauren Bloomstein illustrates a disparity in our nation's health care system, where primary focus is given to newborn babies, but often ignores the mothers.

Courtesy of the Bloomstein Family



Photos by LAUREN WITTE | Times

Maternal mortality crisis in America

Giving birth in the U.S. entails high risk. Biden's administration pushes to reverse that.

BY AKILAH JOHNSON
The Washington Post

As part of a major push by the Biden administration to address the nation's maternal health crisis, senior officials have traveled the country for the past year, talking to midwives, doulas and people who have given birth about their experiences. They've held summits at the White House.

The result: an almost 70-page plan aimed at taking the United

HEALTH CARE RACISM AND DISCRIMINATION REPRODUCTIVE RIGHTS

Serena Williams Could Insist That Doctors Listen to Her. Most Black Women Can't.

We can't solve America's maternal-health problem without first acknowledging how racism harms black moms.

By Elizabeth Dawes Gay

ProPublica

Graphics & Data Newsletters About

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Soleil Irving "just lights up a room when she smiles," Wanda Irving, her grandmother, says. (Sheila Pree Bright for ProPublica)

LOST MOTHERS

Nothing Protects Black Women From Dying in Pregnancy and Childbirth

OB/Gyn > Pregnancy

Black Doctor Dies After Giving Birth, Underscoring Maternal Mortality Crisis

— Tragedy shows racial disparities in pregnancy outcomes aren't solely based on access to care

by Amanda D'Ambrosio, Staff Writer, MedPage Today November 2, 2020

US. Maternal Mortality Ratio Compared to 12 Developed Countries, 2020

Maternal Deaths Per 100,000 Live Births

NETH	AUS	JPN	GER	NOR	UK	SWE	SWIZ	FRA	CAN	KOR	NZ	US
1.2	2.0	2.7	3.6	3.7	6.5	7.0	7.0	7.6	8.4	11.8	13.6	23.8

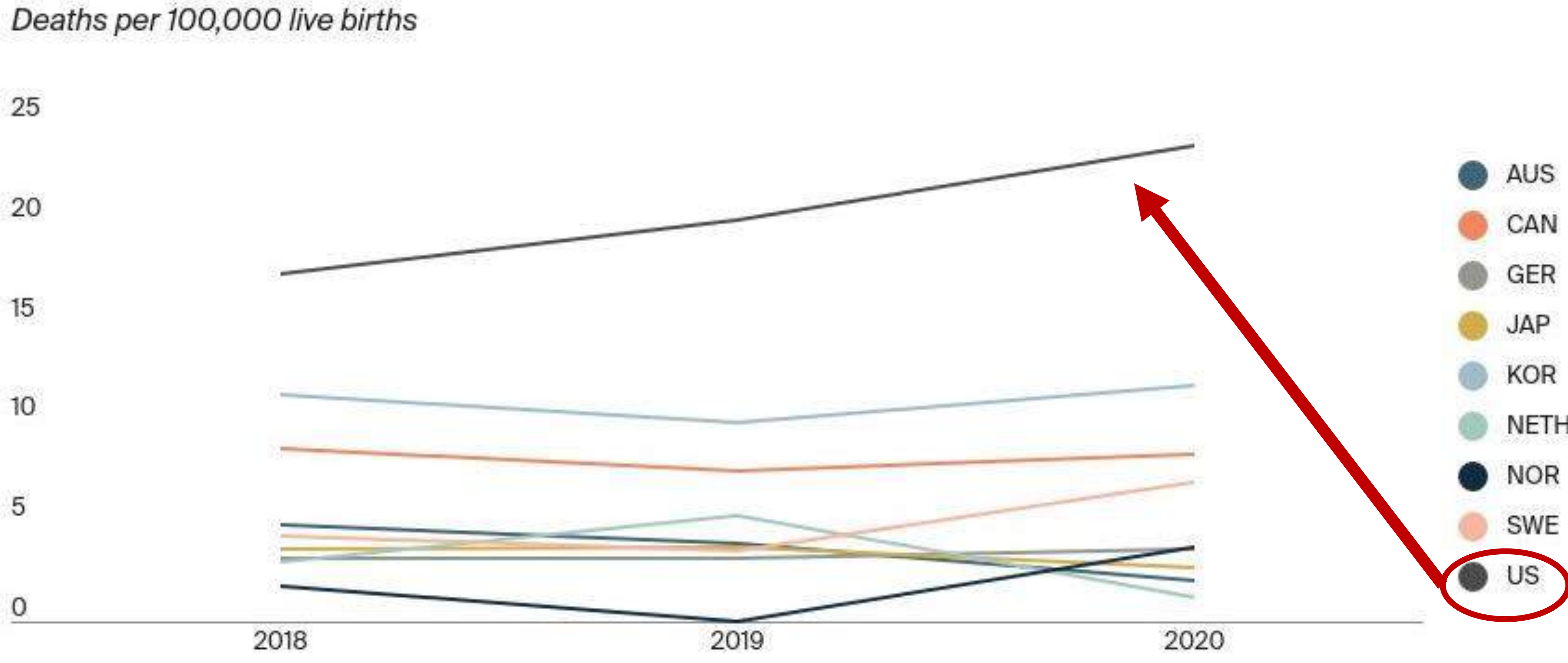
Source: The Commonwealth Fund, 2022

US. Maternal Mortality Ratio Compared to 12 Developed Countries, 2020

Maternal Deaths Per 100,000 Live Births

Country	Value
NETH	1.2
AUS	2.0
JPN	2.7
GER	3.6
NOR	3.7
UK	6.5
SWE	7.0
SWIZ	7.0
FRA	7.6
CAN	8.4
KOR	11.8
NZ	13.6
US Hispanic	18.2
US White	19.1
US	23.8
US Black	55.3

Source: The Commonwealth Fund, 2022



Source: Munira Z. Gunja, Evan D. Gumas, and Reginald D. Williams II, "The U.S. Maternal Mortality Crisis Continues to Worsen: An International Comparison," To the Point (blog), Commonwealth Fund, Dec. 1, 2022. https://doi.org/10.26099/8vem-fc65

US Health Rankings (13 Developed Countries)

Category	Country Rank	US	Leading Country	Median
Health Spending (2021)	1 of 12	$10,921	$2,625	$5,242
Low Birthweight (2019)	1 of 11	8.3%	4.3%	6.4%
Infant Mortality (2020)	1 of 12	5.4 /1,000	1.8 /1,000	3.5 /1,000

Source: World Bank, OECD, WHO

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Maternal Mortality for 37 US States, 2018-21

Maternal Deaths Per 100,000 Live Births

50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00

US
23.5

FL
26.5

TX
28.1

California
Wisconin
Minnesota
Colorado
Massachusetts
Utah
Oregon
Connecticut
Pennsylvania
Illinois
Michigan
Iowa
Washington
Maryland
Nevada
New York
Kansas
United States
Ohio
Missouri
New Jersey
Nebraska
Florida
North Carolina
Texas
Virginia
New Mexico
Oklahoma
Indiana
Arizona
South Carolina
Georgia
Kentucky
Louisiana
Alabama
Tennessee
Mississippi
Arkansas

Source: National Center for Health Statistics, CDC (2023)

Pregnancy-Related Causes of Death
U.S. (2011-15) & Florida (2008-17)

Hemorrhage
Infection
Hypertensive disorder
Other
Cardiovascular
Thrombotic embolism
Cardiomyopathy
Cerebrovascular accident
Unknown
Amniotic fluid embolism
Anesthesia

0% 5% 10% 15% 20% 25%

Percentage of Deaths

Florida
U.S.

Source: CDC website and FDOH Maternal Mortality Review data

FL Maternal Mortality Review Committee Prevention Strategies

- State Presentations and Reports
- Organizational Newsletters
- Hospital Grand Rounds
- Journal Publications
- Hospital/Provider Letters
- Urgent Maternal Mortality Messages

Florida Pregnancy Associated Mortality Review (PAMR)

Call for the Development of Maternal Early Warning Systems (MEWS)

Florida PAMR Findings:

- 55.3% of the maternal deaths in Florida in 2015 were preventable. In an additional 18.4% of the deaths, there was a possible chance to alter the outcome.[1]

Contributing factors:

- lack of healthcare standardized policies and procedures (80%)
- delay of treatment (25%)
- lack of diagnosis (20%)
- lack of healthcare knowledge/skills assessment (20%)
- lack of treatment (15%)
- delay of diagnosis (10%)
- lack of care coordination/referrals/transfers, follow-up (10%)

PAMR MESSAGE TO PROVIDERS:

Deterioration of the clinical condition of a maternity patient can occur rapidly and lead to tragic consequences if adverse signs are not recognized early. Case reviews of maternal deaths have revealed a concerning pattern of delay in recognition of hemorrhage, hypertensive crisis, sepsis, venous thromboembolism, and heart failure.[2] Having a Maternal Early Warning System can help facilitate timely recognition, diagnosis, and treatment for women developing critical illness. A number of organizations have recommended the use of maternal early warning tools as a method of addressing this problem. There are now clinical data suggesting that the use of these tools can reduce maternal morbidity and mortality especially due to hemorrhage and infection.[3]

PAMR MESSAGE TO HOSPITALS:

PAMR endorses the Joint Commission requirements that:

