

# It's Just a Matter of Time



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## Background

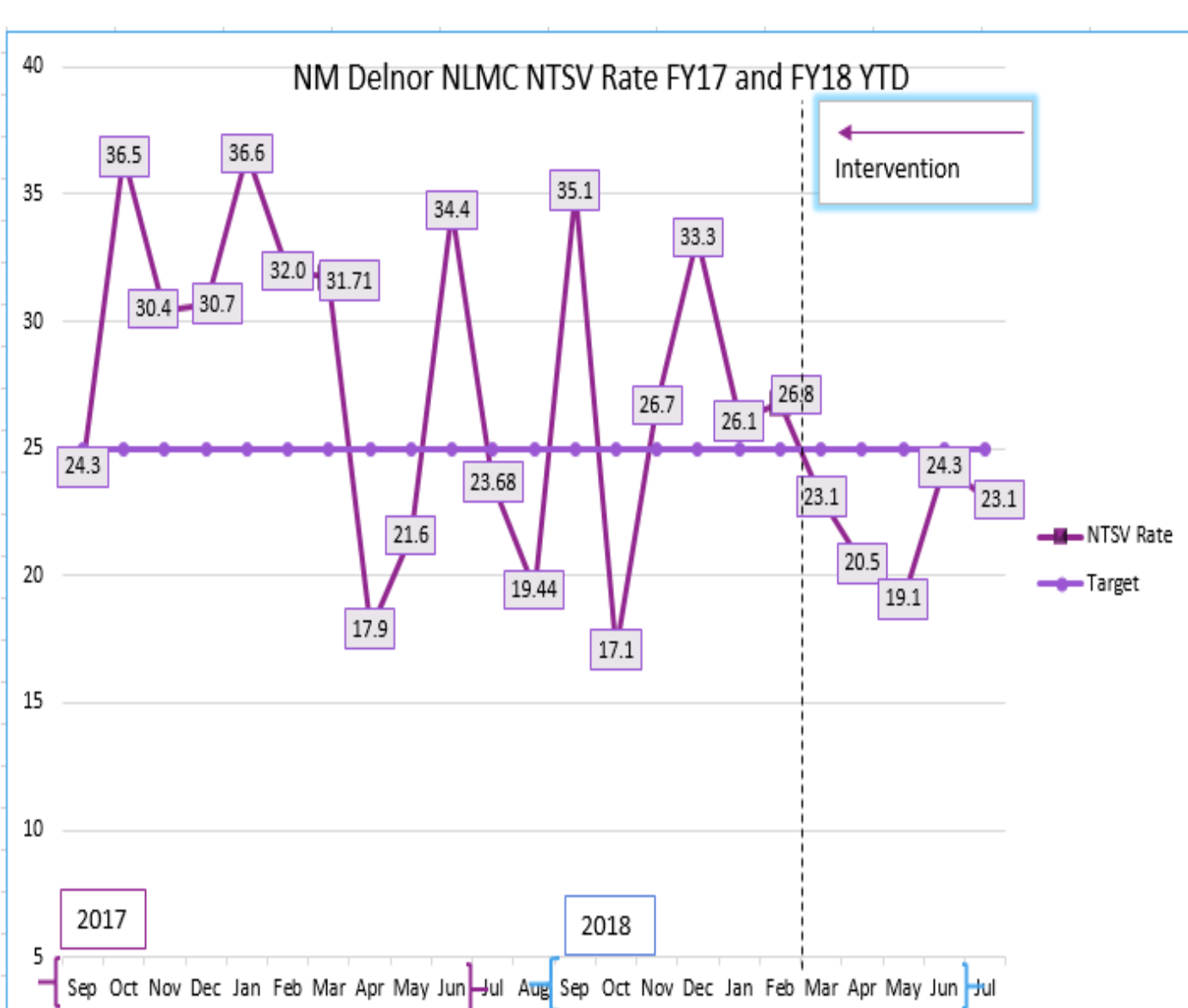
- Nulliparis, Term, Singleton, Vertex (NTSV) cesarean section (C-Section) rates are a publicly reported Joint Commission (JC) perinatal quality measure. Healthy People 2020 established a goal of 23.9% which is supported by JC, LeapFrog Group, and the Illinois Perinatal Quality Collaborative. Our NTSV rate was 33.3% at the beginning of September and through physician and nurse collaboration, the rate decreased over 10% in four months.
- Normal vaginal births have many benefits including a quicker recovery requiring a shorter hospital stay, a lower risk of bladder and bowel injuries, a lower risk of infection and hemorrhage.

