JOGNN

Social and Environmental Conditions Creating Fluctuating Agency for Safety in Two Urban Academic Birth Centers

Audrey Lyndon[1]

Correspondence
Audrey Lyndon, RNC, PhD, CNS, Department of Family Health Care Nursing, University of California, San Francisco, 2 Koret Way Box 0606, San Francisco, CA 94131-0606.
audrey.lyndon@nursing.ucsf.edu

Keywords
Assertiveness
Communication
Interprofessional relationships
Patient safety
Perinatal safety
Teamwork

ABSTRACT

Objective: To identify processes affecting agency for safety among perinatal nurses, physicians, and certified nurse-midwives.

Design: Grounded theory, as informed by Strauss and Schatzman.

Setting: Two academic perinatal units in the western United States.

Participants: Purposive sample of 12 registered nurses, 5 physicians, and 2 certified nurse-midwives.

Findings: Agency for safety (the willingness to take a stand on an issue of concern) fluctuated for all types of providers depending on situational context and was strongly influenced by interpersonal relationships. While physicians and certified nurse-midwives believed that they valued nurses' contributions to care, their units had deeply embedded hierarchies. Nurses were structurally excluded from important sources of information exchange and from contributing to the plan of care. Nurses' confidence was a key driver for asserting their concerns. Confidence was undermined in novel or ambiguous situations and by poor interpersonal relationships, resulting in a process of redefining the situation as a problem of self.

Conclusions: Women and babies should not be dependent on the interpersonal relationships of providers for their safety. Clinicians should be aware of the complex social pressures that can affect clinical decision making. Continued research is needed to fully articulate facilitators and barriers to perinatal safety.

JOGNN, 37, 13-23; 2008. DOI: 10.1111/J.1552-6909.2007.00204.x

Accepted October 2007

[1]RNC, PhD, CNS, is an assistant professor in the Department of Family Health Care Nursing at the University of California, San Francisco

Background

Inpatient perinatal environments may be considered high-hazard domains. Although adverse events are extremely rare, they can have catastrophic consequences (Gaba, 2000; Knox, 2003; Rochlin, 1999). Safety in the high-hazard domain of health care has been conceptualized as a dynamic state of collective agency for identifying emerging threats and deflecting them from reaching the patient (Henneman & Gawlinski, 2004; Knox; Lyndon, 2006). An organizational culture that fosters collective agency assures that *all* clinicians have individual and collective authority to question the plan of care and to "stop the line" (Knox) or change the direction of a situation in the patient's best interest.

In most inpatient perinatal settings, the responsibility for detecting and communicating these threats falls disproportionately on the nurse as the primary gatekeeper monitoring a woman's labor (James, Simpson, & Knox, 2003; Page, 2004). Assertive communication, defined as stating concerns with persistence until there is a clear resolution (Preston, 2003), is a key skill for maintaining safe operations in perinatal care (Leonard, Graham, & Bonacum, 2004; Simpson & Knox, 2003). However, evidence suggests that nurses frequently recognize problems with patient management plans but do not necessarily take assertive action to correct these problems (Cook, Hoas, Guttmannova, & Joyner, 2004; Maxfield, Grenny, McMillan, Patterson, & Switzer, 2005). Furthermore, when they do challenge the plan, they may be ignored (Simpson & Knox).

As described in multiple high-risk industries, safety improvements are garnered through developing a culture of collective agency for safety (Rochlin, 1999), in which all providers have responsibility for changing the direction of the plan when needed, and through improving communication and assertion skills among team members (Helmreich, 2000; Thomas & Helmreich, 2002; Weick, 2002; Weick & Sutcliffe, 2001). However,

interpersonal relationships and economic pressures influencing teamwork and decision making are substantially different in perinatal care. In many settings, nurses are employees of the hospital, while physicians and certified nurse-midwife providers are considered revenue-generating customers (Brown, 2005a,b; Gaba, 2000; Knox & Simpson, 2004).

Enthusiasm has been high for the potential of the aviation model of crew resource management (CRM) to improve safety, teamwork, and communication in health care by flattening hierarchies and improving assertiveness skills (Grogan et al., 2004; Helmreich, 2000; Leonard et al., 2004; Morey et al., 2002; Shapiro et al., 2004). However, clinical trials have demonstrated mixed results or no effect for teamwork training (Nielsen et al., 2007; Morey et al.; Shapiro et al.). A potential explanation for the difficulty in establishing strong empirical links between teamwork training and safety outcomes is that the CRM model was based on understanding challenges to performance from the pilots' perspective (Helmreich, Foushee, Benson, & Eussini, 1986). Few studies have explored health care providers' perspectives on the challenges they face in maintaining safe operations. The studies that exist indicate a lack of consensus on the meaning of "teamwork" and "collaboration" (Thomas, Sherwood, Mulhollem, Sexton, & Helmreich, 2004) and high levels of safety-threatening conflict avoidance (Cook et al., 2004; Maxfield et al., 2005; Smetzer & Cohen, 2005; Sutcliffe, Lewton, & Rosenthal, 2004).

Evidence suggests that providers' agency for safety is threatened by the continued influence of hierarchy, status, power, role conflict, sleep deprivation, and fatigue (Cook et al., 2004; Hendey, Barth, & Soliz, 2005; Landrigan et al., 2004; Maxfield et al., 2005; Rogers, Hwang, Scott, Aiken, & Dinges, 2004; Smetzer & Cohen, 2005; Sutcliffe et al., 2004). Little is known about how perinatal nurses and other perinatal clinicians perceive and manage these threats in their efforts to maintain patient safety. This study developed a better understanding of interpersonal, structural, and social processes affecting individual and collective agency among perinatal nurses, physicians, and certified nurse-midwives (CNMs).

Design/Methodology

Data for this grounded theory study were collected between September 2005 and January 2007 using individual semistructured, open-ended interviews and participant observation with a purposive sample of registered nurses (RNs), physicians (MDs), and CNMs from two teaching hospitals. Interviews were recorded and professionally transcribed verbatim. Transcripts were cross-checked against recordings for accuracy (Kvale, 1996). Fifty-two hours of participant observations were conducted across day, night, and weekend shifts by shadowing participants conducting their usual clinical duties. The researcher observed 10 of the 19 participants (seven RNs, two MDs, and one CNM). Extensive field notes were taken during observations and transcribed as soon as possible thereafter (Hammersly & Atkinson, 1995; Spradley, 1979).

