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

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

FPQC’s Vision & Values

• Voluntary
• Data-Driven
• Population-Based

• Evidence-Based
• Equity-Centered
• Value-Added
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
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. Bettegowda

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

Yuri V. Sebastião, MPH; Lindsay Womack, MPH; Cheryl A. Varnos, PhD, MPH; Judette M. Louis, MD, MPH; Funmilayo Olayo, 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, MBBS; Lindsay S. Womack, MPH; Humberto López Castillo, MD, PhD, CPNP; Maya Balakrishnan, MD; Karen Brubaker, MD, FACOG; Paige Altz, MPH, CPNP; Linda A. Detman, PhD; Emily A. Brown, MA, MPH; John S. Curran, MD; FACP; William M. Sappenfield, MD, MPH, CPNP

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

Chinyere N Reid 1,2, Tara R Foti 3,4, Alfred K Mbabah 3,4, Mark L Hudak 3, Maya Balakrishnan 3, Russell S Kirby 3,4, Ronné E Wilson 3,4, William M Sappenfield 3,4

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

Chinyere N Reid 1, Renice Obure 1, Jason L Salemi 1, Chinwemdii Ilonzo 1, Judette Louis 2, Estefania Rubio 1, William M Sappenfield 1
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
Identify over reporting “unknown”

### % Unknown/Missing in the Birth Certificate

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Maternal race</td>
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<td>Prior live births dead</td>
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<tr>
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<td><img src="#" alt="Green" /></td>
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<tr>
<td>Fetal presentation</td>
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<td><img src="#" alt="Green" /></td>
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</table>

- **≥5% unknown**
- **1.1-4.9% unknown**
- **≤1% unknown**
Assess if data reported in the BC agrees with data reported in the inpatient hospital discharge

## % Agreement in the Linked File

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

- **≤90% agreement**
- **90.1-94.9% agreement**
- **≥95% agreement**
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
Summary Profile

Last 12 months of available data

% 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

- Your Hospital: 12.9%

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

- Your Hospital: 2.5%

% Severe unexpected complication of the term newborn

- Your Hospital: 2.24%

% Moderate unexpected complication of the term newborn

- Your Hospital: 3.43%

Data Quality Issue

- Agreement
- Unknown

Data Source: Linked Birth Certificate to Hospital Discharge
Mother-Focused Care Approaches Using PQI

Across Outcomes: Examine Differences in Perinatal Outcomes

Within An Outcome: Examine Differences by Perinatal Outcomes
NH-black women have a 20% higher likelihood of undergoing a cesarean section in hospital X compared to NH-white women.
Questions
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

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

NICU LEVEL
- 1
- 2
- 3
Compare Your Hospital Rate to Others in the State

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

- Your hospital (%)
- The highest 25% of hospitals
- The highest 50% of hospitals
- The lowest 50% of hospitals
- The lowest 25% of hospitals

NICU LEVEL
- 1
- 2
- 3
Disaggregate Your Rate

% NTSV Cesareans

Race-ethnicity
- Hispanic
- NH-Black
- NH-White

Disaggregate by:
- Race-ethnicity
- Insurance
- Education
- BMI

Your Hospital %NTSV cesareans

2018 2019 2020 2021 2022 2023
Disaggregate Your Rate
Disaggregate Your Rate

% NTSV Cesareans

Education: < than HS, Bachelor’s +, HS/some college

Disaggregate by:
- Race-ethnicity
- Insurance
- Education
- BMI
Disaggregate Your Rate

% NTSV Cesareans - click on legend to change

Disaggregate by:
- Race-ethnicity
- Insurace
- Education
- BMI

Your Hospital %NTSV cesareans

Year:
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023

BMI
- BMI < 30
- BMI 30-34
- BMI 35+
Percentage of Cesarean Deliveries Among All NTSV Births For All Delivery Hospitals in Florida

Note: Data included on this page is through April 2023

Your Hospital

<table>
<thead>
<tr>
<th>Year</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>26.0%</td>
<td>21.1%</td>
<td>27.8%</td>
<td>29.6%</td>
<td>30.1%</td>
<td>40.0%</td>
</tr>
</tbody>
</table>

All delivery Hospitals

<table>
<thead>
<tr>
<th>Year</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>30.5%</td>
<td>28.8%</td>
<td>29.6%</td>
<td>30.3%</td>
<td>29.6%</td>
<td>29.9%</td>
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<tr>
<td>Numerator</td>
<td>1635</td>
<td>1596</td>
<td>1619</td>
<td>1645</td>
<td>1677</td>
<td>518</td>
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<tr>
<td>Denominator</td>
<td>5366</td>
<td>5545</td>
<td>5477</td>
<td>5435</td>
<td>5660</td>
<td>1734</td>
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</tbody>
</table>

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
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

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

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
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

97/106 hospitals