Lessons Learned from Michigan's Obstetric Initiative (OBI): Promoting Vaginal Birth and Birth Equity

Lisa Kane Low PhD, CNM, FACNM, FAAN
Michigan’s Obstetric Initiative (OBI)
Obstetrics Initiative: Safe reduction of primary cesareans and improved quality of maternity care in Michigan

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OBI Quality Improvement Pathway

Reduce variation in NTSV Cesarean Birth Rates across the Collaborative by Optimizing Evidence Based Practices:

Translating Evidence into Practice

• Stair step approach to introduce QI
  • 2020: Focus on dystocia as key literature and data based reason for NTSV Cesarean
  • 2021: Incorporated process measures to support implementation of measures to address dystocia
  • 2022: Extending the metrics to include a planned outcome measure for dystocia diagnosis
OBI strategy roadmap – building QI capacity

2019
- QI Curriculum
- Admission checklist
- Labor progress bundle
- Pay for participation

2020
- Clinically abstracted data
- Shared decision-making education and training
- Labor Culture Survey
- Expanded QI focus with workgroups

2021
- Dystocia: Cesarean birth utilization review
- Patient centered huddles: Team Birth
- Year 1 of pay for performance process measures

2022
- Dystocia compliance
- Fetal assessment QI options
- Expanded birth equity
- Patient reported experiences
- Repeat Labor Culture Survey

-  Year 1 of pay for performance process measures

- Clinically abstracted data
- Shared decision-making education and training
- Labor Culture Survey
- Expanded QI focus with workgroups
The vast majority of sites improved their dystocia documentation between 2021 and 2022.

**Complete documentation of multiple fields, including contraction strength and cervical change, is necessary in order to accurately assess dystocia compliance.**
At the hospital level, an increased rate of dystocia compliance from 2021 - 2022 is associated with a significantly decreased Cesarean birthrate ($p = 0.04$).
A larger proportion of Cesareans were performed for abnormal or indeterminate FHT than labor dystocia in both 2021 and 2022, though the difference was larger in 2022.
Management of Category II Fetal Heart Rate Tracings Algorithm

Smart-phrase for Cat II FHTs:

Category II FHT managed following algorithm including initiation of corrective measures ***. With the persistent presence of ***, a patient-centered huddle was held and the need for an expedited delivery was discussed with the patient. It is our clinical recommendation to proceed with cesarean delivery and after questions were answered the patient agrees to proceed with recommended plan.
Intermittent Auscultation (IA) Bundle

Readiness: Every Unit

• “Promotes Shared Decision making by providing consumer education outlining evidence-based approaches to FHR assessment during labor.

Risk and Appropriateness: Every person who presents in labor

• “Participates in shared decision-making regarding approaches to FHR assessment.”

Reliable Delivery of Appropriate Care: Every person eligible for IA

• “Is regularly informed of overall FHR assessment throughout labor and is provided with necessary education/information about these assessments”

Recognition and Response: Every person for whom eligibility for IA use changes

• “Will be involved in shared-decision making about method of FHR assessment if the maternal or fetal status changes”

Reporting/Systems Learning: Every Unit

• Evaluates patient experiences of FHR assessment including shared decision making, comfort, and education
Measuring Labor Culture 2020 and 2022: What factors best predict NTSV CB rates in Michigan?

- Assessed associations between each survey factor and NTSV CB rate
- Multivariate Poisson Regression
- Controlled for hospital-level covariates:
  - **Patient case-mix**: % Maternal BMI over 30, % Maternal Age over 35
  - **Hospital demographics**: % Medicaid, Nursery Acuity Level, Hospital Geographic Location (urban/rural/frontier), Annual Birth Volume
- Means at the hospital level and differences between disciplines within each hospital
OBI 2020 Labor Culture Survey Timeline

- **Feb 2020**: First cohort launched
- **March 23, 2020**: Michigan stay at home order
- **May 2020**: Fourth cohort launched
- **July 2020**: First round reports

**Nov 2019**
Dr. White Van Gompel presents at OBI SemiAnnual

**March 2020**
Second cohort launched

**April 2020**
Third cohort launched

**June 1, 2020**
Stay at home order lifted

**October 2020**
Second round reports
Challenges Due to COVID19: Michigan Maternity Care Professionals Perspectives
Jill Brown MSN, RN, Kathryn Moore MPH, Lisa Kane Low PhD, CNM, FACNM, FAAN
Department of Obstetrics and Gynecology, School of Nursing, University of Michigan, Obstetrics Initiative, Blue Cross Blue Shield of Michigan

BACKGROUND & SIGNIFICANCE
With the unfolding of a global pandemic throughout 2020, maternity care was altered in multiple ways at all levels including the individual, community and system level. Maternity care delivery changes were implemented to reduce risks of COVID19 transmission that countered usual family centered models of maternity care.

