

Abstract

Purpose: Reducing primary cesarean births is a national priority in the United States. Recommendations include delaying admission of low-risk pregnant women to the hospital until they are in active labor, considered to be 6 cm cervical dilatation. How this recommendation affects decision-making during triage requires further exploration. The purpose of this study was to explore the clinician's perspective on the triage process and deferral of hospital admission for low-risk pregnant women who were not yet in active labor.

Methods: A qualitative descriptive approach was used via semistructured interviews with physicians, midwives, and nurses. Data analysis used an inductive approach and identified codes, a theme and subthemes.

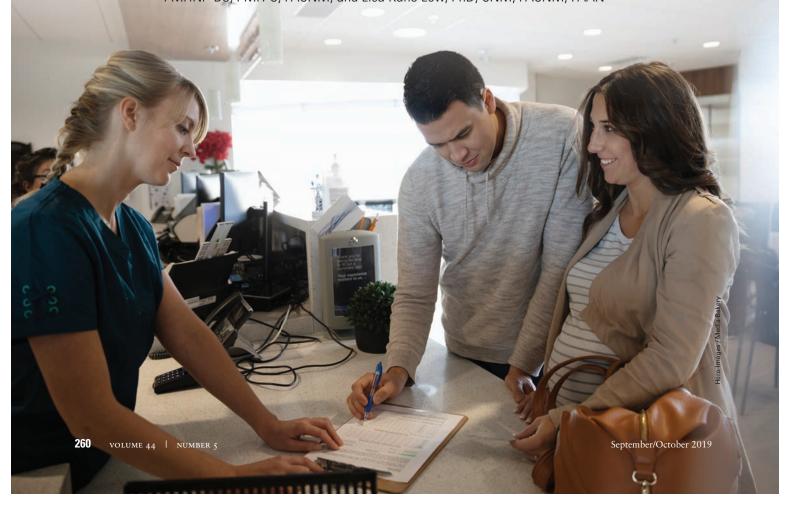
Results: Twenty-five clinicians participated. A triad of decision-making occurred between three main stakeholders: the low-risk pregnant woman, the triage nurse, and the physician or midwife. One theme and four subthemes related to this triad were identified. The theme *Admission of Low-Risk Pregnant Women Depends on Many Factors* provides context to the maternity care triage process. There are many factors clinicians consider prior to admitting women, including situational and clinical factors. Subthemes related to the woman are her expectation and knowledge about birth and her ability to cope with labor. Subthemes associated with the provider and triage nurse are care variation and concern for maternal and fetal safety.

Clinical Implications: From the clinician's perspective, triage is a complex, dynamic process, even for low-risk pregnant women. There is an interplay of different factors affecting clinical decision-making, thus the decision-making triad provides a possible framework for shared decision-making.

Key words: Birth; Maternity care; Spontaneous labor; Triage.



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he cesarean birth rate is 32% in the United States and exceeds recommended rates for optimal maternal and neonatal outcomes (Martin, Hamilton, Osterman, Driscoll, & Drake, 2018). A key strategy to reduce the primary cesarean rate is management of abnormal labor progress (American College of Obstetricians and Gynecologists [ACOG] & Society for Maternal-Fetal Medicine [SMFM], 2014; Caughey, Cahill, Guise, & Rouse, 2014). Based on research examining progression of labor (Zhang et al., 2010), ACOG recommended changing the definition of active labor from 4 cm to 6 cm cervical dilatation (ACOG, 2014). In addition to this change in definition, ACOG also

recommended delaying admission until onset of active labor (6 cm), thus requiring changes to the clinical processes involved in triage and admission to the hospital setting for women presenting with spontaneous onset of labor. The admission decision can influence subsequent clinical processes because admission in early labor compared with active labor is associated with

greater risk of medical interventions and cesarean birth (Bailit, Dierker, Blanchard, & Mercer, 2005; Iobst et al., 2019; Kauffman, Souter, Katon, & Sitcov, 2016; Neal et al., 2014; Rahnama, Ziaei, & Faghihzadeh, 2006).

