



International Journal of Nursing and Health Care Science

Review Article

Wooten R. J Int J Nurs & Healt Car Scie 03: 2023-265

“CODE LABOR”: An Evidence-Based and Interdisciplinary Approach to Caring for Women Experiencing a Birth Outside of the Intended Birth Site

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Submission Date: 29 July, 2023

Accepted Date: 15 August, 2023

Published Online: 21 August, 2023

How to cite this article: Wooten R (2023) “CODE LABOR”: An Evidence-Based and Interdisciplinary Approach to Caring for Women Experiencing a Birth Outside of the Intended Birth Site. *Int J Nurs & Healt Car Scie* 03(11): 2023-265.

Abstract

Local Problem: Deliveries outside intended birth sites often occur without the benefit of asepsis and can lead to poor maternal/fetal outcomes. In one rural northern Alabama hospital, 75-100 babies are birthed monthly with an average of two births occurring outside of the intended birth site monthly.

Objective: The intent of the work was to address 75 obstetrical (OB) and emergency department (ED) nurses’ knowledge gaps regarding the care of women experiencing a birth outside of the intended birth site by introducing an evidence-based process change for quality improvement.

Design: A quasi-experimental design using a non-probability, quota sampling method was used to gather data. The sampling of ED and OB registered nurse (RN) participants was similar in respect to number and experience as within three other rural, northern Alabama hospitals within a 40-mile driving distance.

Participants: Fifty-seven ED and OB RNs

Intervention/Measurements: Education specific to the care of women experiencing rapid labor and birth outside of the intended birth site while including concepts of interdisciplinary communication and teamwork was conducted. Pre- and post-educational surveys, retrospective chart reviews of births outside of the intended birth sites, and evaluations of maternal satisfaction and maternal/fetal outcomes were completed.

Results: Pre-educational data revealed moderate-well communication was felt to occur between the OB and ED nurses and 50.8% of participating nurses felt comfortable or neutral when caring for a woman experiencing a birth occurring outside of the intended birth site. Post-educational data revealed improved interdisciplinary communication and RN comfort level. Nine out of 343 births occurred during the project’s time frame. Seven births occurred within 7 to 40 minutes after arriving to the intended birth site and two births occurred outside of the intended birth site. Hospital Consumer Assessments of Healthcare Providers and Systems (HCHAPS) data were evaluated for process improvement related to the women’s experiences at the birthing site. Data in the last quarter 2018 disclosed an 84.3% satisfaction rate of OB nurse/maternal person communication and a 70.6% recommendation of the hospital to friends and family. First quarter data 2019 revealed an 80.2% satisfaction rate of OB nurse/maternal person communication and 71.7% that would recommend the L&D unit to friends and family. Post-educational surveys revealed positive use of the CODE LABOR policy.

Conclusion: Instituting organizational process change, CODE LABOR, helped ED and OB nurses improve critical decision-making skills, collaborative communication, and teamwork along with improved maternal/fetal outcomes.

Keywords: Education; Evidence-based practice; Interdisciplinary/Collaborative teamwork; Rapid birth; Rapid labor

Precis Statement

This doctoral project paper suggests that interdisciplinary teamwork and communication will improve the care of pregnant women experiencing birth outside of the intended birth site. The author supports this statement by using data collected after educational sessions and new organizational policy and procedure were presented to emergency department (ED) and obstetrical (OB) nurses in a rural hospital in northern Alabama. The project’s purpose was to address ED and OB nurses’ knowledge gaps and confidence levels regarding the care of women experiencing birth outside of intended birth sites.

Implications for Nursing Practice

The report offers a detailed approach, CODE LABOR, to change and improve care provided to women experiencing birth outside of the intended birth site.

The report provides evidence-based information supporting interdisciplinary education to promote effective communication and teamwork to improve the care for women experiencing birth outside of the intended birth site.

The report suggests the CODE LABOR policy will aid in improving maternal satisfaction and maternal/fetal outcomes.

The report suggests the CODE LABOR approach will reduce variations in maternal/fetal care and standardize practice guidelines within an organization.

