Safety Action Series

National Improvement Challenge Winning Programs for Cycle 4 on Safe Reduction of Primary Cesarean Births
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Disclosures

• Melissa Avery has no real or perceived conflicts of interest.
• Phillip Rauk has no real or perceived conflicts of interest.
• Minder Kaur Bal has no real or perceived conflicts of interest.
• Adriane Burgess has no real or perceived conflicts of interest.
• June Ng has no real or perceived conflicts of interest.
• Meike Schuster has no real or perceived conflicts of interest.
Objectives

- Learn about the National Improvement Challenge issued by the Council on Patient Safety in Women’s Health Care.

- Hear from the winners of the Safe Reduction of Primary Cesarean Births cycle. Through their presentations you will:
  
  - Learn how each of the winning institutions successfully utilized the Council’s patient safety materials to drive process improvement around the safe reduction of primary cesarean births and promotion of intended vaginal births.
  - Gain valuable insight on ways that your institution can successfully implement the Council’s tools to drive culture change, increase collaboration, and improve outcomes.
  - Hear real world challenges to successful QI program implementation and discover methods for overcoming these challenges.

- Find out how your institution can get involved in the next cycle of the challenge.
National Improvement Challenge

Improving Quality and Safety in Clinical Care

Through the NIC, the Council seeks to

- Foster a culture of collaboration, teamwork, patient safety, and communication between clinicians and patients to promote the Council’s mission: safe health care for every woman
- Increase widespread implementation of the safety tools disseminated by the Council.
- Encourage the development of patient safety and quality improvement projects.
Submission Evaluation Criterion

• Submissions were evaluated and voted on by members of the Council

• Overall evaluation of submission:
  – Documentation of improved structures, processes, or outcomes.
  – Use of Council developed materials.
  – Demonstrated interdisciplinary collaborative engagement.
First Place

University of Minnesota
Driven to Discover™

Interprofessional Quality Improvement to Promote Safe Reduction of Cesarean Births
Interprofessional QI to Promote Safe Reduction of Cesarean Births

• Design and implement two interprofessional QI projects related to primary cesarean reduction by standardizing FHR monitoring and interpretation
• Teams to include 1 ob-gyn resident and 1 midwife student during the 2018-2019 calendar year
• Include ob-gyn, family medicine, midwifery, and nursing leaders in the needs assessment, planning and execution of the projects
Two QI Projects

• **Deeper use and consistent application of Intermittent Auscultation (AI) for women at low risk of complications**

• **Interpretation of Category II FHR tracings and standard implementation of treatment**
Interruption Agustination (IA)

IA has been launched on the labor unit, most familiar to nursing staff. Focus will be sustaining the culture in support of IA by working with physician and midwife providers to increase their awareness of and comfort with this method of monitoring fetal heart rate status.
IA Protocols

- **ACNM** – active labor every 15-30 min, 2\textsuperscript{nd} stage every 5 min
- **ACOG** – active labor every 15 min, 2\textsuperscript{nd} stage every 15 min
- **AWHONN** – active labor every 15-30 min, 2\textsuperscript{nd} stage every 5-15 min
Category II Tracings

Recent evidence will be used to develop and implement standard recommendations for clinicians in responding to specific patterns in Category II tracings.

A published algorithm has been implemented however acceptance and use is not universal among all providers and nurses. The focus will be on adoption by all nurses and providers.
FIGURE 1
Algorithm for management of category II fetal heart rate tracings

Moderate variability or accelerations

- Yes
  - Significant decelerations with ≥50% of contractions for 1 hour
    - Yes
      - Cesarean
    - No
      - Active Phase
        - Normal labor progress
          - No
            - Cesarean
          - Yes
            - Observe
    - No
      - Observe

- No
  - Significant decelerations with ≥50% of contractions for 30 minutes
    - Yes
      - Cesarean or OVD
    - No
      - Observe

OVD, operative vaginal delivery.

*aThat have not resolved with appropriate conservative corrective measures, which may include supplemental oxygen, maternal position changes, intravenous fluid administration, correction of hypotension, reduction or discontinuation of uterine stimulation, administration of uterine relaxant, amnioinfusion, and/or changes in second stage breathing and pushing techniques.