### Problem Question:

Using the Iowa model, a team of nurses and physicians charged themselves with the question:

Does the implementation and use of the California Maternal Quality Care Collaborative (CMQCC) Labor Dystocia Checklist and the Category II Algorithm for Fetal Monitoring tools reduce the number of primary cesarean sections?

Figure 1: Baseline Data



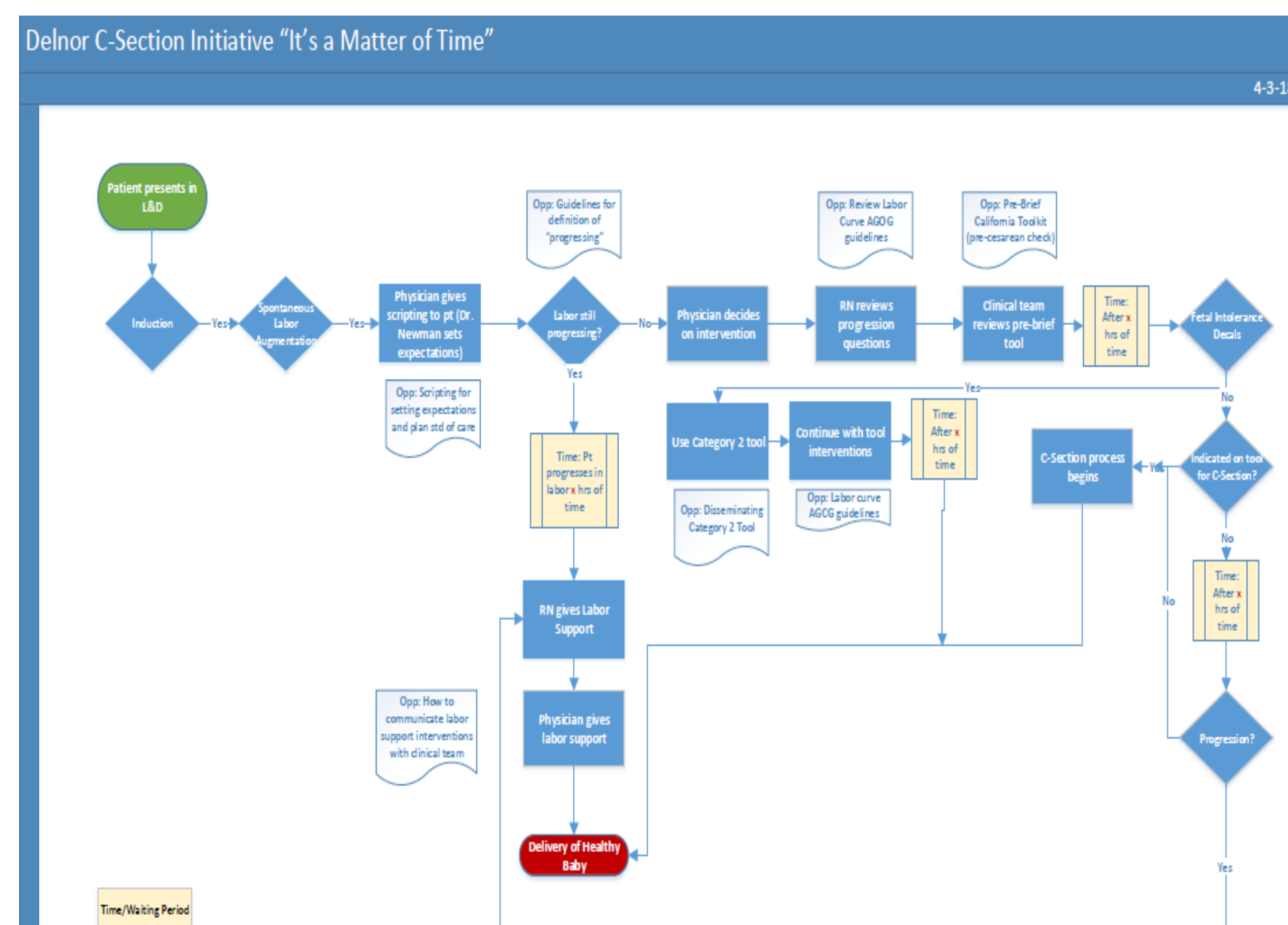
Delnor Nursing Strategy Exemplary Professional Practice "Build on quality performance to achieve top clinical outcomes."