- Hospitals have a process in place for recognizing and responding as soon as a patient's condition appears to be worsening.
- Hospitals develop written criteria describing early warning signs of a change or deterioration in a patient's condition and when to seek further assistance.[4]

For more information, contact:
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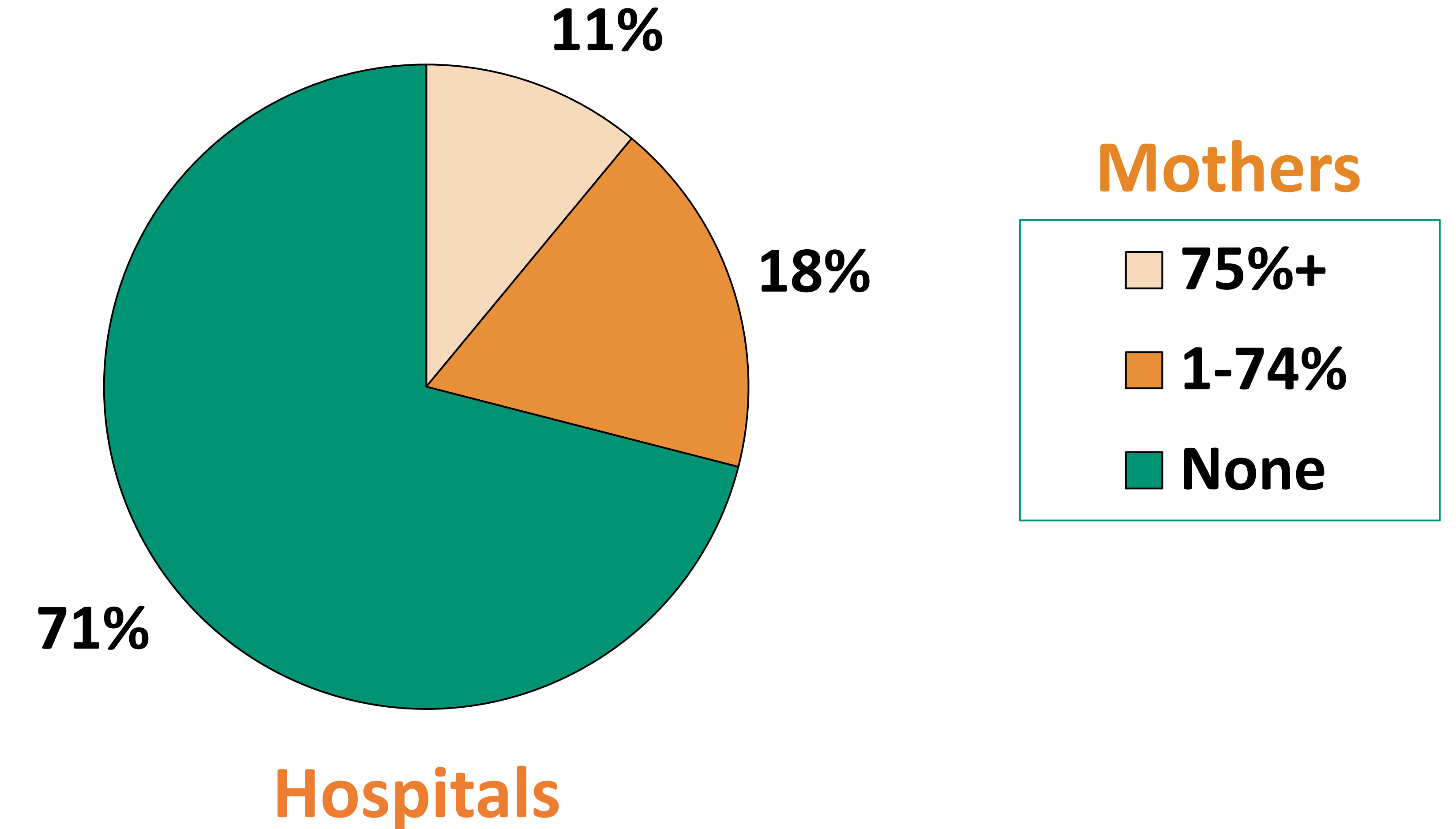
(850) 558-9686

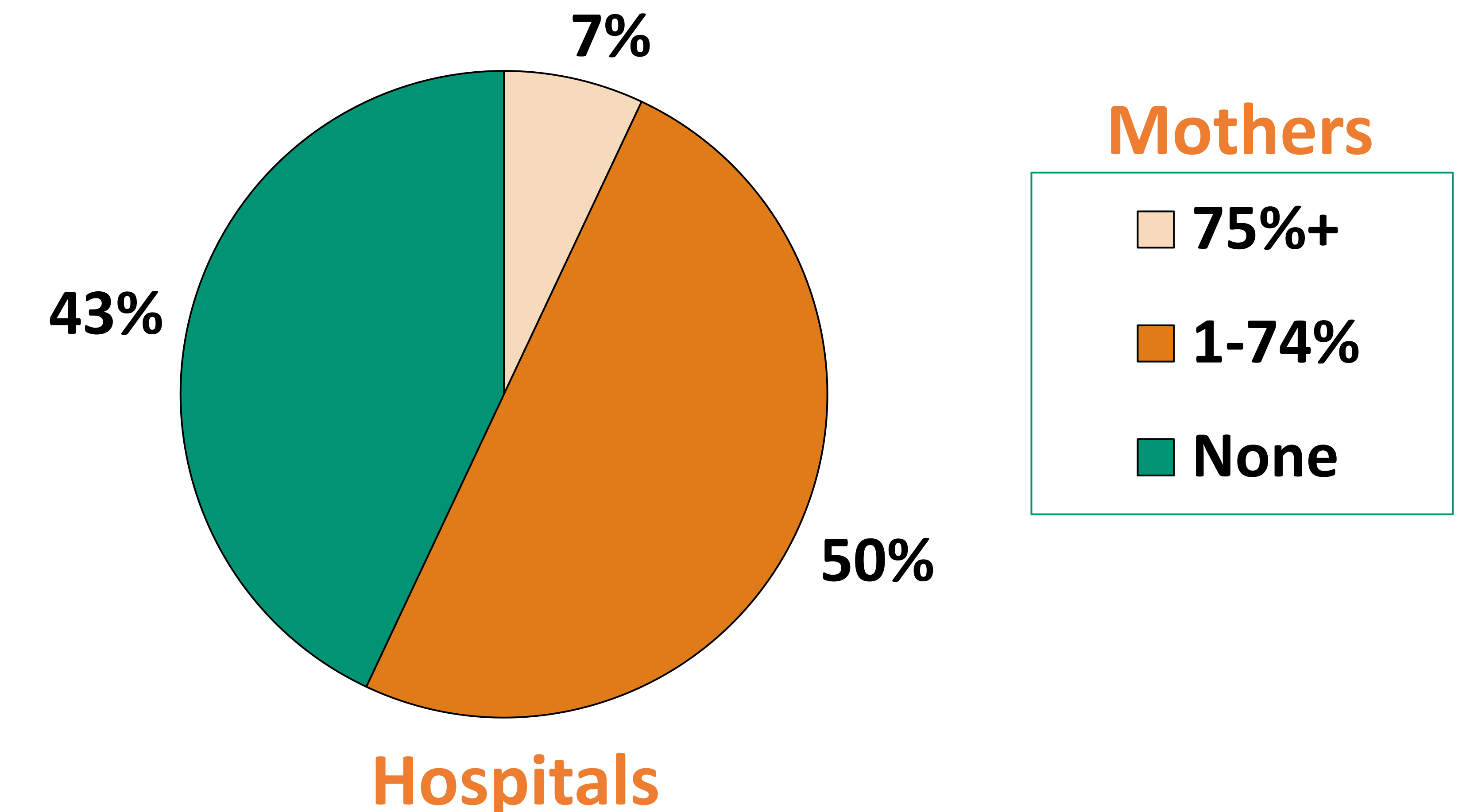
Florida HEALTH

Are There Really Quality of Care Issues Needing to be Addressed?