Stakeholders

- Co-PIs Avery and Rauk
- Midwifery and residency program directors
- 2 residents and 2 midwifery students
- Birthplace medical director (Rauk)
- Birthplace midwifery director
- Family medicine physician leader
- Birthplace nurse manager
- Birthplace APRN leader
- Physician and midwife providers
Planned Implementation

- Meeting to finalize QI projects, recruit learners
- Initial planning meeting with learners and faculty; meeting with stakeholders
- Needs assessment, change strategy model
- Interventions planned
- Finalize process and outcome measures
- Implementation to begin spring 2019
- Data collection and analysis, dissemination
Learner Goals

• With a nursing background in NICU and a free-standing birth center I believe I have somewhat of a unique perspective (on IA and IPE) in that I have witnessed from both sides the importance of collaboration when unexpected circumstances arise in pregnancy, labor, and postpartum and the positive/negative impact these relationships can have on overall outcomes as well as client experiences and satisfaction
Learner Goals

• I look forward to the insights that will be shared between those with different perspectives. I am curious to engage with OB-GYN residents who share a similar interest in fetal monitoring and how we utilize it to manage labor (category 2 project). I am hopeful that we will contribute to the advancement of best practice in this area.
Learner Goals

• I'm looking forward to this interprofessional QI project because I think CNMs and MDs have valuable experience and teaching that could improve the care we provide if we talk and collaborate more. This will help foster the relationship between our specialties on both a personal and institutional level. I'm hopeful a QI project on IA will improve patients' experience with labor in a safe way, and improve provider comfort (RNs, MDs, CNMs) with implementation.
Learner Goals

• I am excited to be involved in this project particularly due to the interprofessional nature of it. Category II FHT are something that both MDs and CNMs have plenty of experience managing. As a life-long learner, it is great to gain different perspectives and learn different tools to provide the best possible care for your patients. Studying this in conjunction with CNMs will help both teams feel more comfortable managing patients and create a more open line of communication.
Planned Evaluation

• Pre-post design strategy
• Quantitative measures
  – Use of AI among low risk women
  – Use of Category 2 algorithm
• Qualitative measures
  – Stakeholder impressions
  – Experience of learners working together
  – Feedback from care recipients where possible
Anticipated Outcomes

• Add to existing focus on reducing cesareans at MHealth
• Enhance current IPE program between midwifery and ob-gyn residency programs
• Closer working relationships among participants
• Opportunity for learners to present in national venues, ACOG and ACNM annual meetings
• Possibility for uptake in other institutions
Second Place

Quality Improvement Project to Reduce the Rates of Nulliparous, Term, Singleton, Vertex Cesarean Section at WellSpan York Hospital

Dr. Minder Bal
Third Year OB/GYN Resident
York Hospital

Adriane Burgess PhD, RNC-OB, CCE, CNE
Clinical Research Specialist
Women and Children Service Line
WellSpan York Hospital

- Serves a population of 520,000+ in south central Pennsylvania.
- 580 bed level 1 trauma center
- Level 3 Neonatal Intensive Care Unit
- Maternal Fetal Medicine
- Nationally recognized teaching hospital
- Approximately 3,000 deliveries per year
Objective

• To reduce and sustain improvement to the rate of NTSV Cesarean Section to at or below NQF target of 23.9%

2016 Yearly NTSV Rate- 27.65%
PDSA Cycle 1 - Data Collection

- Small interdisciplinary group (6 members) convened to discuss the problem of rising rates of NTSV CD at York Hospital.
- Six months (Aug 2016-January 2017) of PC-02 quality data were reviewed by the team.
- 96 cases: 31 who had C-sections and 65 who delivered vaginally.
- Variables known to influence mode of delivery identified from the literature were used to guide data collection on subjects in both groups.
- In order to obtain the patients’ perspective, the childbirth education coordinator surveyed patients (N=72) on their understanding of labor support strategies.
PDSA Cycle 1 - Results

- CD occurred more often in the first stage of labor (79.3%) than in the second (20.7%).

- Sparse and inconsistent documentation of labor support strategies with 63 of 97 women in the sample having no documented labor support.

