Nulliparous Cesarean Section Reduction Initiative (PC-02)—Implementation across the System—Keeping Normal, Normal!

Carolinas HealthCare System

Why are cesarean deliveries a concern?

• Current method of delivery for over 30% of babies born in the United States

• Higher associated morbidity compared to vaginal deliveries with the current pregnancy as well as future pregnancies

• Higher incidences of intraoperative complications

• Longer lengths of stay in the facility

• Consume higher health care dollars.
CESAREAN RATE REDUCTION

Reduction in the first-time cesarean delivery rate is the main strategy

PC-02—What is this?

- **Joint Commission Perinatal Core Measure**
  - Publicly reported for facilities >300 deliveries effective January 2015

- **Included patients:**
  - Nulliparous patients (first baby)
  - Term pregnancy (37 completed weeks of pregnancy)
  - Singleton gestation (one baby)
  - Vertex presentation (head down)

- **Numerator:** Patients meeting above criteria delivered by cesarean section

- **Denominator:** All patients meeting the above criteria
National C/S Rates—What Does the Variation Tell Us?

• National data for the nulliparous CS rates vary between hospitals, physician groups, and individual physician providers within the groups

• **Significant national hospital-level variation in the rates**
  – 2.4%-70% PC-02 rates for these low-risk women—quite the variation!!

• Contemporary patterns show that labor may progress more gradually than previously believed and result in a vaginal delivery—we need to **allow more time for labor** progression

• Nationally, we do not have a **standard approach** to managing labor

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What Did We Need To Do?

• **Standardize** the approach for labor management to reduce variation in the practice

• Contemporary labor patterns show the following:
  – it may take more than 6 hours to progress from 4 to 5 cm and more than 3 hours to progress from 5 to 6 cm of dilation
  – active phase of labor often does not start until the patient is 6 cm or more dilated

• **Allow patients more time** to progress through the stages of labor before diagnosing labor dystocia in contemporary women
How did we start?

- **Multidisciplinary team** formed as part of the IHI Perinatal Improvement Community (PIC) representing our health care system (OBGYN providers, nursing, and administrative representatives)

- Goal was to develop a plan for PC-02 rate reduction

Role of the Leadership Team

- Attended IHI PIC face-to-face meetings

- Reviewed the evidence presented by the IHI faculty
  - Obstetrical governing societies
  - Society for Maternal Fetal Medicine (SMFM)
  - American College of Obstetricians and Gynecologists (ACOG)

- Presented the evidence to the system-wide perinatal collaborative for approval and eventual adoption

- Identified a pilot site—CHS NorthEast
Steps for Implementation of PC-02 Initiative

• **Presentation of evidence based guidelines** for the pilot site

• **Education** for providers, leadership, and nursing staff on practice changes that needed to occur

• **Communication** of baseline data by facility rates, individual practice rates, and provider specific rates to system-level leaders, facility leaders, providers, and nursing staff

• Creation of a **toolkit for system spread**

Steps for Initiative

• Each facility emphasized **transparency** and published individual provider and group/practice PC-02 rates

• Group rates shared within the Ambulatory Medical Group

• **Pilot site** began initiative 1/1/14—CHS NorthEast

• Two facilities were **early adopters**—went live 4/1/14—CHS Lincoln, CHS University

• Initiative go-live across CHS occurred 7/1/14
Challenges with Reducing the C/S Rate

• Providers and nursing staff did not understand exactly what PC-02 measured—this is not a primary cesarean section rate—education was required

• Individual rates and practice rates were provided—required time to review the data

• Providers were often surprised with their individual rate and some questioned the validity of the data

• Some providers challenged the new ACOG/SMFM guidelines/recommendations for managing labor

Success Story with Reducing the PC-02 Rate

• Overall Carolinas HealthCare System’s rate decreased from 27.02% in 2013 to 21.79% in 2015
What Does This Success Story Really Say?

• In 2013, our system had 30,509 deliveries
  – 8,416 women in the PC-02 population
  – 2,274 had cesarean deliveries
  – 27.02% PC-02 rate

• In 2015, our system had 30,872 deliveries
  – 10,322 women in the PC-02 population
  – 2,249 had cesarean deliveries
  – 21.79% PC-02 rate

How Many Lives Have Been Changed??
What Does This Really Mean??

• If our PC-02 rate in 2015 had been 27.02%, 2,790 women would
  have had a cesarean delivery compared with 2,249 that actually had
  a cesarean delivery

• That is 541 women that did not have a cesarean delivery in 2015 that
  would have had if performance had not improved from 2 years ago

• If we count both Mom and Baby…..

1,082 lives were changed in our
system in one year!!
Cost Avoidance

- Cesarean deliveries are estimated to cost $7,000 **MORE** than vaginal deliveries

- In 2015, 541 women avoided a cesarean delivery with our new practice

Cost avoidance for one year for this quality improvement project

**$3,787,000!**

The Joint Commission PC-02 Rate

**CHS PC-02 Rate by Year**

**In 2011-2012, the Perinatal Quality Collaborative of North Carolina (PQCNC) had a Supporting Intended Vaginal Birth (SIVB) Initiative where many of our facilities participated in the work.**
The Joint Commission PC-02 Rate

CHS PC-02 Rate Reduction by Year

The Joint Commission PC-02 Rate

CHS PC-02 Rate by Quarter 2013-2015
**Run Charts Rules Summary**

Signals of non-random patterns:
1. Shift - 6 or more consecutive points either all above or all below the median
2. Trend - 5 or more consecutive points all going up or all going down.
3. Runs - Too few or too many runs.
4. Astronomical point - A point obviously different from the rest, "everyone agrees." This rule is subjective, unlike rules 1-3, which are probability based.

