



Interdisciplinary Team Huddles for Fetal Heart Rate Tracing Review

Lisa Thompson, Cynthia Krening & Dolores Parrett

ABSTRACT: To address an increase in unexpected poor outcomes in term neonates, our team developed a goal of high reliability and improved fetal safety in the culture of the Labor and Delivery nursing department. We implemented interdisciplinary reviews of fetal heart rate, along with a Category II fetal heart rate management algorithm and a fetal heart rate assessment rapid response alert to call for unscheduled reviews when needed. Enhanced communication between nurses and other clinicians supported an interdisciplinary approach to fetal safety, and we observed an improvement in health outcomes for term neonates. We share our experience with the intention of making our methods available to any labor and delivery unit team committed to safe, high-quality care and service excellence.

doi: [10.1016/j.nwh.2018.03.002](https://doi.org/10.1016/j.nwh.2018.03.002)

Accepted March 2018

KEYWORDS: Category II fetal heart rate, electronic fetal monitor, fetal heart rate, fetal safety, high reliability, interdisciplinary collaboration, huddle, labor and delivery

In the mid-1990s, the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) sponsored a series of workshops to standardize definitions of electronic fetal monitoring (EFM) fetal heart rate (FHR) characteristics. The common language it developed to describe FHR tracing patterns, which provide important information on the acid-base status of a fetus at the current point in time, was widely

adopted by professional women's health organizations in the United States. Thereafter, in 2008, the NICHD, [American College of Obstetricians and Gynecologists \(ACOG\)](#), and the Society for Maternal-Fetal Medicine convened another workshop to update the standard terminology for uterine contraction descriptions and FHR pattern categories from the prior NICHD workshops and to recommend a classification system for FHR tracing

CLINICAL IMPLICATIONS

- Systematic interdisciplinary team huddles at regular intervals to review fetal heart rate tracings encouraged proactive, interdependent responsibility for electronic fetal monitoring surveillance and fetal heart rate care management.
- Scheduled interactive fetal heart rate assessment by the entire team using an evidence-based Category II fetal heart rate algorithm further enhanced fetal safety.
- A “CODE EFM” alert provided another layer of safety by bringing the team together to emergently review a fetal heart rate tracing trend, provide input, and assist with care decisions.
- Initiation of these best practices creates a culture of quality and excellence, and results in a willingness of nurses and other clinicians to be dependent on each other to achieve optimum care.

interpretation (Macones, Hankins, Spong, Hauth, & Moore, 2008; see Box 1).

Three Categories of FHR Tracings

According to the resulting three-tiered FHR interpretation system in common use since 2008, Category I FHR tracings reflect normal acid–base status of the fetus, and Category III tracings are predictive of abnormal fetal acid–base status (Macones et al., 2008). Category II FHR tracings are defined as indeterminate with unknown acid–base status, requiring continued evaluation, surveillance, and reevaluation, with increased risk for fetal hypoxia/acidemia (Macones et al., 2008).

Category II is a broad classification that is challenging to manage because it includes FHR tracing patterns with numerous combinations of features, many of which are unlikely to result in adverse outcomes but some of which demand intervention. Although Category II FHR tracings occasionally develop into Category III, they are not often indicative of fetal complications that result in poor outcomes, making it easy for all members of the surveillance team to become complacent (Cahill, Roehl, Odibo, & Macones, 2012). During labor, 84% of FHR tracings exhibit Category II features (Jackson, Holmgren, Esplin, Henry, & Varner, 2011), and in the last 30 minutes of second stage labor, 97% of FHR tracings are Category II (Cahill et al., 2012). In collaboration with obstetric residents, certified nurse-midwives (CNMs), and physician providers, registered nurses (RNs) are responsible for evaluating, managing, and reevaluating continuous FHR tracings to contribute their expertise to the most prudent

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ongoing plan of care. As such, nurses can find it challenging to remain vigilant when most FHR tracings exhibit Category II features, yet the outcomes are routinely good.