- There was no difference in attendance of CBE between those that had a CD and those that had a VD (p=.973). Overall 43.3% of subjects attended CBE.
Project Flow Chart

**NTSV**

**PDSA Cycle 1**

**PDSA Cycle 2**

**Interventions**

- Promoting Progress In Labor
- Assessment of Fetal Well-Being
- Promoting Comfort in Labor
- Promoting Onset of Spontaneous Labor

- Smart Text Pitocin Guidelines
- Training Review Cord Gases
- Survey Training Peanut Ball Clears
- Induction of Labor Sheet Education outpatient
Stakeholders

- Nursing
- Midwives
- Residents
- Physicians
- Administration
- Anesthesia

NTSV Workgroup
NTSV Work-Group

• Adriane Burgess PhD, RNC-OB – Work Group Leader.

• Sub-committee leaders:
  – Dr. Minder K Bal, DO
    • Promoting Progress in Labor
  – Dr. Mojirayo Sarumi DO, MPH
    • Assessment of Fetal Well-being
  – Carrie Hughes MSN, RNC-OB
    • Promoting Comfort in Labor
  – Aimee Fleischman BSN, RN
    • Promoting Onset of Spontaneous Labor
PDSA Cycle 2 – Subcommittee Efforts

- Promoting Progress in Labor – Deep Dive

- Provider Adherence to ACOG Guidelines on Safe Prevention of Primary Cesarean
Findings

• Lack of standardization in documentation regarding CD for arrest of labor
• Limited use of cord gases
• Inconsistent dosing of Pitocin
• Low utilization of IUPC and amnioinfusion
• Ensure adequate pushing time
• Consistent use of peanut ball
PDSA Cycle 2 – Subcommittee Efforts

• Promoting Progress in Labor
  – Standardizing documentation.
    • Smart Text created for utilization in Epic to standardize documentation regarding labor progress.
  – Readdressing oxytocin policies.
    • Clinical Guideline Committee
EPIC Documentation

Arrest-of-labor Narrative Smart Text:

@name@ is a @age@ @gp@ Female at @ga@ with a {singleton, multiple} {multiple: di-di, mono-di, mono-mono} gestation. She presented presented with ***. At this time, decision is made to proceed with cesarean delivery in the {first, second} stage of labor.

{first}

The patient’s labor course is significant for ***. The patient’s latent phase is {prolonged, not prolonged} at approximately *** hours. She is dilated to *** cm. Membranes were ruptured {spontaneously, artificially} at [[time of rupture per nursing flowsheet]]. IUPC was {utilized, not utilized} and uterine activity is {adequate, inadequate, unknown} for *** hours. Oxytocin was {utilized, not utilized} and the maximum dose of oxytocin is *** mu/min. Fetal heart rate tracing has been category {I, II, III}. Interventions as follows: {position changes, fluid bolus, oxygen administration, IUPC/amnioinfusion, oxytocin adjustment}. Amnioinfusion was {utilized, not utilized, not indicated}. Scalp stimulation was {reassuring, non-reassuring, not indicated}. The fetal head position is {direct, left, right} occiput {anterior, posterior, transverse}. Of note, epidural anesthesia was {utilized, not utilized}. Labor course was further complicated by ***, which significantly contributes to the decision for cesarean delivery. The fetal heart rate tracing is category {I, II, III} at the time of decision and fetal cord pH will {be collected, not be collected}. 
PDSA Cycle 2 – Subcommittee Efforts

• **Assessment of Fetal Wellbeing**
  – NST resident review sessions
  – Grand Rounds
  – Cord Gases for cases of NRFHT
  – CMQCC Algorithms on NRFHT
    • Printed and laminated.
    • Distributed to residents, attending physicians and nurses.
PDSA Cycle 2 – Subcommittee Efforts

• Promoting Comfort in Labor
  – Intrapartum Nurses Beliefs Survey
  – Peanut balls in every room
  – Documentation modality for PB and other comfort techniques in EMR (Peanut ball report)
  – CRNA student efforts for clears in labor (8oz/hr)
  – Labor support training for nurses/residents/attendings
PDSA Cycle 2 – Subcommittee Efforts

- Promoting Spontaneous Labor
  - Induction of labor information sheet.
  - Focused CBE based on survey results.
  - Embedding education on Baby Scripts
  - Birthplan
Where we are now...