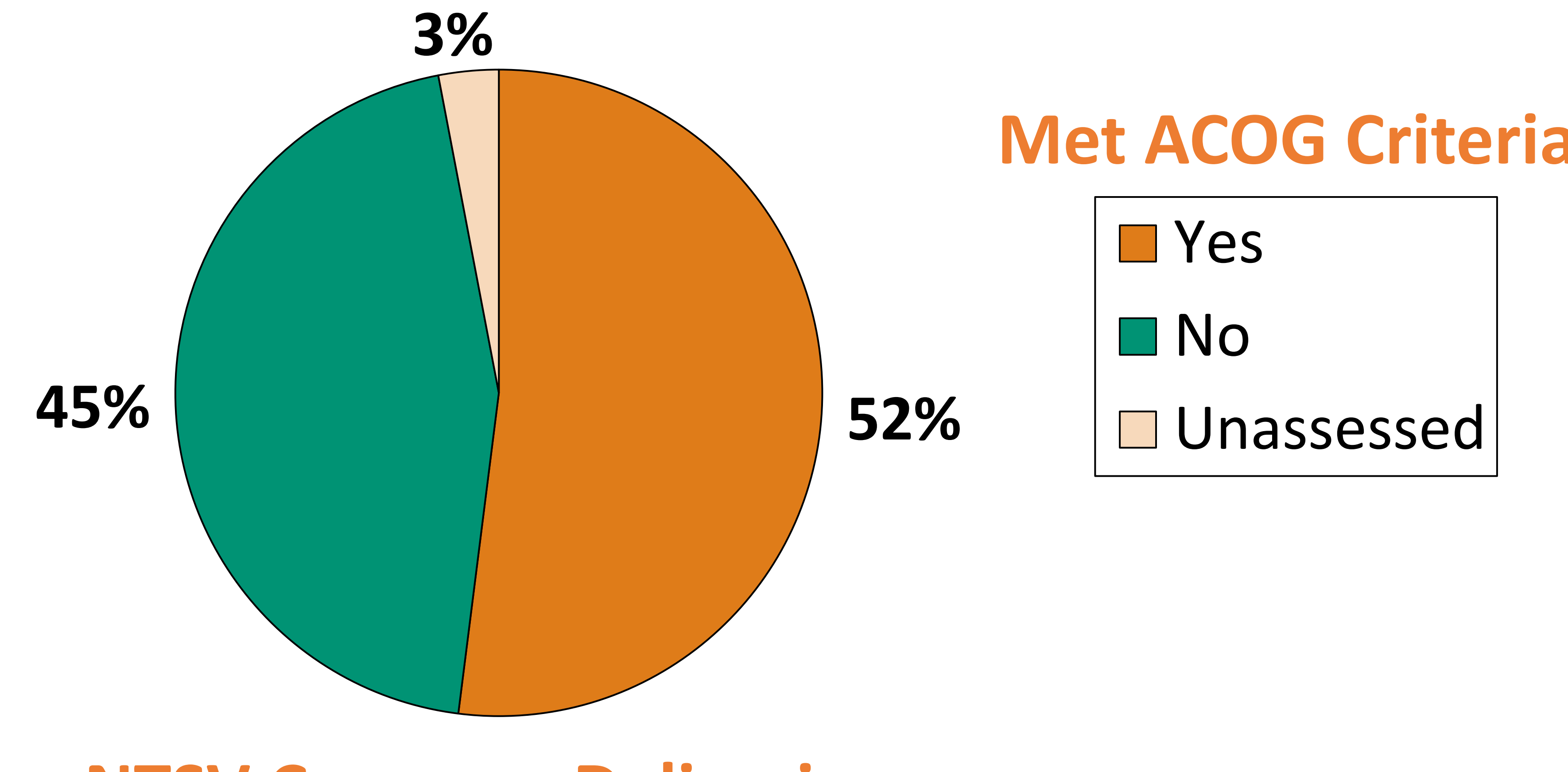
Mothers Assessed for Hemorrhage Risk at Admission
July-August 2013, 31 FPQC OHI Hospitals



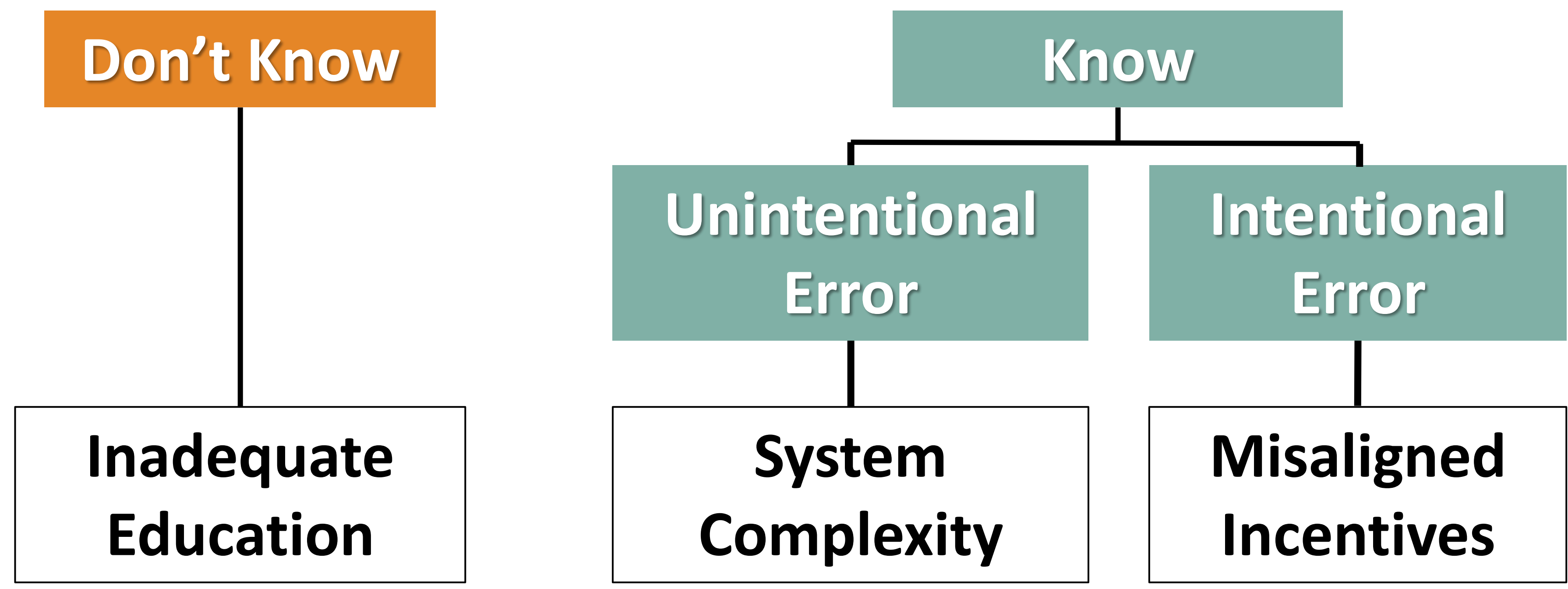
Percent Treated Within 1 hour with Acute Onset Maternal Hypertension July-August, 2015--32 FPQC HIP Hospitals



Percent of All Low Risk Cesarean Deliveries Performed that Met ACOG Criteria, July-Sept, 2019, 66 FPQC Hospitals



Why Not Follow Practice Guidelines?



Why Not Follow Practice Guidelines?

Don't Know

Know

Unintentional Error

Intentional Practice

Inadequate Education

System Complexity

Misaligned Incentives

Quality Improvement

Align Incentives

Quality Improvement

The Framework for QI

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

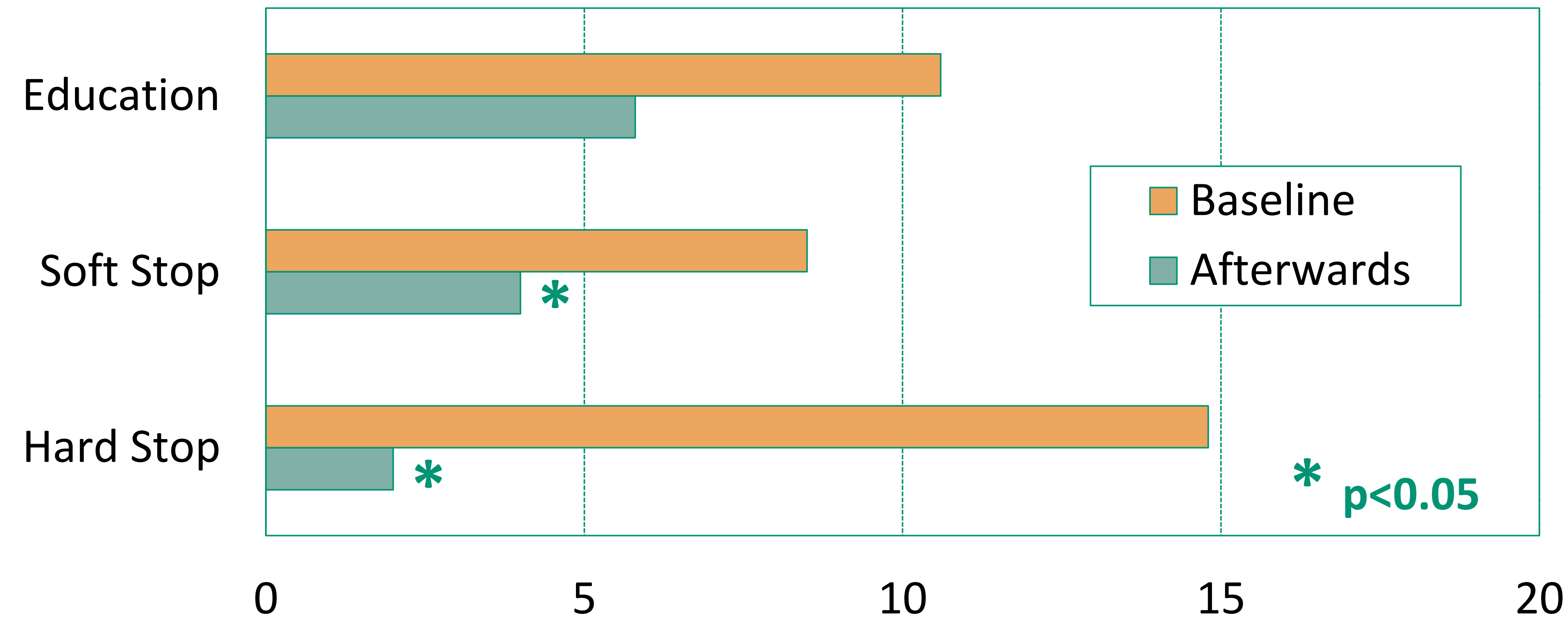
Plan | Do | Study | Act

Source: Associates in Process Improvement: Model for Improvement

Why Perinatal Quality Improvement Efforts?