BOX 1 THREE-TIER FHR INTERPRETATION SYSTEM

Category I

Category I FHR tracings include all of the following:

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

Category II

Category II FHR tracings include all FHR tracings not categorized as Category I or Category III. Category II tracings may represent an appreciable fraction of those encountered in clinical care. Examples of Category II FHR tracings include any of the following:

Baseline rate

- Bradycardia not accompanied by absent baseline variability
- Tachycardia

Baseline FHR variability

- Minimal baseline variability
- Absent baseline variability not accompanied by recurrent decelerations
- Marked baseline variability

Accelerations

- Absence of induced accelerations after fetal stimulation

Periodic or episodic decelerations

- Recurrent variable decelerations accompanied by minimal or moderate baseline variability
- Prolonged deceleration ≥ 2 minutes but < 10 minutes
- Recurrent late decelerations with moderate baseline variability
- Variable decelerations with other characteristics, such as slow return to baseline, “overshoots,” or “shoulders”

Category III

Category III FHR tracings include either of the following:

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

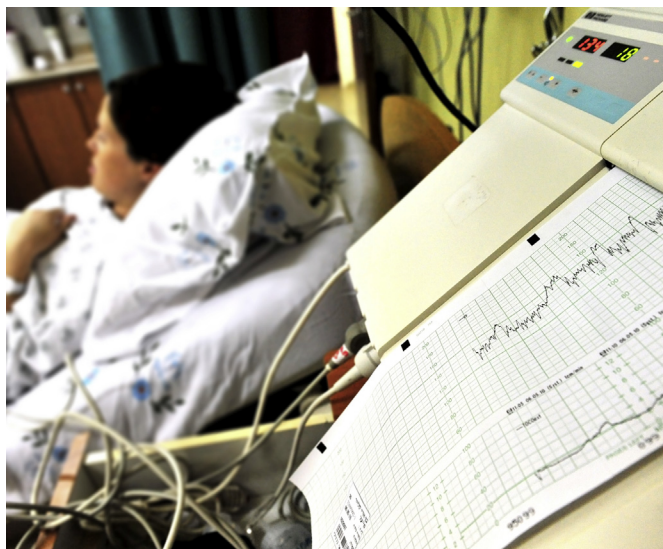
Note. bpm = beats per minute; FHR = fetal heart rate.

Source: Reprinted from “The 2008 National Institute of Child Health and Human Development Workshop Report on Electronic Fetal Monitoring: Update on Definitions, Interpretation, and Research Guidelines,” by G. A. Macones, G. D. Hankins, C. Y. Spong, J. Hauth, and T. Moore, 2008, *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 37(5), pp. 510–515. © 2008, with permission of AWHONN.

History

In February 2016, labor and delivery department (L&D) RNs, CNMs, residents, and physician providers at a busy urban hospital in Colorado implemented best practices to improve term neonatal outcomes. To develop the best practices, the nurse leadership team combined clinical high-risk L&D expertise and their passion for high-quality care with a review of the best applicable clinical evidence (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). RNs, CNMs, residents, and physicians incorporated the resulting best practices into their care of women in labor, resulting in an improvement in prompt and appropriate responses to worrisome Category II FHR tracings. The L&D clinicians who worked together to develop and implement this fetal safety initiative applied the operational principle of high reliability by demonstrating their commitment to continuous quality improvement, interdisciplinary collaboration, and safe perinatal care founded on standardization (Knox & Rice Simpson, 2011).

After education for nurses and physician providers alike, the entire team of L&D RNs, CNMs, and physicians began assembling for FHR tracing reviews on the unit, regularly scheduled around the clock. In March 2017, integration of an evidence-based Category II FHR algorithm augmented the regular EFM tracing huddles (see Figure 1). In April



2017, the L&D clinical team implemented a rapid response code to assemble all available team members emergently between scheduled tracing reviews when a worrisome FHR tracing required immediate group input. These combined improvements to FHR assessments and care planning resulted in an improvement in term neonatal outcomes.