Two types of admission generally occur in maternity care for women experiencing low-risk pregnancies at term gestation: scheduled admission for induction of labor or cesarean birth, and unscheduled admission when a woman presents following spontaneous onset of labor. We defined a low-risk pregnancy as one where the woman was at low risk for complications, including those with a term, singleton vertex fetus and category I fetal heart tracing (Macones et al., 2008). Women with conditions requiring continuous fetal heart monitoring, such as hypertension, were not considered low-risk. The process of decisionmaking for admission of low-risk women with spontaneous onset of labor has received limited research attention and there are few policies in place to support decisionmaking. However, timing of admission is a key factor in determining the use of interventions, hospital costs, and health outcomes (King, 2012; Marowitz, 2014; Tilden, Lee, Allen, Griffin, & Caughey, 2015).

To better support the triage process for women presenting in labor, the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) launched the Maternal-Fetal Triage Index (MFTI) in 2015 (Ruhl, Scheich, Onokpise, & Bingham, 2015). During development of the tool, AWHONN investigators found that only two hospitals in the United States had triage-specific protocols for maternity patients. The MFTI was developed for recognizing primarily high-risk pregnancies and emergency situations (Ruhl et al.). However, efforts to reduce cesarean birth rates in the United States are focused on prevention of cesarean in low-risk women. The purpose of this investigation is to gain a deeper understanding of the dynamics and decision-

making processes during triage for unscheduled admissions of low-risk women presenting in spontaneous labor.

Methods

Setting

The decision to admit a woman in active

labor is not as simple as cervical dilatation.

The woman's coping ability and level

of anxiety must also be considered.

The study site is a community hospital in the northeastern United States with 3,500 annual births. Several private physicians organized in group practices attend births at the hospital. Certified nurse-midwives are hospital employees who are contracted to the attending physician private practices. The midwives attend births at the hospital. The hospital has an early labor lounge, where women are

considered on observation status and can ambulate with their partner to different areas where there are activities such as yoga, meditation, and a shower (Paul et al., 2017). The criteria for use are the same as the definition of low-risk in this study. The hospital has a level III neonatal intensive care unit and a maternal-fetal medicine practice. Because this study was explor-

atory in nature, a qualitative descriptive approach was used (Colorafi & Evans, 2016). The hospital's institutional review board approved this study and interinstitutional agreement was signed with the university.

Sampling and Recruitment Strategy

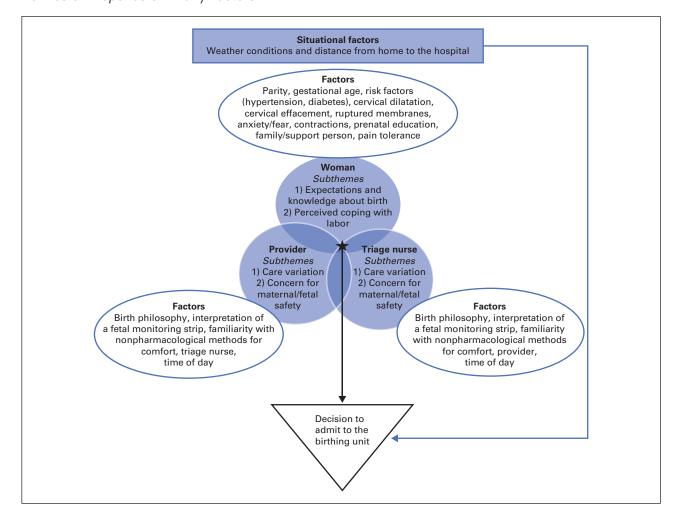
A purposive sample representative of the interdisciplinary team of nurses, midwives, and physicians responsible for admission decision-making in triage was sought. The target sample population was clinicians with at least 1 year of work experience on the study site's birthing unit with experience conducting the triage process with low-risk pregnant women. Participants were recruited in-person during their regular clinical work hours on both day and night shift.

