Time as a Catalyst for Tension in Nurse-Surgeon Communication

Effective communication is critical to the smooth functioning of a multidisciplinary surgical team. The team is a complex system comprising representatives from nursing, surgery, and anesthesia—all disciplines with different health care models. An implicit hierarchy governs the team, fueled in part by stereotypes of the “omnipotent physician” and “subservient nurse.” Team roles are not always articulated clearly or agreed on by team members, making effective communication in the OR a challenge that potentially affects social, administrative, educational, and clinical outcomes.

The need for research in this area is evident, as surveys and anecdotal reports negatively depict OR communications. In addition, although the stereotype of at odds physician-nurse discourse is not specific to the OR, communication in this domain is known for its purported autocratic, top-down, militaristic nature. Representations in popular culture, such as the television programs ER and Chicago Hope, reflect the myth of overtly combative discourse between surgeons and surgical team members, particularly nurses.

Of course, relationships among team members, particularly those between nurses and surgeons, have evolved in recent decades as the nursing profession has revised its “handmaiden” image for that of an autonomous, expert health care profession. The literature includes reports on the motives behind this shift; reflections on its social, philosophical, and theoretical context; and discussions of its influence on physician-nurse relationships. The extent and nature of this influence on specific activities, such as daily communicative exchanges, however, has not received attention from a discourse analytical view.

LITERATURE REVIEW

No studies were found in the literature that directly address the role of communication in the interdisciplinary relationships of surgical team members in the OR. Studies of other clinical settings, however, report barriers to successful communication. The lack of research specific to the OR has made it difficult to assess surgical team communication. Without research, it is difficult to assess the extent and nature of recently identified evolutions in this area. Studying related and overlapping research domains, however, can reveal approaches to this new area of investigation.

Research about health care professionals’ relationships shows discord and disagreement among disciplinary groups, and much of the literature focuses on the

ABSTRACT

Carefully studying communication patterns between nurses and surgeons questions popular stereotypes about OR discourse and expands educators’ understanding of the factors that motivate team communication, patterns that are habitual among team members, and issues that act as catalysts for tension. This study examines the nature of communication between perioperative nurses and surgeons and identifies patterns and sites of tension. Researchers observed 128 hours of interaction between nurses and surgeons in four surgical divisions at one teaching hospital in Ontario, Canada. Field notes were read, coded, and analyzed independently. Results showed that higher tension in nurse-surgeon communication clusters around particular themes, the most dominant of which is time. Analysis of this theme reveals communication strategies that allow surgeons and nurses to achieve individual goals and support social cohesion among team members. AORN J 74 (Nov 2001) 672-682.
tension between physicians and nurses. This literature, however, tends to be more political than scientific, and it offers broad characterization of issues rather than a systematic examination of activities.

Collaboration. Interdisciplinary collaboration has surfaced as a central issue in professionalism, and it is encouraged, particularly by nursing scholars. The literature on collaboration in the medical profession is wide-ranging. Few studies, however, have demonstrated an appreciable outcome effect due to lack of clear methods for defining, isolating, and analyzing the collaborative phenomenon. An important exception to this is recent research in critical care medicine. In rare instances when a correlation has been established between collaboration, which is variously defined, and clinical outcomes, there is a lack of understanding about how collaboration works in terms of communicative patterns and effects. As one source suggests, "we need more evidence and less rhetoric in order to understand when, how, and why collaboration works—or doesn't work—in particular settings."

Organizational performance. Another related research domain is organizational performance. Research in this area has affected fields, such as aviation, in which task analysis and social psychology have been combined to study team activity under pressure. In medicine, much organizational performance research focuses on the nature and explanation of human error. Researchers have analyzed the performance of anesthesia care providers, the coordination between anesthesiology and surgery staff members, and the performance of the surgical team. In the latter study, surveys of 156 surgical team members representing surgery, nursing, and anesthesiology revealed a perceived need for better communication to increase efficiency and improve team morale. Observations of surgical procedures revealed multiple errors related not to technical competence but to the interpersonal aspects of functioning in the OR.