FIGURE 1 SAFETY HUDDLE



Background

Our hospital is an urban facility, located in a downtown neighborhood, with an obstetrics and gynecology residency program and a CNM practice. The hospital's Women and Infants (W&I) Department includes a five-bed triage unit, an 18-bed L&D unit with three obstetric operating rooms and four preoperative/postoperative rooms, a Mother–Baby Unit with 42 beds dedicated to mothers and newborns, and a NICU with 35 Level III-B private rooms. The labor–delivery–recovery rooms in the L&D unit surround an internal caregiver station available to nurses, residents, CNMs, and physicians for use. The caregiver station has 18 computer stations, an electronic whiteboard where team handoffs occur, and two additional mounted large screens allowing for continual FHR tracing displays of all women being monitored. Moreover, each individual computer in the caregiver station and in each labor–delivery–recovery room has dual monitor screens, making it possible for L&D clinicians to see the FHR tracings on one screen and view the electronic health record documentation on the second screen. Approximately 375 births occur on the L&D unit per month, attended by physician, resident, and CNM providers. There are obstetric and anesthesia providers in the department 24 hours per day/7 days per week.

All the W&I RNs, ancillary staff, CNMs, residents, and attending physicians are recurrent participants in a robust Critical Events Team Training (CETT) simulation program. Consequently, from their regular involvement in the skills training and simulation in this perinatal safety program, staff members have learned the importance of teamwork and the value of the concise situation–background–assessment–recommendation (SBAR) communication method in critical situations that can occur in the dynamic environments of any of the W&I clinical units. Additionally, another CETT technique that has been learned and practiced regularly in simulation trainings and applied to real-time use on all W&I units is that of debriefing serious and near-serious events. Debriefs, conducted as close as possible to the time of the critical event, have helped to identify trends over time and have resulted in action items to improve processes and the provision of safe care for women and infants.

One adverse trend identified from debriefs of neonatal code blue events in 2015 was an increase in the unforeseen number of term infants requiring resuscitations with admissions to the NICU after birth. Over the span of a year, three unexpected full-term neonatal resuscitations had occurred, and an additional six full-term neonates were placed on brain cooling in the NICU. Although data regarding unexpected outcomes of term newborns were not being analyzed, this was a notable increase in unexpected outcomes of newborns expected to do well.

One problem that stood out was the complacency of some clinicians regarding Category II tracings that did not result in poor neonatal outcomes

L&D Fetal Safety Initiative

The W&I Department director, perinatal clinical nurse specialist (CNS), and L&D clinical manager endeavored to identify impediments to fetal safety and find solutions to any system issues on the L&D unit that might be contributing to the unexpected outcomes of term neonates. They performed a common cause analysis of all the identified cases that occurred from February 2015 through January 2016. They reviewed chart documentation, debrief event tools, and FHR tracings, but they were unable to discover a common cause. These critical events had occurred on multiple shifts and at various times during the shifts. Although staffing of the shifts varied, examination showed staffing flexed appropriately based on census, so staffing was excluded as a contributing factor. The investigation also showed that different RNs and charge nurses, as well as assorted residents, CNMs, and physicians, had provided care for the women in labor. Failing to identify any commonalities, the leadership team decided to work to improve term neonatal outcomes by refocusing on an L&D fundamental objective of fetal safety.

The CNS reviewed evidence-based nursing and medical literature to share relevant information most applicable to the fetal safety improvement initiative. Incidence of unexpected resuscitation and brain cooling in term newborns for benchmarking purposes was not found in the review of current literature. The clinical manager and CNS discussed the lack of findings from the common cause analysis and the goal to focus on fetal safety. Subsequently, they decided to involve the four L&D shift specialty coordinators who supervised the shifts and worked alongside staff nurses when unit status required additional support. Because they were present on the unit during all shifts, the shift specialty coordinators were able to contribute valuable input from the frontline caregiver stakeholders, including nurses, residents, and providers. The clinical manager, CNS, and shift specialty coordinators mapped out the unit workflow and deliberated about potential issues with unit organization, processes, and dynamics to identify factors that might be detracting from fetal safety on the unit.

Tolerance Regarding Category II Tracings

One problem that stood out was the complacency or tolerance of some clinicians regarding Category II tracings that did not result in poor neonatal outcomes. Often, RNs, residents,