Semistructured interviews were conducted between February 2017 and May 2017. The interview guide included the following questions: 1) How do you decide when to admit a low-risk woman to the birthing unit? and 2) What factors do you consider when admitting a low-risk woman to the birthing unit? Participants were asked to provide examples of the care they provided during triage. They were asked if they had anything further to add before the interview ended. Each audio-recorded interview was conducted privately and lasted between 15 and 30 minutes.

Data Analysis

Data analysis used an inductive approach (Miles, Huberman, & Saldana, 2014). For the first level of analysis, deidentified transcripts were open coded independently by members of the research team. The codes were reviewed by the research team and jointly determined to be the first-level codes. Atlas.ti 8 (http://atlasti.com/) was used to assist with organizing and managing the data analysis. For the second level of analysis, common codes were merged. Codes with corresponding quotes were downloaded from

FIGURE 1. Clinicians' Perspective on Admission of Low-Risk Pregnant Women Overall Theme *Admission Depends on Many Factors*



Atlas.ti and quotes specifically related to admission and the triage process were examined. A matrix was created to display the codes and quotes (Miles et al.). Themes were identified and then added to the matrix (Miles et al.). After 22 interviews, data saturation had occurred (Miles et al.; Saunders et al., 2018), but 3 additional interviews were conducted to confirm saturation.

Trustworthiness

To ensure the rigor of this qualitative study, Guba and Lincoln's criteria were used to address the truth-value, applicability, consistency, and neutrality of the data and analysis (Lincoln & Guba, 1985). To address truth-value, member checks with three participants occurred to ensure the dynamics of triage were accurately reflected in the analysis (Miles et al., 2014).

Results

Sample Characteristics

The interview sample included 13 nurses, 7 physicians, and 5 midwives. Twenty-eight clinicians were approached

for an interview, and three declined participation. The sample was predominately Caucasian. The nurses and midwives were 100% female and the physicians were 57% female. One overall theme and four subthemes were identified during data analysis.

Overall Theme: Admission of Low-Risk Pregnant Women Depends on Many Factors

This theme describes the complexity of the triage process. Part of this complexity is due to the presence of two patients, the mother and the unborn fetus. When describing considerations for admitting a low-risk pregnant woman, 70% of the clinicians stated *it depends* and all clinicians described *many factors*. A decision-making process was identified that occurs between the pregnant woman, the triage nurse, and the provider. This triad is dynamic and depends on the three key stakeholders and the factors present in that moment (Figure 1). Situational factors affecting the decision include a pregnant woman's family support system, how far away from the hospital the woman lives, and weather conditions (e.g., concern for safety

due to inclement weather could factor into a decision to admit). Some situational factors could cause a woman to be admitted even without a clear clinical indication for admission. This is depicted in Figure 1 where the arrow bypasses the triad.

Factors related to the individual provider or nurse include their philosophy on birth, their interpretation of a fetal monitoring strip, their familiarity with nonpharmacological methods for pain relief, time of day, and the relationship they have with their respective colleague in triage at the time of admission. Although these factors relate to both the provider and the triage nurse, their interaction in the triad is specific to the individual person. For example, the provider may interpret the fetal monitoring strip in a way that differs from the triage nurse, and either interpretation may sway that person to admit the woman or send her home.

Factors specific to the pregnant woman include the woman's parity, gestational age, cervical dilatation and effacement, contractions, pain tolerance, whether membranes have ruptured, and level of prenatal education. Many factors influence admission decisions (Table 1). One physician summarized the interplay of various factors, stating *The decision to admit a patient or send her home, it's not something as simple as, one plus one is two, and that leads to admission. It's really a multifactorial decision, and you try to do what you think clinically is supported by the evidence of what that patient needs,*

her individual situation. I mean I would love all low-risk women to be six centimeters dilated at admission. I mean that would be golden. It's just not that simple.

The theme connects the four subthemes that were identified in the data analysis. See Table 2, with the theme, subthemes, definitions, and examples of supporting quotes for each. Subthemes related exclusively to the woman are her expectations about the birth process and her ability to cope with labor. Subthemes related to the provider and nurse include care variation and concern for maternal/fetal safety.