In accordance with grounded theory methods, participants were selected based on their clinical experience and likelihood of being able to respond to the study questions. The primary focus was on RNs' agency for safety; however, physicians and CNMs were also sampled to obtain a broader perspective on team function, interdisciplinary communication, and collective agency. Participant observation was included to capture real-time data about communication patterns, work conditions, and teamwork. The extent of participant observation was guided by theoretical sampling (Charmaz, 2006; Clarke, 2005; Glaser & Strauss, 1967; Kools, McCarthy, Durham, & Robrecht, 1996; Schatzman, 1991).

The study was informed by the following assumptions, which were based on clinical experience and critical review of the literature: (a) Intervening assertively in evolving clinical situations improves outcomes for childbearing families by preventing or mitigating potential harm to patients, (b) Poor communication and lack of assertion in dynamic patient care situations are common in perinatal care environments and contribute to preventable negative maternal and perinatal outcomes, (c) There is a fairly broad range of skill and willingness to intervene assertively among perinatal nurses in most inpatient settings, and (d) Variation in these skills may be related to a number of factors or processes occurring in the care environment that have not yet been articulated.

Rigor was maintained through reflexivity, attention to interaction quality, and both data and analytic triangulation (Angen, 2002; Borbasi, Jackson, & Wilkes, 2005; Clarke, 2005; Hall & Callery, 2001). Reflexivity was approached using three techniques: journaling, memoing, and "self"-interview. A research journal was used to explore personal and professional responses to engaging the study. Memos were used to identify, differentiate, and test the researcher's experiential data as a perinatal clinician against grounded field data. A colleague interviewed the researcher using the interview guide to sharpen awareness of the influence of the investigator's own clinical experiences on data collection and analysis. Participants were actively encouraged to "think out loud" during observations and to "walk through" scenarios they presented during interviews to mitigate making assumptions about the meaning of events. The investigator actively checked interpretations and sought clarification of

Table 1: Selected Interview Questions

Selected Interview Guide Questions	
Registered Nurses	Physicians and Certified Nurse-Midwives
"Could you tell me about what 'keeping patients' safe means to you?"	
"Tell me about a time when something was going wrong for a patient and you needed to do something about it"	"Has a nurse or other clinician ever 'saved' or 'rescued' you from a bad clinical situation?"
"What kinds of things do you do or say when you find yourself in situations like you've just described?	"What did the nurse do that caught your attention or convinced you?"
"Have you ever been in a situation where you knew something was wrong but were hesitant or afraid to speak up or do something about it? Tell me about that"	"Has a nurse ever challenged your plan for a patient? Tell me about that"
	"How hard or easy do you think it is for a nurse to disagree with you about a patient's condition or your plan for a patient?
	"How important do you think it is for a nurse to speak up about his or her concerns?"
"Have you ever been in a situation where you were not able to get a physician or midwife to listen to your concerns about a patient?"	"Are there any situations you can think of where you didn't attend to what a nurse or other clinician wanted from you, and later regretted it?
"What do you think makes a nurse really good at managing complicated patients or rapidly changing patient status?"	
"What do you think makes a nurse really good at getting their message across to the team?"	
"Tell me about a time when you felt care was unsafe"	

meanings during interviews and observations. Sample interview questions are presented in Table 1.

Human subjects approval was obtained from the University of California, San Francisco and participating institutions. Signed informed consent was obtained and participants received a $15.00 gift card for each interview or observation. Data were managed with Atlas.ti 5.0-5.2 (Muhr, 2004). A detailed audit trail was maintained. Peer assessment and member check were used to test the quality of the conceptual development.

Data Analysis

Data were analyzed using the constant comparative method, dimensional, and situational analysis. Dimensional analysis (DA) was developed by Schatzman (1991) and described in further detail by Kools et al. (1996). Dimensionality is the process of recognizing complexity in a situation and using natural analytic processes to inquire into the parts, processes, context, and implications of the situation (Schatzman). Schatzman described DA as providing articulation of a systematic, structured approach to maintaining sustained engagement of both intuitive and systematic cognitive processes in the application of the core ideas and practices of grounded theory (Kools et al.; Schatzman).

Data collection and analysis were conducted simultaneously. The constant comparative method (Glaser & Strauss, 1967; Strauss, 1987) was used to develop open, focused, and theoretical codes (Charmaz, 2006). Open codes were created to describe the data as dimensions of experience without regard for how they appear as elements of Strauss' coding paradigm (structure, process, condition, or consequence) (Schatzman, 1991). Dimensions in DA are similar to categories in traditional grounded theory. Constant comparison was used to identify and subdimensionalize a "critical mass" of dimensions (Schatzman). Theoretical sampling was used to saturate dimensions by fully developing and differentiating their properties (Charmaz; Glaser & Strauss; Kools et al., 1996; Schatzman; Strauss). The power of the various dimensions to illuminate the central actions, interactions, or processes was then considered, and the dimension with the greatest explanatory power was given the status of "perspective" or centrally important position (Kools et al.). The remaining dimensions were then evaluated for their fit as context, conditions, process, or consequence, or discarded from the central framework.

Situational analysis is an extension of grounded theory methods in which the investigator uses a variety of visual mapping techniques to more thoroughly expand and explore the range of variation in the data. Mapping of data elements (people, things, and concepts, depending on the type of map) at the levels of the situation, the social worlds of participants, and discourses within and between social worlds assists the investigator to expand his or her understanding the complexity of the interactions under study. Situational, social worlds, and positional mapping techniques were applied as described by Clarke (2005).

Results

Study Settings

Participants were recruited from the birth centers of two urban teaching hospitals in the western United States. The centers had 1,200 to 1,800 annual births. Both were integrated perinatal units with antepartum, laboring,

Agency for safety fluctuated for nurses, physicians, and certified nurse-midwives in relation to the specific context of the clinical situation.

and postpartum women cared for in one location with one set of staff. They offered a full range of perinatal services from midwifery through maternal-fetal medicine and had in-house obstetric and anesthesia services and an intensive care nursery. Nurses were employed through their respective medical centers and represented by unions. Physicians and CNMs were not employed by the medical centers. Both settings served medically and socially complex patient populations.