Problem Description

In 2016, the Centers for Disease Control (CDC) [1] reports that 3.95 million births occurred in the United States (2018). Rapid births can occur in less than 3 hours of the onset of regular contractions and often occur without the benefit of asepsis. Suzuki [2] states that 2% of all yearly births in the United States occur rapidly and some of those births occur outside of the intended birth site. More than 70% of adverse obstetrical events, such as hemorrhage, perineal tears, and infection have been reported to be linked with errors in communication and improper teamwork within hospitals, limited knowledge and confidence from emergency department (ED) nurses regarding care of women experiencing rapid birth outside of intended birth sites, and lack of organizational policy and procedure directing the care of women experiencing a birth outside of the intended birth site [3].

Available Knowledge

In the labor and delivery (L&D) unit at rural hospital in northern Alabama, 75 to 100 babies are currently birthed monthly with a reported average of two births occurring outside of the intended birth site monthly [8]. Because this hospital lacks an organizational policy that specifically directs the care of women experiencing a birth outside of the intended birth site and the limited knowledge ED nurses have about labor and delivery, it is important that policies and procedures are in place to appropriately care for women experiencing births outside of intended birth sites. In an Emergency Nurses Association (ENA) [4] Position Statement, it is noted that more than 750,000 women are treated in the ED for obstetrical and gynecological conditions each year [5]. It is expected that licensed healthcare providers are to administer competent care and manage emergent obstetrical situations in any environment.

At the rural hospital in northern Alabama, the author and the Director of Women's and Children's reviewed records of two births which occurred outside of the intended birth site and completed a root-cause analysis. In both instances, it was noted that miscommunication between the ED and obstetrical (OB) nurses occurred. Also, while completing investigative rounds at the hospital, the author noted that a rapid labor/birth kit was not easily located by the ED nurses in the ED. Additionally, the kit was not easily accessible and important items were missing from the kit. Improving interdisciplinary communication and teamwork between the ED and OB nurses with an aim of quality improvement can impact maternal-fetal care. Improving accessibility of the kit and adding the missing items such as sterile blankets, bulb suction, and identification (ID) bracelets to the kit could assist with preventing errors and undesirable outcomes such as misidentification, infection, perinatal injury, and death. Such interventions can also heighten the performance of evidence-based practice (EBP) and greatly improve the care of women experiencing a birth outside of the intended birth site.

Literature Review

The author performed a broad inquiry in the Cumulative Index of Nursing and Allied Health Literature (CINAHL), the Cochrane library, Medline, PubMed, and Google Scholar databases using the key words obstetrical emergencies, precipitous births, and emergency births. Three common topics emerged from the review of literature (1) how standardized processes and team training can improve knowledge, (2) how utilization of emergency response teams trained in standardized, evidence-based obstetrical triage improve maternal care, and (3) how the effectiveness of team training in the healthcare industry influences organizational and maternal/fetal outcomes. Subrahmanyam, Joseph, and Abraham [6] postulated that nurses should be acquainted with correct triaging of obstetric emergencies to safeguard the life of the pregnant woman and fetus. Ruhl, Scheich, Onokpise, and Bingham [7] support that standardization of triage improves communication among the healthcare team and if implemented appropriately, care of pregnant women is improved. Depending on organizational preference, OB triage tools can be purchased from a unified source, such as Association of Women's and Neonatal Nursing (AWOHNN) [8], or they can be developed individually by the L&D unit within a healthcare organization. Regardless of its development, a standardized OB triage tool can decrease inconsistencies in care, decrease poor maternal/fetal outcomes, and enhance EBP management of OB emergencies.

The use of emergency response teams trained in OB management are supported by the articles published by Subrahmanyam, Joseph, and Abraham in 2017 [6], the article from Ruhl, Scheich, Onokpise, and Bingham in 2015 [7], and the guidelines published by American College of Obstetricians and Gynecologists (ACOG) [9] in 2016. Additionally, the effectiveness of team training in the healthcare industry and its influences on organizational and person-centered outcomes are supported by the articles from Hughes, et al. [10,11].