THEORETICAL APPROACH

The study is informed by a rhetorical theory of communication as a social act. A fundamental principle of rhetoric is that all communication has intended and actual effects. Similarly, all communication is motivated by the need to identify with an audience to overcome differences and achieve the common ground required for a productive exchange. Forging such identification requires recognition of the elements of division and negotiation of shared interests.

In some communication settings, divisive factors may be especially numerous or intensive, as in cross-cultural contexts or labor relations. The surgical team, due to its interdisciplinary nature, is beset by divisive elements, including gender, economics, politics, and professional models of care. These divisions provide fertile ground for communication to go awry, motives to conflict, and messages to have unintended effects.

When communication does derail, its effects expand beyond the words used. Words act on individuals, by both making possible and constraining their understanding of their lives. Studying communication this way shifts attention from what is said (i.e., content) to what is accomplished or affected (i.e., action). This approach enables analysis of communication problems and their effect on social activity.

METHODS

The study received ethical approval from the hospital ethics review board, and all subjects signed consent forms. Observers had no previous relationship with participants. Members of the research working group did have relationships with participants; therefore, they did not have access to raw data. Rather, only anonymous data were presented to the working group, which ensured the confidentiality of all participants. During a four-month period, two researchers jointly observed 128 hours of OR interaction representing a range of procedures from four surgical divisions (i.e., general surgery, urology, otolaryngology, cardiology) at one teaching hospital in Ontario, Canada. Observers attended 35 procedures involving surgeons, fellows, residents, clerks, nurses, students, perfusion staff members, anesthesia care providers, and anesthesia fellows and residents. The study used an ethnographic approach that involved nonparticipant observers dwelling in the social environment under investigation. Due to participants' expressed concerns regarding audiotaping
METHOD NOTE

Achieving rigor in qualitative research studies

The scientific rigor of research is associated with the value of its findings. Qualitative research methods, such as the grounded theory method used in this study, have been criticized for lack of rigor, according to quantitative standards. Rigor, however, is defined differently for qualitative studies since the outcomes of such studies are different.\(^2\) Quantitative studies are judged by the validity, reliability, and generalizability of their findings, and qualitative studies are evaluated on the basis of the credibility, dependability, confirmability, and transferability of their methods and results.\(^2\)

A researcher may achieve credibility, sometimes referred to as truth value, by taking the collected data back to their source to validate interpretations and subsequent findings. This process is known as member checking. A study may be considered credible if the descriptions of the experience are recognizable to those who have lived the experience. A researcher also may ensure credibility by repeatedly observing or interviewing the same person or reading field notes or interview transcripts more than once. In the data analysis phase, the researcher may use peer debriefers to provide additional views of the data.\(^3\) In this grounded theory study, the investigators reviewed their field notes repeatedly and checked their preliminary and completed interpretations with several peer debriefers.

Dependability refers to the stability of data over time and various conditions and is determined after credibility has been established. Using independent external reviewers to scrutinize and audit data helps ensure dependability. Stepwise replication—the use of two teams of researchers who conduct their inquiries independently and subsequently compare analyses—is another means of assuring dependability.\(^4\) In this study, a pair of researchers conducted independent analyses and then conferred to compare their interpretations.

Confirmability or consistency is concerned with objectivity or neutrality of the data and not of the researcher. Confirmability is achieved by leaving an audit trail—a collection of evidence (eg, raw data, researcher journal, preliminary data interpretations) from the study. Independent examiners attempt to follow the audit trail to track the decisions and conclusions of the investigator. A study is judged to have confirmability if the auditors arrive at the same interpretations of the meaning and significance of the study findings as the researcher.\(^5\)

Transferability is similar to generalizability in quantitative research and refers to the extent to which the results of the study apply to other groups and settings. Ultimately, it is up to the users of the findings to judge whether they can be transferred to other contexts. The researcher, however, must provide a rich and thorough description of the study setting and participants (ie, thick description) that will allow readers to judge whether the contexts are similar and, therefore, whether the results are transferable.\(^6\)

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NOTES
3. Ibid.
5. Byrne, "Evaluating the findings of qualitative research," 703-704; Polit, Hungler, Nursing Research: Principles and Methods, 430.
6. Ibid.
or videotaping, observers employed a standardized field note technique to capture observed events. This technique allowed researchers to record three types of notes:

- objective observations,
- subjective interpretations of observations, and
- researchers’ notes-to-self about the implications of observations on research design and analysis.