Participants

A purposive sample of 19 providers participated in the study, including 12 RNs, 2 CNMs, and 5 MDs. Four MDs were perinatologists, and one was a chief resident in obstetrics and gynecology. The study included 18 women and 1 man. Sampling was not predetermined based on gender, ethnicity, race, or other demographic characteristics but these were considered when feasible to increase diversity. Self-reported ethnicity was 74% White, 10% Hispanic, and 16% Asian/Pacific Islander. The age, experience, and number of years in practice in the specific setting are described in Table 2.

Findings

Advocacy as the Source of Nurses' Agency for Safety. Nurses identified "being the patient's advocate" as the source of their agency for patient safety and central to their function as an RN. They invoked the language of advocacy spontaneously in response to the question, "Tell me what keeping patients safe means to you," and they described "safety" as broadly encompassing protection of the integrity of the person entrusted to their care.

> I think that what I would say is that [safety] would be that a patient and her loved ones come through the hospital experience— the treatment, the procedures—as intact as possible physically, emotionally, psychologically, as much as possible.—RN

Table 2: Mean and Range of Age and Experience Level of Participants by Provider Group

Provider Type	Age	Years in OB	Years in Setting
Registered nurse (12)	42 (29-61)	10 (0.5-41)	10 (2-20)
Certified nurse-midwives (2)	55 (53-57)	25 (20-30)	2 (1.5-3)
MD (5)	49 (32-70)	21 (4-45)	13 (4-33)
All (19)	46 (29-70)	14 (0.5-45)	10 (1.5-33)

Note. OB = obstetrics.

However, the nurses also acknowledged that they were not always successful in implementing this advocate role. They shared multiple examples where they were not able to effectively challenge plans of care they considered either unsafe or inappropriate. Physicians and CNMs also described situations in which they felt intimidated or remained silent about concerns.

Fluctuating Agency for Safety. The dimension with the greatest explanatory power for understanding the participant's sense of agency to maintain safety was *fluctuating agency*. Their agency for safety, or ability to press their concerns with appropriate persistence until there was a clear resolution (Preston, 2003), varied across multiple dimensions which facilitated and constrained efforts to maintain patient safety. Fluctuations in agency for safety were described by all types of providers. The dimensions affecting agency will be discussed in relation to their roles as elements of context, conditions, process, and consequences (Figure 1).

Context: The Situation in Which the Phenomenon is Embedded

The clinical practice environment was characterized by inconsistency in availability of resources for basic patient needs, strong segregation of professional activities by discipline, hierarchical social structures within and between disciplines, and a tendency for safety to be defined (especially by physicians and CNMs) as the absence of adverse outcomes.

Availability of Resources. Working under a shortage of resources was a common concern. The subtle and pervasive influence of working with frankly inadequate resources was particularly evident during participant observations. Nurses were repeatedly interrupted from providing direct care to patients to hunt for basic care items missing from rooms and stock areas, reset safety equipment that had not been properly prepared by previous staff, and spend time on the phone tracking down medications that had not been delivered or entered into the patient's electronic medication profile. Physicians, nurses, and CNMs all had concerns about the availability and skill mix of nursing staff and expressed frustration about continually dealing with organizations that did not seem to be responsive to the specific and unique needs of childbearing women and families.

> I'm tired of fighting the system. I have limited time left in my career.—MD

> I feel like we're this entity that nobody really understands … other units don't understand that we may have 12 patients and that may require 8 nurses, even though we're not technically an ICU.—RN