## Methods

- A team was created including nursing leadership, professional practice, clinical nursing and physicians.
- A review of literature was led by a clinical nursing team.
- A process map was created to identify opportunities in current practice.

Figure 2: Delnor Pre-Implementation Cesarean Section Process Map



### Intervention and Implementation

- Dissemination and education to all of the physicians and nursing occurred regarding the CMQCC Labor Dystocia Checklist and the Category II Algorithm.
- Prior to any potential C-Section, both tools are reviewed collaboratively between nursing and the physician to determine if a C-section is necessary.

Figure 3: Intervention Tools Utilized from CMQCC

**CMQCC**  
California Maternal Quality Care Collaborative

Pre-cesarean Checklist for Labor Dystocia or Failed Induction

Patient Name: \_\_\_\_\_ MHR: \_\_\_\_\_ Active Phase Arrest > 6 cm Dilatation (must fulfill one of the two criteria)

Gestational Age: \_\_\_\_\_ Date of C-section: \_\_\_\_\_ Membranes ruptured (if possible), then:

Time: \_\_\_\_\_ Adequate uterine contractions (eg moderate or strong to palpation or >20 MVUs for a 4-hour period) in dilation, effacement, station or position

Observer(s): \_\_\_\_\_ Initial: \_\_\_\_\_ OR

Bedside Nurse: \_\_\_\_\_ Initial: \_\_\_\_\_ Inadequate uterine contractions (eg <20 MVUs for >4 hours of uterine activity without augmentation, dilation, effacement, station or position)

**Indication for Primary Cesarean Delivery:**

- Failed Induction (must have both criteria: if cervix unfavorable, Bishop score < 8 for nulliparous and < 6 for multiparous)
- Cervical Ripening used (when starting with unfavorable Bishop score as noted above): Ripening agent used: \_\_\_\_\_ Reason: opening not used: cervix unfavorable
- AND
- Unable to generate regular contractions (over 2 minutes) and cervical change after rupture administered for at least 12-18 hours after membrane rupture. \*Note: at least 24 hours of oxytocin administration after membrane rupture is preferable if maternal and fetal statuses permit
- Latent Phase Arrest < 6 cm dilatation (must fulfill one of the two criteria)
  - Latent Phase Arrest: Duration in hours: \_\_\_\_\_
  - Active Phase Arrest: Duration in hours: \_\_\_\_\_
  - Second Stage Arrest: Duration in hours: \_\_\_\_\_
- Moderate or strong contractions palpated for > 12 hours without cervical change
- OR
- RPV > 200 MVUs for > 12 hours without cervical change