Observers conducted approximately two brief unstructured interviews per observation to solicit participants’ opinions of the representative nature of the observed activity. Mechanisms to minimize observer effect included observation length (ie, three to five hours) and observation duration (ie, one month of observation per surgical division).

**Data analysis.** Using the grounded theory tradition, field notes were analyzed to construct a qualitative schematic of team communication in the OR. Grounded theory analysis is an inductive process in which recurring themes or categories arise during repeated readings of field notes. The process is iterative and relies on a “constant comparative” approach to data analysis. Constant comparative describes the standard of continuously testing and revising key themes or categories as data are organized using the categorical framework. This process ensures the trustworthiness and authenticity of the interpretations. After a preliminary code of themes is established using this method, all observers conduct individual analyses and confer to establish common findings. Discrepancies are resolved through discussion. In this study, as an additional test of authenticity, both preliminary and completed findings were presented to the working group members, whose insider feedback was used to confirm the representativeness of observations and to refine and expand the qualitative analysis.

All communication events, defined as any discourse with an audience and purpose that consisted of at least one statement and response cycle, were identified. Longer sequences with one shared purpose and audience were considered as single events. Using qualitative data analysis software, thematic categories were divided further to identify the speaker, audience, type of discourse, rhetorical strategy, and context of each event.

**RESULTS AND DISCUSSION**

The study revealed recurrent discourse forms, themes, and sites of tension in OR communication, along with which types of communication are used most frequently. It also revealed that time is a catalyst for tension between surgeons and nurses in the OR.

**Recurrent discourse forms, themes, and sites of tension.** The study captured a diverse range of forms of discourse, including jokes, stories, commands, questions, social “chat,” statements, rebukes, and silences. Figure 1 illustrates some of the central thematic nodes and subnodes that emerged during the inductive data analysis process.

Communicative tension arose regularly in relation to these themes. In fact, all 35 observed procedures contained between one and four events of higher than normal tension. Higher tension was characterized by the phenomenon of tension extending beyond the original participants. In such cases, the effect of the tension is significant beyond the particular content, participants, and context of its original occurrence. Tension was spread to other team members, other contexts (eg, adjoining ORs, front desk, scrub area), and to other topics of conversation or content areas.

**Types and frequency of communication.** Higher tension events occurred most often between surgical and nursing staff members. Although tension was a factor in nurse-surgeon discourse, findings contradicted common stereotypes about nurse-surgeon communication (Table 1). In contrast with the prevailing myth of an autocratic, hierarchical communication system in the OR, findings suggest that there is in fact a wide range of subtle communications among members of the surgical team, particularly in situations of tension or potential tension.

For instance, when surgeons and nurses are discussing issues of time (eg, patient scheduling, sending for the next patient, cancellation procedures, room turnover), they use many forms of discourse (Figure 2). Discourse forms include stereotypical communications, such as commands (eg, “Send for the next patient, please”) and rebukes (eg, “This room isn’t turned over yet”). Nonconfirming of stereotypical notions are findings that nurses were more likely than surgeons to use commands (ie, 14% versus 9%), and nurses were almost as likely as surgeons to use rebukes (ie, 10% versus 12%). “Other” discourse forms included

- jokes (eg, “I think all the patients should be sent for at 8:30 AM, and then I wouldn’t be kept waiting”)
- stories (eg, “Last week, my team was really slow, and none of my patients were sent for on time”)
- nonverbal communication (eg, the circulating nurse nods his or her head and picks up the telephone to send for a patient); and
silence (eg, although the circulating nurse has heard a request, it is not acknowledged by a verbal or nonverbal response).