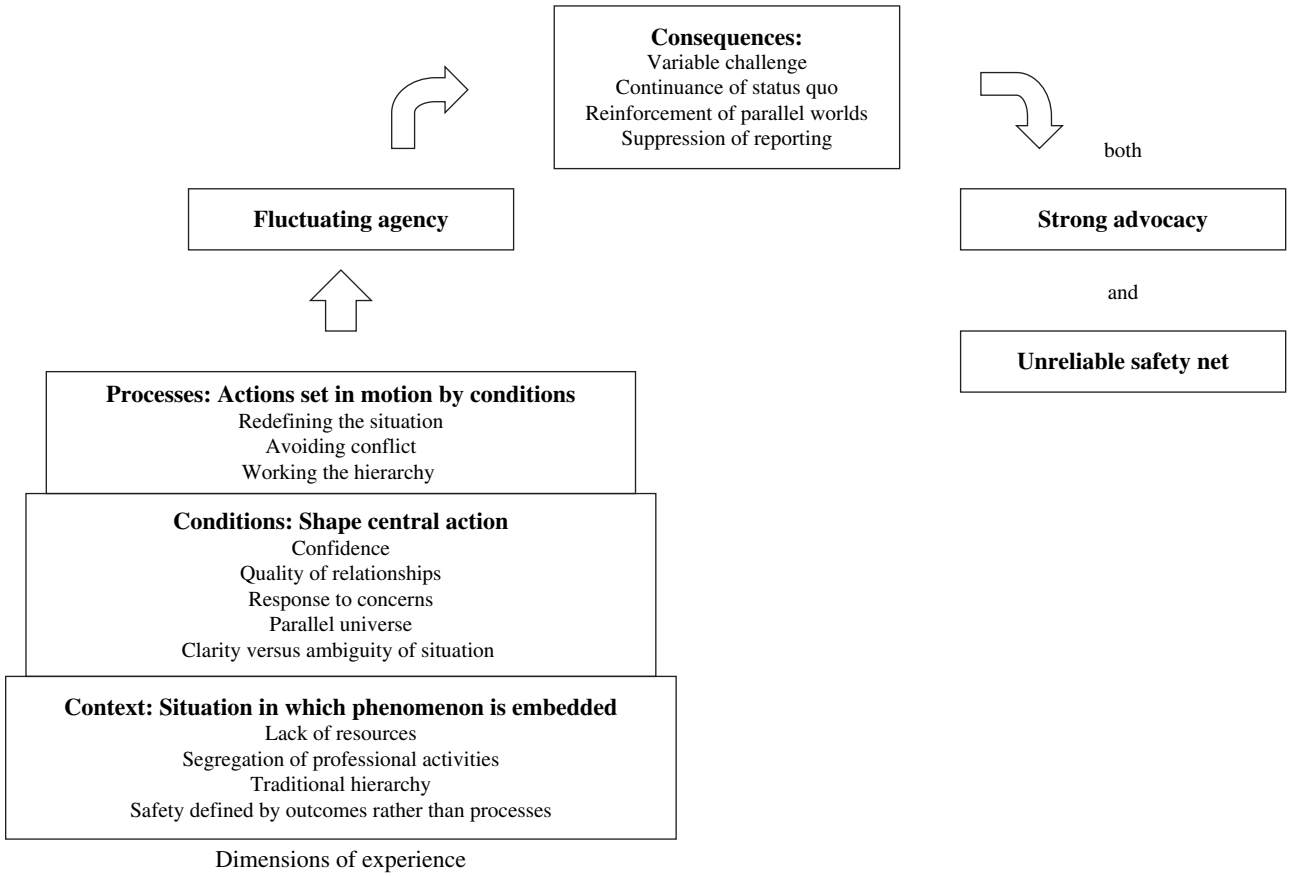

Figure 1. Perspective of fluctuating agency

Segregation of Professional Activities. In both settings, there was distinct demarcation of space, time, and action based on discipline. Nurses and physicians gave and received report at different, mutually exclusive times. Few, if any, nurses attended teaching rounds where patients were presented to the attending physician by residents. Certified nurse-midwives were present in teaching rounds and their role there varied by setting due to different models of midwifery care. Plans were reviewed, updated, and validated at teaching rounds.

For nurses, their perceived exclusion from teaching rounds was a point of significant conflict. The physicians and CNMs universally reported having good collegial relationships with RNs and a belief that nurses would interrupt rounds when appropriate. In contrast, RNs reported that the clinicians in rounds were not open to being interrupted for pressing needs during rounds and that nurses were structurally excluded from this important source of information exchange.

> [Field note][Charge nurse says] At one point the MDs asked that nurses don't come in while they're having rounds. There's a huge war around that. We have rounds at 7 to 7:30, and even if we have a lot going on they are pushing us out. I think it would be good for the charge nurse to go, but when you just come on you have so many things to do: you have to pass out keys, and delegate, and go down and give report to the nursing office, so it just can't be done.

The nurses knew decisions were being made in these sessions and critical information was exchanged there. They felt they had no formal access to this information and lacked opportunities to contribute information to the decision-making process. Registered nurses described not being acknowledged when they did try to contribute and believed that they lacked administrative support for changing these patterns of segregation. Most importantly, they were frustrated by the lack of formal communication between disciplines regarding the plan of care.

> And the perfect example of that is Pitocin because docs may have this idea in their mind of why this person needs it and why they want to deliver them

> sooner as opposed to later and why they feel like it's warranted. But that is not communicated to the nurse caring for the patient. And we manage that medication.—RN

The nurses also contributed to the ongoing segregation of information exchange in the sense that they normalized their inability to attend rounds in pointing to their competing duties such as checking charts, distributing keys, and reviewing medication orders at the beginning of the shift.

Hierarchy. The traditional hierarchical structure of medicine was evident in both settings. Hierarchy and distribution of power were issues of concern to all participants. Some participants (physicians, nurses, and CNMs) expressed concern with "breaking" the hierarchy and associated negative consequences for relationships when going over another's head. Others simply acknowledged that traditional hierarchies continue to influence team interactions.

> I think that [residents] get talked to by Attendings for letting nurses have too much control.—RN

> I think … a nurse saying to a physician, "This isn't right" or "this is a problem-this isn't safe" is dependent on the nurse's personality, the doc's personality and the sort of hierarchical culture of the institution.—MD

> Well, wait a minute. You know, like I'm assessing the situation, and I don't need [the nurse] to tell me what to do.—CNM

A specific property of hierarchical relations was the privilege given to outcome data and research. Demonstrating facility with the latest research findings was a proven method of enhancing status: "That's what flies around here … who can cite the study better than this other person … who knows the numbers"—CNM. The privilege given to outcome data was also evident in discussions of problematic situations that did not result in fetal compromise:

> So being on the miso[prostol] unmonitored may or may not have made a difference at all. But—I don't know—this is one that was like bordering on unsafe. So ultimately this patient's outcome was great. There was no harm done.—MD, describing a patient receiving a high risk medication without being monitored.

In these types of situations, physicians in particular were likely to define care processes as still being within a margin of safety, rather than as an unsafe and unacceptable situation in which clinicians and patient were fortunate to have avoided an adverse event. This held true at the departmental level, where routines were defined as safe as long as no data refuted their safety.

> And then they said, "But we don't feel there's enough data about this." And it's like, "Well, we're not even looking at the right data. We don't even collect the right data. I mean, just forget the whole thing.— MD, describing bringing a concern to the department.

Conditions Facilitating, Blocking, or Shaping Agency

Confidence was a strong driver of agency for safety. This dimension was particularly salient for RNs in the study. Their *confidence* in themselves and in their clinical grasp of the situation was very important in their judgments about when and how to intervene and a key driver for asserting concerns. Confidence was not a fixed property of an individual; it was fluid and dynamic, highly variable both within and across individuals.

> I might have—on my time on the night shift, been able to explore the possibility of a [cesarean] section … And I just was not confident enough at that time—with myself—to do that.—RN, about a compromised baby.

> It's a hard thing to do, but you just have to do it. So what if they're upset? It doesn't really matter if they get pulled out of rounds … [If] he's upset and the strip looks fine, well, that makes me feel good. Good, he's comfortable with the strip.—RN, on insisting on a bedside evaluation from the Attending.

Having the confidence to intervene varied with the RN's experience, the quality of relationships between clinicians, the clarity of the situation, and the responses of others to the RN's concern.