PURPOSE
It is critical to understand the influence of the pandemic on the provision of maternity care by health care professionals to avoid unintended consequences on the workforce and to support optimal care for childbearing families.

RESEARCH QUESTION
How has COVID19 impacted the work of maternity care providers (RNs, CNMs, MDS)?

METHODS
Using a survey methodology, the question “How has COVID19 impacted your work?” was added to an existing survey focused on maternity care unit culture.

- The survey was administered confidentially to maternity care professionals at hospitals participating in the Obstetrics Initiative, a quality collaborative aiming to safely reduce primary cesarean births throughout the state of Michigan.
- Open text question responses were analyzed by two independent investigators using directed content analysis to identify themes.

SAMPLE POPULATION
Nurses, physicians and midwives who work at 57 of the maternity care hospitals in the state of Michigan were participating in a survey starting February 2020; in April through June 2020, the COVID19 questionnaire was added. 1,071 surveys completed with 647 responses for the COVID question, representing 60% of the participants.

RESULTS

Provider’s Health
- “Creating and maintaining a healthy work environment.”
- “Tired, run down, and physically and emotionally drained.”
- "Increased stress in general" - Michigan - May 2020

Patient Care Impact
- "I was upset, and it was hard to take care of patients. It was emotionally draining" - Michigan - May 2020
- "I just have more energy but I’m still very tired. I’m kind of running on empty, working all the time" - Minnesota - May 2020

Personal Protective Equipment
- "I would wear the mask and the PPE, I would also wear the N95 mask because I was very uncomfortable with the N95 mask" - Michigan - May 2020

Decreased Support During Labor: Visitors positive and negative
- "They’re not allowed to come in." - Michigan - May 2020
- "Visitors are not allowed to be in the room." - Michigan - May 2020

Ethical Challenges and Feelings of Moral Distress: Conflict between Self Care and Care of Others

- "I would say ethical challenges are mainly around personal care and personal time and personal privacy" - Michigan - May 2020

- "In our survey there were a lot of people who said the biggest challenge is having to give up personal care and privacy" - Michigan - May 2020

SUMMARY
Five major themes emerged across all types of providers:

- Providers health which includes stress, anxiety, fatigue, exhaustion and financial stress
- Perceptions of patient care impact including the use of inductions or not more or less cesareans being performed, more admissions in active labor with less use of triage visits and reduced access to labor comfort resources
- Burdens of personal protective equipment including loss of patient face to face interactions, work flow effects, lack of needed resources and changes in policies
- Ethical challenges with work place demands due to conflicts arising between concern for self vs. executing their role in patient care creating a sense of moral distress

CONCLUSIONS
Maternity care providers in Michigan experienced a range of complexities when providing care during the pandemic, challenging many to question the balance between their role as providers with concerns for the effects of COVID19 on themselves and those they provide care. Resources are necessary to support providers who experience distress to support the wellbeing and retention of the maternity care workforce.

ACKNOWLEDGEMENTS
This study was funded by the Blue Cross Blue Shield of Michigan. We would like to thank Blue Cross Blue Shield for their financial support, the Michigan Department of Health and Human Services, the Michigan Maternal-Fetal Health Taskforce, the Obstetrics Initiative, and the Michigan Department of Community Health for administrative support and data support. The Blue Cross Blue Shield Michigan Blue Health Grant supported the Michigan Maternity Care Professionals Survey Project. The Michigan Maternal-Fetal Health Taskforce and the Michigan Department of Community Health provided guidance. We would also like to thank the Michigan Maternity Care Professionals for participating in the survey.
## 2022 SUMMARY