Interestingly, 47% of nurses regularly use statements (eg, “We are closing, so we will need the next patient in 20 minutes,”) in communications with surgeons about time. This form of discourse is a rhetorical strategy in team communications. The statement is a useful response for nurses because its neutrality allows the deflection of questions that could potentially cause nurse-surgeon tension surrounding issues of time and domain control. The following example from the study illustrates this strategy.

Surgeon: “Did I hear you say the next patient is canceled?”
Circulating nurse: “She’s not prepped.”
Surgeon: “What if we are out in five minutes?”
Circulating nurse: “I still think she is canceled. We wouldn’t get to her.” (The circulating nurse then telephones the front desk to let the scheduling nurse know that they are still completing the procedure.)
Surgeon: (angrily) “Well, I don’t know when we’ll be finished. I don’t have control.”

The nurse’s statement “She’s not prepped” only indirectly answers the attending surgeon’s question, deflecting his inevitable frustration from her role as the individual who sends for patients or cancels procedures. Instead, the issue of patient prepping—and the staff member responsible for this activity—is offered as a substitute target for the surgeon’s anger at falling behind schedule. Similarly, the statement “We wouldn’t get to her” followed by the telephone call to the front desk provides a strategic response to the surgeon’s persistent questioning. This neutral statement and use of the term we distributes responsibility for the cancellation fairly. Furthermore, the statement and the telephone call allow the nurse to implicitly make a point that might cause conflict if made explicitly. Her point is that the decision to cancel is based on more than the surgeon’s desire to complete all the scheduled procedures.

Nurses also were observed employing the strategy of deflection during exchanges with surgeons about another tension-causing issue—temperature control. These four examples were excerpted from longer exchanges, which often included the anesthesia care provider’s comments on patient temperature.

Surgeon: “God, it’s hot!”
Nurse: “It’s at 55—that’s as low as it will go.”

Surgeon: “I’m dying in here—can we get the heat turned down please?
Nurse: “I’ll call plant engineering.”

Surgeon: “Am I the only one who’s hot? Is this a
menopausal thing—you don’t feel it?”
Nurse: (Soft laughter with no verbal response.)

Surgeon: “Well if we can’t turn it down... I mean, I can’t operate like this.”
Nurse: “Maybe a quick break would help.”

Deflection in these instances directs attention away from the budding conflict between surgeon and nurse or between surgeon and a nurse/anesthesia care provider alliance. This technique, in which the nurse deflects and minimizes the looming conflict often is accompanied by posing alternative solutions. For example, calling plant engineering serves a number of strategic purposes. It can imply a faulty thermostat or other circumstances beyond the nurse’s control and possibly create another target for the surgeon’s ire.

The sideways nature of this discourse contradicts the assertion that nurses have evolved from the “posture of a willing supplicant” toward the “stance of a stubborn rebel.” Although study participants often described the surgeon-nurse relationship in the OR as generally having evolved in this way, the discourse patterns do not reflect this. Rather, nurse responses often directed attention to discursive techniques such as deflecting and suggesting alternatives—techniques that maintain a careful balance between supplicant and rebel and between the surgeon’s goals and perceptions and the nurse’s goals and perceptions. Such techniques are the “nuts and bolts” of constructive conflict management. Understanding and cataloging these techniques are required to build on existing “helpful communication tips” and move beyond “rhetoric” toward evidence-based approaches to best practices in OR communication.

**Time as a catalyst for tension.** Time was identified in data analysis as a particularly salient and influential issue in team communications. In communications about time, dominant tensions in the surgeon-
nurse relationship surfaced repeatedly. In fact, the theme intersects with and acts as a catalyst for other important themes related to team interaction that were identified in the study (Figure 3). The following interaction demonstrates ways in which time can act as a catalyst for several high tension issues between surgeons and nurses.