Subtheme 1: Expectations and Knowledge about Birth

Clinicians referenced the importance of a woman's personal expectations and her knowledge about birth as affecting decisions in triage. The majority of the women discussed by clinicians received prenatal care and a physician or midwife provided education during prenatal visits. Overall, 20% to 30% of women at this hospital attend childbirth classes. Lack of childbirth education was perceived as concerning because according to the clinicians, women were not as prepared or educated about the labor and birth process as they deemed necessary. Prenatal preparation and education about childbirth were viewed as major contributors to admission decisions. The low-risk pregnant woman's expectations and knowledge of the labor process for childbirth were discussed in almost every interview. Specifically, clinicians

TABLE 1. Factors Affecting the Decision to Admit by Each Member of the Triad

| Role | Relationship | Factors Influencing the Decision to Admit | Subtheme | Overall Theme |
|---------------------------------------|--|---|---|--------------------------------------|
| Provider (physician or midwife) | Relationship with the pregnant woman Relationship with the triage nurse | Birth philosophy Interpretation of a fetal monitoring strip Familiarity with nonpharmacological methods for comfort Triage nurse Time of day | Care variation Concern for maternal/ fetal safety | Admission of Low-Risk Pregnant |
| Triage nurse | Relationship with the pregnant woman Relationship with the provider | Birth philosophy Interpretation of a fetal monitoring strip Familiarity with nonpharmacological methods for comfort Provider Time of day | | |
| Pregnant woman | Relationship with the provider Relationship with the triage nurse | Parity Gestational age Risk factors (hypertension, diabetes) Cervical dilatation Cervical effacement Ruptured membranes Anxiety/fear Uterine contractions Prenatal education Family/support person Pain tolerance | Expectations and knowledge about birth Perceived cop- ing with labor | Women Depends on Many Factors |

 TABLE 2. Definition of Subthemes by Role with Supporting Quotes

| Role | Subtheme and Definition | Supporting Quotes from the Clinicians |
|--|--|---|
| Pregnant woman | The woman's expectations and knowledge about birth: The woman's personal knowledge, beliefs, and expectations about labor and the birth processes. | Most women don't understand we don't care as much about the dilation, but (we care more about) the thinning out of the cervix. People have no idea about that part of the exam. It's things that people just don't know about, especially with their first baby. (With their) second baby they usually know, but with their first baby they just have no clue, they are upset when they're getting discharged or there's talk of them going home if they make no (cervical) change. Triage nurse. It's the women who come in early labor who have never really heard about the pain and that contractions should be lasting a minute, 3 minutes apart. The 3-1-1 rule, I have to tell them at that point, when they are in triage (that they are not in labor) these women have more of a problem and think they should be admitted when they shouldn't be. Midwife. I think the challenge is when it's their first pregnancy, so they don't really know what to expect because they don't really know where the train is heading and how intense (labor) really gets. It's a lot of education of kind of active labor versus early labor, how long early labor can take and, what strategies |
| Pregnant woman | Perceived coping with labor. The pregnant women's ability to cope with her pain, fear, and anxiety during her labor | you can do at home. So, I think a lot of times, that's a challenge. Triage nurse . It depends on how many times they've been in triage, their pain level. But who I think needs to stay, who could go; we always try to encourage them to go, if possible, especially if they live close by or they're able to manage it, but some patients aren't. Triage nurse . |
| | and the labor process. | You know, I think too it depends if people have gone to prenatal classes, depends on their support people. And then, you know, it just depends on just them. You know, some people have anxiety, so that plays into it in whether they can kind of accept and try to cope. You know, it comes down to just coping skills and what people can manage and whether they feel if they can manage (latent) labor on their own. So, I think, you know, as far as us in triage, whether it's the nurse or the provider, education is important to kind of empower them to make them realize that you know what, you can manage this. This is normal, it's just a process, and just giving them some tools to help them along. Triage nurse. |
| Clinicians (The triage nurse or provider) | Care variation: The variation in care that is provided from clinician to clinician based on their interpretation of the clinical and contextual factors and how they think care should be managed for the pregnant woman and the fetus. | You know, there's some people you're more likely, even if they're in early labor, to want to encourage, the provider to keep them because they might have a history, maybe even their anxiety. You hate to just send them home just because you want them to feel like you care about them and not that you're just trying to kick them to the curb. Like, you understand their pain and what they're going through. So, I kind of try to take all those factors, particularly a patient's feeling, and then decide what to do with them. I know sometimes people, you know, they get really strict. Until you are 4 or 5 centimeters, you go home. I've never been one to believe that ever, because there's just too many other things that are involved in that, particularly with people who are anxious or people who want medication, even if they're 1 centimeter. Triage nurse. |
| Clinicians (The triage nurse or provider) | Concern for maternal/fetal safety: The concern for the safety of both the pregnant woman and/or the fetus. It includes any factors that require immediate medical attention or the concern that these factors may happen further into the labor process. | Well, how often they're contracting, what the baby looks like (on the fetal monitor), whether or not their water is broken. If they have, you know, any risk factors. Triage nurse. Obviously, any safety concerns, if the baby had any questionable things on the (fetal) monitor; if mom's blood pressure was up or she had any questionable things for her. Physician. Are they in labor or are they not in labor? Is the patient safe? Is the baby safe? You have a good tracing. There's no issues with fluid. Midwife. |