Team-based training includes learning to collaborate with decisions and simultaneously improve communication and teamwork. It is believed that the safety and satisfaction of hospitalized individuals can be improved by team-based training [11] and it encourages an air of comradery between team members and imparts expectations of respect for one another’s knowledge and experience. The article by Hughes, et al. [10] provides strong evidence to support the theory that team training improves knowledge and stronger task performance when compared to individual performances.

Research indicates that there are several approaches to (1) assess nurses’ knowledge gaps regarding the care of women experiencing birth outside of the intended birth site, (2) assess the effectiveness of team training, and (3) evaluate the use of standardized OB triage methods. One study [10] conducted systematic reviews of random controlled clinical trials (RCTs), case-control, and cohort studies to demonstrate the effectiveness of team training in the healthcare industry.

A study specifically focusing on OB emergency preparedness compared variations in training and the need for standardized education regarding correct OB triage methods [6]. Another study reported the effectiveness of using a standardized tool specific to OB triage [7]. Lastly, a systemic review was conducted by evaluating team behaviors during OB emergencies [11,12]. Interventions in each study were proven to positively influence one or all of the following: teamwork, communication, and the overall care of the woman.

Team training in OB emergency care will be a promising avenue for optimizing emergency response and improving the quality of care of women experiencing rapid labor and birth outside of the intended birth site. Harmonizing existing and new efforts to integrate standardized knowledge regarding care of women experiencing rapid labor and birth outside of the intended birth site will eliminate knowledge gaps and improve maternal/fetal outcomes. Quality of team collaboration and communication between the ED and OB nurses are also expected to improve.

Rationale for Interventions

Many ED nurses may become apprehensive with the chance that a birth is imminent. If this occurs, pregnant women are best served if someone attends them who is experienced in conducting a birth. Creating and organizing a framework for the delivery of care based on EBP, collaboration, and teamwork is critical in reducing maternal and fetal complications. Educational interventions also aid in decreasing the ED nurses’ fear about how to care for women experiencing births outside of the intended birth sites and decreasing ineffective communication between nurses of different specialties.

Specific Aims

The first aim of this project was to implement a quality improvement process by encouraging a practice change. The second aim was to empower the ED and OB nurses to address their knowledge gaps regarding the care of women experiencing births outside of the intended birth sites and address communication challenges. This aim was measured by post-educational session surveys. Lastly, the “CODE LABOR” Policy was developed to decrease challenges of communication between different nursing units and improve maternal/fetal outcomes within the organization while also influencing overall maternal satisfaction of care measured by Hospital Consumer Assessments of Healthcare Providers and Systems (HCHAPS).

Methods

A non-probability, quota sampling method was used for all nurses working in the ED and OB units. A sampling of 57 Registered Nurses (RNs) working in Labor and Delivery and Emergency Department settings with average age of 31-40 years (=35.5) and an average experience of 5-10 years (=7.5) in bedside nursing participated in the study. A quasi-experimental design was used to influence quality improvement in the health-care setting and to improve overall outcomes.

Interventions

Pre- and post-educational session surveys were used to evaluate perceived limitations and improvements in interdisciplinary communication and care of women experiencing rapid labor and birth outside of the intended birth site. Secondly, educational sessions were collaboratively developed by the Director of Women’s and Children’s and Dr. X, a practicing nurse educator for 5 years who also has 16+ years bedside obstetrical nursing experience. The educational sessions were validated by the Director of Women’s and Children’s and were conducted by Dr. X with the purpose to promote organizational change. The sessions uncovered mixed existing knowledge of the ED and OB nurses and encouraged additional learning regarding care of women experiencing rapid labor and birth outside of the intended birth site. Multiple face-to-face sessions were presented using PowerPoint slides, lecture, and hands-on equipment for simulation. An additional intervention included the revision and development of an intraorganizational policy, “CODE LABOR” (Appendix A), with the concurrent use of an OB assessment algorithm called the “CODE LABOR Care Pathway” (Appendix B).