Experience as a Subdimension of Confidence. "Experience" held strong explanatory power for the nurses as a proxy for their ability to intervene effectively when they had a concern. Experience was perceived by RNs as central to having agency in the situation: More experience contributed to having more confidence, and the inability to intervene was ascribed to "the younger nurses" or "the newer people." Close attention to nurses' stories revealed additional factors influencing nurses' agency, despite the strength of the "experience" discourse.

Quality of Relationships. Knowing the other providers was a key facilitator of effective use of agency for all participants. Good relationships were considered essential for effective teamwork in emergent situations.

Knowing who one was dealing with allowed a clinician to anticipate how the other person might respond to their concerns. In most cases, knowing the colleague was described as a facilitator in the context of a good relationship, a level of trust with that person, and knowing how the person would respond:

> I think I have a good enough relationship with the doctors. I think that … I've been here long enough that they know me and they trust what I'm saying. Compared to somebody who's maybe only been here a year or two and has just learned labor. I think you have to pay your dues. They trust what I'm saying, and they'll come back and take a look at the strip.—RN

Knowing the colleague was also important for clinicians in effectively managing difficult relationships; they were then able to brace themselves for difficult interactions or had developed specific strategies for dealing with someone they knew was hard to get along with.

> There's this one nurse that moves so slowly that I really thought she was doing it on purpose to irritate me … I just want to go up and shake her … but I've learned, I have to really kind of meditate and just say, 'That's just who she is'—MD

> I don't shut down with her anymore, that [doctor], even in the OR. I can't think of any one thing that I might've done to change my reaction to her. But it has changed, and I think maybe I'm setting myself up or preparing myself for her being on that night. I have to act more confident, not let her get to me.—RN

While knowing that the colleague often helped RNs engage clinical concerns more effectively, nurses also described many situations in which knowing who they were working with did not help overcome hurdles in expressing or getting action on their concerns. Knowing or having a "good" relationship was easily trumped by contextual factors such as hierarchy:

> [The peds team] didn't listen to me—they listened to the doc. And they know me, and they didn't even know the doc who was standing there with the football hold [catching the baby], [but] that's who they were going to listen to.—RN, describing resident's dismissal of the pediatric team for an imminent birth requiring pediatric attendance.

Response to Concerns. Nurses described being ignored, getting shot down, and being recipients of rude behaviors as part of the nature of everyday practice. They expressed a distressing certainty about not being attended to when they had clinical concerns. When asked whether they had ever been in a situation where they had difficulty getting a physician or CNM to respond to a concern, RNs said, "Many, many, many times," "It happens a lot," and "It's just the course of things." They did not express this difficulty as exclusively occurring with physicians. Thus, while physicians and CNMs universally described themselves as open to, and expecting an RN's contributions to the plan of care, nurses often described being shut out of formal information exchange and not welcomed as contributors.

Participants described actively avoiding conflict to preserve relationships with colleagues; this threatened safety when providers interacted less and withheld reporting of incidents.

> Its way better than it was 30 years ago … But some of it's still there. You know? … They just think they're the kings and queens of the world and we nurses are just their servants and not worth interrupting them.—RN

Parallel Worlds. The nurses' sense of being shut out and not attended to was exacerbated by pervasive and mutually reinforcing segregation of professional activities, especially between nurses and physicians. RNs described the outcome of this segregation as "being on separate planets," and "living in a parallel world," in which they either did not know or did not agree with the MDs' specific plans for patients. They described situations of "cross-counseling" patients, wherein nurses and physicians gave patients conflicting information regarding medications. More importantly, patients got trapped in the resulting "chasm" between the two disciplines.

> So [titrating the oxytocin] becomes this constant tug of war of "Turn it up" "No, it's fine" "Turn it up" "No, I don't want to. That's not the protocol."—RN

This kind of disconnection also occurred at times with CNMs and created tension between the disciplines.

Clarity Versus Ambiguity. Clarity of the clinical situation was a powerful contributor to clinicians' confidence and sense of agency. Two influences on clarity were the degree to which RNs were able to bridge the chasm between disciplines and determine whether there was a clear plan for the patient, and the new perspective clinicians brought to situation awareness when they came in as a provider with a different take on the evolution of a situation. When the situation was very clear to the nurse, physician, or CNM, there was no hesitation in questioning the plan:

Nurses sometimes redefined the problematic situation as a problem of self rather than a problem of not being attended to appropriately.

> "Look" I said "You better get into that room … she's got a contracted pelvis. She's never going to deliver that baby. You need to call it."—RN

> I went to the monitors at the front desk and I could hardly sit still. This was a fetal monitor strip with lates and no variability … and I said, "No, she's going straight into the operating room."—MD

> I said, "The first thing I'm going to do before you finish giving your report is I'm going to go tell them to turn off the Pit in that room because I'm not going to sit here for even two minutes if I can't be at that bedside."—CNM

However, when the situation was less straightforward, it was sometimes more difficult, particularly for nurses, to challenge the plan of care with persistence. Novel situations created uncertainty and could temper even experienced RNs' forcefulness in expressing concern.

> I felt so frustrated about that [difference in patient counseling], so I talked to the chief resident, and I said you know, "Why the difference in this?" and she said, "Well they just really don't- they couldn't handle the baby, they wouldn't want it." I said, "Well that seems kind of personal."[The chief said,] "Blah blah, bye." Just, "I'm not going there with you [RN's name]" "Oh, okay." So just do my job….—RN

Processes: Actions Set in Motion by Conditions

Processes that were problematic for the development and maintenance of collective and individual agency for safety included *avoiding conflict* and its subdimension *working the hierarchy,* and *redefining the situation*.

Avoiding Conflict. The high perceived importance of interpersonal relationships for effective team function created an environment where participants described actively avoiding conflict with colleagues in order to preserve relationships. Conflict avoidance was safety threatening when clinicians decreased interactions with other providers, did not mention problems to others, and withheld reporting of incidents for fear of damaging relationships.