Surgeon: (Speaking to circulating nurse, midway through a procedure) “So, is the next patient going to be late then?”
Circulating nurse one: “I don’t know. [The floor nurse] said she’d do her best. I’ve sent for her.”
Surgeon: “It’s such a waste. I think they should bring all the patients in at 8:30 AM so they’re here if this happens.”
Circulating nurse two: (Laughs)
Circulating nurse one: “So the ones we cancel at 2:30 PM can have been waiting here since 6:30 AM?”
Surgeon: “Well, your point is well-taken, but they’re

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**Table 1**

<table>
<thead>
<tr>
<th>Discourse stereotypes</th>
<th>Discourse findings</th>
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<tbody>
<tr>
<td>Surgical team is a hierarchical communicative system.</td>
<td>Surgical team is a multidimensional system of complex relationships.</td>
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<tr>
<td>Surgeon communication uses commands and rebukes.</td>
<td>Surgeon communication uses questions and statements.</td>
</tr>
<tr>
<td>Nurses may respond with agreement or aggression.</td>
<td>Nurses may respond with neutral deflecting statements.</td>
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**Figure 2** Surgeons and nurses use many different forms of discourse when communicating about time issues.
Circulating nurse two: "I agree with you, but—
(Surgeon walks away midway through the nurse’s comment, and she ends mid-sentence.)

In this excerpt, the theme of time divides into issues of patient scheduling and room turnover. These issues are related to surgeons’ and nurses’ perceptions of team roles (ie, who is in charge of sending for patients and, therefore, the pace of the day’s procedures?) Debates about when the next patient should be transferred to the OR are a common occurrence in daily activity. Such communication demonstrates that what appears to be a straightforward hierarchy led by the attending surgeon actually is a complex negotiation to control the pace of sending for patients (ie, domain control).

The surgeon is entitled to request ordering the transfer of the next patient; however, this responsibility falls to the circulating nurse, who is responsible for not only responding to the surgeon’s request but also ensuring that patients arrive at the OR without undue delay. The circulating nurse is in a difficult position, situated between these two responsibilities. In response to these implicit conflicts, nurses were observed either ignoring premature requests to order patient transfers or acknowledging the request but fulfilling it according to their own estimations of the pace of the current procedure. Rarely was either action overtly rebellious. In fact, the subtlety employed in both maneuvers suggested a purposeful balancing act among the responsibility to maintain a fluid surgical pace, to advocate for patients who are scheduled for surgery, and to maintain team member cohesion by placating the surgeon in charge.

The negotiation about patient scheduling demonstrates a relationship among the themes of time, domain control, and money. As participants indicated, surgeons are paid by procedure, not by the hour, and this different economic structure can create conflicting perspectives about procedure cancellation. Nurses and surgeons also differ in their expectations of the time needed to prepare the OR for the next procedure. Nurses commented that such differences can be attributed partly to different responsibilities (eg, surgeons rarely were present for all the activities of preparing a room and procedure).

Although economics clearly is at play in such tensions, morale also is an issue. In recent decades, perioperative nursing staff members in North America have faced many changes in working conditions and administration. These changes, which often are perceived as threatening, have disheartened nurses and contributed to morale-related issues, such as a reluctance to sacrifice lifestyle. For instance, nurses may be hesitant to continue working beyond a scheduled shift to accommodate additional procedures. In these instances in which issues of economics, morale, and lifestyle are invoked, time can be a catalyst for cascading tensions in the OR.

LIMITATIONS

As in any observational study, the Hawthorne effect, wherein subjects act differently due to observers’ presence, is a possibility. Observation duration (ie, three to five hours) and length of time in each division (ie, one month) offered an opportunity for participants to become accustomed to the presence of observers and was expected to minimize the Hawthorne effect. In addition, observers were instructed to record any evidence of the Hawthorne
effect in their field notes. In discussions after the
day’s observations, researchers determined whether
any such data should be discarded as tainted.
Informal interviews with randomly selected partici-
pants after each observation period contributed to a
sense of the data’s representativeness as well as
informed decisions to discard unreliable data.