From the clinicians' perspective there is a triad of decision-making that occurs in triage between the pregnant woman, the provider and the triage nurse.

mentioned that women are uncertain about when to come to the hospital and have difficulty distinguishing between active and latent labor, resulting in many women arriving to the hospital when they are in latent labor. From the perspective of the clinicians, if women better understood the labor process they would not come to triage during latent labor. One nurse stated; The general perception (by women) of what labor is supposed to be and not really understanding it. Women think once there's a contraction, it's the real deal, real labor and it's not. Especially women when they go for a prenatal visit, and somebody strips their membranes, and they think they are in active labor. Of course, you know they're going to go home (from hospital triage). You tell the woman, 'you aren't in labor and that doctor who stripped your membranes isn't even on tonight.'

Knowledge of the labor process was described as especially difficult for nulliparous women and those who had received little or no prenatal education. Several clinicians mentioned the difference in expectations and knowledge between nulliparous and multiparous women. Level of preparation, education, and understanding of the labor process was linked with the subtheme, perceived coping. The general perception of the clinicians was that more preparation and education before birth resulted in better coping ability during labor.

Subtheme 2: Perceived Coping with Labor

A woman's ability to cope with labor, personal anxiety, and pain tolerance influences admission decisions. A woman's coping ability affects how the clinician responds to her needs. The variability in coping with labor and the associated pain are factors that influence the decision-making triad. If a woman is perceived as coping well, she is more likely to be discharged home even if she has a greater cervical dilatation during latent labor. Alternatively, a high level of reported pain paired with a lower cervical dilatation is likely to result in admission to the birthing unit. One midwife described this phenomenon as follows; *The emotional and physical state of the wom-*

an and how she's coping with pain may cause me to admit her. I remember a first-time mom I admitted who was one centimeter dilated. She was 100 percent effaced, plus one station, and she was screaming like someone was stabbing her to death, and I admitted her.

Clinicians frequently mentioned the woman's anxiety as a factor that reduces coping with labor. The higher the level of her perceived anxiety by the clinician, the more difficulty clinicians had in helping the woman manage her latent labor experience using nonpharmacological approaches. Perception of anxiety influences if a woman is admitted because it is perceived as more caring to admit her than to send her home. This subtheme provides context for the theme on care variation.