> I felt like my rapport with the nurse was much more important to—to keep than writing an incident report on her.—CNM

> Now, if I called [the nurse manager] on top of the charge nurse who really wasn't responding … that would have ramifications on the rest of my career here in terms of someone holding a grudge against me.—MD

Physicians and CNMs were almost unanimous in their expressed desire to hear concerns from RNs and others presented in a clear and direct manner. Many RNs described routinely communicating in this way. However, nurses, physicians, and CNMs also described various strategies they used for working the hierarchy in order to get what they believed was needed for safe patient care without creating conflict. These included the use of suggestion, "sweet talk," and taking direct action without informing the other provider, as this RN related in response to a resident sending the pediatric team away right before a birth with thick meconium-stained fluid:

> I went over to the phone—boop boop boop—she didn't know who I was calling—and they came back in. So as far as she knew, they just came in on their own.

Such strategies threaten safety because they obscure the difference of opinion and reinforce the status quo. In this case, the nurse effectively maintained safety for the patient, but the resident was not privy to why the team showed up when they did. Things just "worked out," normalizing both the resident's "right" to decide which team members were needed for birth and the RN's powerlessness in the situation.

Redefining the Situation

Nurses were often able to take these difficulties in stride by simply ignoring power behaviors, requesting providers' attention for important conversations, or insisting on getting the rationale from the provider and having a discussion about the plan. However, novel situations and the responses of others to concerns threatened RN agency by undermining confidence in their assessment of the situation, sometimes causing them to question their own judgment. Thus, the RNs sometimes began redefining the problematic clinical situation as a problem of self rather than a problem of not being attended to appropriately, regardless of their level of experience.

Redefining first-time situations: "I just didn't know …" In some cases, the nurse's discomfort with a novel evolving clinical experience was redefined from being an inherent problem with what was happening to the patient into a problem of the RN's inexperience with the situation. This type of redefinition occurred when the nurse experienced "the brush-off" or lack of response from the physician or CNM regarding her concern. Several RNs related cases where their years of experience were not powerful enough to help them resolve very difficult ethical dilemmas that arose in unfamiliar "first-time" situations.

> I honestly thought—I kind of thought that it was my issue, because it was a termination … I thought, "Wow you know you really—that's a hard one." You

know? [pause] I just though this is how it was done.—RN

Transforming the brush-off to "something I missed." In response to being brushed-off, nurses sometimes began doubting their own knowledge or convinced themselves that they must have missed some key information that would change the clinical picture. This occurred when physicians or midwives were particularly abrupt or rude.

> Well, I think its how they totally can shut you down … I mean … the way that she spoke to us was just so rude and so abrupt. And I was pretty much shocked. I'm like, "Oh-" then you kind of start self-doubting. "Well, I don't know. Maybe they did treat her in the OR. They gave her some antibiotic" and, you know, then you start doubting yourself. "Oh, well, maybe there's something I missed."— RN

Self-doubt also occurred when RN concerns were considered by a physician or CNM but the course of patient care did not change. Using the chain of command could be particularly problematic for nurses when their concerns were not validated by a change in the plan because using the chain of command was perceived as a threat to important relationships.

> I think if you go up the chain of command and the decision changes in your favor, then you feel like it's warranted. But if … it stays the same … then you don't feel validated … And you feel like you've ruined this relationship maybe with this doc.—RN

Consequences

The context, conditions, and processes described above created a degree of variability in interactions and responses that undermined the reliability of the safety net for childbearing women in these settings. The use of assertive communication strategies and the persistence with which clinicians pursued their concerns were variable. The specifics of clinical situations (such as the clarity of the problem, the quality of interpersonal relationships, and the responses of others to expressions of concern) often resulted in strong advocacy and assertive communication of problems leading to a clear resolution. However, dimensions also came together in unpredictable ways, resulting in the interactional processes of redefining the situation, avoiding conflict, and working the hierarchy (Figure 1). These processes resulted in fluctuating agency: variation in the degree to which clinicians challenged problematic situations. Avoiding conflict and working the hierarchy undermined collective agency for safety by maintaining the status quo of the parallel universe and reinforcing segregation of professional activities. Patients were sometimes trapped in the resulting divisions between disciplines. At times, these processes suppressed addressing safety issues or incidents and resulted in missed opportunities for building relationships and trust through constructive conflict management.

Discussion

The differences between the physicians and CNMs and the nurses regarding perceptions of openness to RN input into the plan of care in this study are consistent with reported differences in perception of teamwork climate between types of clinicians in labor and delivery and other settings (Sexton et al., 2006; Thomas, Sexton, & Helmreich, 2003). Physicians in those studies had higher perceptions of the level of teamwork and RN participation in decision making than did nurses. These findings are also consistent with Kennedy and Lyndon's (2007) report of the presence of tensions between nurses and CNMs regarding openness to nursing contributions to the plan of care for women in labor. The findings of fluctuating agency for safety are supported by Blatt, Christianson, Sutcliffe, and Rosenthal's (2006) findings that situational dynamics, including confidence and interpersonal relationships, influenced whether residents voiced or silenced their clinical concerns about patient care. Both studies suggest that speaking up and remaining silent are not single-point mutually exclusive choices but part of an ongoing dynamic relational process.

Assertive communication and collective agency for safety have been described as key to safe operations in the inpatient perinatal environment (Knox & Simpson, 2004; Lyndon, 2006; Simpson & Knox, 2003). There is little data available specifically related to the existence of collective agency for safety in perinatal care. However, evidence increasingly suggests that an environment of collective agency does not generally exist in health care settings (Cook et al., 2004; Gaba, Singer, Sinaiko, Bowen, & Ciavarelli, 2003; Maxfield et al., 2005; Smetzer & Cohen, 2005; Sutcliffe et al., 2004). These findings identify some of the complex social and environmental processes that both facilitate and inhibit individual and collective agency for safety in academic perinatal settings. Nurses, physicians, and CNMs were often quite successful in asserting their concerns in ways that resulted in strong advocacy for patient safety. However, the context, conditions, and processes contributing to fluctuating agency also fundamentally undermined reliability in providing safe care.

Limitations

The findings discussed here are local and specific to two urban academic hospitals with characteristics making them dissimilar to most U.S. settings providing perinatal care. While the investigator's experience as a

perinatal nurse enriched the data collection, it may also have biased data and analysis in specific directions. The perspectives of administrators, anesthesia providers, and pediatric providers were not included and these may provide important additional information. Certified nurse-midwife participation was quite limited, and the physician and CNM perspectives both require further exploration in future research. The retrospective nature of the interview data is subject to recall bias, and clinicians' perceptions of contributing factors are likely to be influenced by their knowledge of the outcomes of specific cases (Dekker, 2002).