Finally, working group members were given
opportunities to comment on whether data seemed
representative. In only two instances did these
researchers question the quality of the data. Due to
these measures, researchers are confident that the
findings of this study reflect representative team
member communication activities specific to the
hospital studied, the time of year in which observa-
tions were conducted (ie, August to December), and
the nature of divisions selected for study.

CONCLUSION
Surgical team member communications in the
OR follow observable patterns and are influenced
by recurrent themes. Time can be a source of con-
troversy, affecting issues of role and relationship,
domain control, and morale of surgical team
members. In the face of such tension, communication
among OR team members is more subtle and com-
plex than the openly combative style of OR myth. In
fact, patterns of communication observed in this
study reflect the complex and sophisticated nature
of new, evolved surgeon-nurse relationships. Data
reveal that nurses use discursive strategies to
achieve nursing goals (eg, fluid and responsible
room management, patient advocacy) while mini-
mizing interprofessional tension and maintaining
social cohesion.

The methodology applied in this research pro-
vides a systematic approach to defining the nature of
OR communication and investigating when and why
tensions arise and how nurses and surgeons currently
respond to such tensions. These data are essential to
understanding and cataloging specific communica-
tion strategies that are employed, both successfully
and unsuccessfully, during interprofessional tension.

Increasing evidence-based understanding of what
causes tension and the effects on nurse-surgeon com-
munication will allow staff members and educators to
be proactive in handling these issues.

RECOMMENDATIONS FOR EDUCATION
Despite the common belief that the OR is one
of health care’s most stressful environments, there
currently are no explicit instructions for novices in
recognizing and handling communicative tension
among surgical team members. Further, the implicit
curriculum of trial and error and modeling and mimi-
cry makes it difficult to monitor and shape novice
learning and can result in their acquiring unintended
values. Educators recognize that novices require
explicit instruction to acquire technical skills and
knowledge. Similarly, novices require explicit
instruction to acquire team communication skills,
particularly the sophisticated strategies involved in
interprofessional discourse in situations of tension.
Consequently, an educational initiative is needed
that provides novice surgical team members with
• a “catalog” of common, tension-provoking issues
  in surgical team communications;
• an understanding of various strategies for han-
dling team tension;
• a sense of how practicing surgeons, nurses, and
  anesthesia care providers employ and interpret
  these strategies; and
• an opportunity to hear and appreciate the perspec-
tives that surgical team members from different
disciplines bring to these issues.
Future research in this area will help fulfill these
needs. ▲

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Ringworm of the Scalp—Major Health Issue

This year, approximately 1 million children will be infected with tinea capitis, a highly contagious disease better known as ringworm of the scalp, according to an Aug 16, 2001, news release. This disease is a fungal infection, and its incidence is increasing in the United States. Ringworm accounts for more than 90% of skin fungal infections in children less than 10 years of age in the United States.

Ringworm of the scalp, contrary to its name, is not a worm—it is a highly contagious fungal infection. Hair loss, itching, and dandruff are symptoms of this disease. It can be spread through direct contact and through indirect contact with combs, hats, and articles of clothing of infected individuals. Many people who become infected with the disease do not seek treatment or remain undiagnosed, which can lead to severe pain, permanent hair loss, scar formation on the scalp, missed days of school or work, and the potential of spreading the disease to others. According to the release, the Centers for Disease Control and Prevention estimates that more than 700,000 physician visits per year are made for ringworm of the scalp.

Even though children less than 10 years of age are at the greatest risk, anyone can be infected with ringworm. Researchers analyzed 1996 data and found that children between the ages of five and 18 made more than 77% of physician visits for ringworm. Those younger than five years of age accounted for 19% of visits, and those older than 18 years of age accounted for 4% of visits. African-Americans are most at risk, as they accounted for 81% of 1996 visits.

Early recognition and treatment are the keys to slowing and preventing the spread of ringworm. Shampoos and other topical treatments alone are not an effective cure. According to the release, an oral antifungal is the only effective cure. To prevent the spread of the disease, children should be taught not to share communal items, such as combs, barrettes, and stuffed animals.