Interdisciplinary Team Huddles for Fetal Heart Rate Tracing Review

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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.

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
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> ■ 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.
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> *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.