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Using a Team-Centered Approach to Evaluate Effectiveness of Nurse–Physician Communications

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ABSTRACT

Objective: To characterize communication strategies of labor and delivery nurses and their physician colleagues during perinatal decisions.

Design: A quantitative descriptive design was used.

Setting: A perinatal setting in an urban acute care facility.

Participants: Twenty-nine perinatal nurses and 11 attending physicians.

Methods: A model of team communication derived from research on cockpit crew communication served as a framework for this analysis. Data were taken from transcriptions of audio-taped conversations and discourse analysis.

Results: Findings indicated that nurses and physicians tended to use status-based communication styles and rarely employed team-centered communication strategies.

Conclusion: Nurse and physician status-based communication styles may hinder optimal patient outcomes.

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AWHONN

Miscommunication exists between health care providers and often results in patient injury and death (The Joint Commission, 2005, 2008). When information is not shared consistently or in a timely fashion, patients may be at an increased risk for medical errors (Nair, Fitzpatrick, McNulty, Click, & Glembocki, 2011). Numerous approaches, such as structured communication tools and interprofessional communication guidelines, have been developed and evaluated regarding impact on improving communications to avoid health care errors (Alvarez & Coiera, 2006; Gawande, Zinner, Studdeert, & Brennan, 2003; Merry & Brown, 2002; Robinson, Gorman, Slimmer, & Yudlowsky, 2010; Simpson, James, & Knox, 2006; Sutcliffe, Lewton, & Rosenthal, 2004). Maintaining safety in critical health care tasks is a team effort and depends upon team members' effectiveness and efficiency in transmitting patient needs (Vazirani, Hays, Shapiro, & Cowan, 2010; Zwarenstein & Bryant, 2005; Zwarenstein & Reeves, 2006; Zwarenstein et al., 2008). Conversely, research data support an association between poor communication among health care providers and medical errors, often resulting in patient mortality (Alvarez & Coiera, 2006; Gandhi,

2005; Gawande, Zinner, Studdert, & Brennan, 2003; Robinson, et al., 2010). However, most authors have focused on highly specific contexts such as hand offs, rounding, and types of charting (Varpio, Hall, Lingard, & Schryer, 2008); few have addressed the issue of how nurses and physicians communicate directly regarding urgent care needs.

Literature Review

For decades, health care has borrowed best practices from the aviation industry, including team huddles, structured communication, voluntary error reporting, and high-fidelity simulation. The goals of both industries are safety and good outcomes based upon effective and close cooperation of personnel. For the past 20 years, airlines worldwide have successfully incorporated crew resource management into the training of their personnel, in particular, pilots, flight attendants, and dispatchers. Although the health care industry has emphasized teamwork and communication as critical to ensuring patient safety, problems in this area persist.

> **Maintaining safety in critical health care tasks is a team effort and fundamentally depends upon team members' effectiveness and efficiency in transmitting patient needs.**

Interdisciplinary teamwork is central to safe, quality, patient outcomes (Dechairo-Marino, Jordan-Marsh, Traiger, & Saulo, 2001; Lyndon, Zlatnik, & Wachter, 2011; Salas, Wilson, Murphy, King, & Salisbury, 2008). Health care team members are expected to deliver a high level of patient care and, as part of their responsibility, to communicate effectively and efficiently with each other (Lingard et al., 2006, The Joint Commission 2008). However, time pressure, lack of understanding of health care team members' roles, poor organizational support, and absent leadership are barriers to good interdisciplinary teamwork and team communication (Xyrichis & Lowton, 2008), which increases the likelihood of medical errors (Alvarez & Coiera, 2006; Chapman, 2009; Gandhi, 2005; Gawande, Zinner, Studdert, & Brennan, 2003; Rosenstein, & O'Daniel, 2008). For instance, The Joint Commission, (2008) reported that ineffective communication between health care team members contributed to 60% of medical errors. Lyndon and colleagues (2014) determined that ineffective communication patterns have led to staff resignations due to a sense of personal powerlessness or lack of administrative action in light of patient safety issues.