Consentant: \_\_\_\_\_

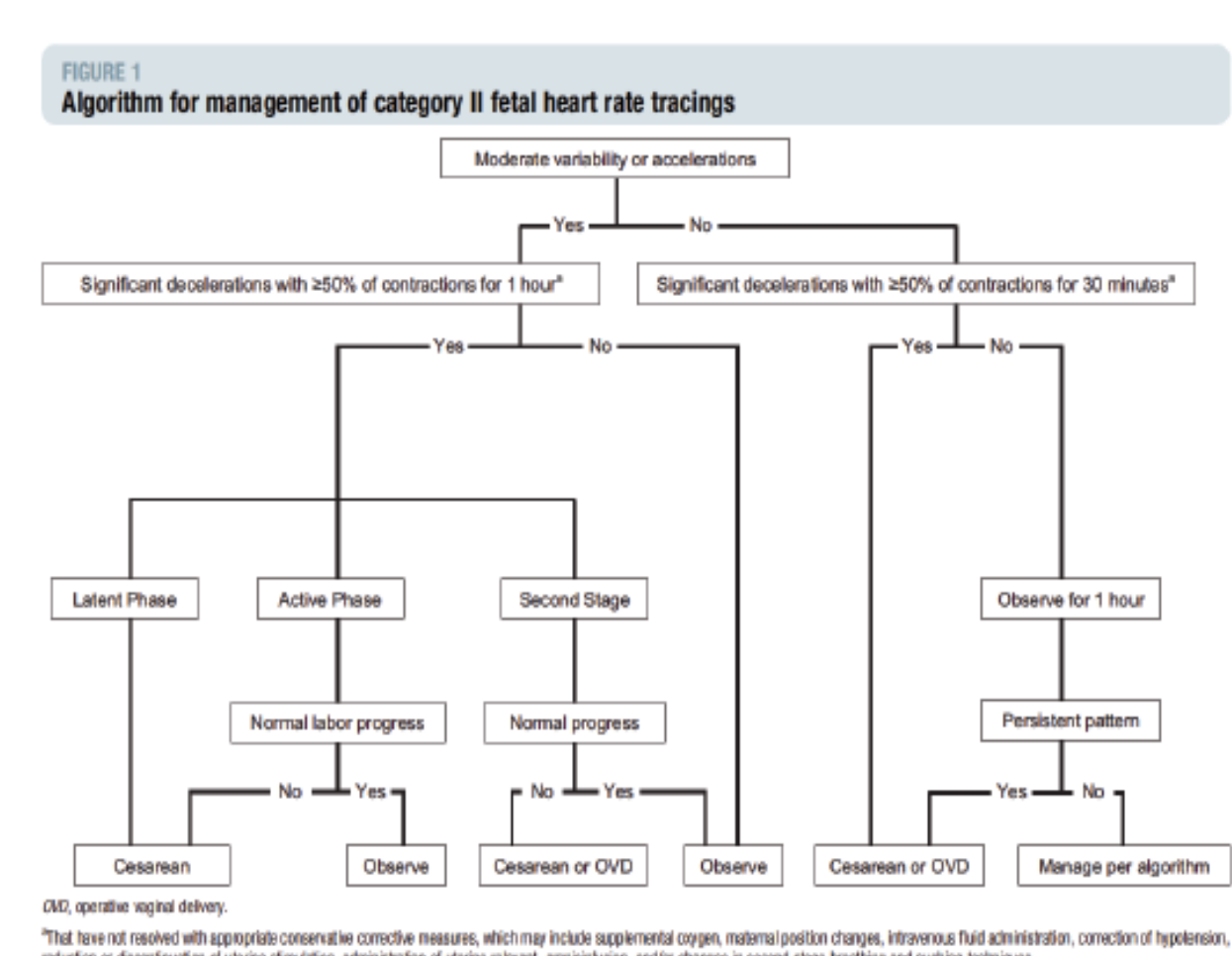
**Appendix J**  
CMQCC Labor Dystocia Checklist (ACOG/SFMF Criteria)

**CMQCC**  
California Maternal Quality Care Collaborative

**CMQCC Labor Dystocia Checklist (ACOG/SFMF Criteria)**

- Diagnosis of Dystocia/Arrest Disorder (all 3 should be present)**
  - Cervix 6 cm or greater
  - Membranes ruptured, then
  - No cervical change after at least 4 hours of adequate uterine activity (eg, strong to palpation or MVUs > 200), or at least 6 hours of oxytocin administration with inadequate uterine activity
- Diagnosis of Second Stage Arrest (only one needed) No descent or rotation for:**
  - At least 4 hours of pushing in multiparous woman with epidural
  - At least 3 hours of pushing in multiparous woman without epidural
  - At least 3 hours of pushing in multiparous woman with epidural
  - At least 2 hours of pushing in multiparous woman without epidural
- Diagnosis of Failed Induction (both needed)**
  - Bishop score < 6 for multiparous women and < 8 for nulliparous women, before the start of induction (for non-medically indicated/elective induction of labor only)
  - Oxytocin administered for at least 12-18 hours after membrane rupture, without achieving cervical change and regular contractions. \*Note: At least 24 hours of oxytocin administration after membrane rupture is preferable if maternal and fetal statuses permit

