South Carolina Department of Health and Environmental Control

SC Birth Outcomes Initiative – Data Workgroup

Daniela Nitcheva, PhD
Division of Biostatistics
Vital Statistics
SC Birth Outcomes Initiative (SCBOI)

• Launched in July 2011.

• SCBOI is an effort by the SC Department of Health and Human Services (SCDHHS), South Carolina Hospital Association, SC Department of Health and environmental Control (SCDHEC), March of Dimes, Blue Cross Blue Shield of South Carolina and over 100 stakeholders to improve the health outcomes for newborns not only in the Medicaid program but throughout the state’s population.
Data Capacity and Performance Measures Workgroup

• The group has members representing agencies and organizations that provide and utilize data.

• Members have extensive knowledge of the various data sets across multiple state agencies and other data sources.

• Working together as a group allows us to combine the unique knowledge around issues specific to each data set.
Data set

• A linked data set was created in order to produce reports.

• The data set links records from birth certificates with hospital discharge data, and Medicaid claims data.

• This linked data set allows for a very detailed analysis of maternal characteristics and birth outcomes.
Linked data set

- Birth certificate data
  - link the mother’s to the baby’s record
  - contain some medical and health history of the mother
- Hospital discharge data
  - contain information on the current delivery
- Medicaid data
  - verification of payor
Reports

• Reports are produced after careful consideration of:
  • policies around data release
  • confidentiality of data
  • quality and completeness of specific variables
  • use of small numbers
  • definitions of variables and indicators
  • use of ICD-9 and ICD-10 codes
  • interpretation of data and indicators
Selected Measures from Birth Certificate Data

• Trends over the last 10 years

• Population level measures

• Include data for all residents of the South Carolina, not just births that occurred in SC hospitals
Low Birthweight Rates, 2007-2016

Year

Percent of Live Births
10.2 9.9 10.0 9.9 9.9 9.5 9.7 9.4 9.5 9.6
8.1 8.0 8.2 8.0 8.0 7.8 7.8 7.7 7.7 7.8
10.2 9.9 10.0 9.9 9.9 9.5 9.7 9.4 9.5 9.6

SC VLBW (0 to 1499 g)  SC MLBW (1500 to 2499 g)  SC LBW (0 to 2499 g)
Preterm Rates, 2007-2016

Year


Very Premature (1 to 31 weeks) Moderately Premature (32 to 36 weeks) Premature (1 to 36 weeks)

Percent of Live Births

0 2 4 6 8 10 12 14

2.2 2.1 2.0 2.0 2.0 2.1 2.2

10 9.7 9.8 9.5 9.5 9.3 9.0 8.8 9.1 9.2

12.2 11.8 11.7 11.5 11.5 11.3 11.1 10.8 11.1 11.1

Preterm Rates, 2007-2016

Very Premature (1 to 31 weeks) Moderately Premature (32 to 36 weeks) Premature (1 to 36 weeks)
Full Term Rates, 2007-2016
Breastfeeding Initiation, 2007-2016

Percent of Live Births

Year

Breastfeeding Initiation

58.1 59.5 60.1 61.4 65.7 68.2 70.5 71.9 74.8 76.9
Selected Measures Using Linked Data Set, Q1 2011- Q2 2016

- Restricted to SC delivering hospitals
- Allows for exclusion of medically indicated records based on hospitals discharge data
- Quarterly estimates – small numbers!
- Change from ICD-9 to ICD-10 in Q4 2015
- Use with caution!
Elective Inductions, Q1 2011- Q2 2016

- Percent of Live Births
- Quarter Year
- Elective Induction ICD-9 CM
- Elective Induction ICD-10 CM
Primary C-Sections, Q1 2011- Q2 2016
CONTACT US

Email: info@dhec.sc.gov
Phone: (803) 898-DHEC (3432)

Media Relations
Media Contact Information
Email: media@dhec.sc.gov

Stay Connected
Using data to drive change in SC hospitals

Aunyika Moonan, PhD, CPHQ
Executive Director, Data and Measurement
South Carolina Hospital Association
“When you two have finished arguing your opinions, I actually have data!”
**Working together with SC hospitals and partners**

- Overwhelming evidence-low hanging fruit

- Engagement: August 2011, commitment from all birthing hospitals to stop early elective deliveries

- Throughout the entire Collaborative, use data to drive decision making

- 2013, SC DHHS and BCBSSC stopped reimbursement to hospitals and physicians
Working together with SC hospitals and partners

SC BOI programs: (Data driven)

- Baby-Friendly USA
  - 41.4% SC births, 39.5% Medicaid vs. national average 21.5%

- Screening, Brief Intervention and Referral to Treatment (SBIRT)

- Long Acting Reversible Contraceptives

- Centering Pregnancy

- Supporting Vaginal Birth Initiative-signed commitments
BOI Hospital Reports

Using Data to Monitor Birth Outcomes through Quality Improvement
"I'll pause for a moment so you can let this information sink in."
Purpose