Robinson et al. (2010) explored nurse and physician perceptions of effective and ineffective communication at a large university health science center. Nurses and physicians with at least 5 years of experience participated in three focus groups ($N = 18$). Five effective communication themes were identified and three ineffective themes emerged. Effective themes included message clarity and precision relies on verification, collaborative problem solving, supportive and calm demeanor particularly under stress, mutual respect among colleagues, and a true understanding of the unique role of team members. Ineffective themes identified included making someone feel inferior through humiliation (derision), dependence on electronic systems (thus reducing face-to-face opportunities for communication), and linguistic and cultural barriers. These results point to opportunities on how to remove barriers to effective nurse–physician collaboration and to enhance teamwork skills.

In a study by Nair and colleagues (2011), the most frequently used nurse–physician collaborative behaviors reported by nurses were sharing patient information, and the most frequently used collaborative behaviors of nurses and physicians reported by physicians were the relationship between nurses and physicians. The most infrequently used nurse–physician collaborative behaviors of nurses and physicians reported by nurses and physicians were decision making on care/cure.

As critical as effective team communications are to patient safety, research on communications in health care typically has focused on improving hand offs between nurses, rounding, and types of charting (Varpio, Hall, Lingard, & Schryer, 2008). Fewer studies have addressed nurse–physician communications. A study by Wu et al. (2011) on the use of smartphones revealed that they impeded communications and led to negative outcomes such as interruptions and differing opinions by nurses and physicians as to what was considered urgent. Additionally, nurses reported that use of the telephone was associated with a decline in face-to-face communication, diminished the quality of communications, and led to poorer interprofessional relationships.

The education of health care personnel also has not adequately incorporated concepts such as teamwork and team communication. Curricula in nursing programs focus on information gathering (i.e., the nursing process), therapeutic communications, and the use of tools such as Situation, Background, Assessment, Response (SBAR) for team communications, and have been less concerned with the teaching and development of communication skills. Kalet and colleagues (2004) pointed out that though approximately 65% of medical schools teach communication skills to medical students during their preclinical education, these skills may decline by graduation. It is acknowledged that communications by physicians are related to successful clinical outcomes, yet the teaching of important communication skills is not widely or fully integrated in to medical education (Yedidia et al., 2003). Some medical programs, such as the one at University of California-Los Angeles (UCLA), recognize that teaching communication skills is frequently overlooked and have adapted their curricula to meet this need (Wilkes, Hoffman, Slavinm, & Usatine, 2013).

The aviation industry, in contrast, has recognized the importance of team communication and

collaboration and has incorporated these concepts into their training courses, in particular the training of cockpit crews in what is known as crew resource management (CRM) (Mussen, 2008). Although there are many differences between cockpit crews and nurse–physician teams, important similarities exist between the two domains so that lessons learned from aviation communication seem also relevant to health care. Cockpit crews and health care teams are made up of highly trained professionals and include an individual in leadership position, either the captain or the physician. Both task environments are dynamic, requiring frequent updates of situation or patient models. Conditions may be ambiguous and outcomes uncertain. Often team members work under considerable time pressure, with little time to spare for diagnosis and decision making. And above all, human error and miscommunication can have catastrophic consequences.

The challenge for effective communications and teamwork is very evident in an intrapartal setting due to the continuously, sometimes unpredictable, changing patient status. Research evidence suggests that all clinicians in labor and delivery and elsewhere at times minimize communications, do not voice concerns about patient care, or actively avoid clinical conflict. This occurs for a variety of reasons that may include lack of confidence, saving face, preserving relationships, deference to hierarchy, and fear of repercussions (Lyndon, Zlatnik, & Wachter, 2011).

Framework for the Study

Team communication is not just a matter of conveying task-critical information. Team members also define and reaffirm the nature of their relationship in the process, for instance whether they consider themselves as equals or assume a higher rank versus a subordinate role (Keyton, 1999; Watzlawick, Beavin, & Jackson, 1967). Teams in many work settings may include individuals with different social status, such as nurses and physicians or cockpit crews on transport aircrafts, and communication patterns may reflect these differences and reinforce a hierarchical team structure (Brown & Levinson, 1987; Herrmann & Grabowski, 1994). Surveys of critical care physicians and nurses revealed differences in their understanding of teamwork consistent with their status (Pronovost, Wu, & Sexton, 2004; Thomas, Sexton, & Helmreich, 2003). Physicians' responses suggest that they perceived themselves as the ones who give orders to nurses whereas nurses reported difficul-

ties in expressing concerns or criticism. Likewise, researchers on crew communication found that captains tended to issue commands whereas first officers were less direct; typically they asked questions or identified a problem in the hope that the captain would realize that action was needed (Fischer, 2000; Linde, 1988). Status-based communication, that is, communication patterns that reaffirm status differences, has two components: communication highlights the actions or preferences of an individual, and the more powerful team member uses more forceful language than the subordinate team member. (See Figure 1).

