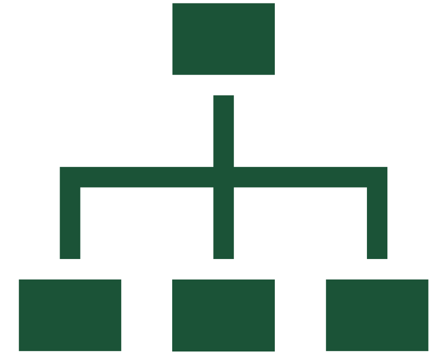
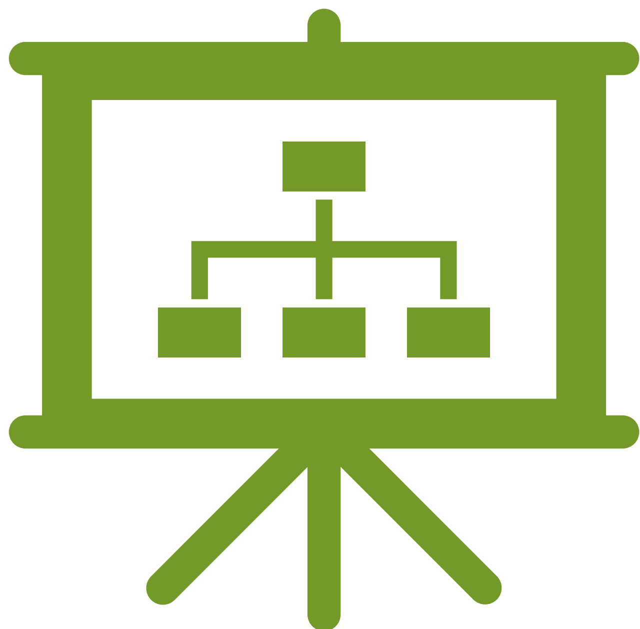
EFM: What are we doing? How do we talk to each other?*

MHA Joint Perinatal Improvement Summit
10/22/24
LeeAnn Hubbard, MD & Jeannine Nelson, RNC-OB, BSN

*Embracing a standardized model to promote high reliability





So let's look at…

Category II Communication for nurses and clinicians

- Review EFM categorization
- Category II communication tool
  - Communication Process
  - Huddle tool
- Standardizing communication can help—our experience with Team STEPPS

Category I

FHR tracing must include:

- Baseline rate: 110-160 bpm
- Baseline variability: moderate
- Late or variable decelerations: absent
- Accelerations: present or absent

Category II

All FHR tracings not categorized as category I or category III

Approximately 80% of all tracings

Category III

FHR tracings with either:

- Absent baseline variability AND any of the following:
  - Recurrent late decelerations
  - Recurrent variable decelerations
  - Bradycardia
- Sinusoidal pattern

Review of EFM Categories & Criteria

A three-tiered interpretation system developed by NICHD in 2008

Let’s think about this

What category is a tracing with a baseline of 145 bpm, moderate variability, accelerations present and intermittent variable decelerations?

- Category I?
- Category II?
- Category III?

CATEGORY II

Let's think about this

What category is a tracing with a baseline 135, absent variability and recurrent late decelerations?

- Category I?
- Category II?
- Category III?

CATEGORY III

Let’s think about this

What category is a tracing with a baseline of 110 bpm, minimal variability, no accelerations and no decelerations?

- Category I?
- Category II?
- Category III?

CATEGORY II

Let’s think about this

What category is a tracing with a baseline of 155 bpm, moderate variability, accelerations absent and recurrent early decelerations?

- Category I?
- Category II?
- Category III?