Excluding hospitals with no obstetricians and RR < 30%

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Unadjusted</th>
<th>Adjusted</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate (95% CI)</td>
<td>p-value</td>
<td>Estimate (95% CI)</td>
</tr>
<tr>
<td>Best Practices</td>
<td>-0.25 (-0.58, 0.07)</td>
<td>0.126</td>
<td>-0.29 (-0.65, 0.08)</td>
</tr>
<tr>
<td>Fear</td>
<td>-0.61 (-0.91, -0.31)</td>
<td>&lt;0.0001</td>
<td>-0.67 (-1.01, -0.33)</td>
</tr>
<tr>
<td>Unit Microculture</td>
<td>-0.20 (-0.47, 0.06)</td>
<td>0.133</td>
<td>-0.35 (-0.70, -0.001)</td>
</tr>
<tr>
<td>Physician Oversight</td>
<td>-0.09 (-0.37, 0.19)</td>
<td>0.514</td>
<td>-0.08 (-0.43, 0.27)</td>
</tr>
<tr>
<td>Maternal Agency</td>
<td>-0.27 (-0.54, -0.004)</td>
<td>0.054</td>
<td>-0.34 (-0.67, -0.001)</td>
</tr>
<tr>
<td>Cesarean Safety</td>
<td>-0.39 (-0.72, -0.06)</td>
<td>0.021</td>
<td>-0.81 (-1.23, -0.39)</td>
</tr>
<tr>
<td>Unit Norms</td>
<td>-0.07 (-0.28, 0.15)</td>
<td>0.545</td>
<td>-0.11 (-0.36, 0.14)</td>
</tr>
<tr>
<td>Vaginal Birth Microculture</td>
<td>-0.10 (-0.32, 0.12)</td>
<td>0.361</td>
<td>-0.13 (-0.39, 0.13)</td>
</tr>
<tr>
<td>Patient Safety Culture</td>
<td>-0.005 (-0.18, 0.17)</td>
<td>0.959</td>
<td>-0.06 (-0.29, 0.16)</td>
</tr>
</tbody>
</table>

Adjusted for hospital annual birth volume, geographic location, nursery acuity level, maternal % BMI > 30, maternal % age > 35 y, and maternal % Medicaid as primary insurance.
NEW 2022 Outcomes

Excluding hospitals with no obstetricians and RR < 30%

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Estimate (95% CI)</th>
<th>p-value</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear</td>
<td>-0.67 (-1.01, -0.33)</td>
<td>0.0001</td>
<td>0.51289</td>
</tr>
</tbody>
</table>

Assume Hospital X has a baseline NTSV Cesarean rate of 30%. If staff at Hospital X focused their efforts on improving culture and decreased their score on the Fear subscale by one point, they could expect their Cesarean rate to decrease by a relative 48.7%. That is, they would expect their Cesarean rate to decrease to 15.4% (30% - [30% * 0.487]).
NEW 2022 Outcomes (ctd.)

Assume Hospital X has a baseline NTSV Cesarean rate of 30%. If staff at Hospital X focused their efforts on improving culture and increased their score on the Unit Microculture subscale by one point, they could expect their Cesarean rate to decrease by a relative 29.6%. That is, they would expect their Cesarean rate to decrease to 21.1% (30% - [30% * 0.296]).
NEW 2022 Outcomes (ctd.)

Assume Hospital X has a baseline NTSV Cesarean rate of 30%. If staff at Hospital X focused their efforts on improving culture and decreased their score on the Cesarean Safety subscale by one point, they could expect their Cesarean rate to decrease by a relative 55.5%. That is, they would expect their Cesarean rate to decrease to 13.4% (30% - [30% * 0.555]).
How do different providers perceive the unit culture?

- Agreement
- Disagreement
- Agree to Disagree
**Patient Safety Culture and Challenges to Labor & Delivery Teamwork Pre- and Post- ARRIVE**

Emily White VanGompel, MD, MPH.1 Lavisha Singh, MPH.1 Francesca Carlock, MPH.1 Jill Brown, MSN, RN 2 Emma Keer BS, Lisa Kane Low, PhD CNM2

1NorthShore University Health System, 2The Michigan Obstetrics Initiative

**Introduction and Background**

- In 2018, a large randomized controlled trial (ARRIVE) found elective induction at 39 weeks gestation reduced cesarean delivery for low risk first births.
- This new practice has been endorsed by obstetric physicians but not nursing professional organizations.
- Significant concerns about the implementation of these findings have been raised.
- Hospital safety culture’s focus on communication and collaboration across disciplines may play a role in facilitating effective implementation of these findings.