"Education is Not Sufficient"

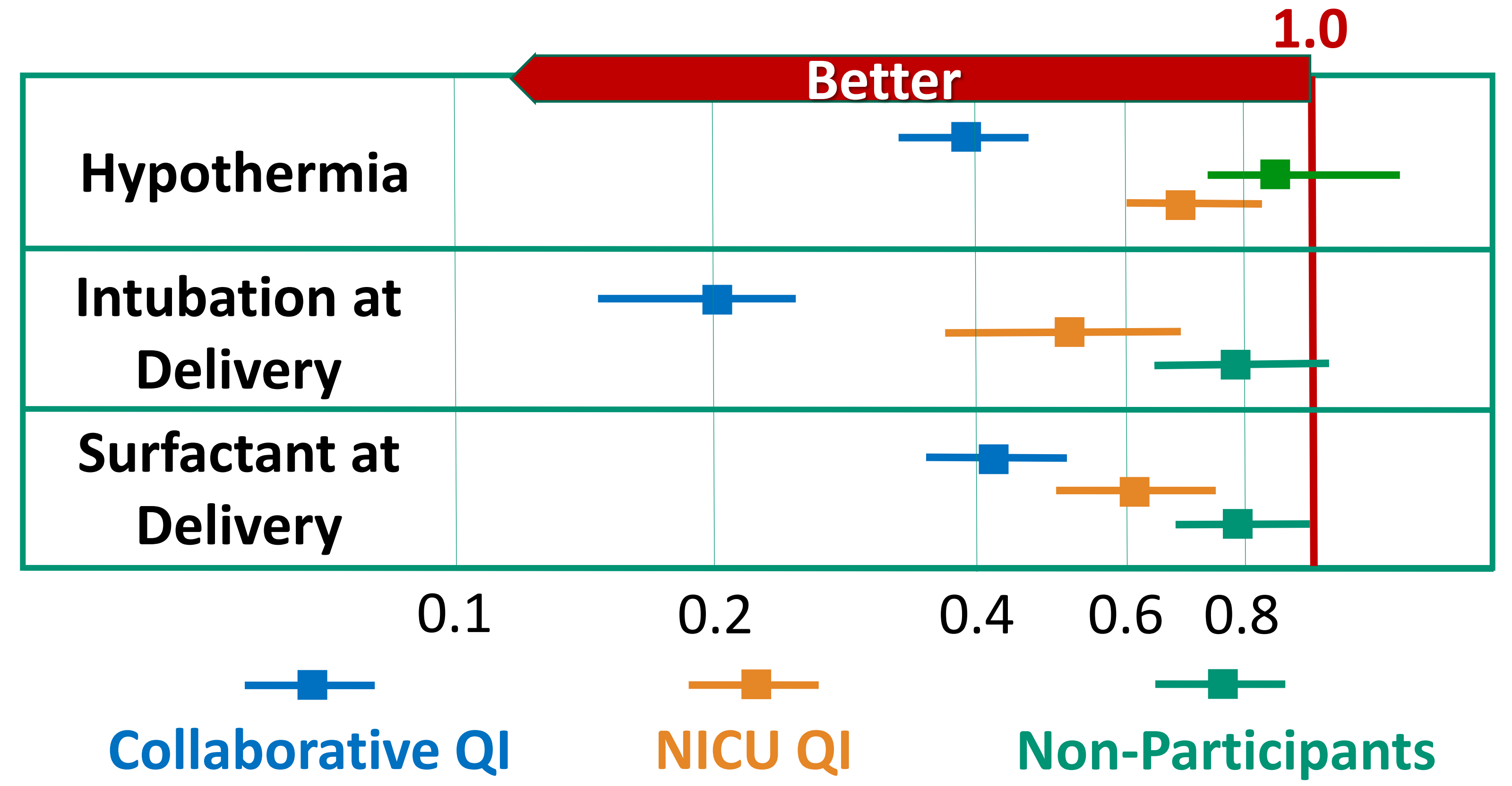
Reduction in Early Elective Delivery by Approach, 2007-2009, HCA Hospitals



Source: Clark, et. al. (2010) Reduction in elective delivery at <39 weeks of gestation: comparative effectiveness of 3 approaches to change and the impact on neonatal intensive care admission and stillbirth. American Journal of Obstetrics Gynecology

“Participating in A Perinatal QI Collaborative Makes a Difference”

Adjusted Odds Ratios for Post-Intervention & Baseline Neonatal Resuscitation Initiatives, CPQCC NICUs



Source: Lee, et al. Implementation Methods for Delivery Room Management. Pediatrics 2014

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"Participating Again in a Collaborative Makes a Difference"

Severe Maternal Morbidity Rates among Hemorrhage Patients by Hospital Category, CMQCC Hospitals

	Hospitals	Baseline Rate	Post Rate	Percent Reduction
Not participating	48	28.6	28.2	**1.2%**
No prior experience	74	22.7	19.2	**15.4%**
Prior experience	25	22.7	16.2	**28.6%**

Main EK, Cape V, Abreo A, et al., Reduction of severe maternal morbidity from hemorrhage using a state perinatal quality collaborative. Am J Obstet Gynecol 2017;216:298.e1-11.

How Did FPQC Develop?

March of Dimes Big 5 State Initiative

WASHINGTON
MONTANA
NORTH DAKOTA
MINNESOTA
MAINE
OREGON
IDAHO
VERMONT
NEW HAMPSHIRE
WYOMING
SOUTH DAKOTA
WISCONSIN
NEW YORK
MASSACHUSETTS
MICHIGAN
RHODE ISLAND
CONNECTICUT
NEVADA
NEBRASKA
IOWA
PENNSYLVANIA
NEW JERSEY
UTAH
ILLINOIS
DELAWARE
COLORADO
OHIO
INDIANA
WEST VIRGINIA
MARYLAND
CALIFORNIA
KANSAS
VIRGINIA
MISSOURI
KENTUCKY
NORTH CAROLINA
TENNESSEE
ARIZONA
NEW MEXICO
ARKANSAS
OKLAHOMA
SOUTH CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
TEXAS
LOUISIANA
FLORIDA
HAWAII
ALASKA

Early State Perinatal Quality Collaboratives

WASHINGTON
OREGON
CALIFORNIA
IDAHO
NEVADA
MONTANA
WYOMING
UTAH
ARIZONA
COLORADO
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MISSISSIPPI
MICHIGAN
INDIANA
KENTUCKY
TENNESSEE
ALABAMA
OHIO
GEORGIA
FLORIDA
WEST VIRGINIA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
PENNSYLVANIA
NEW YORK
VERMONT
MAINE
NEW HAMPSHIRE
MASSACHUSETTS
RHODE ISLAND
CONNECTICUT
NEW JERSEY
DELAWARE
MARYLAND
HAWAII
ALASKA

Current FPQC Partners & Funders

Florida Society of Neonatologists

Advancing the Care of Neonates in the Sunshine State

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

Florida PQC Starting Point

Challenges…

- Deregionalized perinatal system
- No regional perinatal nurses
- Weak hospital regulations
- State hosp. assoc. included ~half of maternity hospitals
- New ACOG District
- Weak State Neonatal Society
- No prior NICU collaboration
- No perinatal QI leaders

Strengths…

- Unanimous multi-organizational support
- MMRC support
- MMRC/ACOG leaders became FPQC leaders
- March of Dimes grant

FPQC Initiative Resources

Monthly Coaching Calls with hospitals state-wide

Online Toolbox

Algorithms, Sample protocols, Education tools, Competencies, Slide sets, etc.