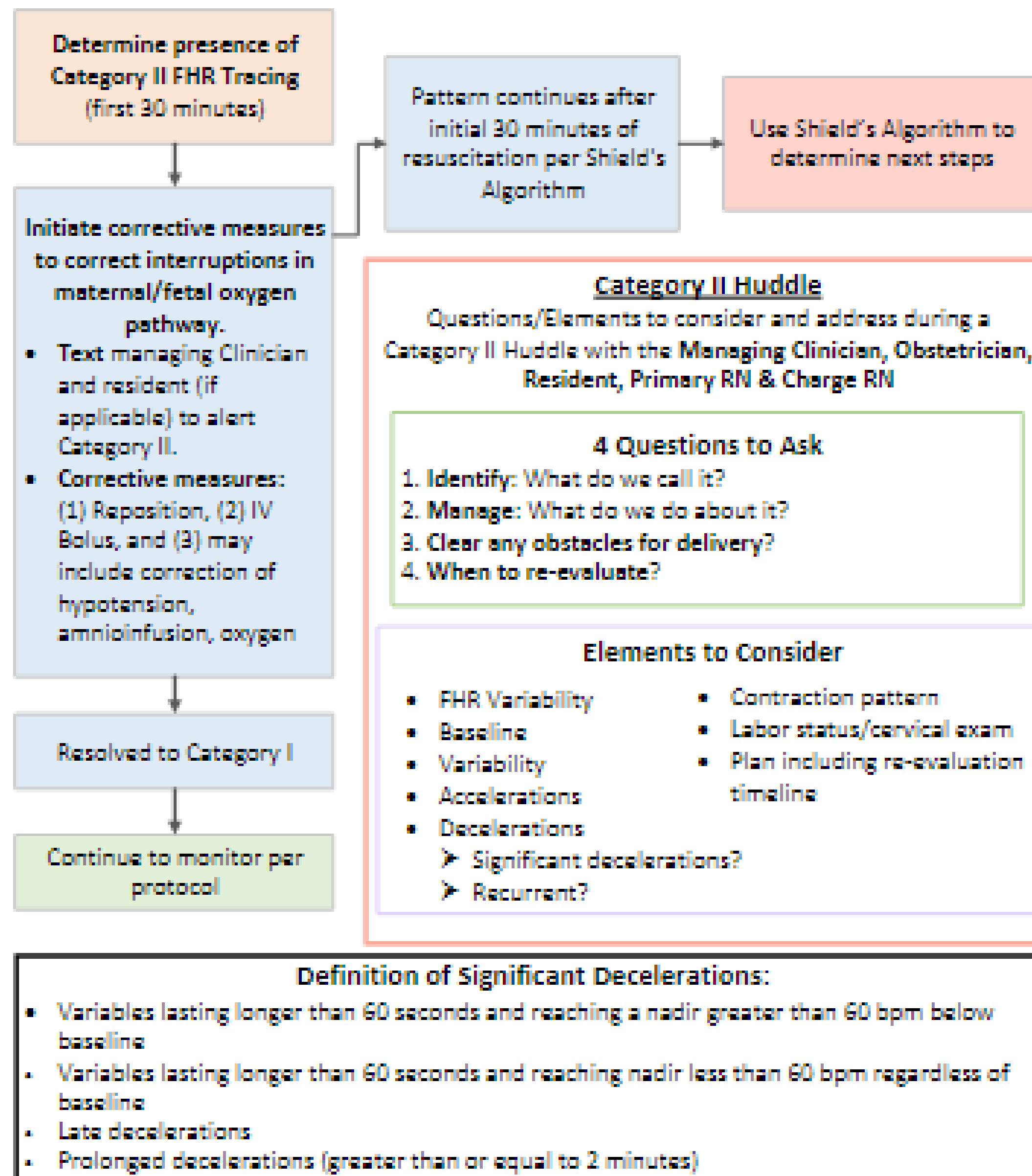
CATEGORY I

So you have identified a category II tracing. Let’s look at the…

Category II FHR Management & Communication Process

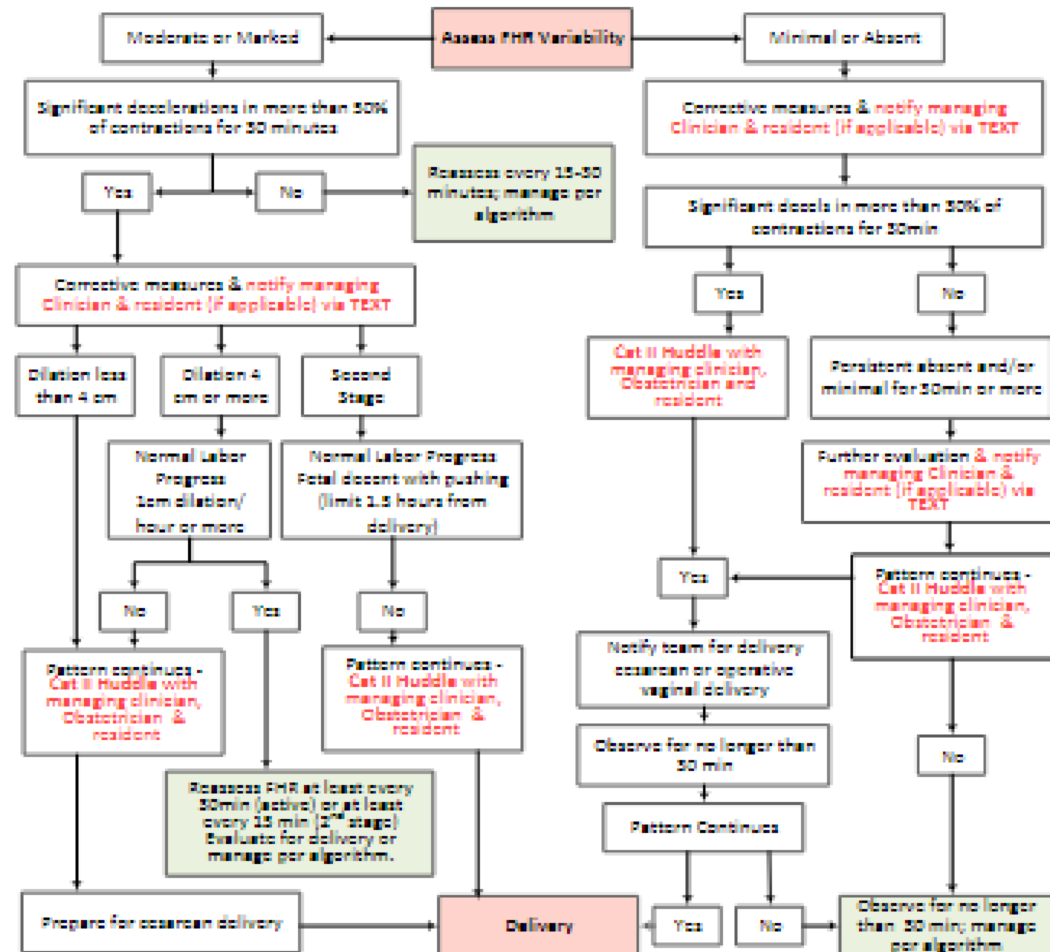
…and work through it.

- **Two leading publications with suggested Cat II management algorithms**
- **Both are legally appropriate—defense and plaintiff attorneys**
  - **Clark**
    - Am J ObstetGynecol 2013 Aug;209(2):89-97
    - Expert opinion
  - **Shields**
    - Am J Perinatol. 2018 Dec;35(14):1405-1410.
    - Multi-center prospective trial
    - Higher level of evidence, HP chose this as our model



Fetal Heart Rate (FHR) Communication Process
Promoting Situational Awareness with a Shared Mental Model Across the Interdisciplinary OB Care Team
Determine presence of Category II FHR Tracing (first 30 minutes)
Initiate corrective measures to correct interruptions in maternal/fetal oxygen pathway.
Text managing Clinician and resident (if applicable) to alert Category II.
Corrective measures: (1) Reposition, (2) IV Bolus, and (3) may include correction of hypotension, amnioinfusion, oxygen
Pattern continues after initial 30 minutes of resuscitation per Shield's Algorithm
Use Shield's Algorithm to determine next steps
Resolved to Category I
Continue to monitor per protocol
Category II Huddle
Questions/Elements to consider and address during a Category II Huddle with the Managing Clinician, Obstetrician, Resident, Primary RN & Charge RN
4 Questions to Ask
1. Identify: What do we call it?
2. Manage: What do we do about it?
3. Clear any obstacles for delivery?
4. When to re-evaluate?
Elements to Consider
FHR Variability
Baseline
Variability
Accelerations
Decelerations
Significant decelerations?
Recurrent?
Contraction pattern
Labor status/cervical exam
Plan including re-evaluation timeline
Definition of Significant Decelerations:
Variables lasting longer than 60 seconds and reaching a nadir greater than 60 bpm below baseline
Variables lasting longer than 60 seconds and reaching nadir less than 60 bpm regardless of baseline
Late decelerations
Prolonged decelerations (greater than or equal to 2 minutes)