- **2017 Yearly Rate-** 25.20%
  - 2.45% from 2016
- **2018** 5 of 8 reported months data below target
Next Steps

• Improve standardization in use of:
  – Nitrous Oxide
  – Intermittent Monitoring Policy
  – Early Labor Walking Path

• Explore sources of variation

• Continue to follow process metrics

• Project replicated by other hospitals in the system
Additional Recognition

NTSV Work Group Members

• Kristi Mowrer RN
• Carol McIlhenny PhD
• Kathie Singer MSN, WHNP-BC, RNC
• Yvette Krietz MSN, RN, NE-BC, CLC
• Dianne Moore MSN, RN
• William Unwin, MD
• Mary Keperling, DO
• Carlos Roberts MD
• Paul Burcher MD, PhD
• Natalie Beccone, CRNA Student
• Sally Wenger, CRNA student
• Taryn Heiland BSN, RNC-OB
• Meredith Lutz BSN, RN
• Jenna Ludwig BRN, RN
• Julia Wheeling MBA, RN
• Christa Winemiller BSN, RN
• Christa Bamburg CNM
• Jessica Slothower MBA, MSN, RNC-OB
Third Place

Rutgers
Robert Wood Johnson Medical School

Safe Reduction of Primary Cesarean Births
Safety Action Series: National Improvement Challenge on Safe Reduction of Primary Cesarean Births: 3rd place

June Ng, PGY3
Meike Schuster, DO, Assistant Professor, Director of Quality Improvement
Mark V. Sauer, MD, Professor and Chair
Charlatta Ayers, MD, Associate Professor and Chair, General Division of Obstetrics and Gynecology
Todd Rosen, MD, Chief, Division of Maternal Fetal Medicine
Ushma Shah, MD, Assistant Professor, Department of Anesthesia
Carla Boyle, BSN, RNC, Nursing Director of Perinatal Services
Department of Obstetrics, Gynecology, and Reproductive Sciences
125 Paterson Street
New Brunswick, NJ 08901
Introduction

• C/S: most commonly performed surgery in the world
  – 2007: 26.5% C/S rate overall
  – 2016: 31.9% C/S rate overall
  – 2016: 36.2% C/S rate overall in NJ

Why?

Increase in primary C/S rate

Decrease in TOLAC (trial of labor after C/S) rate

2009: 32.9%
VBAC
2015: 12.4%
VBAC

(Martin et al 2018, Spong et al 2012)
Benefits of C/S

- Avoids labor for conditions that are contraindications to labor, ie. placenta previa, vasa previa, malpresentation, etc.

- Fastest mode of delivery for fetal distress remote from delivery

- Indicated mode for arrest of dilation or descent

Risks of C/S

- Hemorrhage requiring hysterectomy or transfusion
  - Shock, cardiac arrest, need for assisted ventilation

- Venous thromboembolism, major infection, and wound disruption or hematoma

- NICU admission or morbidity to fetus

- Future risk of placenta previa, placenta accreta, surgical difficulty, uterine rupture

CDC Healthy People Initiative: 23.9% for NTSV pregnancies

(Spong et al 2012)
Available Evidence

• 2012 workshop between NICHD, ACOG, SMFM:
  – Track number of non-medically indicated C/S and C/S for failed induction of labor, labor arrest, or non-reassuring FHT without meeting ACOG/NICHD criteria
  – Encourage physicians to revisit definitions of active labor, labor arrest, failed induction, and non-reassuring FHT
  – Multiple approaches likely necessary to institute change

(Spong et al 2012)
Available Evidence

• Chaillet and Dumont, 2007:
  – 5 RCTs (2 controlled), 5 ITS
  – 13% decrease in C/S with audit and feedback
  – 27% decrease when used with other interventions, i.e. second opinion, culture change
  – No difference in neonatal or maternal morbidity

(Chaillet and Dumont 2007, Main et al 2011)
Methods

1. Measure:
   - **Non-medically indicated Cesarean deliveries** and inductions of labor
   - Failed inductions of labor, NRFHT, arrest of dilation, arrest of descent
   - Reviewed each month by June Ng, PGY3, and Dr. Meike Schuster

2. Report:
   - **Quarterly report cards** distributed for each physician
   - Vs. partners and other department members
   - Presented in de-identified fashion at monthly business meetings

3. Encourage:
   - Compliance to accepted indications for Cesarean delivery
   - **Designate physician and nursing champions** to re-educate on:
     - Definitions of arrest of first stage, second stage, and non-reassuring FHT
     - Admission in active labor, and
     - Provide second opinions when decision made for Cesarean delivery for non-reassuring fetal heart tracing
   - Best practice protocols