The study design was intended to explore dimensions of experience for this set of clinicians in their home clinical environment. It was not intended to be generalizable. However, many of the dimensions of the context and conditions described here (resource problems, hierarchy, segregation, variability in responses, and relationships) can be expected to be present in other settings. Although the multiple layers of hierarchy in academic settings are not present in the community settings where most perinatal nurses practice, all physicians and many CNMs are trained in teaching hospitals. The interactions occurring there can be expected to influence how physicians and CNMs later interact with nurses in community settings.

Clinical and Research Implications

Women and families should not be dependent on the relationships between providers for their safety. This study and Blatt et al. (2006) both highlight interpersonal relationships as driving safety and quality to a degree that has been underrecognized, especially when situations are ambiguous. This may be due to increasing pressure toward conformity of social relations in uncertain situations (Henricksen & Dayton, 2006). Clinicians should be aware of this pressure and concerned with developing reliable strategies for decreasing the influence of providers' interpersonal relationships on the processes and outcomes of providing care during labor and birth. Clinicians also need to consider how care processes positively reflect safety rather than relying solely on outcomes as safety indicators. Adverse outcomes are rare in perinatal care, and it is very possible to use unsafe processes to deliver care resulting in "good" outcomes (Knox, Simpson, & Garite, 1999; Simpson, 2005). Research investigating the degree and impact of moral distress experience by clinicians when they do not voice their concerns is needed. Further research is indicated to delineate context-specific facilitators and challenges to agency for safety at individual, group, and organizational levels, to develop and test intervention strategies, and to link these specifically to safety process and outcome indicators.

Clinicians and administrators would do well to closely examine their services for barriers and facilitators of collective agency for safety. Multiple studies have demonstrated that perspectives on safety and teamwork are quite different across disciplines. Engaging all participating disciplines in all phases of assessment, problem solving, implementation, and evaluation and actively seeking multiple perspectives is an essential step toward bridging the divisions between disciplines and improving collective agency for safety in perinatal care.

Acknowledgments

Funded by the Association of Women's Health, Obstetric, and Neonatal Nursing 2006 Novice Research Grant and the Nursing Initiative of the Gordon and Betty Moore Foundation.

REFERENCES

Angen, M. J. (2002). Evaluating interpretive inquiry: Reviewing the validity debate and opening the dialogue. *Qualitative Health Research*, *10*, 378-393.

Blatt, R., Christianson, M. K., Sutcliffe, K. M., & Rosenthal, M. M. (2006). A sensemaking lens on reliability. *Journal of Organizational Behavior*, *27*, 897-917.

Borbasi, S., Jackson, D., & Wilkes, L. (2005). Fieldwork in nursing research: Positionality, practicalities, and predicaments. *Journal of Advanced Nursing*, *51*, 493-501.

Brown, J. P. (2005a). Ethical dilemmas in healthcare. In M. S. Patankar, J. P. Brown, & M. D. Treadwell (Eds.), *Safety ethics* (pp. 67-82). Burlington, VT: Ashgate.

Brown, J. P. (2005b). Key themes in healthcare safety dilemmas. In M. S. Patankar, J. P. Brown, & M. D. Treadwell (Eds.), *Safety ethics* (pp. 83-126). Burlington: Ashgate.

Charmaz, K. (2006). *Constructing grounded theory.* Thousand Oaks, CA: Sage.

Clarke, A. E. (2005). *Situational analysis: Grounded theory after the postmodern turn.* Thousand Oaks, CA: Sage.

Cook, A. F., Hoas, H., Guttmannova, K., & Joyner, J. C. (2004). An error by any other name. *American Journal of Nursing, 104*(6), 32-43.

Dekker, S. (2002). *The field guide to human error investigations.* Burlington, VT: Ashgate.

Gaba, D. M. (2000). Structural and organizational issues in patient safety: A comparison of health care to other high-hazard industries. *California Management Review, 43*(1), 83-102.

Gaba, D. M., Singer, S. J., Sinaiko, A. D., Bowen, J. D., & Ciavarelli, A. P. (2003). Difference in safety climate between hospital personnel and naval aviators. *Human Factors*, *45*, 173-185.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Hawthorne, NY: Aldine De Gruyter.

Grogan, E. L., Stiles, R. A., France, D. J., Speroff, T., Morris, J. A., Nixon, B., et al. (2004). The impact of aviation-based teamwork training on the attitudes of health-care professionals. *Journal of the American College of Surgeons, 199*, 843-848.

Hall, W. A., & Callery, P. (2001). Enhancing the rigor of grounded theory: Incorporating reflexivity and relationality. *Qualitative Health Research*, *11*, 257-272.

Hammersly, M., & Atkinson, P. (1995). *Ethnography: Principles in practice* (2nd ed.). New York: Routledge.

Helmreich, R. L. (2000). On error management: Lessons from aviation. *British Medical Journal*, *320*, 781-785.

Helmreich, R. L., Foushee, H. C., Benson, R., & Eussini, W. (1986). Cockpit resource management: Exploring the attitude-performance linkage. *Aviation, Space, and Environmental Medicine*, *57*, 1198-1200.

Hendey, G. W., Barth, B. E., & Soliz, T. (2005). Overnight and postcall errors in medication orders. *Academy of Emergency Medicine*, *12*, 629-634.

Henneman, E. A., & Gawlinski, A. (2004). A "near-miss" model for describing the nurses's role in the recovery of medical errors. *Journal of Professional Nursing*, *20*, 196-201.

Henricksen, K., & Dayton, E. (2006). Organizational silence and hidden threats to patient safety. *Health Services Research*, *41*(Pt. II), 1539-1554.

James, D. C., Simpson, K. R., & Knox, G. E. (2003). How do expert labor nurses view their role? *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, *32*, 814-823.

Kennedy, H. P., & Lyndon, A. (2007, April). Tensions and teamwork: A study of midwives and nurses. Proceedings of the Western Institute for Nursing Annual Meeting, Portland.