Shield's Algorithm for Category II FHR Tracings with Significant Decelerations



Definition of Significant Decelerations:

- Variables lasting longer than 60 seconds and reaching a nadir greater than 60 bpm below baseline
- Variables lasting longer than 60 seconds and reaching nadir less than 60 bpm regardless of baseline
- Late decelerations
- Prolonged decelerations (greater than or equal to 2 minutes)

Management outline for patients with Category II fetal heart rates associated with "significant Decelerations" and normal fetal heart rate variability (moderate or marked) and abnormal variability (minimal or absent). Fetal heart rate (FHR) Notes: 1. Resuscitative (Corrective) measures may include: repositioning, IV bolus, correction of hypotension, Oxygen (10L via mask). 2. Additional Interventions: Consider amnioinfusion for variable decels. 3. Scalp stimulation and/or vibroacoustic stimulation.

KEY POINTS:

1. If FHR tracing reverts to category 1 for 30 minutes, the Shields Algorithm no longer applies. It would be restarted if category 2 tracing recurs.
2. This algorithm is a guideline. Final management of labor is the decision of the clinician.
3. If category 3 FHT occurs at any time, Shields Algorithm does not apply.

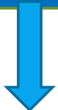
Reference: Shields, L. E., Wiesner, S., Klein, C., Pelletreau, B., & Hedriana, H. (2018). A Standardized Approach for Category II Fetal Heart Rate with Significant Decelerations: Maternal and Neonatal Outcomes. American Journal of Perinatology, Vol. 35, pp 1405-1410

Category II FHR Communication Process

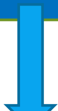
Determine **presence of Category II FHR Tracing (first 30 minutes)**

Initiate corrective measures to correct interruptions in the maternal/fetal oxygen pathway. Consider causal factors:

- Insufficient uteroplacental perfusion
- Cord compression



Resolved to Category I



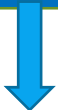
Continue monitoring per protocol

Category II FHR Communication Process

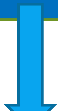
Determine presence of Category II FHR Tracing (first 30 minutes)

Initiate corrective measures to correct interruptions in the maternal/fetal oxygen pathway. Consider causal factors:

- Insufficient uteroplacental perfusion
- Cord compression



Resolved to Category I

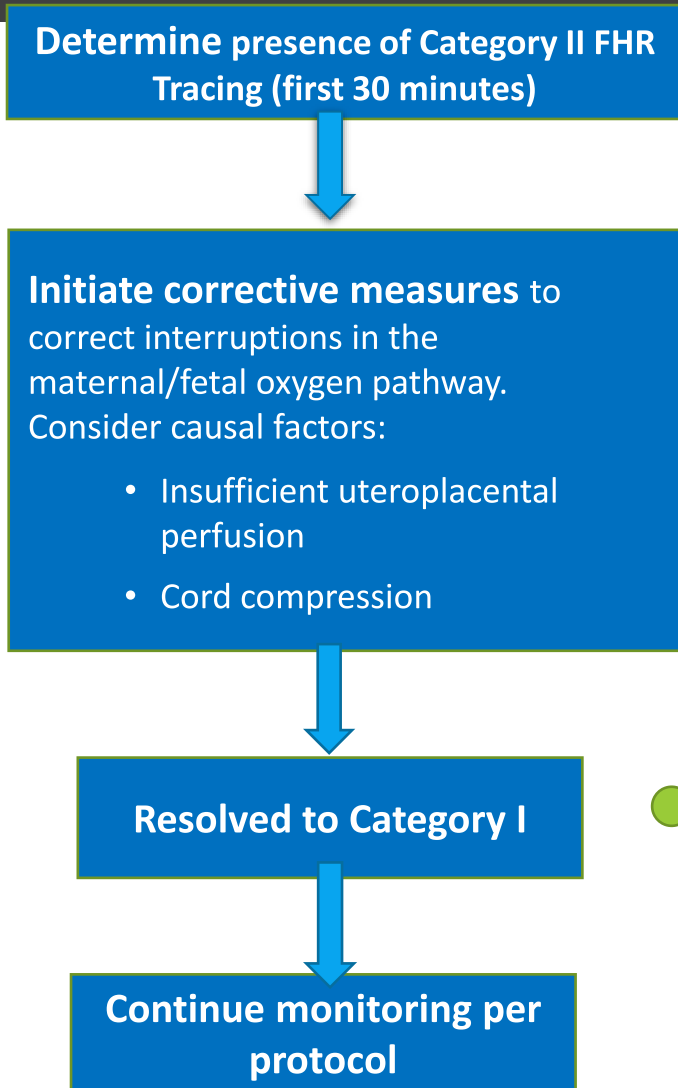


Continue monitoring per protocol

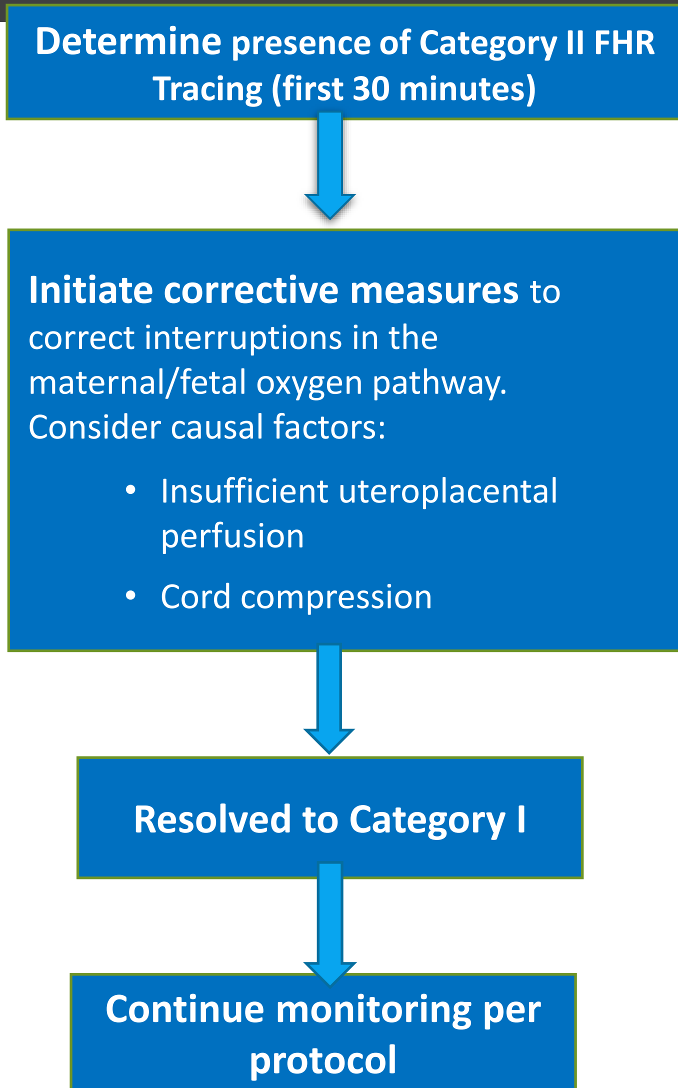
Corrective measures could include:

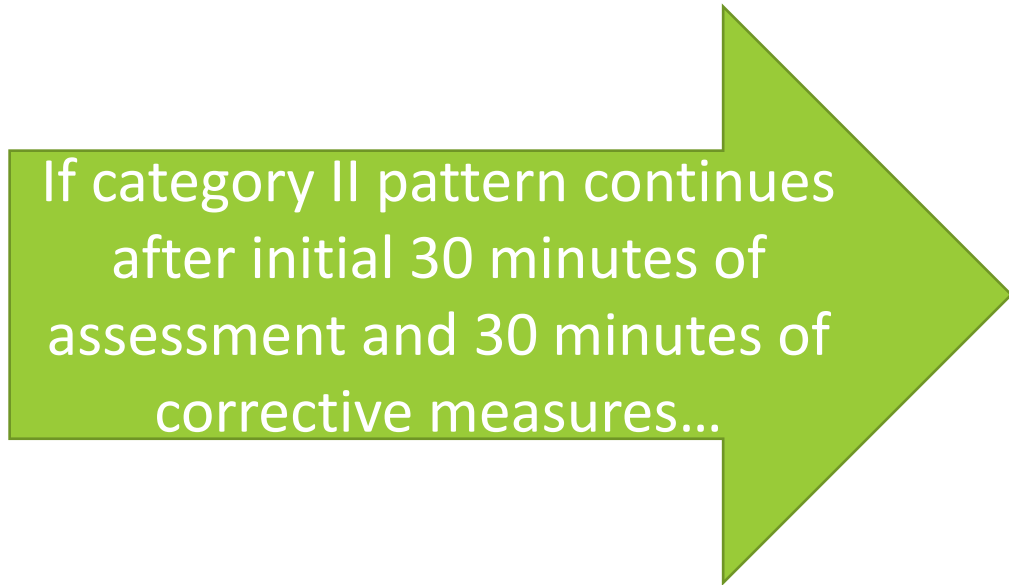
- Maternal position change
- IV fluid bolus
- Correcting maternal hypotension
- Supplemental oxygen for up to 30 minutes
- Stopping oxytocin for prolonged decelerations

Category II FHR Communication Process



Category II FHR Communication Process





Huddle!

Example for groups with MD/CNM collaboration: OB Team to Participate in Huddle when:

- Patient is having prolonged decelerations with a nadir ≥ 80bpm
- If oxytocin has been discontinued for tachysystole or FHR concerns
- Abnormal baseline with or without decelerations lasting ≥ 60 minutes
- Minimal variability with or without decelerations lasting ≥ 60 minutes
- Absent variability without decelerations (evolving Category III)
- Patient is a TOLAC
- Bleeding greater than show
- Thick meconium

Communication Isn't Always Easy--How we have worked on it

There are other programs out there, but benefits to TeamSTEPPS are: Studied. FREE!

Team STEPPPS Communication Principles

- SBAR (Situation, Background, Assessment, Recommendation)
- Closed-loop communication
- Call-out/Check-back
  - Especially for Emergencies
- Handoffs
  - One of the most error-prone situations in medicine

Communication Difficulties

- Giving feedback
- Decrease Hierarchy:
  - Anyone can stop the line with safety concerns!
- When people disagree on plans:
  - Two-challenge rule
  - "CUS" Words
    - I am **C**oncerned
    - I am **U**ncomfortable
    - This is a **S**afety Issue