When speakers use other-directed ("you do") strategies, they identify actions they want their addressee to perform. In self-directed ("I do") communications, speakers indicate actions they themselves wish to do, and in generic communications, they refer to action preferences and strategies without specifying who is to take the action. Typical strategies of other-directed communications are commands ("Go ahead and admit her. Just run an IV with 50 of LR per hour"), obligations, that is, statements specifying an action the partner should or should not do ("You don't have to worry too much"), suggestions ("Why don't you recheck her in two hours?"), as well as questions concerning the partner's willingness or intention to act ("Is there any way you could print her labs and her blood pressures and just what she has gotten and bring it down to me?"). Self-directed communication includes the following strategies: action and intention statements ("I ordered a CBC, ANP, and a UA"; "I'm still gonna try and get the steroids"), and requests in which a speaker, either pro forma or explicitly, asks permission to act ("Let me finish my paperwork . . . ", "Are you fine with me sending her home?"). Typical examples of generic communications include preference statements and inquiries ("I want her to get steroids." "Did you want to start Pitocin, or do you want to wait and see if she changes?"), strategies ("So if we give it today, that's good enough for a week which should put her at almost 34 weeks") or problem identifying statements and questions ("Her blood pressures are really high." "So, she's had two over 160?").

Communication strategies within each category differ in terms of their social force. For instance, commands are more forceful than suggestions or queries (Blum-Kulka, House, & Kasper, 1989), and speakers who give orders place considerable pressure on their addressees to follow through with the desired action, than if they had suggested or questioned their partners' willingness or ability

Slightly more than one half of registered nurse (RN)–physician interactions were considered to be effective, but interactions tend to be status based.

to perform the action (Figure 1). Likewise, in self-directed communications and generic communications, when speakers state their intentions to perform some action or mention their preference for an action, they also communicate a strong commitment to it. This signals to their addressee that, besides their agreement, they do not invite any input from them. In contrast, when speakers request permission to act, probe for their partner's preferred action, or identify a problem, they do not, at least explicitly, push for a particular action but rather defer to their addressee to authorize it. Team communication is status based if the more powerful member prefers to use the more forceful strategies whereas the less powerful member chooses weaker strategies.

An alternative to status-based strategy preferences is team-centered communication. Fischer (2000) coined this term to characterize communication strategies that emphasize team members' shared responsibilities for solving a problem. It is important to underscore that the team-centered communication model does not deny that there

are differences among team members in terms of status, experience, and expertise. However, these differences are not used to elevate the views of an individual, or to curtail communication between team members. Team-centered communication is grounded in team members' understanding that they are jointly responsible for accomplishing a task. Communication between team members is open, and each member's insights and perspectives are welcomed and valued. In contrast, status-based communication is grounded in status differences and is structured in a top-down manner. The differences between team-centered and status-based communication are illustrated in Figure 2.

In team-centered communication, speakers frame a situation as a team effort to which every member contributes. The emphasis is on the problem the team faces or the action they should take, and the conversation creates a "we will do" work climate which is conducive to discussion and collaborative decision making. Who is to perform the action is not explicitly stated but can be inferred from the context in which the communication occurs, or will be left for team members to decide. For instance, a physician engages in team-centered communication when he or she tells the nurse, "Let's go ahead and prepare patient X for a C-section" instead of ordering the nurse to do so. A nurse may
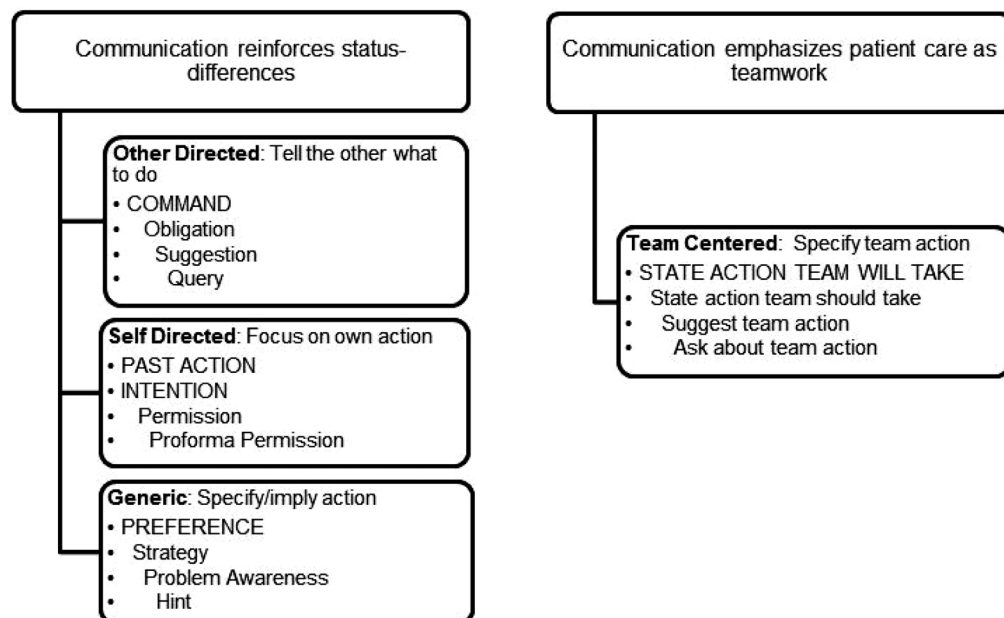