- Provide cover letter and data reports to CEO, Quality, Perinatal, CMO, Regional etc. point of contacts on a quarterly basis

- Continue tracking hospital progress through quarterly and annual hospital reports
South Carolina Birth Outcomes Initiative Data Committee

Quarterly Hospital Report:
Data through Quarter 2, 2016 (April – June, 2016)

May, 2017
South Carolina Birth Outcomes Initiative Data Committee
5-Year Anniversary Hospital Report:
Data Comparing CY 2011 to CY 2015

January, 2017

Medicaid Policy Research
at the USC Institute for Families in Society
BOI Data Webinars Offered
Table of Contents of BOI Data Packets

1) Data Committee members (point of contacts-who to call)

2) Data Dictionary

3) Quartile information for the perinatal level of the hospital being reported

4) Part A: Quarterly comparisons for your specific birthing facility and the state (tables/graphs)

   Part B: Annual comparisons for a specific birthing facility and the state (tables/graphs)

4) Appendix-detailed quartile information, data sources etc.
2) **Data Dictionary**

- Birth Facility-not freestanding
- Difference-Absolute
- Induction-37-38 weeks gestation
- NICU stays-NICU levels 3 or 4
- Pay Source-expected
- Quarter-CY
- Relative Percentage Change-(−) change indicates better outcome
- The Joint Commission Exclusion Criteria: PC-01 and PC-02
Reported Measures for Data Packet

- Birthweight
- Gestation
- Overall Inductions at 37-38 Weeks
- Primary C-Sections at 37+ weeks with and without exclusions applied (PC-02)
- Primary C-Sections at 39-40 weeks with and without exclusions applied
- Repeat C-Sections
- Total C-Sections with and without exclusions applied
- Elective Inductions at 37-38 weeks gestation
- NICU Stays Among Deliveries at 37-38 Weeks
- The Joint Commission Early Elective Delivery (PC-01) Measure*
3) **Quartile Information: 2016**

*(Ex: Perinatal Levels II and IIE)*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Your hospital %</th>
<th>Minimum</th>
<th>First Quartile</th>
<th>Median</th>
<th>Third Quartile</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective Inductions</td>
<td>2.63%</td>
<td>0.00%</td>
<td>1.36%</td>
<td>2.78%</td>
<td>3.89%</td>
<td>18.48%</td>
</tr>
<tr>
<td>The Joint Commission Early Elective Delivery</td>
<td>14.91%</td>
<td>13.56%</td>
<td>19.29%</td>
<td>22.61%</td>
<td>30.01%</td>
<td>53.26%</td>
</tr>
<tr>
<td>Primary C-Section with exclusions removed</td>
<td>28.64%</td>
<td>13.92%</td>
<td>23.97%</td>
<td>28.08%</td>
<td>34.42%</td>
<td>44.83%</td>
</tr>
<tr>
<td>Primary C-Sections at 39-40 weeks with exclusions removed</td>
<td>29.20%</td>
<td>14.00%</td>
<td>23.88%</td>
<td>28.79%</td>
<td>35.39%</td>
<td>50.00%</td>
</tr>
</tbody>
</table>

Lower rate is better.
4) **Table Layout of measures (by state and hospital)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>All payers</th>
<th>Medicaid</th>
<th>All payers</th>
<th>Medicaid</th>
<th>All payers</th>
<th>Medicaid</th>
<th>All payers</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qtr 1, 2011 rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qtr 2, 2016 rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absolute Difference between Q2, 2016 and Q1, 2011 (+/-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative Percentage Change Q2, 2016 and Q1, 2011 (+/-)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Graphs: Percentage of Primary C-Sections for First Time Mothers with Exclusions removed

% C-Sections First Time Moms

Year

Per cent of Live Births

5) Appendix:

- Data sources
- Detailed information about measures caveats
- Perinatal quartile levels of performance
Lessons Learned

- Importance of data input by birth clerks, coders, documentation by physicians, nursing and other medical staff etc. Mirror results?

- Validation of results; internal process

- Don’t let perfect be the enemy of good

- Did you read the fine print?
Lessons Learned

- Pull your internal data-medical record numbers-check
- Understanding quality improvement
- Healthy Competition: YES
- Celebrate successes together!
- Data drives improvement!
- Hospitals love working together towards a common goal-healthier moms and babies in SC
Aunyika Moonan, PhD, CPHQ
Executive Director, Data and Measurement
803-744-3534
amoonen@scha.og
From Birth Data to Decision Making: Using Data to Advance Maternal and Child Health

Sarah Gareau, DrPH
Ana López–De Fede, PhD

USC Institute for Families in Society
Division of Medicaid Policy Research
October 5, 2017
"That which is measured improves. That which is measured and reported improves exponentially."