Managing and Resolving Disagreements

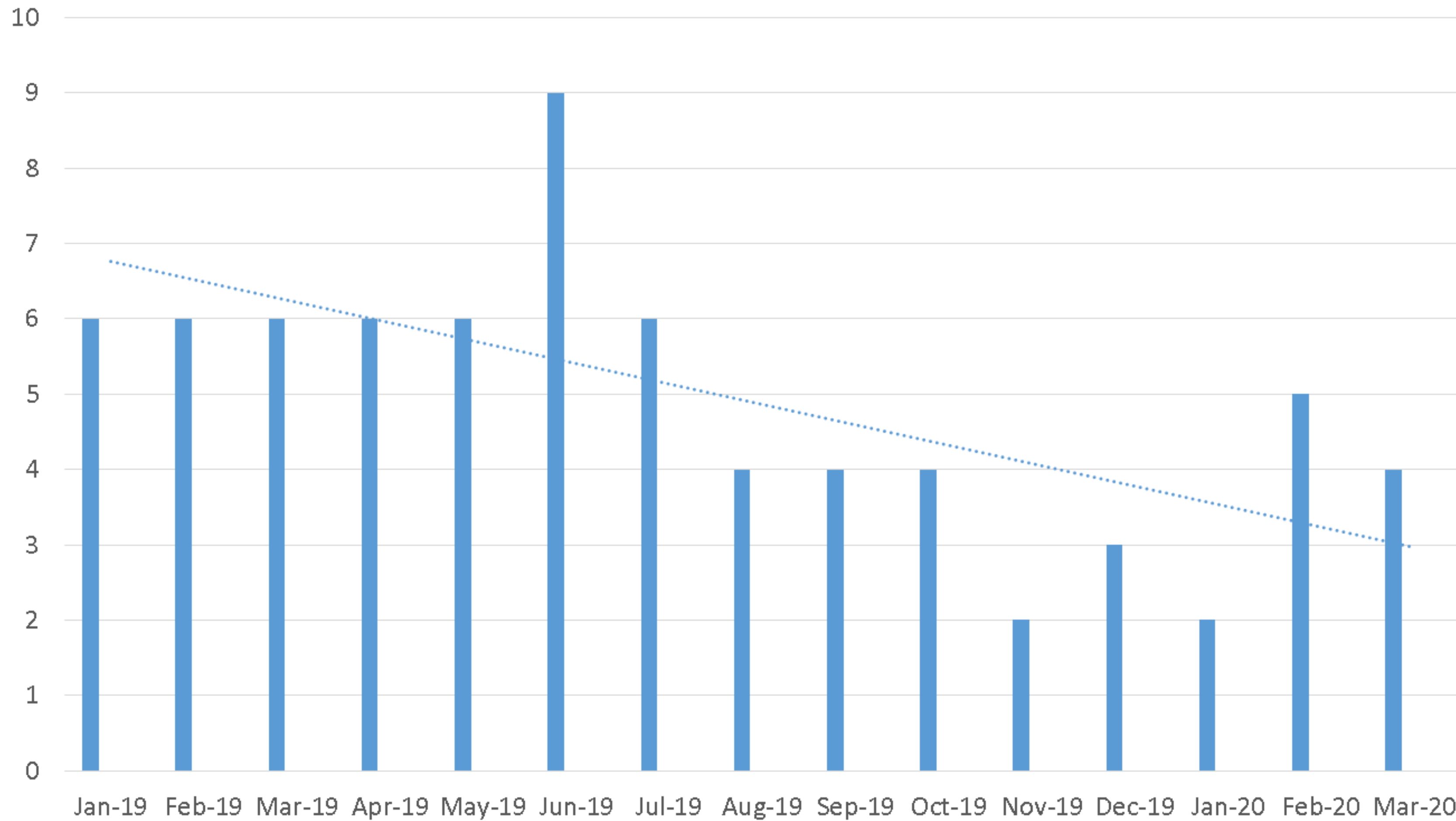
- "DESC"
  - **Describe** the situation or behavior concretely
  - **Express** your concerns
  - **Suggest** other alternatives
  - **Consequences** should be stated
- Escalation plan
  - Our example is: 2nd OB MD, RN Manager, OB Medical Director
- Debrief
  - Neutral, what went well/what didn't

Team STEPPS Highlights Guide

- [TeamSTEPPS Pocket Guide | Agency for Healthcare Research and Quality (ahrq.gov)]

Standardizing communication does help…

Number of Monthly SCN Admissions ≥ 37.0 Weeks Gestation: January 2019 Through March 2020



Learnings from Team STEPPS implementation

- Senior Leader support
  - It does take time and potential need to block schedules/shifts
  - Fully interdisciplinary
- Colleagues will be in 3 general groupings
  - "Gung ho": Can see the benefits immediately and are bought-in
    - Use this group to help increase buy-in
  - "Meh": Will go along with it but need to be sold on benefits
  - "Opposition": "This is dumb" "I know how to talk, its XX person that doesn't"
    - We found that taking all staff (RN, CNM, and MD) through it in the same way seemed to diffuse some of this
- 7 times 7 ways
  - Electronic learning
  - Group sessions
  - Followups in newsletters, staff meetings, bathroom brief

So in review...

We are doing several things to improve communication around category II tracings

Expanded | View All

Fetal Assessment
Fetal HR Tracing Category

Labor Interventions
Labor Interventions
Response to Labor Interventions

Care Team Notifications
Name:
Role:
Time notification sent:
Method of Notification:
Request:
Notification Reason:
Follow Up Actions:

Category II Huddle
Huddle Completed (time):
Huddle Staff:
Plan of Care:

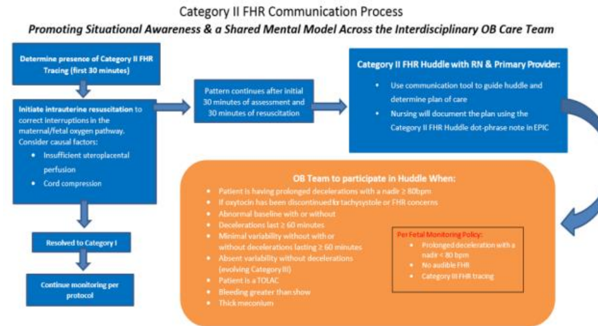
Fetal Assessment
Fetal Movement
Fetal HR Assessment Method
Fetal HR (beats/min)
Fetal HR Baseline
Fetal HR Variability
Fetal HR Accelerations
Fetal HR Decelerations
Sinusoidal Pattern Present
Additional Documentation

Uterine Activity Assessment
Method
Contraction Frequency (Minutes)
Contractions in 10 Minutes
Contraction Duration
Contraction Duration (free text)
Contraction Intensity
Uterine Resting Tone
Contraction Pattern
Additional Documentation

Vaginal Exam
Method
Vaginal Bleeding
Cervical Position
Cervical Consistency
Cervical Dilation (cm)
Cervical Effacement
Fetal Presentation
Fetal Station
Bishop Score (Vaginal Exam)

So in review…

We are doing several things to improve communication around category II tracings



HUDDLE COMMUNICATION TOOL

	3 Questions[1]
• FHR elements o Variability o Baseline o Accelerations o Decelerations: depth, recurrent? • Contraction pattern • Context/Risk Factors • Labor status/cervical exam • Plan including re-evaluation timeline • Document nursing Category II note	1. Identify: What do we call it? 2. Interpret: What does it mean? 3. Manage: What do we do about it? (always context driven) 2 Principles[2] 1. Is there disruption in the fetal oxygenation pathway? 2. Can we rule out fetal metabolic acidemia? (moderate variability, acceleration, scalp stim)

CATEGORY II FETAL HEART TRACING HUDDLE

Time RN notified provider: ***
Time of Huddle: ***
Category II FRH has been present for ***
Huddle Participants:
FHR Tracing:

- Fetal HR Baseline: normal range (110-160 bpm)
- Fetal HR Variability: moderate (amplitude range 6-25 bpm)
- Fetal HR Accelerations: 15 bpm x 15 sec
- Fetal HR Decelerations: absent

Contractions:

- Contractions in 10 minutes: 5
- Uterine Resting Tone: soft by palpation

Maternal Vital Signs:

Vitals:	07/05/19 1200
BP:	127/81
Pulse:	88
Resp:	16
Temp:	97.6

Medications:
Cervical exam:

- Cervical Dilation (cm): 4-5
- Cervical effacement: 80%
- Fetal Station: -1

Actions taken:
Plan: ***
Re-evaluate in *** minutes or if/when ***.

Will all this improve outcomes?

One more plug....

- MHA itself will be releasing an EFM course that all participating hospitals will have access to!
- This will be an up-to-date evidence-based tool that all teams can use so we are all speaking the same language
- If you are interested in access to this course as well as other roadmaps on best practices, we would love additional members of our Perinatal Committee! Contact any of the Summit organizers for more info

References

Macones, G et al., The 2008 National Institute of Child Health and Human Development Workshop Report on Electronic Fetal Monitoring: Update on Definitions, Interpretation, and Research Guidelines, Obstetrics and Gynecology, Vol 112, No 3 (2008)

Miller, L. A., Miller, D. A., & Cypher, R. L. (2017). *Mosby's pocket guide to fetal monitoring: A multidisciplinary approach* (8th ed.). St Louis, MO: Elsevier.

Thompson, L., Krening, C., & Parrett, D. (2018). *Interdisciplinary Team Huddles for Fetal Heart Rate Tracing Review*. NWH Journal, Vol. 22, Is. 3, pg 240-249.

Curriculum Materials. Content last reviewed February 2019. Agency for Healthcare Research and Quality, Rockville, MD. https://www.ahrq.gov/teamstepps/curriculum-materials.html

RH-PC-BC-15-16 Fetal and Uterine Monitoring During Pregnancy Policy

(###) Category II FHR Communication Process

PC-07-30 OB STAT Activation Policy