See Perla et al. (2010) for further explanation and details.

**PC-02 Rate by Month**

Signals: Shift - 7 points below the median
Sustainability of PC-02 Improvement

- **Transparency of data** is reported by facility, practice, and provider quarterly

- Practice level and provider level **trends are reviewed**

- **Engagement** and **collaboration** of Acute Care and Ambulatory Leadership
  - PC-02 performance is part of Acute care and Ambulatory Leader goals (including physician leaders)—**Alignment** of goals across the service line

- **Peer review** and **case study development** is occurring for cesarean cases not meeting criteria

Sustainability of PC-02 Improvement

- What you **measure**, you improve!

- **Communicate, communicate, communicate!!**

- Don’t take your eyes off the ball!
Next Steps

• **Continue** with **goal alignment** across the system

• Determine what each facility needs in terms of support—**individualize**

• Focus on the facilities that have **not shown improvement** or have had rate increase—though we’re a system of One, we have different challenges
  – Continue to support those facilities with good results and work with others to improve results

Learning Design/Collaborative Structure

• Monthly collaborative Perinatal Quality system-level meetings
  – Nursing Leadership—each facility represented
  – Provider Leadership—each facility represented

• Reporting of Perinatal Core Measures and other Perinatal Quality initiatives

• **Sharing of best practices, success stories and opportunities identified/lessons learned**

• Peer review-peer discussions for providers with a higher than average rate for PC-02 using case studies
TIPS FOR QUALITY IMPROVEMENT IMPLEMENTATION

Useful Tips

PDSA MODEL FOR IMPROVEMENT

Plan
Act
Study
Do
Plan—Where to Begin??

• Do you have high performers that can be identified as champions for your improvement project?

• Establish best practice protocols/guidelines for the change needed

• Educate teammates on these new best practices

Plan—Next Steps

• Important to know what exactly it is that you are measuring—gain understanding

• Gain trust with the data—data integrity is essential
Do—Implement Improvement Strategies

• Once trust is gained, then you can work on improvement strategies

Study—Where to Focus the Work

• Review data variations to determine where to focus the improvement efforts

• Discussions with facility leaders and providers with low performance

• Know your data—this will require case reviews and deep dives into the reasons for the variation in performance
Study—Show Them the Data!!

- Competition is a great **driver for improvement**!

- Be **transparent** with the **data**

- Have **peer to peer conversations** regarding following evidence-based practice—**engage your provider champions**

Act—Successful Approaches for Addressing Variation

- **Transparency with the data** and **accountability for performance**
  - Consider including in the Ongoing Professional Practice Evaluation (OPPE)
  - Peer review for cases not following guidelines
  - Link performance to provider and leader compensation

- **Goal alignment** across the system is key—all working together for success!

- Outside sources may force improvement for facility viability—let’s have great performance without this “stick”
  - Medicaid payment plans
  - Private payers
  - Blue Cross Blue Shield Blue Distinction for Maternity Care
Take Aways

• This work has a meaningful impact to both mom and baby

• Goal alignment with stakeholders across the system is key to success

• Standardization of care utilizing evidence based practice is needed to reduce variation in care delivery

Questions??
Toolkit Elements for PC-02 Initiative

• Data collection tool
• Algorithm
• Clinical Practice Guidelines
• PC-02 Scorecard
• Deep dives into numerator cases (cesarean sections)

CHS PC-02 Algorithm
CHS PC-02 Algorithm (page 2)

From Page 1
Discharge Home with F/U Information
Once the patient is in labor
Does the Patient meet criteria for C-Section?
If any one of these apply:
-- NonReassuring FHR
-- Failed Induction (see definition to left)
-- Active Phase Arrest 6 cm Dilated w/ROM & No Cervical Change *
> 4 Hrs of Adequate Ctx w/IUPC > 200 MVUs
> 6 Hrs of Inadequate Ctx
-- Second Stage Arrest *
> 3 Hrs in Nulliparous W/O Epidural
> 4 Hrs in Nulliparous W Epidural

Meets Admission Criteria

Doesn't meet Admission Criteria

Patient Delivers Vaginally
Pt will be in Denominator
Use Labor Support Techniques, Monitor Pt and Fetus Per Policy

No Pt will be in Numerator and Denominator

Patient Delivers Via C-Section

Yes

“Failed Induction” defined as:
Failure to generate regular (e.g. every 3 min) contractions and cervical change after > 24 hours of oxytocin administration with AROM (if feasible).

Data Collection Tool
### PC-02 Scorecard

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**Note:** The above table represents the PC-02 Scorecard for various metrics related to obstetric outcomes, with data spanning from Jul 2012 to Jul 2013.