Figure 1. Strategies associated with status-based communication (left column) and team-centered communication (right column).
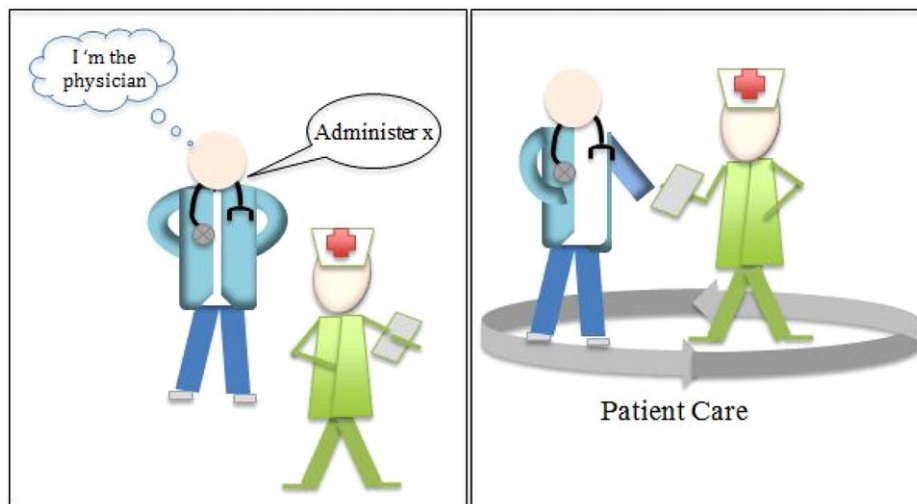
Figure 2. Illustrated differences between top-down status-based communication and open, collaborative team-centered communication.

combine SBAR with team-centered communication by saying, "I've already decreased her Pitocin. Should we discontinue it completely?" Note also that though this approach presents a course of action, it also leaves the ultimate care decision with the physician. As speakers may feel more or less strongly about the need for a particular action, they can rely on different team-centered strategies to express varying degrees of commitment. Intention statements ("We'll break her water at lunch") are more forceful than suggestions ("Why don't we drop it to 35?") followed by queries ("Should we discontinue it completely?").

Team-centered communication is a generic model. Although it has been developed for the training of cockpit crews, its underlying assumption seems applicable to other domains as well, and was therefore included in our analysis of nurse–physician interactions.

Research Problem

This research was conducted to examine how nurses and physicians communicate with each other regarding urgent labor and delivery decisions, and whether their strategies were supportive of teamwork or followed a status-based communication model. This study emerged as a component of a quality project to improve communication between nurses and physicians regarding patient status, based at one hospital that is part of a major urban health care system. Labor and delivery units were selected for this study be-

cause patient status (either the mother's or the baby's) can change rapidly, and the labor and delivery environment is one in which a healthy, positive outcome is expected. As part of the quality project, nursing staff modified the traditional SBAR communication tool to reflect the specifics of their patient population. In a postimplementation survey, nurses and physicians rated their communications more positively after the introduction of the modified SBAR tool. However, both groups commented that there were still opportunities for improving interprofessional communications. This quality project provided the basis for this study on nurse–physician communication, with the goal of enhancing positive patient outcomes

We sought to characterize communication strategies of labor nurses and their physician colleagues in an urban community hospital during urgent perinatal decisions. Fischer's (2000) framework of team-centered versus status-based communication strategies was used. The research questions were

1. What is the frequency of communication types used by nurses and physicians in discussing urgent labor and delivery patient situations?
2. What is the frequency of effective versus ineffective communication outcomes occurring post-interprofessional discussions regarding urgent labor and delivery patient situations?