Subtheme 3: Care Variation

Care variation refers to the differences in care provided across clinicians based on their interpretation of the clinical and contextual factors, and how they think care should be managed for the pregnant woman and the fetus. The individual clinician's critical analysis of factors leads to their decision on care management for the pregnant woman and fetus. Every factor in Table 1 could lead to variation in triage management and affects the decision to admit. These factors influence care even if they are not grounded in evidence to support the decision to admit a low-risk woman. Birth philosophy and the interpretation of the fetal monitoring strip are examples of two such factors. Clinicians stated that individual members of the healthcare team influenced whether a woman will be admitted and that these team members may not have shared the same opinion on what the plan of care should be. Although providers make the final decision regarding admission, triage nurses may advocate one way or another. This situation is described by one of the physicians; *It depends* on the nurse you're working with. Because sometimes the nurse sets it up perfectly for you, where you come in and the woman says the nurse told me that you probably were going to send me home. Whereas other nurses will be concerned because a woman's uncomfortable. But, I will be

thinking: Yeah, but, she's not in labor. You know? So, it's a team approach, but, sometimes the person's wearing your color shirt and sometimes they are not.

The woman's parity was an important factor frequently mentioned by the clinicians. Some clinicians referred to a first pregnancy as an influencing factor, whereas other participants focused on multiparous women. This is due to the labor process for a nulliparous woman usually being slower, whereas multiparous women tend to have shorter labors.

Subtheme 4: Concern for Maternal/Fetal Safety

All clinicians mentioned concern for maternal-fetal safety. This concern was either the clinician's own personal concern, or the concern of another team member. These two subthemes, variation in care and concern for maternal fetal safety, are interrelated because the variation in management is primarily due to concern for maternalfetal safety. Fetal monitoring was referenced frequently in relation to safety. Some clinicians felt reassured by fetal monitoring, whereas others viewed it as unreliable in identifying fetal compromise. As one midwife stated, "My fetal surveillance, so if there's any concern for me, she's two centimeters, but she's having decels (deceleration of the fetal heart) obviously, she'll be admitted, even though she's not in active labor. Gestational age, I'm probably more apt, to admit the 41-1/2 week person who's three centimeters versus the woman who's 39 weeks. But, again, I do send those later term (greater than 40 weeks' gestation) patients' home, it depends upon the baby. The baby has to look just really perfect (on the fetal monitor)."

Clinicians recognized that delaying admission is safe; and for low-risk women, safer than admitting too early. Several clinicians mentioned the cascade of interventions specifically. Others recognized that once a woman is admitted, we feel like we need to do stuff to keep labor going even if she [isn't] in active labor. However, clinicians stated that if the woman has no risk factors and she is in latent labor, she should go home and wait for active labor. One midwife stated, But as long as they're a low-risk, healthy woman with a reactive non-stress test, then I want to know if this is her first baby or not. If it's not her first, what were her previous labors like? Definitely how she appears. You know, if she appears to be in more of an active labor, how she's coping, whether her water's broken or not, and what her goals are for labor. If she is in latent labor, then best place for her is home. Because I think for one, studies have shown that, delaying admission till true active labor will decrease your risk of a C-section, but also, I just think... I mean my personal philosophy, in general, I think birth is usually a normal, natural process.

Discussion

Our study identifies a triad in decision-making that occurs during the triage process as the decision is made whether to admit a low-risk woman to the birthing unit or not. This triad has been described in other areas of healthcare, but not explicitly for maternity care (Ledlow, O'Hair, & Moore, 2003). Kennedy et al. (2016) studied providers, women, and nurses to explore factors promoting vaginal birth and found that providers and women viewed childbirth preparation as an important factor in achieving first-time vaginal birth. Edmonds, Miley, Angelini, and Shah (2018) focused on low-risk, first-time pregnant women and noted there was uncertainty among women as to when they should come to the hospital (Edmonds et al.). Our results support these findings with a more critical focus on the decision-making process in triage from the clinician's perspective.

Fetal monitoring was frequently discussed in the interviews. Despite national efforts to standardize the interpretation of electronic fetal monitoring, variation persists (Alfirevic, Devane, Gyte, & Cuthbert, 2017; Ananth, Chauhan, Chen, D'Alton, & Vintzileos, 2013). Concern about the fetal monitoring strip can lead to admission, resulting in prolonged and continuous monitoring, reduced maternal mobility, and increased discomfort (Lothian, 2014). This cascade of events demonstrates the role of electronic fetal monitoring in raising cesarean birth rates in low-risk healthy women (Alfirevic et al.; American College of Nurse Midwives, 2018; Caughey et al., 2014).