Technical Assistance

from FPQC staff, state Clinical Advisors, and National Experts

Educational sessions, videos, and resources

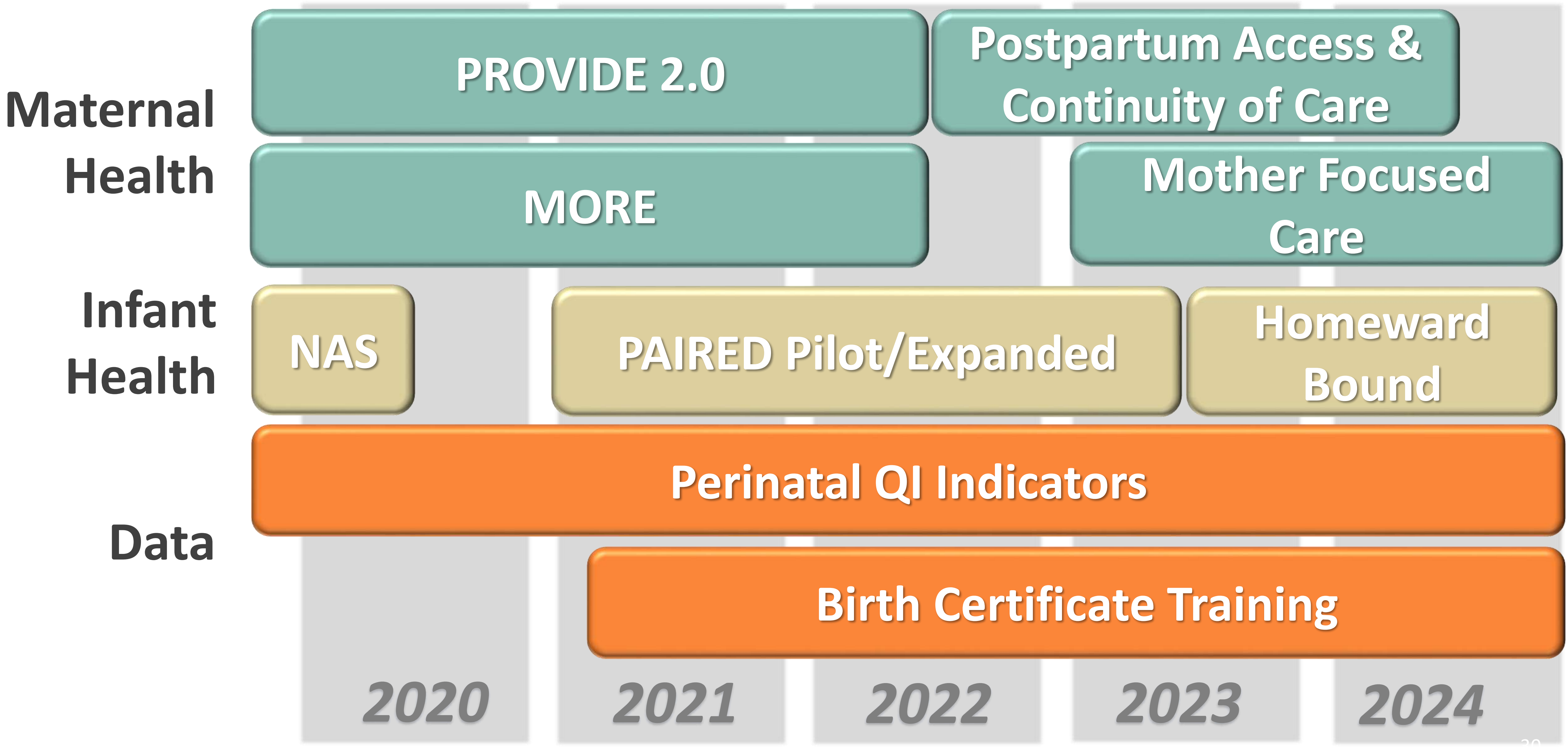
Initiative-wide collaboration meetings

Monthly and Quarterly QI Data Reports

Regular E-mail Bulletins

Custom, Personalized webcam, phone, or on-site Consultations & Grand Rounds Education

FPQC Initiatives



CDC Funded State Perinatal Quality Collaboratives

WA MT ND MN ME VT NH OR ID WY SD WI MI NY MA RI CT CA NV UT NE IA PA NJ CO IL IN OH DE MD KS MO WV VA KY NC AZ NM OK AR TN SC MS AL GA TX LA AK HI FL

Legend

Not Funded

Funded

Participating

CDC

FPQC's Growth Strategy

1st 5-Year CDC Grant Focus (2016-2022)

- Assure FPQC quality in all QI initiatives and activities.
- Promote FPQC's quality through regional training sessions, organizational presentations and meeting scholarships.
- Learn thru interviews why hospitals did not sign up for initiatives after expressing some interest.
- Collaborate one-on-one with organizational partners to promote FPQC hospital participation.

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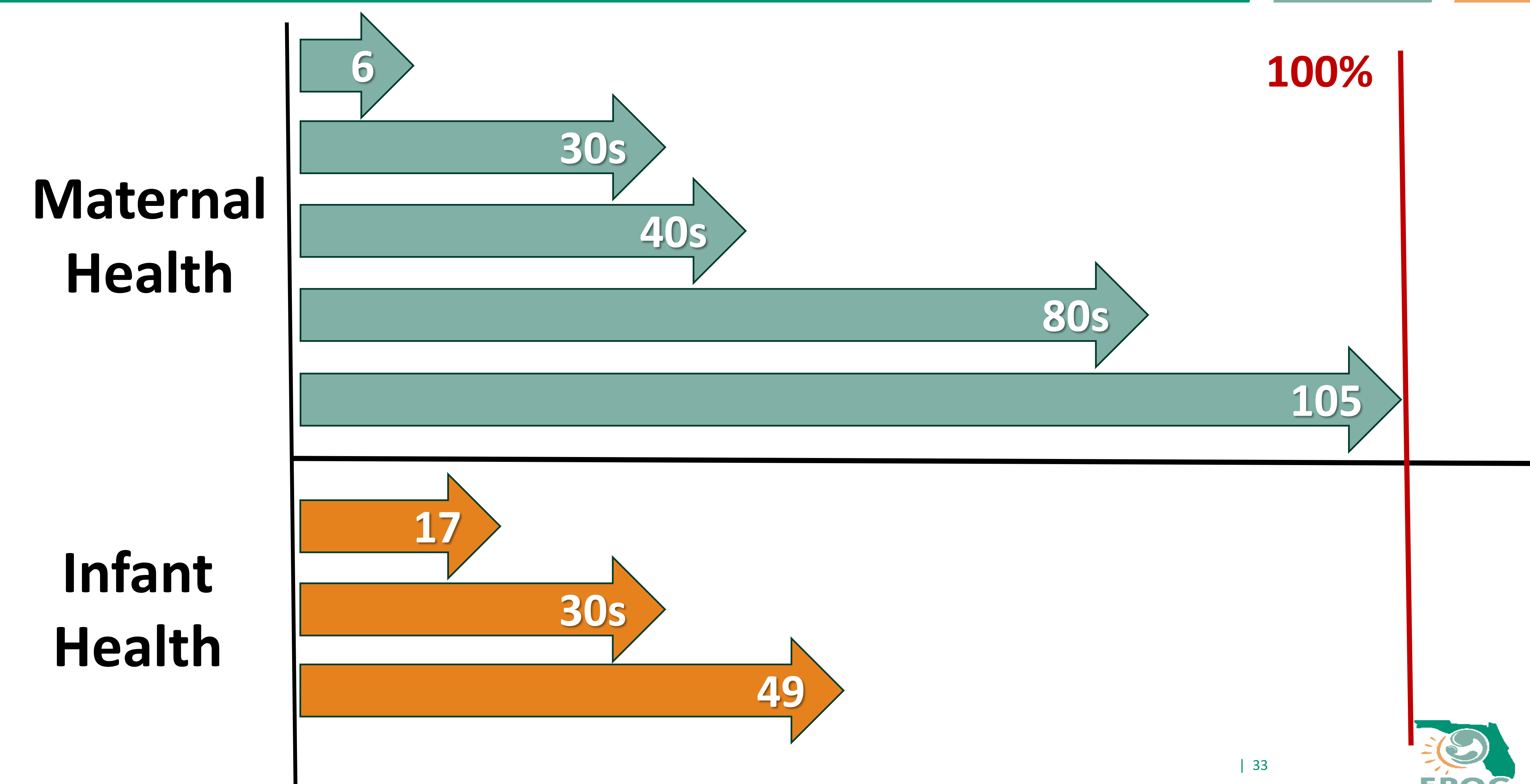
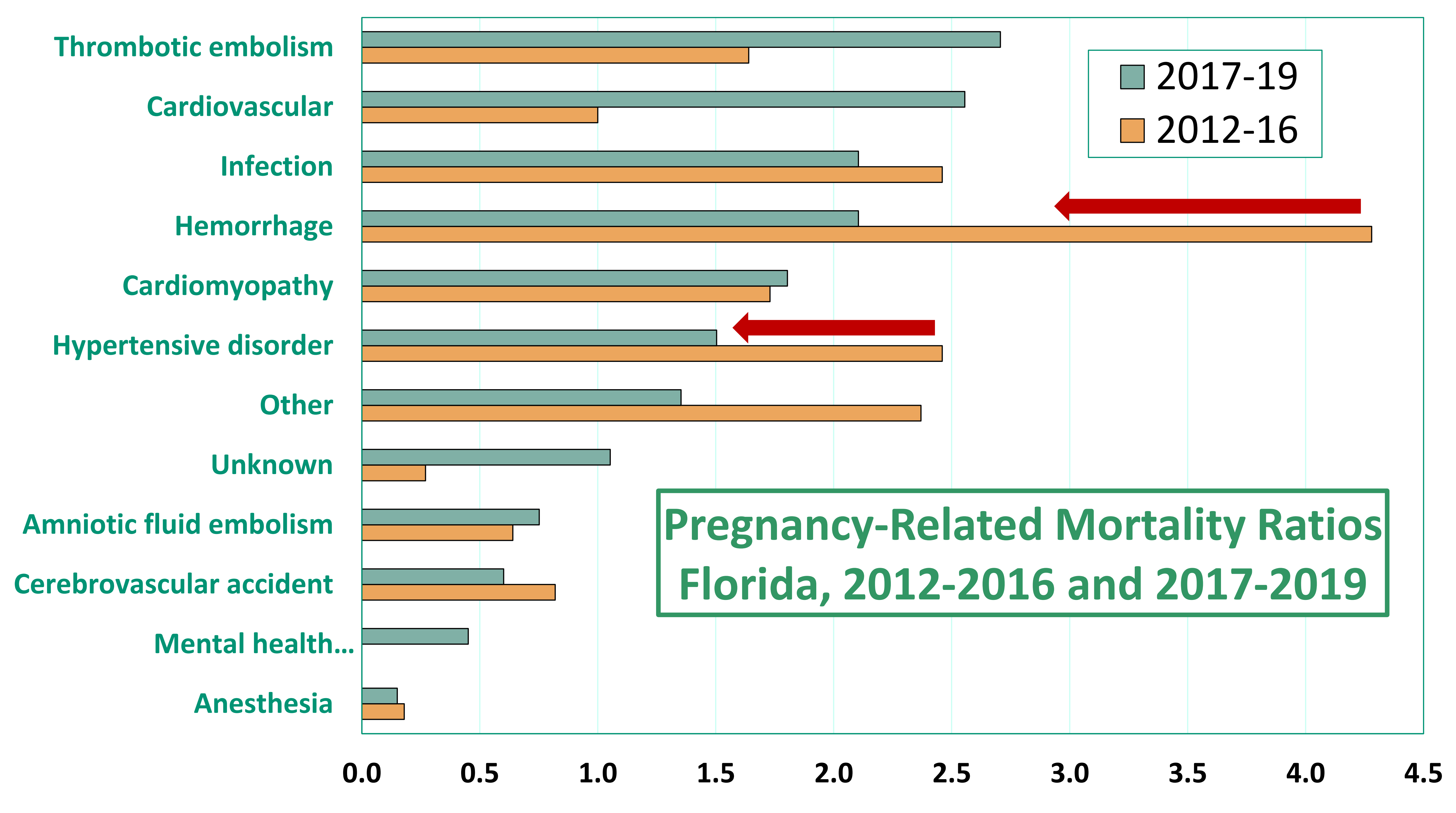
Number of Hospitals Participating in FPQC