Research Method

A descriptive methodology was adopted to explore the frequency of communication types used by registered nurses and physicians in discussing urgent labor and delivery patient situations and the effectiveness of communication outcomes occurring post-interprofessional discussions. Institutional Review Board approval for the study was obtained from the health care system. Consent forms outlining details of study participation were completed prior to data collection. Participants were assured that they could withdraw from the study at any time and their personal comments would be confidential. All registered nurses and admitting physicians associated with the targeted unit consented to participate in the study.

Description of the Sample

The sample consisted of 29 perinatal staff nurses and 11 attending physicians. The majority of the participating nurses had a range of nursing practice experience of 1.5 to 30 years, with 25% having more than 12 years of experience, all within perinatal nursing. Regarding educational preparation, the sample was evenly divided, with 50% of the nurses holding a BSN and 50% prepared at the associate degree level. The admitting, board-certified obstetricians had a range of experience from 5 to 32 years, with 50% having more than 15 years of experience. Gender of nurses and physicians was not identified in the sample. No nurse midwives practiced at this facility, so none was included in this sample.

Data Collection

Complete nurse–physician conversation recordings were obtained during a 2-month period by the hospital telephone operator who had historically recorded conversations for quality purposes. The audio-recorded conversations lasted from 2 minutes to 20 minutes. The recorded conversations were transcribed by a professional transcriptionist with all identifiers removed. A sample of 38 conversations was randomly selected; however, eight were excluded from further analysis due to poor audio quality, insufficient length, or conversations concerning personal matters. A total of 30 audio-taped conversations were analyzed in depth to classify nurse–physician communication strategies and identify effective and ineffective communication outcomes and processes. Immediately after transcription all audio-taped conversations were destroyed per Institutional Review Board request.

Data Analysis

Transcripts of the conversations were coded for communication strategies and effectiveness. Coding was done by a team of two research nurses and one researcher with 23 years of experience as a communication specialist. The physician champion who was an integral part of the research team assumed a different position during the course of this investigation; another physician was not added to the team due to limitations in time and other resources Communication effectiveness concerned the overall quality of a nurse–physician conversation and involved a binary judgment: effective versus ineffective. The research team defined *effective communication* between nurses and physicians as a collegial exchange with both parties equally participating and receiving by the nurses of a physician-initiated patient care order. *Ineffective communication* was defined as a conversation involving any of the following characteristics: discordance, interruptions, mixed messages, apologies and objections, or monologues. To code for communication strategies coders individually read each transcript and identified statements in which a speaker sought to initiate an action in support of patient care. These initiating statements were subsequently classified as team centered, other directed, self-directed, or generic communications. The few disagreements between coders concerning communication strategies and effectiveness ratings were discussed until consensus was reached. Consensus coding did not involve the calculation of a difference score; rather it was a collaborative process between expert judges

Results

We sought to discover the frequency of communication strategies used by nurses and physicians, and the quality of their interactions. Data analysis revealed two patterns: nurses and physicians predominantly relied on other-directed or generic strategies to initiate critical care decisions, and slightly more than one half of their interactions were considered to be effective.

There were 30 conversations involving 163 utterances that concerned actions related to patient care. Overall, physicians made more of these contributions ($n = 108$, 66.26%) compared to nurses ($n = 55$, 33.74%). Frequencies and percentages of physicians' and nurses' communication strategies were calculated and are displayed in Table 1. Team-centered communication strategies were rarely used by physicians ($n = 14$, 12.96%)