Knox, G. E. (2003, October). *Beyond high reliability: Moving to ultrasafe systems*. Paper presented at the Kaiser Permanente Partnership for Perinatal Patient Safety Conference, San Francisco.

Knox, G. E., & Simpson, K. R. (2004). Teamwork: The fundamental building block of high-reliability organizations. In B. J. Youngberg & M.. Hatlie (Eds.), *The patient safety handbook*. Sudbury, MA: Jones & Bartlett.

Knox, G. E., Simpson, K. R., & Garite, T. J. (1999). High reliability perinatal units: An approach to the prevention of patient injury and medical malpractice claims. *Journal of Healthcare Risk Management*, *19*(2), 24-32.

Kools, S., McCarthy, M., Durham, R., & Robrecht, L. (1996). Dimensional analysis: Broadening the conception of grounded theory. *Qualitative Health Research*, *6*, 312-330.

Kvale, S. (1996). *Interviews: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage.

Landrigan, C. P., Rothschild, J. M., Cronin, J. W., Kaushal, R., Burdick, E., Katz, J. T., et al. (2004). Effect of reducing intern's work hours on serious medical errors in intensive care units. *New England Journal of Medicine*, *351*, 1838-1848.

Leonard, M., Graham, S., & Bonacum, D. (2004). The human factor: The critical importance of effective teamwork and communication in providing safe care. *Quality and Safety in Health Care*, *13*(Suppl. 1), i85-i90.

Lyndon, A. (2006). Communication and teamwork in patient care: How much can we learn from aviation? *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, *35*, 538-546.

Maxfield, D., Grenny, J., McMillan, R., Patterson, K., & Switzer, A. (2005). *Silence kills: The seven crucial conversations for healthcare*. Retrieved February 20, 2005, from http://www.aacn.org/aacn/pubpolcy.nsf/Files/SilenceKills/%24file/SilenceKills.pdf

Morey, J. C., Simon, R., Jay, G. D., Wears, R. L., Salisbury, M., Dukes, K. A., et al. (2002). Error reduction and performance improvement in the emergency department through formal teamwork training: Evaluation results of the medteams project. *Health Services Research*, *37*, 1553-1581.

Muhr, T. (2004). *Atlas.Ti (Version 5.0-5.2)*. Berlin, Germany: Scientific Software Development GmbH.

Nielsen, P. E., Goldman, M. B., Mann, S., Shapiro, D. E., Marcus, R. G., Pratt, S. D., et al. (2007). Effects of teamwork training on adverse outcomes and process of care in labor and delivery: A randomized controlled trial. *Obstetrics and Gynecology*, *109*, 48-55.

Page, A. (2004). *Keeping patients safe: Transforming the work environment of nurses*. Washington, DC: National Academy Press.

Preston, P. (2003, October). *Learning from human factors: Getting it right in perinatal care*. Paper presented at the Kaiser Permanente Partnership for Perinatal Patient Safety Conference, San Francisco.

Rochlin, G. I. (1999). Safe operation as a social construct. *Ergonomics*, *42*, 1549-1560.

Rogers, A. E., Hwang, W., Scott, L. D., Aiken, L. H., & Dinges, D. F. (2004). The working hours of hospital staff nurses and patient safety. *Health Affairs*, *23*, 202-212.

Schatzman, L. (1991). Dimensional analysis: Notes on an alternative approach to the grounding of theory in qualitative research. In D. R. Maines (Ed.), *Social organization and social process: Essays in honor of anselm strauss* (pp. 303-314). New York: Aldine de Gruyter.

Sexton, J. B., Holzmueller, C. G., Pronovost, P. J., Thomas, E. J., McFerran, S., Nunes, J., et al. (2006). Variation in caregiver perceptions of teamwork climate in labor and delivery units. *Journal of Perinatology*, *26*, 463-470.

Shapiro, M. J., Morey, J. C., Small, S. D., Langford, V., Kaylor, C. J., Jagminas, L., et al. (2004). Simulation based teamwork training for emergency department staff: Does it improve clinical team performance when added to an existing didactic teamwork curriculum? *Quality and Safety in Health Care*, *13*, 417-421.

Simpson, K. R. (2005). Failure to rescue: Implications for evaluating quality of care during labor and birth. *Journal of Perinatal and Neonatal Nursing*, *19*, 24-34.

Simpson, K. R., & Knox, G. E. (2003). Adverse perinatal outcomes: Recognizing, understanding, and preventing common types of accidents. *Lifelines*, *7*, 224-235.

Smetzer, J. L., & Cohen, M. R. (2005). Intimidation: Practitioners speak up about this unresolved problem. *Joint Commission Journal on Quality and Patient Safety*, *31*, 594-599.

Spradley, J. P. (1979). *The ethnographic interview*. New York: Holt, Rinehart & Winston.

Strauss, A. L. (1987). *Qualitative analysis for social scientists*. Cambridge, UK: Cambridge University Press.

Sutcliffe, K. M., Lewton, E., & Rosenthal, M. M. (2004). Communication failures: An insidious contributor to medical mishaps. *Academic Medicine*, *79*, 186-194.

Thomas, E. J., & Helmreich, R. L. (2002). Will airline safety models work in medicine? In M. M. Rosenthal & K. M. Sutcliffe (Eds.), *Medical error: What do we know? What do we do?* (pp. 217-234). San Francisco: Jossey-Bass.

Thomas, E. J., Sexton, J. B., & Helmreich, R. L. (2003). Discrepant attitudes about teamwork among critical care nurses and physicians. *Critical Care Medicine*, *31*, 956-959.

Thomas, E. J., Sherwood, G. D., Mulhollem, J. L., Sexton, B. J., & Helmreich, R. L. (2004). Working together in the neonatal intensive care unit: Provider perspectives. *Journal of Perinatology*, *24*, 552-559.

Weick, K. E. (2002). The reduction of medical errors through mindful interdependence. In M. M. Rosenthal & K. M. Sutcliffe (Eds.), *Medical error: What do we know? What do we do?* (pp. 177-199). San Francisco: Josey-Bass.

Weick, K. E., & Sutcliffe, K. M. (2001). *Managing the unexpected: Assuring high performance in an age of complexity*. San Francisco: Jossey-Bass.