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Nursing Peer Review of Late Deceleration Recognition and Intervention to Improve Patient Safety

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ABSTRACT

We describe a nurse peer-review process to improve late deceleration recognition and intervention on one labor and delivery unit. Monthly chart audits ($n = 721$) met the goal of 75% reviewer agreement after the 4th month of implementation and have been maintained to date. Nurses recognized for excellence were more likely to be certified, work day shift, or be a member of the Perinatal Safety Team. Institutional support, a dedicated review team, and education contributed to success.

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Although electronic fetal heart monitoring (FHM) is used for most women who give birth in the United States today (American College of Obstetricians and Gynecologists [ACOG], 2010), failure to identify FHM tracings of concern and provide appropriate interventions play a role in poor neonatal outcomes (Association of Women's Health, Obstetric and Neonatal Nurses [AWHONN], 2009). Standardized nomenclature, the practice of evidence-based interventions, and validation of competence are widely accepted to reduce risk (ACOG, 2012; AWHONN, 2008; Kirkpatrick & Burkman, 2010; Simpson, 2009). Although ACOG and AWHONN promulgate a standard of competence in FHM for obstetric care providers, the responsibility falls upon each individual institution to provide education, validate competency, and monitor practice (Murphy, Halamek, Lyell, & Druzin, 2003).

Peer review is advocated as a method to improve nursing quality and safety, role actualization, and practice advancement by the American Nurses Association (ANA), American Nurses Credentialing Center's (ANCC) Magnet program, and The Joint Commission (TJC). Nursing peer review is the process by which practicing nurses systematically assess, monitor, and make judgments about the quality of care their peers provide as measured against professional standards of practice (ANA, 1988). For obstetric nurses, the standard of FHM practice comes from the AWHONN's (2008) position statement for FHM and includes the ongoing monitoring, interpretation, clinical interventions, and evaluations of the woman and fetus.

Key to nursing peer review is measurable criteria against which to evaluate practice (Haig-Heitman & George, 2011). Our hospital was engaged in a perinatal safety initiative wherein FHM tracings were reviewed routinely (Kenny, Nicodemo, Fenton, & von Gruenigen, 2013). During the spring of 2008, initial reviews identified safety issues regarding nurse recognition and treatment of concerning fetal heart rate (FHR) patterns, particularly with late decelerations. A quality improvement project followed with the goal to assess and monitor our nurses' FHM practice against specific criteria, to identify educational opportunities, to improve practice performance, and to

Competence in fetal heart monitoring assessment, interpretation, intervention, and evaluation is central to safe obstetric care.

improve our patient outcomes based on lessons learned.

Nursing leaders decided to use the peer-review process to improve safety associated with FHM. We hypothesized implementation of nurse peer review would improve the recognition and treatment of late decelerations, and that maximizing fetal oxygenation status would result in improved clinical outcomes. The secondary objective was to identify clinical and nurse factors surrounding late deceleration recognition and intervention to refine education and follow-up efforts. The purpose of this article was to describe a quality improvement project that increased perinatal safety using the nurse peer-review process.

Methods

Virginia Henderson's need theory (1966) was the theoretical framework for this quality improvement project. According to Henderson, the first fundamental human need is to breathe normally. Henderson also described the nursing role as a "scientific problem solver" where the nurse understands the influences on "breathing." In pregnancy, these exchange mechanisms include maternal circulation and cardiac output, maternal oxygenation, placental function, and fetal homeostatic mechanisms. When alterations occur, the nurse intervenes appropriately to assist the patient to meet this fundamental need. This peer-review project examined the human need for respiration reflected in the patterns observed on FHM strips and the nurses' identification, interpretation, and intervention to maximize fetal oxygenation. Essentially, we viewed the labor nurses in our project as "scientific problem solvers" caring for the maternal/infant dyad's first fundamental need of "breathing normally/adequate oxygenation" as measured by our marker of fetal late deceleration recognition and management. Improvement of nursing practice was accomplished by feedback, education, and support of the nursing staff.

Quality Improvement Method

The Plan-Do-Study-Act cycle (PDSA) is the quality improvement method adopted by our hospital system and guided this project since its implementation in July 2008 (Deming, 1986). The PDSA method targets standardization of care, multidisciplinary safety issues, and evaluation of progress to sustain improvement. The PDSA cycle is the most frequently used method for rapid change in health care (Varkey, Reller, & Resar, 2007). According to Deming (1986) in the Plan step, objectives are stated and plans and predictions are made. In the Do step, a test of change is carried out and problems, observations, and data analysis is started. During the Study phase, lessons learned are outlined and the final step, Act occurs when "next step" changes are determined. The cycle then begins all over again with iteration as the fundamental principle for continuing improvement.

The PDSA cycles are effective at highlighting and rapidly addressing system failures that account for the majority of health care errors (Institute of Medicine, 1999). In the literature, application of the PDSA cycle to FHM peer review has not been cited. However, departmentally we have used the PDSA cycle to improve the use of standardized communication, antenatal steroid administration, oxytocin administration (Doyle, Kenny, Burkett, & von Gruenigen, 2011), and elective induction quality (Doyle, Kenny, von Gruenigen, Butz, & Burkett, 2012). The method of this project will be described as one PDSA cycle, although in practice it involved a number of rapid cycles.

Setting

We conducted this quality improvement project in a Midwest Level III perinatal center with an annual delivery volume averaging 3,000. The project targeted FHM interpretation of women whose labor was induced or augmented with oxytocin. At baseline and throughout the project, approximately 50% of annual deliveries were the result of labor induction or augmentation.

The labor and delivery unit employed 63 RNs and six LPNs at midpoint of the project. The average length of practice for a nurse in Labor and Delivery is 20 years. Formal FHM education includes a basic FHM course during orientation and the 2-day AWHONN Intermediate FHM program after one year of practice. Thereafter, nurses maintain FHM competency with an annual exam or formal FHM education.

A team of FHM reviewers was already in place reviewing 40 FHM strips per month for a normal fetal status at the start of oxytocin administration, and the avoidance or proper management of

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