Table 1: Frequency and Percent of Communication Strategies

Communication Strategies	Nurses		Physician	
	Frequency	Percent	Frequency	Percent
Team-centered "We do"	2	3.64	14	12.96
Team's Intention (We're gonna do X)	0	0.00	3	2.78
Team Suggestion (Let's do/Why don't we do X?)	0	0.00	8	7.41
Query (Should we do X?)	2	3.64	3	2.78
Other-directed "YOU DO"	23	41.82	45	41.67
Command (Go ahead and do X)	6	10.91	30	27.78
Obligation (You need to do X)	1	1.82	1	0.93
Suggestion (Why don't you do X?)	4	7.27	4	3.70
Query (Can you do X?)	12	21.82	10	9.26
Self-directed "I DO"	11	20.00	11	10.19
Action (I did X)	2	3.64	0	0.00
Intention (I'm gonna do X)	0	0.00	9	8.33
ProForma Permission (Let me do X)	0	0.00	2	1.85
Permission (You want me to do X?)	9	16.36	0	0.00
Generic	19	34.55	38	35.19
Preference Statement/Query (I want/ Do you want X for patient?)	14	25.45	7	6.48
Strategy (She needs a PIH eval.)	3	5.45	6	5.56
Problem Awareness (She has/does she have condition Y?)	1	1.82	22	20.37
Hint (She's uncomfortable and getting close. / Is she Ok?)	1	1.82	3	2.78

or nurses ($n = 2$, 3.64%) during care decisions. Instead, physicians and nurses predominantly relied on other-directed communication strategies in these discussions ($n = 45$, 41.67%; $n = 23$, 41.82%) for physicians and nurses, respectively, followed by generic communications ($n = 38$, 35.19% for physicians; $n = 19$, 34.55% for nurses).

However, differences between physicians and nurses were apparent concerning the subtypes of strategies used. With respect to other-directed communications, commands were physicians' dominant strategies ($n = 30$, 66.67% of their other-directed communications) as when a physician instructed a nurse, "This morning just give her 16 units of Humalog before breakfast." Nurses most frequently used queries ($n = 12$, 52.18% of their other-directed communications) in an attempt to prompt physicians for care decisions. Typical examples are the following questions: "Did you want to leave orders for her? or "What do you want

to do?" Physicians' generic communications predominantly concerned the patient's status ($n = 22$, 57.89%), typically questions that addressed a critical issue, such as "Do you think she's progressing quicker?" Nurses, in contrast, tended to inquire about the physician's treatment preference to initiate care decisions ($n = 14$, 73.68), as in "Do you want her to be antepartum after I get her blood pressure down?" This strategy preference may reflect nurses' traditional approach to seeking a physician's order.

As mentioned above, team-centered communications rarely occurred in our sample of nurse–physician conversations. This type of communication was basically nonexistent among nurses. If physicians used a team-centered approach they tended to phrase suggestions in terms of joint actions. Examples include, "Let's check her again in an hour and just see where she is" or "We may have to keep her."

Table 2: Outcomes of Conversations

Communication Strategies	Effective Conversations		Communication Strategies	Ineffective Conversations	
	Frequency	Percent		Frequency	Percent
Collegial	5	29	Discord	3	23
Received an Order	8	47	One-sided conversation	3	23
BPP = Both parties participating in conversation	4	24	Talk over	2	15
			Objection	2	15
			Mixed message	1	9
			Nurse apology	2	15
Total	17	100	Total	13	100

Effective conversations were defined as interactions that were collegial, with nurses and physicians participating and resulting in a clear care decision (see Table 2). Of the total of 30 transcripts analyzed, 17 of the conversations were judged to be effective, meaning that 29% of conversations were collegial ($n = 5$), an action plan was determined in 47% of these ($n = 8$), and in 24% of the conversations, both parties participated in determining the patient plan of care ($n = 4$). Thirteen of the transcribed conversations were rated as ineffective. Of these, 23% of the conversations exhibited discord ($n = 3$), and 23% were dominated by the physician with minimal contribution by the nurse involved ($n = 3$). Furthermore, 15% of the conversations revealed one partner talking over the other ($n = 2$) or raising an objection to the patient plan of care (or the nurse apologizing for disturbing the physician (15% of the conversations, $n = 2$). In the conversations in which the nurse apologized ($n = 2$), one instance was due to the fact that the nurse contacted the wrong physician for the patient.

Discussion

By capturing conversations as they occurred during the course of patient care, typical patterns were revealed. The majority of nurses and physicians used other-directed communication strategies as a primary form of deciding on patient care needs, and more importantly, their strategy preferences were consistent with a status-based communication model. Physician tended to issue commands and did so more often than nurses. Nurses, in contrast, relied on queries to initiate decisions on patient care—a strategy less frequently observed for physicians.