New Hospital Perinatal QI Participation Parameters

CMS QI Reporting	All hospitals participating in Medicare are required to report their participation in a national or state perinatal quality collaborative and implementation of their safety bundles.
Joint Comm. Requirement	TJC accredited hospitals must select one hospital QI health equity issue and present a series of QI steps performed to address this issue.
Florida Statute	All Florida maternity hospitals are required to participate in two FPQC quality improvement initiatives at all times.

Do QI Initiatives Actually Work in Florida?


Thrombotic embolism
Cardiovascular
Infection
Hemorrhage
Cardiomyopathy
Hypertensive disorder
Other
Unknown
Amniotic fluid embolism
Cerebrovascular accident
Mental health…
Anesthesia
2017-19
2012-16
Pregnancy-Related Mortality Ratios
Florida, 2012-2016 and 2017-2019
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5

Low Risk Cesarean Rates

35.0
30.0
25.0
20.0

Florida
U.S.

↓6.8%
↑1.2%

2030 Healthy People Goal—23.6

2017 2018 2019 2020 2021

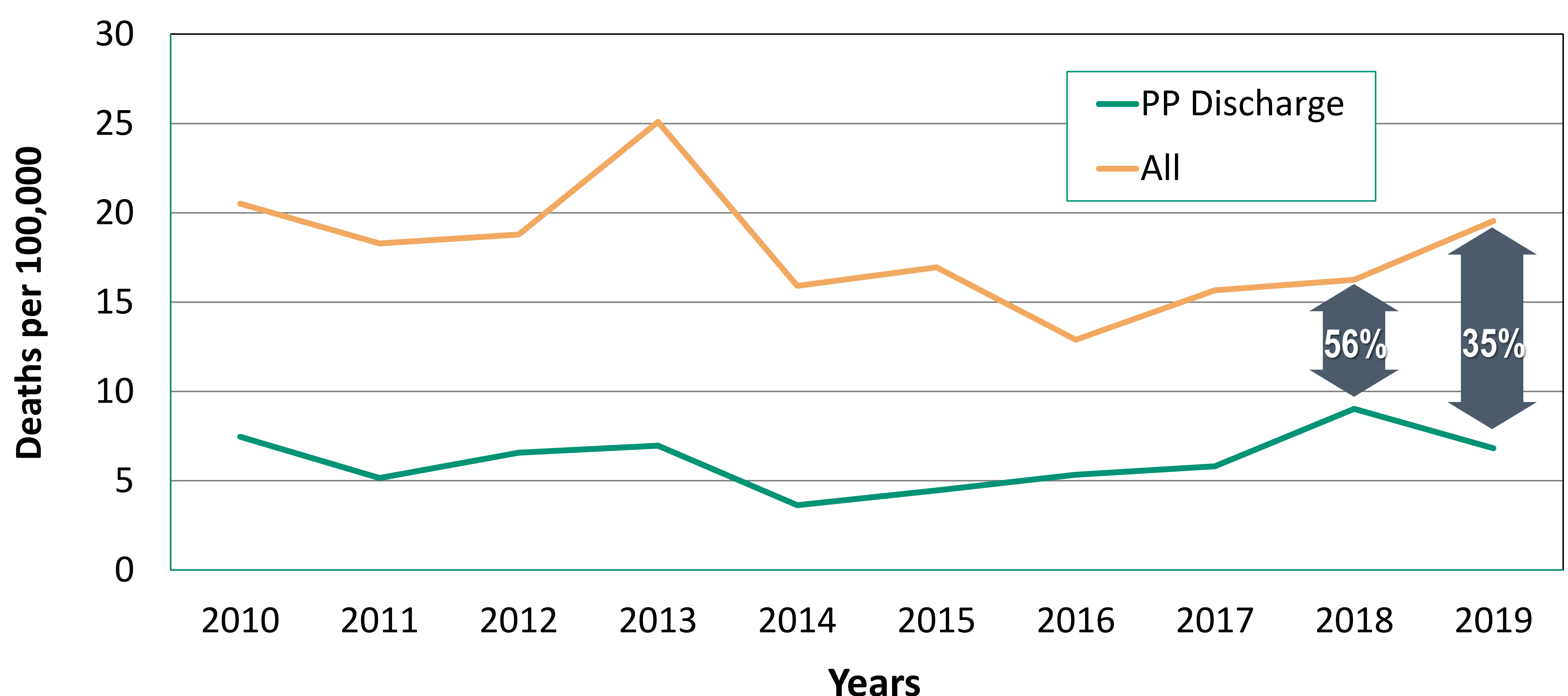
Who Are Our Needed Partners to Make Change Happen?

Who Are the Needed Partners to Improve Health?

First FPQC QI Initiatives

- Early Elective Delivery
- Hemorrhage
- Hypertension
- Antenatal Steroids
- Neonatal Resuscitation
- Mother’s Own Milk

Pregnancy-Related Mortality Rates Florida, 2010 to 2019



Source: FL Maternal Mortality Review data

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Postpartum Discharge Pregnancy-Related Deaths with a Stand-Alone Postpartum ER Visit, Florida, 2015 to 2019

Days After Birth	Percentage
0-13 days	32%
14-60 days	25%
61-180 days	31%
181+ days	67%

Percentage: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%

Days After Birth

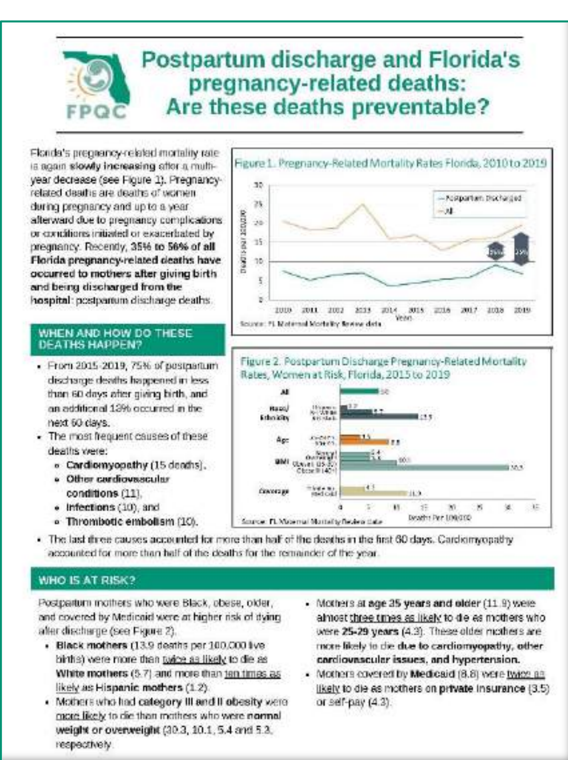
Source: FL Maternal Mortality Review data

Who Are the Needed Partners to Improve Health?

Postpartum Access & Continuity of Care

Emergency Department Providers

Initiative Materials for New Partners



Postpartum discharge and Florida's pregnancy-related deaths: Are these deaths preventable?

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Florida's pregnancy-related mortality rate is again **slowly increasing** after a multi-year decrease (see Figure 1). Pregnancy-related deaths are deaths of women during pregnancy and up to a year afterward due to pregnancy complications or conditions initiated or exacerbated by pregnancy. Recently, **35% to 56% of all Florida pregnancy-related deaths have occurred to mothers after giving birth and being discharged from the hospital**: postpartum discharge deaths.