CNMs, and physicians observed tracings in the “gray zone” of Category II on monitor screens, presuming that FHR changes would resolve instead of initiating intervention (Barbieri, 2011). This tolerance concerning FHR tracings could have contributed to the unexpected poor outcomes. The leadership team appreciated that L&D RNs maintain ongoing EFM competency and that they learn to understand the immense responsibility and the significance of FHR surveillance from the time they first complete entry-level fetal monitoring education. Nonetheless, in endeavoring to achieve a goal of improved fetal safety to decrease poor outcomes in term neonates, the leaders perceived a value in fetal monitoring re-education, specifically concerning the divergence of Category II FHR tracings, with an emphasis on Category II FHR management for L&D nurses and physicians. Additionally, all L&D nurses are required to complete the Association of Women’s Health, Obstetric and Neonatal Nurses (Washington, DC) *Intermediate Fetal Heart Monitoring* course every 2 years as an ongoing requirement. Competence is also validated every 2 years for physicians and mid-level providers who interpret fetal monitoring data, because completion of GE Healthcare (Little Chalfont, UK) *Electronic Fetal Monitoring* modules is a requirement for their credentialing and re-credentialing.

Communication Issues

Two additional common EFM system errors distinguished in the literature were problems observed on the unit and reported in event debriefs as action items for improvement (Miller, 2005): (a) incomplete communications between team members and (b) nurses being reluctant to question physician’s decisions. These issues were identified even though CETT simulations always involved SBAR and nurse–physician communication and collaborative practice. CETT simulation debrief feedback corroborated by shift specialty coordinators’ real-time observations showed that the communications were sometimes not clear or failed to impart urgency.

The clarity of SBAR communication is crucial when time is of the essence, but some practice in day-to-day operations outside of CETT simulations is necessary to enhance spontaneous recall of the SBAR format in an emergency. From CETT debriefs after some L&D simulation events involving worrisome FHR tracings, the leadership team also realized that opportunities existed to improve the knowledge and understanding of a tangible chain of command guideline for L&D nurses. Lack of follow-through to achieve appropriate responses or interventions had occurred, even in instances when the RN promptly and appropriately reported a potential problem during a simulation. To feel comfortable in seeking another opinion, nurses needed to be fully aware of whom to contact when they did not receive a quick or a suitable reply to their requests for assistance regarding FHR interpretation, evaluation, or plan of care. Moreover, the chain of command team members needed to be willing and prepared to meet their responsibilities when called on.

Finally, the leadership team decided that the RN staff would benefit from re-education on the appropriate allocation of nursing resources based on nurse experience and the acuities of women admitted to L&D for care. The nurse leaders were mindful that RNs new to L&D or new to the unit required supervision befitting their orientation status so they could learn in an environment of safety for the expectant mothers and for themselves.

Consequently, the L&D leadership team determined the most suitable evidence-based practices to help them move forward with their initiative to enhance fetal safety. Target areas for L&D RNs, CNMs, and physicians would include EFM tracing tolerance, management of Category II FHR tracings, communication of fetal status, chain of command, and appropriate staffing assignments. The project commenced with an identical education and re-education plan for all RNs, CNMs, and physicians.

Team Education and FHR Tracing Huddles

In February 2016, the CNS assumed the initial steps to address the identified opportunities by providing EFM updates for all L&D RNs, CNMs, residents, and obstetric physicians. With a focus on avoiding EFM tracing tolerance and managing Category II FHR tracings, the education emphasized evaluation, intrauterine resuscitation, documentation, and frequent re-evaluation of Category II tracings (ACOG, 2010; Macones et al., 2008). Coordinating the same FHR interpretation and management approach for all members of the team was crucial and equally as important as providing the same basic education for all team members (Miller, 2005). Further team re-education addressed SBAR to enhance communication, clarity regarding the chain of command guideline, and appropriate nurse assignments based on acuity of women admitted to L&D and RN expertise.

Simultaneously, as the education was taking place, the leadership team implemented regularly scheduled interprofessional team huddles to combat FHR tracing tolerance (see Figure 1). Their intention was to promote a culture of team responsibility for the safety of all monitored fetuses, understanding the active process of interprofessional collaboration that is critical to maximizing positive outcomes for all women (Raab, Will, Richards, & O’Mara, 2013). L&D team members incorporated FHR tracing huddles into their unit routine, systematically convening to view and assess each FHR tracing and discuss ongoing management. A poster outlining the obstetric strip review process positioned next to the electronic whiteboard in the caregiver station provided a visible reminder and reference for the team (see Figure 2). The poster reminded L&D clinicians that an FHR tracing huddle must occur every 4 hours around the clock (at 8 a.m., 12 p.m., 4 p.m., 8 p.m., 12 a.m., and 4 a.m.), announced by the charge RN via the wireless, hands-free communication badge (Vocera Badge; Vocera Communications, San Jose, CA).