**Objectives**

To explore and quantify disciplinary differences in attitudes towards elective induction prior to and after the ARRIVE trial, and determine if hospital patient safety culture impacts these attitudes.

**Study Design**

- A mixed-methods study utilizing:
  - The Labor Culture Survey: a validated quantitative survey of labor unit culture.
  - Hospital characteristics and cesarean delivery rates derived from the California Maternal Data Center and Michigan Birth Certificate Data
  - Content analysis of free text responses
  - Population studied: Physicians, midwives, and nurses delivering intrapartum care at
  - Hospitals in California (2017)
  - Hospitals in Michigan (2020)

**Conclusions and Implications**

- Physician attitudes differed in the pre-ARRIVE compared with the post-ARRIVE sample; however, nursing attitudes did not.
- Post-ARRIVE, nurses and physicians with higher composite safety culture scores showed similar attitudes towards reducing induction of labor.
- Hospitals incorporating ARRIVE trial findings should engage all maternity care professionals, including nurses, to create policies that address eligibility criteria and induction of labor protocols that optimize health outcomes and patient care experiences.

**Funding Source and References**

This study is supported by the Michigan Obstetrics Initiative which is funded by Blue Cross and Blue Shield of Michigan. The NorthShore Auxiliary supported the time of three authors. The primary author’s effort was supported by the Agency for Healthcare Research and Quality (KOBHS028028-01).

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**Principle Findings - Quantitative**

- **Timing of Induction Matters**
  - Of 377 comments mentioning induction of labor: 357 were negative, 20 were positive

- **Who Should be Offered Inductions**
  - We are actively working on the supporting vaginal-only initiative. However, the ARRIVE study is contradictory to this effort. - L&D Nurse
  - We should encourage patients to go home and come back if an early induction is unsuccessful. - L&D Nurse

- **Need for Protocols and Staff**
  - Better adherence to IOL protocols with respect to Pitocin titration, use of Cytotec to Pitocin titration, use of AROM on closed cervix. - CNM
  - “Nothing points to a cesarean section like a closed cervix showing up for an induction.” - L&D Nurse

- **Ideas to Improve the Induction Process**
  - We should encourage patients to go home and come back if an early induction is unsuccessful. - L&D Nurse
  - Providers need to educate the patients about the benefits and risks, and process of being induced, so that patient is able to jointly make an informed decision. - CNM

**Principle Findings – Qualitative (cont.)**

- **Principle Findings - Quantitative**
  - Post-ARRIVE, disciplines’ attitudes were closer in alignment at hospitals with stronger patient safety cultures.

**Principle Findings – Qualitative**

- **Need for Protocols and Staff**
  - “I think the biggest area for improvement is reducing 39 week inductions pushed by the doctors.” - L&D Nurse
  - “We are actively working on the supporting vaginal-only initiative. However, the ARRIVE study is contradictory to this effort.” - L&D Nurse

- **Conclusions and Implications**
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  - Hospitals in California (2017)
  - Hospitals in Michigan (2020)
Summary

• A positive unit culture that is focused on promoting vaginal birth does make a difference in reducing NTSV cesarean birth rates
  • Belief in the value of vaginal birth short term and long term outcomes
• A culture of safety aligns with a culture that promotes vaginal birth with all team members participating in the plan of care process, in support of best practices
• Support for communication and engagement of all team members promotes a culture of safety and supports a reduction in the NTSV cesarean birth rate.
• Agreement on integration of evidence based practices between members of the maternity care team improves unit culture and decreases the NTSV cesarean birth rate.
TeamBirth Participating Hospitals 2022