There is a growing body of literature on maternal anxiety and coping demonstrating that continuous support of women during labor decreases fear and improves birth outcomes (AWHONN, 2018; Bohren, Hofmeyr, Sakala, Fukuzawa, & Cuthbert, 2017; King, 2012); however, there is a gap in evidence on when this support should start. Previous research by Roberts, Gulliver, Fisher, and Cloyes (2010) suggests that clinicians should assess women's ability to cope with labor rather than focus on rating of pain (Roberts et al.). This study supports that a woman's ability to cope with early labor is an influencing factor for admission. There is a clear role for nurses to provide education to women and their partners to support shared decision-making during the triage process.

Standardized protocols or policies are recommended to improve care during the triage admission process. Although the hospital where the study was conducted has a triage protocol, it was only discussed when the interviewer specifically inquired about it. This hospital's triage protocol specifically addresses management of latent labor, yet none of the clinicians describe using the triage protocol as part of the decision-making process when admitting low-risk women.

Only one clinician mentioned shared decision-making as a component of the triage admission process. Shared decision-making, defined as the "process of communication in which clinicians and patients work together to make optimal healthcare decisions that align with what matters most to patients (National Quality Forum [NQF] p. 3, 2018)" is a critical element within the triad. This is an important area for future research because there is no universally available tool to promote communication between women and clinicians during labor and birth.

Clinical Implications

- Decision-making during triage of low-risk women is complex because of many factors that can influence care including those that are nonclinical such as weather conditions and distance to the hospital.
- The three key stakeholders and their perspectives on childbirth should be considered when examining variation of care in triage and during the admission process: these stakeholders are the woman, the triage nurse, and the provider.
- The perspectives of all members of the triad should be acknowledged, considered and understood to promote shared decision-making and woman-centered care.
- By educating women, nurses can provide women with the knowledge to make an informed decision about whether to be admitted to the hospital.
- Nurses can provide continuous labor support to women to decrease maternal anxiety and foster a woman's ability to cope with labor. This type of support promotes a woman's confidence in her ability to progress smoothly through the first stage of labor.

Limitations

This study is limited as it was conducted in one hospital with a homogenous population of clinicians and women. Future research should include multiple sites and settings with diverse populations to further the decision-making triad. We focused on clinician's perspectives because previous research has captured the pregnant woman's perspective. Because interviews were not conducted with women who had experienced the triage process, their role in the triad can only be represented based on the perspective of the clinicians.

Clinical Implications

Multiple factors influence the decision-making for admission that occurs after a low-risk pregnant woman presents to triage for assessment of labor. This study describes the complexities of decision-making regarding admission for childbirth as a triad between the provider, nurse, and woman. The role of the nurse in this triad should not be underestimated because nurses communicate with the woman and provider continuously during the triage and admission decision-making process. A noteworthy finding of this study is that all of the nurses acknowledged that although they did not make the final decision to admit a woman, they could influence either the woman or provider during the decision-making process.

The triad model can inform clinical practice and guide nurses to promote shared decision-making regarding the admission of low-risk women following spontaneous onset of labor. Nurses who work in prenatal clinics provide education to women and can support and guide women to think about how they will cope during labor and what their options may be in the early labor lounge. This knowledge could empower women to request to use the early labor lounge. Most importantly, triage nurses are the first healthcare provider women encounter in triage.

Their influence on whether to admit or not admit should not be underestimated. Triage nurses provide the initial assessment and have the opportunity to support women, and discuss coping mechanisms and comfort measures.

Acknowledgment

This work is lovingly dedicated to Debra L. Wiegand, PhD, RN. Dr. Wiegand participated in all aspects of the study design and data analysis as our qualitative expert and Rachel Breman's mentor. She sadly passed away during the final revision stages of this manuscript. The authors also thank Dr. Kimberly Dever for her support. •

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The authors declare no conflicts of interest.

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DOI:10.1097/NMC.0000000000000550

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