Outcomes, Measurement, Data Collection

Data collection included: (1) reviewing HCHAPS reports from the rural hospital in northern Alabama to evaluate organizational outcomes, (2) evaluating pre- and post-educational session surveys regarding the staff’s comfort level when caring for women experiencing rapid labor and birth outside of the intended birth site and the staff’s perceived level of communication with colleagues on other nursing units, and (3) the conduction of retrospective chart reviews of two women who had experienced rapid labor and birth outside of the intended birth site.

Educational sessions developed and promoted existing knowledge and encouraged additional learning regarding care of women experiencing rapid labor and birth outside of the intended birth site by the CODE LABOR Policy and the CODE LABOR Care Pathway. RNs reported a better sense of the woman’s experience, their role during a rapid labor and birth or birth occurring outside of the birth site, and different methods to engage in or activate teamwork and communication. Implementation of the project led to the development of the CODE LABOR Kit (items useful for the delivery of a fetus such as bulb suction, surgical clamps, cord clamp, sterile blankets, hat, ID bracelets) to be placed along with a rapid birthing tray (composed of sterile instruments, basin, and glass tube to collect umbilical cord blood) in an easily accessible area in the ED triage area. Instead of everyone searching for necessary items during a rapid birth outside of the intended birth site, the ED and OB RNs stated that having the CODE LABOR Kit in one place added a sense of calm during the event. Additionally, the implementation of the project also led to the development of an organizational goal to have practicing obstetricians, ED physicians, and midwives included in the education processes.

Analysis

Paired t-test analyses revealed that statistically significant learning occurred with p value < 0.5 . Post-test data revealed improved feelings of interdisciplinary communication and collaboration between the OB and ED nurses. Post-test data revealed improved comfort levels while caring for a woman experiencing rapid labor and birth outside of the intended birth site. Data specific to the OB unit were evaluated for process improvement related to maternal experience as reported by their observation. Published fourth quarter 2018 HCHAPS data disclosed an 84.3% satisfaction rate of OB nurse to maternal person communication and a 70.6% recommendation of the hospital’s L&D unit to friends and family ($n=17$). First quarter 2019 data revealed an 80.2% satisfaction rate of OB nurse-to-maternal person communication and 71.7% that would recommend the hospital’s L&D unit to friends and family ($n=10$).

Ethical Considerations

In the study, our recruited participants were employed ED and OB nurses within one rural hospital in North Alabama. Fifty-seven of 94 OB and ED nurses chose to participate. Nurses from other departments were not asked to participate in the study, which may indicate a response bias due to the scope of the study. Qualitative research of this kind is usually based on small samples, not generalized, and allows readers to make their own decisions regarding the transferability of information. Institutional Review Board (IRB) approval was received from the university’s IRB.

Evaluation Plan

Routine email reminders and scheduled visits with the ED and OB nurses were conducted by senior RNs to reinforce the use of the CODE LABOR Policy and the “CODE LABOR Care Pathway” as an evidence-based practice guideline during nursing encounters with women experiencing rapid labor and births outside of the intended birth site. Formative evaluations of project implementation include soliciting feedback from the organization’s Chief Nursing Officer (CNO), Director of Women’s and Children’s Services, and Director of Emergency Services. Other information for evaluation included outcomes gathered from various organizational reports, post-delivery data of rapid births occurring outside of the intended birth sites, newborn data, feedback from the ED RNs concerning their level of comfort, and feedback from both OB and ED RNs about any changes in communication and teamwork. Continued dissemination and sustainability of the project will be managed by the organization’s education department. Data will continue to be collected as an ongoing incentive for increased interdisciplinary collaboration and teamwork.

Conclusion

Obstetrical emergencies are challenging tasks that require specific education and maneuvers to manage safely. Clinical administrators and nurses working in the OB and ED units must fully embrace labor and birth policy guidelines to continue to decrease knowledge gaps and improve interdisciplinary communication and teamwork. The CODE LABOR Policy will improve the culture of caring for the pregnant woman in settings outside the intended birth site and CODE LABOR can easily be adapted for use in other healthcare facilities. With the collection of future data, determinants affecting deliveries outside the birthing sites can be evaluated. Little research exists regarding such determinants, especially in rural North Alabama.

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