When notified, all available L&D RNs, CNMs, residents, and in-house physicians gather in the caregiver station.

Because obstetrics residents participate in the management and care of all women on the unit, they take turns leading the regular huddles. All team members participate in the focused discussion and analysis of FHR tracings, trends in the last 4 hours since the previous tracing huddle, changes in medical conditions, and labor progressions. The team discusses the best plan of care for each fetus and arrives at consensus.

During the implementation of these tracing huddles from February 2016 through January 2017, FHR surveillance and

communication regarding FHR tracings among RNs, CNMs, and physicians improved. Although data regarding provider satisfaction were not obtained, physicians have been observed shifting from relative reluctance to active participation in the huddles. Unexpected outcomes in term neonates decreased to one neonatal code blue and one infant admitted to the NICU for head cooling during that period. However, in February of 2017, an FHR tracing identified in a huddle that warranted immediate attention did not receive

FIGURE 2 OB STRIP REVIEW POSTER

OB STRIP REVIEW

WHY: To provide “eyes on” safe care to every patient

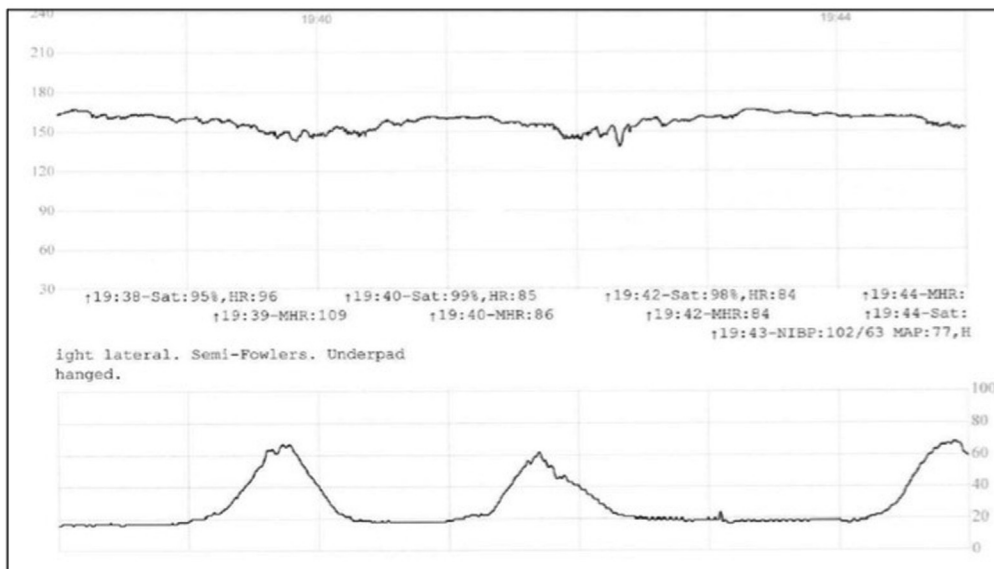
WHEN: 7 days a week, every 4 hours: **0800; 1200; 1600; 2000; 2400; 0400**

WHO:

- Interns, Residents and Attendings (if in-house and available)
- Labor and Delivery RNs
- SSC and Charge Nurse

HOW:

- SSC or Charge Nurse will call over Vocera for OB Strip review at the required time
- Resident or Intern will run review
- **EACH** strip will be briefly brought up and evaluated. If there are concerns, the strip will be scrolled and discussed



OB = obstetric; RN = registered nurse; SSC = shift specialty coordinator.

follow-up for several hours until the next regularly scheduled huddle. As a result, the L&D leadership team realized that they needed to add supplemental layers to enhance safety.

Category II Algorithm and Code EFM

In February 2017, the L&D clinical manager gathered a team consisting of the four shift specialty coordinators, CNS, director of W&I Services, and Obstetrics/Gynecology Residency Program director to collaborate on additional improvements that would help support RNs, CNMs, residents, and attending physicians when an FHR tracing required immediate evaluation and intervention. In a demonstration of the hallmarks of high reliability, the interdisciplinary team addressed the concept of implementing additional standardized processes to assist in the appropriate management of Category II FHR tracings (Knox & Rice Simpson, 2011) and the existing FHR tracing huddles on the unit.