4. Anesthesia and nursing
   - Work with anesthesia to provide adequate and timely pain control when making decision to continue labor
   - Work with nursing to ensure timely medication administration per protocol and position changes to prevent malposition or asynchtytism

**Goal:** achieve CDC goal of 23.9% for NTSV gestations over 2 year period
Future Initiatives

• Modify and implement at neighboring institutions in the mid-Atlantic region
• Encourage other methods to improve vaginal delivery rate:
  – External cephalic version
  – Operative vaginal delivery
  – Multifetal vaginal deliveries
  – Induction of labor in women desiring TOLAC
Context – Rutgers Robert Wood Johnson Medical School

<table>
<thead>
<tr>
<th>Healthy People 2020</th>
<th>National Average</th>
<th>RWJUH</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.9% (NTSV)</td>
<td>21.8% (1C/S, 2016)</td>
<td>28.4% (1C/S, 2017)</td>
</tr>
</tbody>
</table>

+4.5%

- NJ C/S rate varies broadly – 14.0-42.1% in 2017
- Mid-size tertiary care referral center in central NJ
- 2,500 deliveries/year
- Uninsured Hispanic community, private Orthodox Jewish community, and a high risk group in central New Jersey

(The Leapfrog Group 2018)
Study of Interventions

More time in second stage = higher rates of

- Puerperal infection
- 3\textsuperscript{rd} and 4\textsuperscript{th} degree lacerations
- Postpartum hemorrhage
- Cerebral palsy
- NICU admissions

\[ \downarrow \]

Measure the above 5 complications monthly, alongside primary C/S rate

(Safe prevention of the primary cesarean delivery. Obstetric Care Consensus No. 1, 2014)
<table>
<thead>
<tr>
<th>Dr. X</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total NTSV deliveries</td>
<td>100</td>
</tr>
<tr>
<td>No. vaginal deliveries</td>
<td>60</td>
</tr>
<tr>
<td>No. C/S</td>
<td>40</td>
</tr>
<tr>
<td>% C/S rate</td>
<td><strong>40.0%</strong></td>
</tr>
<tr>
<td>failed IOL (# meeting criteria)</td>
<td>5 (2)</td>
</tr>
<tr>
<td>arrest of dilation (# meeting criteria)</td>
<td>15 (8)</td>
</tr>
<tr>
<td>arrest of descent (# meeting criteria)</td>
<td>10 (5)</td>
</tr>
<tr>
<td>non reassuring FHT (# meeting criteria)</td>
<td>10 (3)</td>
</tr>
<tr>
<td>% Goal (national average)</td>
<td><strong>23.9%</strong></td>
</tr>
<tr>
<td>Difference ([(% Goal – your % C/S rate)/100]</td>
<td><strong>+18.2%</strong></td>
</tr>
<tr>
<td>% C/S rate in your practice</td>
<td><strong>25.0%</strong></td>
</tr>
<tr>
<td>% C/S rate in your department</td>
<td><strong>27.0%</strong></td>
</tr>
</tbody>
</table>
Strengths & Weaknesses

**Strengths:**
- Multipronged approach
- Multiple disciplines involved
- Specific, tangible goal

**Weaknesses:**
- Subject to factors like enthusiasm of our “champions,” responsiveness of providers to Cesarean section indications
- No “consequence” for providers not agreeable to changing practice
- External generalizability?
Summary

- Primary C/S rate at RWJUH higher than national average
- Significant risks associated with primary C/S
- Multidisciplinary approach to decrease primary C/S rate
  - Measure rates of non-medically indicated C/S
  - Report cards for each physician
  - Encourage adherence to accepted indications for C/S
  - Work with anesthesia and nursing
  - Measure potential neonatal and maternal complications
References


Q&A Session
Press *1 to ask a question

You will enter the question queue
Your line will be unmuted by the operator for your turn

A recording of this presentation will be made available on our website:
www.safehealthcareforeverywoman.org
National Improvement Challenge
Cycle 5: Combination Project – Reduction of Peripartum Racial/Ethnic Disparities + Any Other Clinical Patient Safety Bundle

Declaration of Intent
Due February 15, 2019

Full Application
Due June 14, 2019

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