Figure 1. Pregnancy-Related Mortality Rates Florida, 2010 to 2019

Source: FL Maternal Mortality Review data

WHEN AND HOW DO THESE DEATHS HAPPEN?

- From 2015-2019, 75% of postpartum discharge deaths happened in less than 60 days after giving birth, and an additional 13% occurred in the next 60 days.
- The most frequent causes of these deaths were:
  - **Cardiomyopathy** (15 deaths),
  - **Other cardiovascular conditions** (11),
  - **Infections** (10), and
  - **Thrombotic embolism** (10).
- The last three causes accounted for more than half of the deaths in the first 60 days. Cardiomyopathy accounted for more than half of the deaths for the remainder of the year.

Figure 2. Postpartum Discharge Pregnancy-Related Mortality Rates, Women at Risk, Florida, 2015 to 2019

Source: FL Maternal Mortality Review data

WHO IS AT RISK?

Postpartum mothers who were Black, obese, older, and covered by Medicaid were at higher risk of dying after discharge (see Figure 2).

- **Black mothers** (13.9 deaths per 100,000 live births) were more than twice as likely to die as **White mothers** (5.7) and more than ten times as likely as **Hispanic mothers** (1.2).
- Mothers who had **category III and II obesity** were more likely to die than mothers who were **normal weight or overweight** (30.3, 10.1, 5.4 and 5.3, respectively.
- Mothers at **age 35 years and older** (11.9) were almost three times as likely to die as mothers who were **25-29 years** (4.3). These older mothers are more likely to die **due to cardiomyopathy, other cardiovascular issues, and hypertension.**
- Mothers covered by **Medicaid** (8.8) were twice as likely to die as mothers on **private insurance** (3.5) or self-pay (4.3).

Mortality Brief

Education Flyer

Post-Birth Health Check "Follow the B's!"

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Florida Perinatal Quality Collaborative
Postpartum Access & Continuity of Care (PACC) Initiative

Blues	Assess mood/coping. Provide depression screening. Review signs/symptoms of mood disorders & how to get help.
Bonding	Assess bonding with baby/babies along with support person(s). Provide resources as needed, including Healthy Start resources.
Breast (or Bottle)	Discuss infant feeding. Provide support & additional resources.
Bleeding	Assess bleeding. Review signs of abnormal bleeding & when to call provider (PP Warning Signs).
Bottom	Assess perineum tear or episiotomy. Assess for issues with voiding/BMs. Ask if patient is constipated or having normal BMs. Discuss resumption of sexual activity, atrophic vaginitis, & post-coital discomfort.
Baby Spacing	Discuss family planning & provide education as needed.
Blood Pressure	Assess BP & any signs of preeclampsia.
Other Best Practices	• Review signs/symptoms of infection including ↑ temperature &/or tachycardia. • Reinforce PP Warning Signs. • Discuss risk reduction in future pregnancies (e.g. aspirin for preeclampsia). • Offer community linkages as needed (e.g. WIC, home visiting, lactation support).

www.fpqc.org/PACC • fpqc@usf.edu 10/13/22

Pregnant in the past year?

Other Diagnoses to Consider

- Short of Breath/ Cardiomyopathy
- Hypertension/ Preeclampsia
- Fever/ Sepsis
- Thromboembolism
- Hemorrhage/ Anemia
- Depression/ Mental Health
- Drug Use

For more information scan the QR codes, or go to www.fpqc.org/pacc

PACC
POSTPARTUM ACCESS & CONTINUITY OF CARE

FPQC

ER Education Flyer

Who Are the Needed Partners to Improve Health?

Mother Focused Care

Who Are the Needed Partners to Improve Health?

Mothers

- FPQC Maternal Consultant
- FPQC Maternal Advisory Group Developing/Reviewing All
- Mother's Recommended on Hospital QI Teams
- Mother Listening Sessions
- Maternal Respectful Care Surveys

Community Partners Florida Healthy Start

- FPQC Community Consultant
- Locals Invited & Introduced at Kickoff
- Locals Provide an "Up-To-Date" Community Resource Directory
- Partners Recommended on Hospital QI Teams
- Provide Mother Materials
- Find Diverse Mothers for Listening Sessions

Respectful Maternity Care (RMC) Survey

29 hospitals are currently using the RMC Survey to gather feedback from postpartum patients on respectful care during their hospital stay.

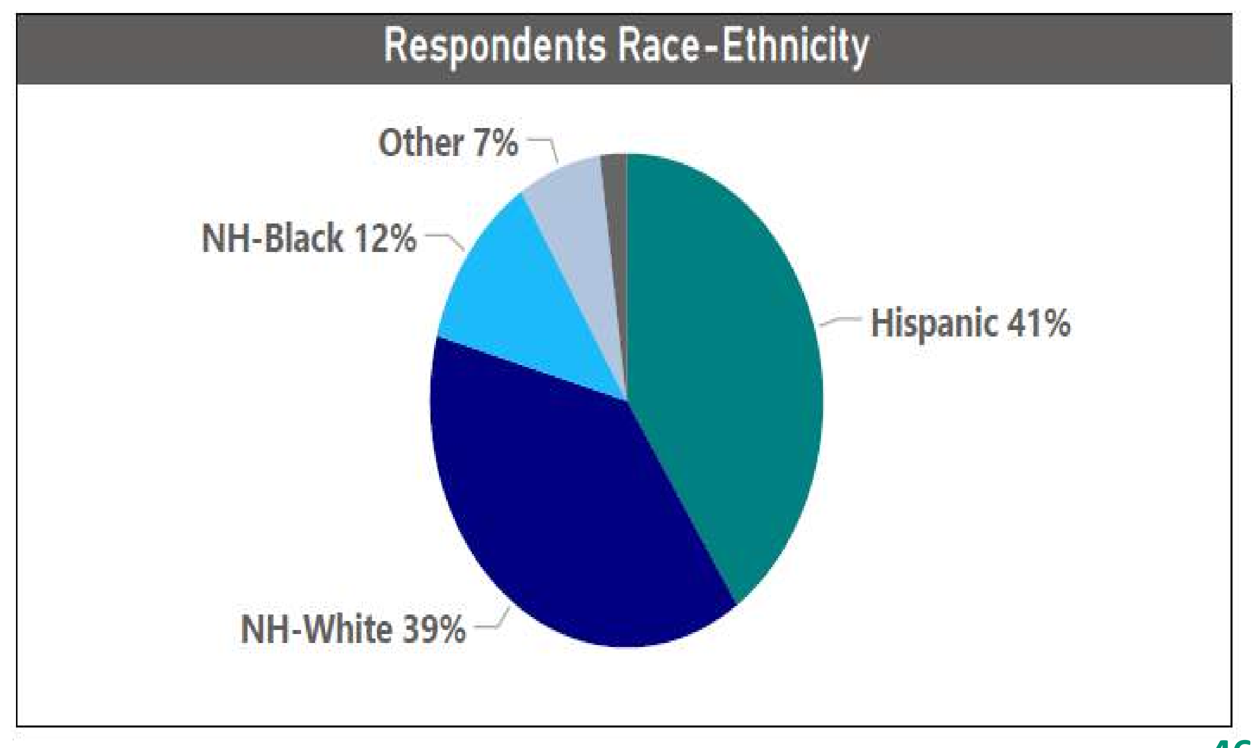
PATIENT DEMOGRAPHICS:

Overall

798

 # total surveys

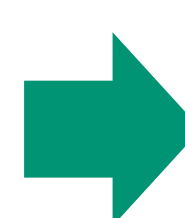
Survey language	% Respondents
English	83.58%
Spanish	14.66%
Haitian Creole	1.75%

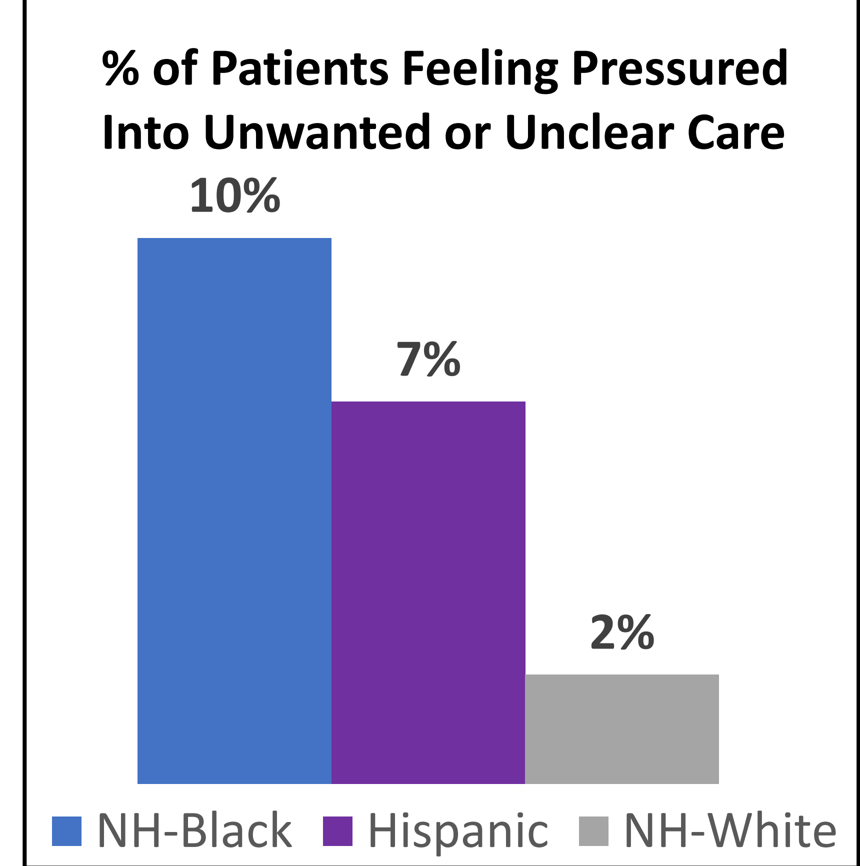


FPQC's Respectful Maternity Care (RMC) Survey

- Over 95% of survey responses received have been positive.
- Negative feedback is minimal but, allows hospitals opportunities to assess and enhance their specific practices.