The leadership team reviewed the proposal of a Category II algorithm by Clark et al. (2013), a consensus effort of expert authors in the management of Category II FHR tracings. Their intent was to provide a standardized, systematic foundation for L&D clinician discussion of persistent Category II FHR tracings. Based on stage of labor and labor progress, the algorithm provides suggested guidance for management of Category II tracings (see Figure 3). Significantly, the National Certification Corporation (NCC) expressed support of the algorithm in 2016, and the NCC EFM Monograph by Simpson (2016), describing the application of the algorithm, was included in the current NCC EFM Toolkit introduced

at the 2016 ACOG Annual Clinical and Scientific Meeting. The leadership team anticipated that this Category II FHR algorithm would support dispassionate open discussion on the unit and contribute to a plan of care consensus for ultimate maternal and fetal safety.

While observing and taking part in the FHR team reviews occurring every 4 hours on the unit, the team leaders became aware that a solution was necessary for the problem of comprehensive L&D clinician reviews being required at times other than regularly scheduled FHR tracing huddles. In their discussion of a rapid response for such opportunities, the team evaluated the internal W&I department emergency response system in place at the time. The existing process for emergency code activation was that the unit secretary, once notified by an RN, CNM, or physician, followed a phone tree for each specific code to send out notifications by overhead pages and hands-free communication badge notifications. Based on the nature of the emergency, appropriate team

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members immediately responded. Believing that the RNs, ancillary staff, residents, CNMs, and physicians would easily adapt to another code with the same process, the team

elected to add an EFM tracing rapid response strategy to call an emergency FHR tracing huddle, CODE EFM (see Box 2).

The L&D leaders decided to initiate these two opportunities to augment the best practice fetal safety improvements thus far in practice. Introduction of the Category II algorithm for evaluation and suggested management of FHR tracings and implementation of CODE

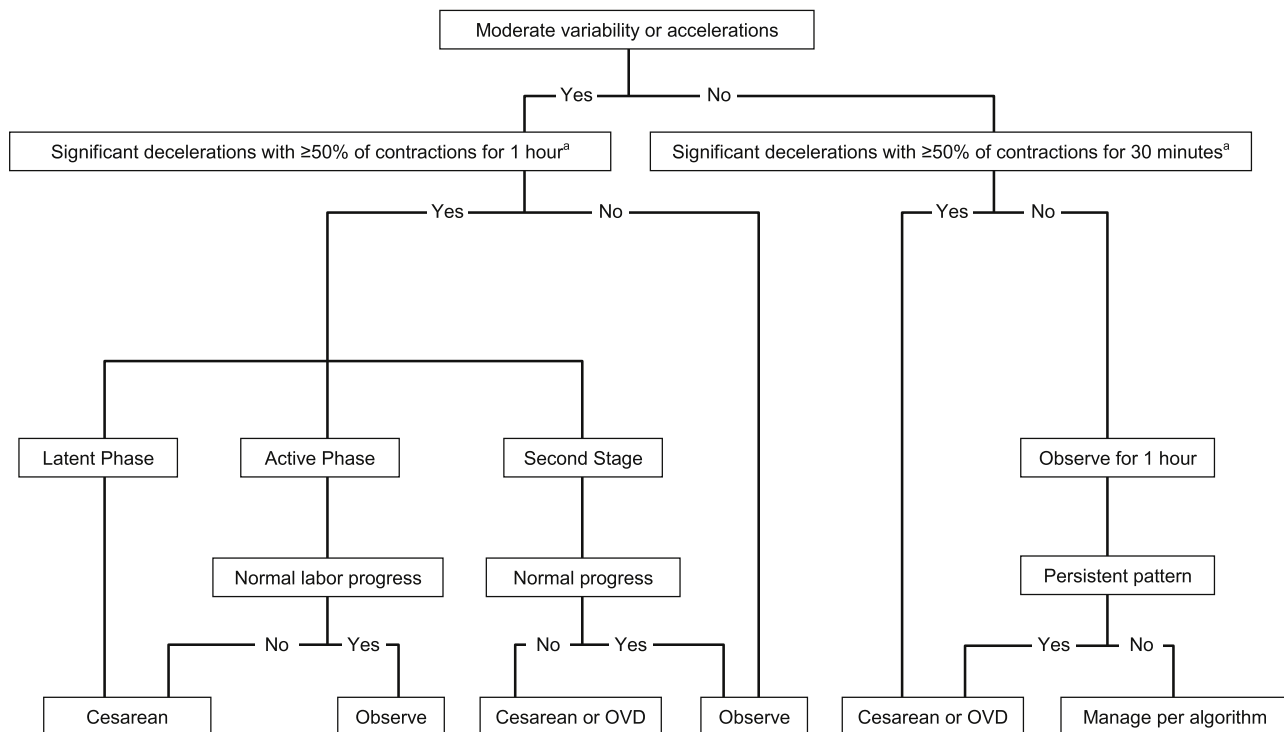
EFM would enhance communication between RNs, residents, CNMs, and physicians to further support an interdisciplinary approach to fetal safety and contribute to improved term neonatal outcomes.