Appendix P Algorithm for Management of Category II Fetal Heart Rate Tracings



**Management of category II fetal heart rate patterns: clarifications for use in algorithm**

- Variable refers to persistent (baseline) FHR pattern, moderate, minimal, absent during a 30-minute evaluation period, as defined by NICHD.
- Minimal variability is consistent name to moderate variability for purposes of the algorithm.
- Significant decelerations are defined as any of the following:
  - Variable decelerations lasting longer than 90 seconds and reaching a nadir more than 60 bpm below baseline.
  - Variable decelerations lasting longer than 90 seconds and reaching a nadir less than 60 bpm regardless of the baseline.
  - Any prolonged decelerations, as defined by the NICHD. Due to the broadness currently inherent in this definition, identification of a prolonged deceleration should prompt discontinuation of the oxytocin until the deceleration is resolved.
- Application of algorithm may be initially stopped by up to 30 minutes while attempts are made to stabilize category II patterns with conservative measures (positioning, oxygen, contraction of hypotension, position change, amnioinfusion, tocolysis, reduction or discontinuation of oxytocin).
- Once a category II FHR pattern is identified, FHR is evaluated and algorithm applied every 30 minutes.
- Any significant change in FHR patterns should result in reapplication of algorithm.
- For category II FHR patterns in which algorithm suggests delivery is indicated, such delivery should be initiated within 30 minutes of decision for delivery.
- If at any time tracing reverts to category I status, or observations for even a short time to category II status, the algorithm no longer applies.
- Presence of variable decelerations in addition to category II patterns is not a contraindication to the algorithm. However, unusual variability or absence of each rhythm in the baseline tracing may lead to certain types of category II patterns and vent defibrillation. This algorithm is not intended as a substitute for assessment of fetal well-being (primarily).
- Algorithm may be overridden at any time if, after evaluation of patient, physician believes it is in best interest of the fetus to intervene sooner.

FHR: Modified from NICHD. Original Source: Revised National Institute of Child Health and Human Development. Clark, Gagnon JF. PEDIATRICS. 2006; 117(5):e100-107.

## Results

- Since September 2017 to March 2018, the monthly NTSV rate decreased by 10%.
- During the period from September through June FY17 and then the same period in FY18, there has been a 4.7% decrease in the NTSV rate which equates to 16 mothers that were delivered vaginally versus having a C-Section.