Race and Ethnic differences were seen, particularly with patients who reported feeling pressured into unwanted or unclear care.





Maternal Listening Session with 163 Diverse Mothers Preliminary Results

Most rated their experience as a 9 or 10 on a scale of 1-10.

Hospital Opportunities

Those who rated below 9-10

- Needed resources (lactation support, insurance, supplies)
- Noted less follow-up or individualized, prompt care
- Felt rushed or ignored
- Wanted choice, respect

Preliminary Results: What do postpartum parents need?

Responsiveness

Alert, prompt, follow-up

Information & Resources

Items stocked and prepared, listening, offering

Supplies

Formula, diapers, housing, schooling, snacks, mothers' postpartum care

Lactation Support

…Ask the consultant right there; sometimes Google can be all over the place

…I was ready to go home, and the baby was ready to go home. But I feel like I was not at 100% ready with breastfeeding. …needed to see a lactation lady just to ease my own my own fears

Considerations for Home, Safety & Work

…I was in a bad relationship. So, I was asking them about housing and stuff.

…I won't be getting paid tomorrow.

Accommodation & Welcome of Family Members

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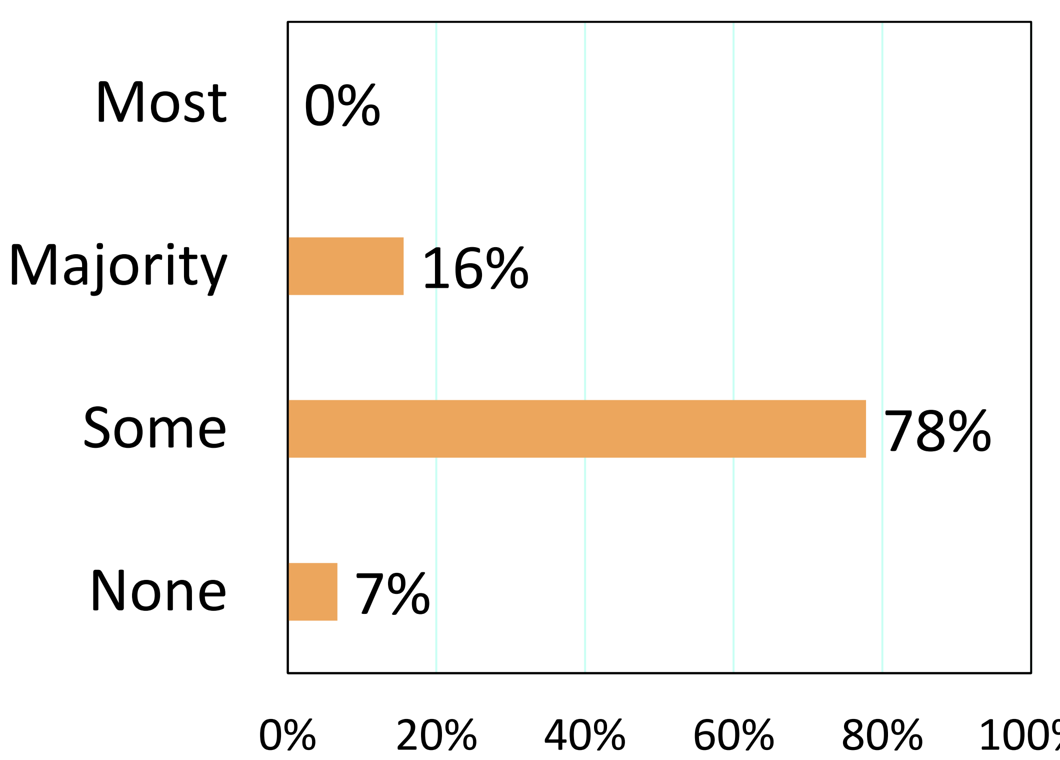
Future Challenges to Implementing Quality Improvement?

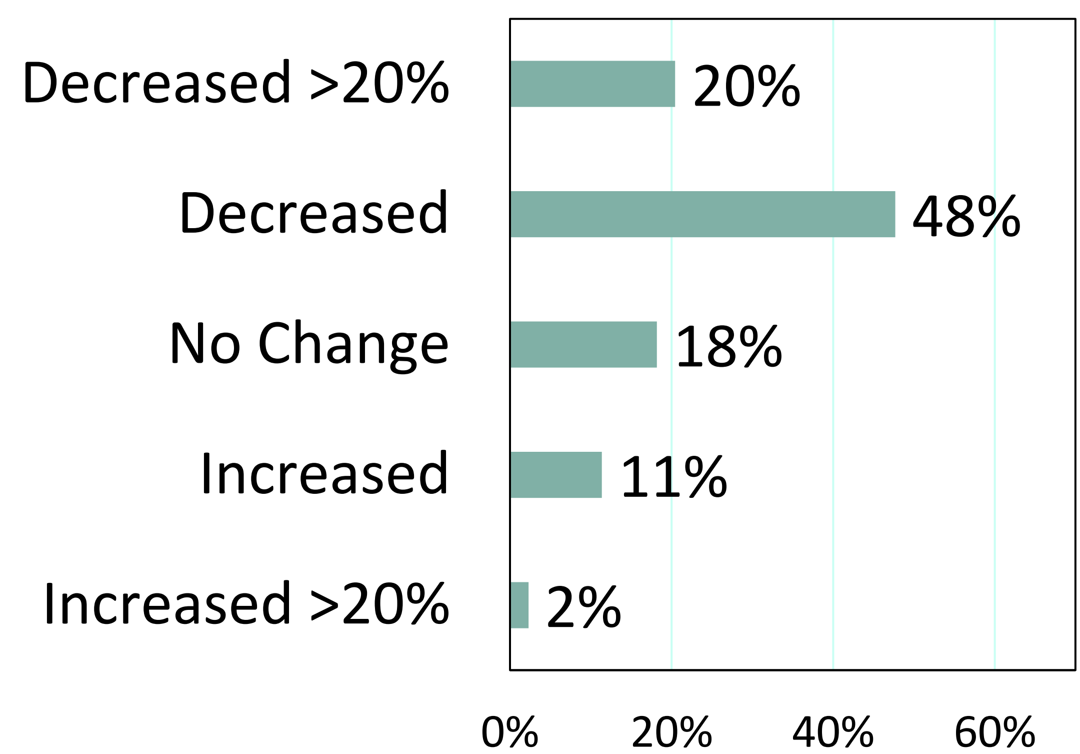
- Hospital Priority—Adequate Staffing & Resources
- QI Data Quality
- Current Health Care Structure Limits Quality

"Insufficient Nursing Staffing and Support for QI Initiatives" FPQC Hospital Survey, June, 2022 (n=80)

How much of your hospital's maternity nursing staff have turned over during pandemic?



At what nurse staffing level is your hospital currently operating?



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Multiple Pressure Points to Improve Quality

Government Reporting

Health Care Plans

Professional Organizations

Joint Commission

Peer Review

Medical Education

AHCA Medicaid

Consumer Ratings

Quality Measures

“Challenges with QI Data Collection Strategies for Rapid Data Reporting”

- **Insufficient nurse staffing to abstract medical records.**
- **Insufficient data quality collected via electronic health records**

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"Current Health System Structures Limit Quality Improvement"

- Howell EA, Egorova NN, Babierz A, Zeitlin J, Hebert PL (2016). Site of delivery contribution to black-white severe maternal morbidity disparity. *American Journal of Obstetrics and Gynecology,* 215(2): 143-152.
- Wang E, Glazer KB, Sofaer S, Balbierz A, Howell EA. (2021) Racial and Ethnic Disparities in Severe Maternal Morbidity: A Qualitative Study of Women's Experiences of Peripartum Care. *Women's Health Issues,* 31(1): 75-81.

1. Provider and staff education alone is not enough for QI.
2. Multiple-hospital QI initiatives will make a larger and more substantial improvement in perinatal health care.
3. Perinatal QI is a multidisciplinary team sport at a hospital, community & state level. Multiple partners are needed at each.
4. Both internal and external pressure points (positive & negative) are needed to maximize and sustain hospital perinatal QI efforts.
5. QI Initiatives include identifying and improving the care system.
6. Perinatal QI alone is not enough to improve health care disparity.

Questions?

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"To improve the health and health care of all Florida mothers & babies"