The CNS and clinical manager collaborated with the department head of obstetric anesthesia for feedback and recommendations regarding CODE EFM. The anesthesiologist agreed that it would be advantageous to have an anesthesia provider present for a CODE EFM to keep abreast of ensuing events and to be prepared for timely interventions if the involvement of anesthesia became necessary.

The director of W&I Services, CNS, and clinical manager presented implementation of the Category II algorithm and CODE EFM to obstetrics providers at the March 2017 obstetrics/gynecology department meeting; both concepts received 100% support. Throughout March 2017, the clinical manager and shift specialty coordinators educated RNs, residents, CNMs, and physicians on application of the Category II FHR algorithm

FIGURE 3 ALGORITHM FOR MANAGEMENT OF CATEGORY II FETAL HEART TRACINGS

Algorithm for management of category II fetal heart rate tracings



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.

Clark. Category II FHRT. *Am J Obstet Gynecol* 2013.

Reprinted from "Intrapartum Management of Category II Fetal Heart Rate Tracings: Towards Standardization of Care," by S. L. Clark, M. P. Nageotte, T. J. Garite, R. K. Freeman, D. A. Miller, K. R. Simpson, . . . G. D. V. Hankins, 2013, *American Journal of Obstetrics & Gynecology*, 209(2), p. 90. © 2013, with permission of Elsevier.

from the Clark et al. (2013) article as a communication and management tool. Universally, nursing staff, surgical technologists, unit secretaries, CNMs, and physicians received instruction on the new CODE EFM. All L&D team members learned that when an RN, resident, CNM, or physician desiring an in-the-moment EFM tracing review between regular FHR tracing huddles alerted the L&D secretary, the secretary would implement the phone tree. When notified, all available team members would convene at the caregiver station to review the tracing and provide input into the assessment and plan of care. Staff education included the Category II FHR management algorithm and article, the CODE EFM workflow, and the unit secretary's CODE EFM phone tree. In addition to the education, all nurses and physicians received pocket card copies of the algorithm and FHR definitions for their reference.

The clinical manager updated the obstetric strip review poster to include the Category II FHR management algorithm

to make it available near the electronic whiteboard as a ready reference for FHR tracing huddles and CODE EFMs. The CNS concurrently placed a copy of the Clark et al. (2013) article next to the poster in the caregiver station, and a copy was sent to all members of the obstetrics medical staff for their review. The go-live date for CODE EFM was April 1, 2017.

Outcomes

Perinatal collaborative efforts and increased interdisciplinary accountability for FHR tracings enhanced the L&D culture of high reliability and perinatal safety by improving fetal surveillance, interprofessional communication, and management of women in labor who require interventions. Without exception, all available unit team members gather every 4 hours for FHR tracing huddles, and it is standard for the clinical members of the L&D team to apply the Category II FHR management algorithm during tracing reviews, as needed. Although some clinicians expressed concern that

BOX 2 CODE EFM

WHO? All physicians, residents, CNMs, and RNs working in L&D

WHAT? A chance for all to gather, review an FHR tracing of concern, and weigh in on the assessment and plan

WHERE? L&D boardroom

WHEN? When an FHR tracing warrants immediate evaluation by the team

WHY? At times, we may need input from the entire team for the best plan of care for a fetus

HOW? Call the unit secretary for a CODE EFM—all staff on the unit should respond to the boardroom

Note. CNM = certified nurse-midwife; EFM = electronic fetal monitoring; FHR = fetal heart rate; L&D = Labor and Delivery Department; RN = registered nurse.

close, regular scrutiny of all FHR tracings would increase cesarean birth rates, this has not occurred since implementation of the FHR tracing huddles.