Figure 4: Low Risk Primary Cesarean Section Rates (NTSV) Post Implementation

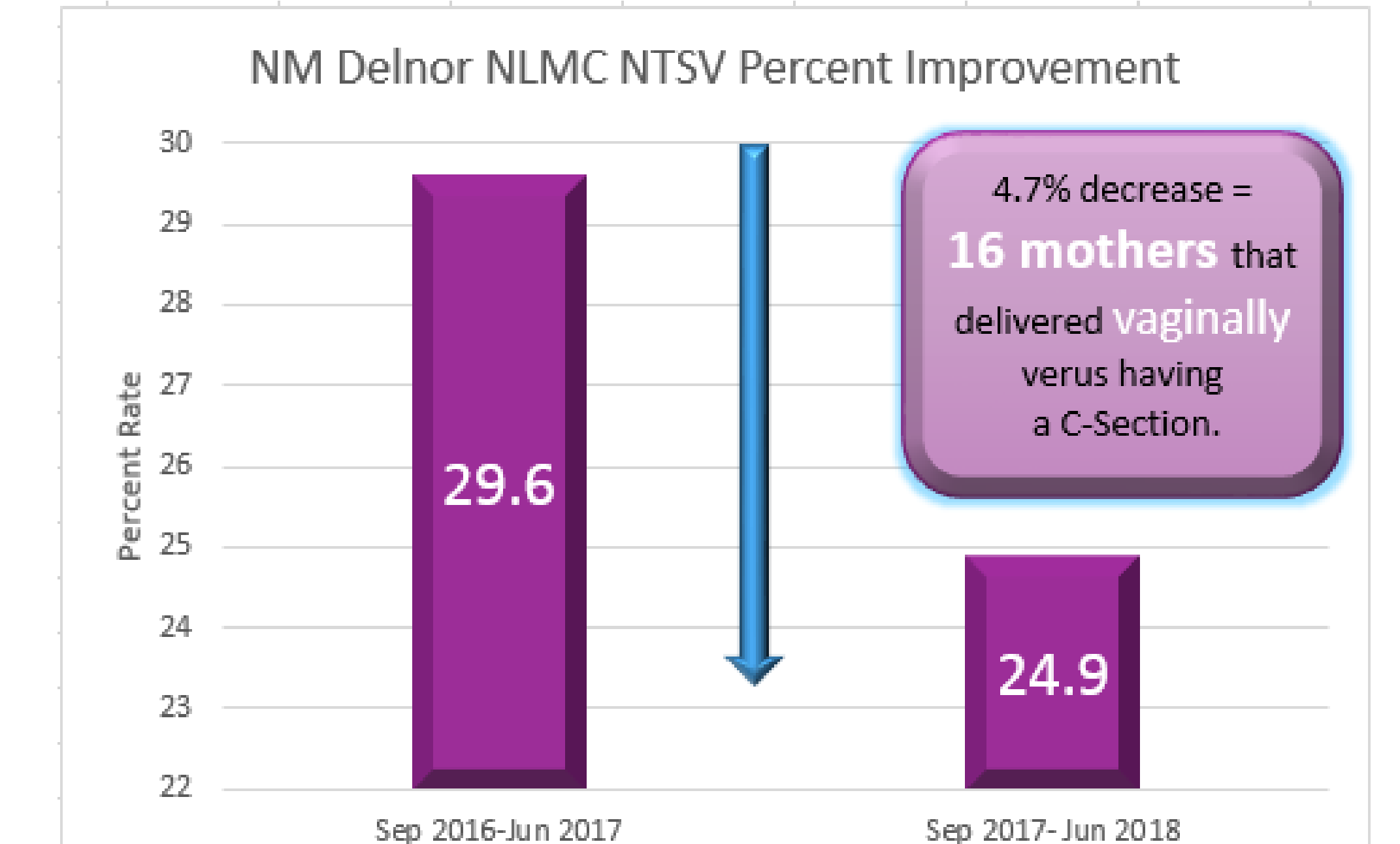
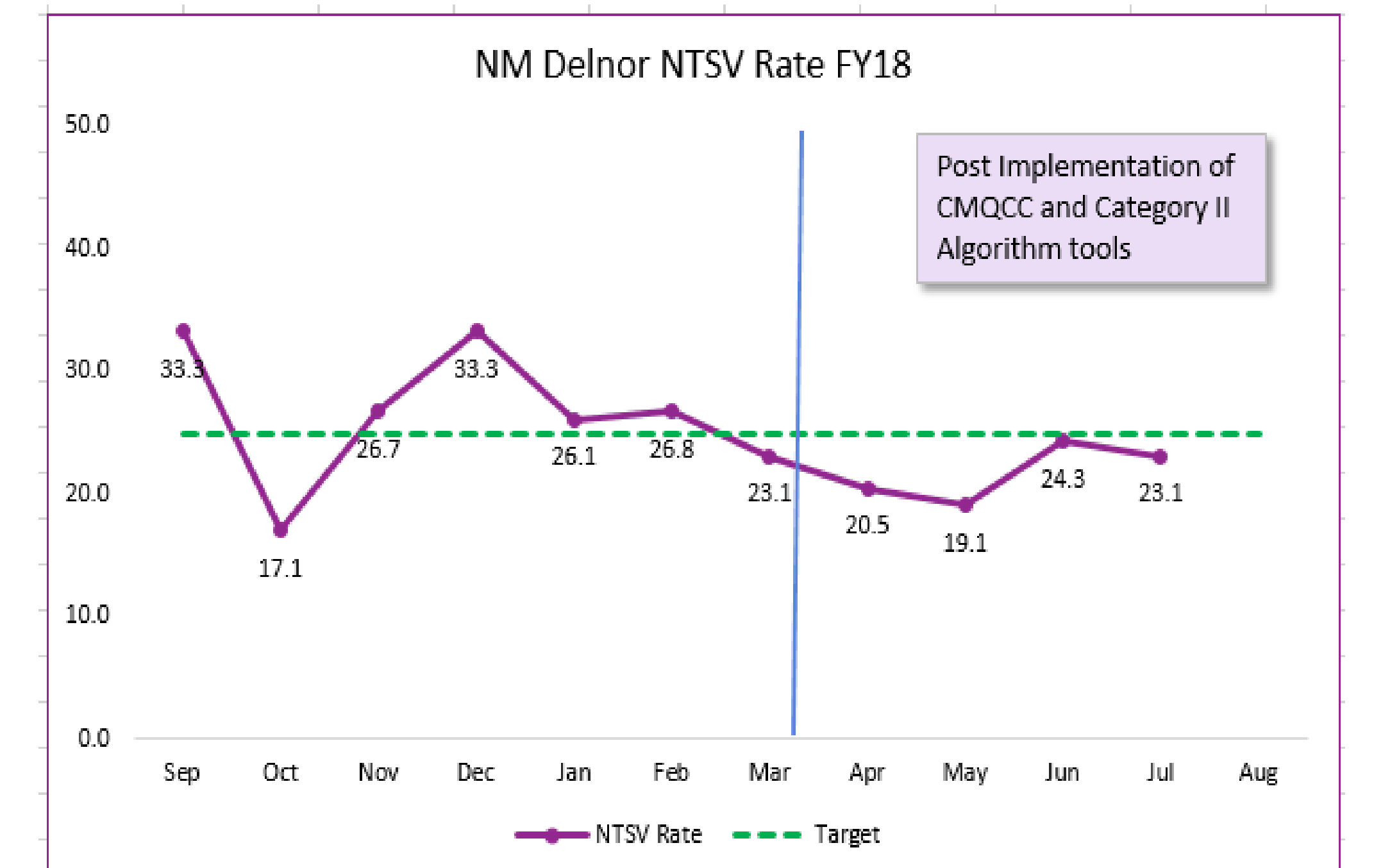