**Michigan:**
- Ascension St. John Hospital Detroit
- Ascension Providence Hospital Novi
- Ascension Providence Hospital Southfield
- Henry Ford Macomb Hospital
- Hillsdale Hospital
- McLaren Bay Region Family Birth Place
- Munson Healthcare Grayling Hospital
- ProMedica Charles and Virginia Hickman Hospital
- ProMedica Coldwater Regional Hospital
- ProMedica Monroe Regional Hospital
- Sparrow Hospital
- Trinity Health St. Mary Mercy Livonia Hospital
- Trinity Health St. Joseph Mercy Ann Arbor Hospital
- Trinity Health St. Joseph Mercy Oakland Hospital
- Trinity Health Mercy Health Mercy Campus
- Trinity Health Saint Mary’s Grand Rapids
The number of staff trained on a Delivery Tool and Patient-Centered Huddles increased throughout 2021; by Q4, more than 600 staff had been trained on huddles.
SDM has increased 13.3%
Having a higher proportion of births with any provider documentation of SDM (nurse documentation of plans, provider H&P note, or provider documentation in LPN) is associated with a decreased unplanned Cesarean rate across the collaborative ($p = 0.056$).
Shared Decision Making and NTSV Cesarean Births

SDM is associated with 8.3% lower cesarean probability

- 32.2% (95% CI: 30.9, 33.7)
- 23.9% (95% CI: 22.8, 25.0)

Generalized linear mixed models were used to generate estimates.
What is Birth Equity?

“The assurance of the conditions of optimal births for all people with a willingness to address racial and social inequalities in a sustained effort.”.

~Dr. Joia Crear-Perry, MD
Founder and President
### Comparing Maternal Race/Ethnicity for NTSV births in 2020:

**OBI Workstation Data (1,078 births)**
- American Indian/Alaska Native: 2 births (0.2% of total births)
- Asian or Pacific Islander: 27 births (2.5% of total births)
- Black: 381 births (35.4% of total births)
- Hispanic: 128 births (11.9% of total births)
- More than one race: 3 births (0.3% of total births)
- Race and/or Ethnicity Unknown: 113 births (10.5% of total births)
- White: 364 births (33.5% of total births)

**Michigan Birth Certificate Data (1,044 births)**
- American Indian/Alaska Native: 14 births (1.3% of total births)
- Asian or Pacific Islander: 40 births (3.8% of total births)
- Black: 233 births (22.2% of total births)
- Hispanic: 132 births (12.6% of total births)
- Not Reported/Unknown: 2 births (0.2% of total births)
- Other: 6 births (0.6% of total births)
- White: 607 births (58.1% of total births)

Discrepancies between the OBI Workstation and Michigan Birth Certificate data exist for a variety of reasons, including different NTSV classification and race/ethnicity reporting processes for patients. These discrepancies can result in a misclassification of data for analysis and interpretation. OBI strongly recommends that each health system ensure a consistent process that includes patient-reported race and ethnicity.
OBI's birth equity work thus far has focused on identifying discrepancies in health outcomes by race-ethnicity and insurance status across the collaborative. Differences in health outcomes including severe maternal morbidity and mortality, Cesarean birth, and others are understood to be a result of social determinants of health and discriminatory care practices rather than biological differences. In other words, this report uses race-ethnicity as a proxy for the experience of racism and insurance as a proxy for the experiences of classism and income inequality.
Disparities Across The Collaborative
There is a 14.78%, statistically significant difference between the **highest and lowest Cesarean rate** by race ethnicity group in 2022 (p < 0.0001)*.

- **ASIAN/PACIFIC ISLANDER, NON-HISPANIC**: 38.3% of 496 births
- **BLACK, NON-HISPANIC**: 31.0% of 1,853 births
- **HISPANIC**: 28.7% of 777 births
- **WHITE, NON-HISPANIC**: 28.0% of 7,936 births
- **RACE AND/OR ETHNICITY MISSING/UNKNOWN**: 26.2% of 992 births
- **MORE THAN ONE RACE, NOT HISPANIC/LATINO**: 24.1% of 83 births
- **AMERICAN INDIAN/ALASKAN NATIVE, NON-HISPANIC**: 23.5% of 34 births

*Chi Square

Includes complete cases 1/1/2022 - 6/17/2022
Other outcomes differed by race/ethnicity

Across the collaborative, Black patients have the highest rate of severe maternal and fetal morbidity ($p < 0.0001$).
Black patients are the least likely to have any documentation of shared decision making at their birth in 2021 (p <0.0001).
Black patients had the highest Cesarean rate among both patients paying with private insurance and patients paying with Medicaid in 2021 ($p < 0.0001$).