Since April 1, 2017, CODE EFM was successfully used on one occasion to bring the team together for a review of a concerning Category II FHR tracing in between regular tracing huddles. In that instance, the L&D RN presented the FHR tracing of a woman with late preterm pregnancy exhibiting minimal variability and late decelerations to the off-going obstetric provider without result; that physician did not suggest interventions or propose a time frame for re-evaluation. Consequently, the nurse promptly presented an SBAR communication to the on-coming attending provider and informally called for a CODE EFM by announcing it at the caregiver station. Because all the available L&D team members were already present on computers in the immediate area, it was not necessary for the secretary to implement the phone tree. All available L&D nurses and physicians immediately moved to gather by the electronic whiteboard and used the Category II algorithm as a platform for discussion of the FHR features and interventions. By consensus, the attending provider and the team decided on a plan to initiate intrauterine resuscitative measures to promote fetal oxygenation and to arrange for an epidural for pain management and to reevaluate the FHR tracing in 30 minutes. However, when the charge nurse realized that the epidural procedure would not be complete within the 30-minute period and that the FHR tracing had not improved with initial interventions, she called the team back together sooner, and the

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obstetric provider made the decision to perform an urgent cesarean birth. The newborn was born with stable Apgar scores and was transferred to the NICU for prematurity without distress, requiring no resuscitation. In discussion of CODE EFM use, team leaders believe that consistent application of the algorithm for regular ongoing assessments has diminished the need to call CODE EFM with any frequency.

The clinical manager and shift specialty coordinators plan to regularly inform L&D RNs, CNMs, physicians, residents, and ancillary staff with updates of FHR tracing huddle and CODE EFM outcomes for their information and as learning opportunities, as they do from debriefs of all serious and near-serious events. Safety updates include a celebration of accomplishments, improvements made based on lessons learned, and “what could have gone better” opportunities from debriefs of FHR tracing issues. L&D leaders intend to maintain a high level of enthusiasm for the fundamental objective of fetal safety by encouraging all team members to identify factors that might be detracting from fetal safety and to actively participate in solutions.

Implications for Nursing Practice

The initiative described here could enhance fetal safety on any L&D unit. Systematic interdisciplinary team huddles for FHR

tracing review at regular intervals encouraged proactive, interdependent responsibility for EFM surveillance and FHR management. Scheduled interactive FHR assessment by the entire team using an evidence-based Category II FHR algorithm as a management guideline further enhanced fetal safety. In addition, a CODE EFM alert

provided another layer of safety by bringing the team together to emergently review an FHR tracing trend, provide input, and assist with care decisions. Initiation of these best practices creates a culture of quality excellence and results in a willingness by nurses and other clinicians to depend on each other to achieve optimum care.

Conclusion

The NICHD introduction of electronic FHM nomenclature, quantitative definitions, and a standardized three-tier system for interpreting and communicating FHR tracings has allowed for quality improvements that foster fetal safety through multidisciplinary communication and cohesion. Implementation of regularly scheduled team huddles to review FHR tracing, application of a Category II FHR algorithm, and introduction of an emergency code to address the need for an immediate FHR tracing review has improved the process of health care for laboring women and has decreased occurrences of unexpected poor outcomes in term neonates at a busy, urban Colorado

hospital. Use of common language and an emphasis on structure has decreased variations in FHR strip analysis. Use of the Category II FHR algorithm has provided evidence-based management guidance. On the basis of their education and EFM competency, perinatal RNs, CNMs, residents, physicians, and anesthesiologists have been empowered to convene, assess FHR strips, discuss management alternatives, and arrive at group consensus regarding interpretation and preferred plans of care, with a positive impact on term neonatal outcomes. **NWH**



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