Table 1: Control Plan

Control Measurement						
Metric	Goal	Control Limit	Review Process	Frequency	Process Owner	Threshold for Action
NTSV Rate	23.9%	28.0%	Identify every NTSV Case during the month.	Monthly	NLMC Clinical Director	Any month greater than 23.9%
			Fetal Monitoring Strip Review	Monthly/Quarterly	Medical Quality Director	
			Documentation Review	Monthly		
					Peer Review and Feedback. Collaborate patient case review for every NTSV Case.	

## Conclusions

The following were essential to our success:

- Supporting positive and collaborative working relationships between nursing and physicians
- Providing regular data of progress towards NTSV reduction
- Sharing literature and best practices with all physicians and nurses
- Peer accountability to utilize the tools with every patient

## Reference

- Clark, SL, Nageotte MP, Garite TJ, et al. Intrapartum management of category II fetal heart rate tracings: towards standardization of care. Am J Obstet Gynecology. 2013; 209(2):89-97.
- Romijn A, Teunissen PW, deBruijne MC et al. (2017). Interprofessional collaboration among care professionals in obstetrical care: are perceptions aligned? BMJ Quality and Safety. (0): 1-8.
- Smith H, Peterson N, Lagrew D, Maine E. (2016). Toolkit to Support Vaginal Birth and Reduce Primary Cesareans: A Quality Improvement Toolkit. Stanford, CA: California Maternal Quality Care Collaborative.