- Karl Pearson
Collaboration Is Key
Collaboration

With input from the hospitals and other stakeholders, we have made changes to SC BOI data reporting over the years to improve usability.
Collaboration

Reports are distributed and used to inform policy not only in SC, but nationally.
Collaboration

Gains have been made by linking SC BOI evaluation (data dissemination and understanding) with this collaboration of public and private partners (payers, hospitals, non-profits, and state agencies).
SC BOI Outcomes
Comparing 2011-15

- 5% reduction in moderately low birthweight
- 7% reduction in births at 37 or 38 weeks gestation
- 9% reduction in Elective Primary, Primary at 39-40 weeks gestation, and Total C-Sections
- 31% reduction in The Joint Commission Early Elective Delivery Measure
- 9% reduction in overall inductions
GAINS:

37-38 Week Elective Inductions

• Data released May, 2017 showed a 92% improvement in this measure. *(Decrease from 9.62% in Q1, 2011 to 0.74% in Q2, 2016)*

• The policy to link payment reform with birth outcomes has been highlighted by Catalyst for Payment Reform, NPR Shots, and The LeapFrog Group.
This is one of the most extraordinary examples of progress in health care that I’ve seen in my career. It shows that public reporting can galvanize change, and that saves lives.”

- Leah Binder, president and CEO of LeapFrog

Using Education, Collaboration, and Payment Reform to Reduce Early Elective Deliveries

November 22, 2013

This case study by Catalyst for Payment Reform (CPR) with support from the Milbank Memorial Fund shares the story of South Carolina’s Birth Outcomes Initiative (BOI). The report chronicles how South Carolina’s Department of Health and Human Services, South Carolina’s largest commercial health plan, and many other stakeholders partnered to engage providers in quality improvement activities, and then agreed together to stop paying for early elective deliveries—those occurring before 39 weeks gestation. Early elective deliveries are associated with worse health outcomes for infants and mothers and higher health care costs. Despite the overwhelming evidence against early elective deliveries, an estimated 10 to 15 percent of babies in the United States continue to be delivered early without medical cause.
Collaboration

- SC BOI Outcomes
- 37-38 Week Elective Inductions
- Behavioral Health
• Data team reports have highlighted the increase in neonatal abstinence syndrome (NAS) and need to better address opioid use during pregnancy.

• In 2016, at least one in four women with a delivery covered by Medicaid had participated in the Screening, Brief Intervention, and Referral to Treatment Initiative.

• Clinicians have also been trained on different methods of addressing NAS.
Census data were combined with birth outcomes data from vital records to provide a strong contextual framework within which to explore birth outcomes and socioeconomic status.
The Environmental Scan can be used to:

- identify areas of high socioeconomic disadvantage;
- examine geographic patterns of disease burden;
- evaluate access to local health care facilities;
- identify potential health service gaps; and
- target interventions in high need areas.
BOI Environmental Scan

INTERACTIVE MAP FEATURES

- Map layers that can be turned off and on using the “layers” feature in Adobe® Acrobat
- A responsive that legend adjusts to show currently active layers
- Overlays viewable on top of mapped data that show correlation between birth outcomes and SES Indicators
- Ability to compare mapped data ranges to statewide values
AHEAD:

BOI Environmental Scan

Where can I find the Scan® and the User Guide?

schealthviz.sc.edu/birth-outcomes-initiative
NEW Hospital Reports

• Driven by clinician feedback, will be providing a new set of biannual maternal and infant health quality improvement targets

• Will shift to explore more maternal outcomes
NEW Hospital Reports

- There will also be a secure interactive online dashboard (with comparison at the state, perinatal, and payer levels).

### SC Birth Outcomes Quality Improvement Dashboard

<table>
<thead>
<tr>
<th>Perinatal Quality Comparative Data Sample</th>
<th>Table Page Reference</th>
<th>Hospital Name</th>
<th>Level Average</th>
<th>Hospital vs. Hospital Level Average</th>
<th>All Hospitals Average</th>
<th>Hospital vs. All Hospitals Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A: Total Deliveries</td>
<td>Table 1, p ---</td>
<td>2,603</td>
<td>3,579</td>
<td>NA</td>
<td>3,659</td>
<td>NA</td>
</tr>
<tr>
<td>Section B: Quality Metrics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-Section Delivery Rate (% of Total Deliveries)</td>
<td>Table 2, p ---</td>
<td>34.8%</td>
<td>32.7</td>
<td>ABOVE</td>
<td>33.0%</td>
<td>EQUAL</td>
</tr>
<tr>
<td>Primary C-Section Rate (% of Total Deliveries)</td>
<td>Table 2, p --</td>
<td>18.5%</td>
<td>18.7%</td>
<td>EQUAL</td>
<td>17.6%</td>
<td>EQUAL</td>
</tr>
<tr>
<td>Postpartum Hemorrhage Rate</td>
<td>Table 3, p --</td>
<td>2.9%</td>
<td>4.9%</td>
<td>BELOW</td>
<td>3.4%</td>
<td>EQUAL</td>
</tr>
</tbody>
</table>
"Coming together is a beginning, staying together is progress, and working together is success."

– Henry Ford
Questions?

Ana Lòpez–De Fede, PhD
adefede@mpr.sc.edu
(803)777-5789
ifs.sc.edu/MPR