<table>
<thead>
<tr>
<th>Private</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACK, NON-HISPANIC</td>
<td>BLACK, NON-HISPANIC</td>
</tr>
<tr>
<td>ASIAN/PACIFIC ISLANDER, NON-HISPANIC</td>
<td>MORE THAN ONE RACE, NOT HISPANIC/LATINO</td>
</tr>
<tr>
<td>HISPANIC</td>
<td>RACE AND/OR ETHNICITY UNKNOWN</td>
</tr>
<tr>
<td>AMERICAN INDIAN/ALASKAN NATIVE, NON-HISPANIC</td>
<td>WHITE, NON-HISPANIC</td>
</tr>
<tr>
<td>RACE AND/OR ETHNICITY UNKNOWN</td>
<td>ASIAN/PACIFIC ISLANDER, NON-HISPANIC</td>
</tr>
<tr>
<td>WHITE, NON-HISPANIC</td>
<td>AMERICAN INDIAN/ALASKAN NATIVE, NON-HISPANIC</td>
</tr>
<tr>
<td>MORE THAN ONE RACE, NOT HISPANIC/LATINO</td>
<td>HISPANIC</td>
</tr>
<tr>
<td>17.9% of 95 births</td>
<td></td>
</tr>
</tbody>
</table>

Data updated 5/1/2022 to include locked cases 1/1/2021 - 12/31/2021
Collaborative-wide measures - Patient-centered huddles (2022 cases only)

The proportion of births with a patient-centered huddles varies 5.8% by race/ethnicity across the collaborative (p = 0.661).*

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian / Alaskan Native</td>
<td>33.3%</td>
</tr>
<tr>
<td>Black</td>
<td>30.9%</td>
</tr>
<tr>
<td>Asian / Pacific Islander</td>
<td>30.3%</td>
</tr>
<tr>
<td>Multiple race/ethnicities</td>
<td>29.2%</td>
</tr>
<tr>
<td>White</td>
<td>28.5%</td>
</tr>
<tr>
<td>Unknown race/ethnicity</td>
<td>28.3%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>27.5%</td>
</tr>
</tbody>
</table>

The proportion of births with a patient-centered huddles varies 2.8% by race/ethnicity across the collaborative (p = 0.142).*

<table>
<thead>
<tr>
<th>Payment Source</th>
<th>Proportion</th>
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<tbody>
<tr>
<td>Other payment source</td>
<td>31.0%</td>
</tr>
<tr>
<td>Medicaid</td>
<td>29.9%</td>
</tr>
<tr>
<td>Private insurance</td>
<td>28.2%</td>
</tr>
</tbody>
</table>

*Chisq
Patient Reported Experiences

MADM
The Mothers Autonomy in Decision Making scale (MADM) is a scale developed to assess women’s experiences with maternity care.

MOR
The Mothers on Respect index (MOR) is a scale developed to assess the nature of respectful patient-provider interactions and their impact on a person’s sense of comfort, behavior, and perceptions of racism or discrimination.

Collect Demographic data with survey (Race/Ethnicity, income, education, etc.)

Pilot testing 2022

Collaborative Wide 2023
Cesarean rates change from Jan 2020 to June 2022
rates increased between Jul 2020 and Nov 2021

Fitted line was based on generalized additive model
35 hospitals decreased cesarean rates from 2021 to 2022

darker arrow color indicates higher annual case volume
In 2022, the unplanned Cesarean rate across the collaborative is significantly higher after an induction of labor than a spontaneous labor (p < 0.0001).*

*Chi Square

Includes complete cases 1/1/2022 - 6/17/2022
The Cesarean rate is higher among Medical and Elective inductions than Spontaneous births (P < 0.0001).
The proportion of births that are induced at the site level is positively associated with the site-level Cesarean rate ($p = 0.02$).
Unplanned Cesarean Indications in 2022

After an induction are different than those after a spontaneous labor (p = 0.02)
Resources

• Delivery Decisions Initiative at Ariadne Labs
• Labor and Delivery Planning Board pdf
• OBI Resources and Tools: Labor Partnership Document
• OBI Option A Resource Page
• OBI Option B Resource Page
• TeamBirth Project home page
• Labor Culture Survey 2022
• OBI General website and resources
References