Nurses' and physicians' preferences for specific types of self-directed and generic communication strategies also aligned with status differences. Nurses tended to prompt physicians to authorize actions, either explicitly by asking permission to take an action, or indirectly by inquiring which action a physician preferred (the fact that it was the nurse who would realize the physician's preference was implied). In contrast, physicians tended to request or verify critical patient information with the nurses before reaching a care decision, that is, before instructing nurses on what to do, or informing the nurses of the action they intended to take.

As has been observed in cockpit crews, status-based communications were found to be the norm in this sample of nurse–physician interactions. These patterns are in keeping with the physician's role as director of the health care team for a patient, and as this research demonstrates, they can be quite successful. About 57% of the physician–nurse conversations sampled were judged to be collegial, participatory, and resulting in a clear treatment decision. However, there are hidden costs of status-based communication that are frequently overlooked until adverse events bring them to the fore. If status differences dominate team interactions, true collaboration may be inhibited, and ultimately task performance may suffer. By being forceful, high-status team members discourage criticism. Lower status members likely feel insecure whether and how to challenge a

superior's assessment or decision and may fear that their disagreement could be perceived as disrespectful (Brown & Levinson, 1987). Thus, instead of voicing dissent, lower status team members may feel pushed to agree with their superiors, even when they have valid objections. This problem has been noted in the health care literature (Provonost, Wu, & Sexton, 2004; Reader, Flin, & Cuthbertson, 2008). It has received considerably more scrutiny in the aviation domain when it became apparent that failures by junior crew members to adequately monitor and challenge a captain's behavior contributed to aircraft accidents (National Transportation Safety Board [NTSB], 1994).

Team-centered communication seems a viable alternative to status-based communication. Research with commercial pilots showed that it could be an effective approach to collaborative decision making and error prevention (Fischer & Orasanu, 2000; Fischer, Rinehart, & Orasanu, 2001). Fischer and colleagues (2000) presented commercial pilots with aviation scenarios, each describing an error by the pilot flying the aircraft. Participants were asked to rate the effectiveness of status-based and team-centered communication strategies that pilots (in a previous study) had used to avert the error. Captains and first officers favored team-oriented communications, rather than interventions based on status. A team-centered communication model may also support nurses and physicians as they make critical patient care decisions by fostering a "we do" approach to planning and negotiating of patient care needs. Communication strategies that emphasize nurses' and physicians' shared responsibility for patient care likely encourage both groups to bring their knowledge and expertise into care discussions, and as a result could promote a comprehensive patient plan of care. However, results of this study indicate that nurses and physicians rarely adopted team-centered communication strategies. This finding suggests that there is a training need as well as a considerable challenge ahead as education of health personnel seeks to overcome status-based conversational norms. Maxson et al. (2011) reported a positive outcome using high-fidelity simulation-based team training as a potential venue for improving nurse–physician collaboration in clinical decision making.

This study had several limitations. It involved only a small sample size, and the recorded conversations did not capture emergency situations that

> **The team-centered communication model is an effective communication model, is worthy of administrative support, and should be used in interdisciplinary in-services and discussions on communications.**

may call for a heightened level of teamwork. Still, the prevalence of other-directed and generic communication strategies in the conversations suggests that nurses and physicians may employ the same strategies during an emergency, as analyses of aircraft accidents have revealed. No nurse midwives were included in this study, which could have contributed an additional component regarding status, perceptions, and quality of communications. And lastly, findings are limited in that there was no follow-up on the conversations, either to validate the clarity of the communications, or to seek interpretation of or perspectives on the meaning of statements. Future research opportunities include replication of this study with other populations of nurses and physicians and use of interventional research methods.

The practical implication of this research is an increased recognition of the types of communication strategies nurses and physicians use. Findings indicate that communication patterns of RNs and physicians have not changed into more collaborative, team-centered interactions despite pointed endeavors such as in-services on the use of SBAR or unit focus groups regarding nurse–physician communication, Instead, professional staff seems to adhere to the traditional status-based style. Ultimately this communication style could lead to less-than-optimal patient outcome because lower-status team members, such as nurses, are not treated as equals. They may not be asked for their input to critical care decisions, be recognized for their scope of practice, or may not be given recognition for their insights and initiatives, and thus may never contribute to their full potential. Collaboration must be an organizational goal, with acknowledgment to health care team members for contributions to quality patient care outcomes.

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