Organizational Learning in an Orthopaedic Unit: A Learning History

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Organizational Learning in an Orthopaedic Unit: A Learning History

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Organizational Learning in an Orthopaedic Unit
A Learning History

Bret Lyman ▼ Lindsey Shaw ▼ Carly Moore

The purpose of this study was to explore organizational learning in an orthopaedic hospital unit. Skill in organizational learning is necessary to achieve high reliability in a dynamic healthcare environment, yet organizational learning in hospital units is not well understood. A learning history was conducted with a high-performing orthopaedic unit. Findings were interpreted in the context of a previous learning history conducted with a critical care unit. Despite contextual differences, each unit progressed through the same four developmental stages to achieve its current state of high reliability. On both units, psychological safety and a healthy work environment proved essential for developmental progression. Hospital units may progress through distinct developmental stages to achieve their desired outcomes. Psychological safety and a healthy work environment appear foundational to organizational learning in hospital units. Nursing leaders should work with team members to evaluate their unit’s development and use suggested strategies to facilitate organizational learning.

Improvement at the unit level is crucial to improving hospitals and health systems (Berta et al., 2015; Nelson et al., 2008), yet organizational learning at the unit level is not well understood. Recently, organizational learning was studied in a critical care unit situated in an urban, not-for-profit, regional medical center (Lyman, Ethington, King, Jacobs, & Lundeen, 2017). The critical care unit progressed through a series of developmental stages to achieve high reliability. Its early development involved establishing psychological safety (feeling comfortable speaking up without fear of negative consequences, Edmondson, 1999), which prepared the unit to thrive in an era of increasing accountability. As individual and collective performance on the unit improved, team members adopted and developed systems-based mechanisms to sustain their improvement and reliably achieve excellent performance. These findings support the American Association of Critical-Care Nurses’ (AACN, 2016) position statement that a healthy work environment is essential to achieving clinical excellence in critical care.

The National Association of Orthopaedic Nurses’ (NAON) (2010) position statement also claims that a healthy work environment is critical to excellent performance in orthopaedic nursing. However, to our knowledge, organizational learning in orthopaedic hospital units has not been studied. The CINAHL, MEDLINE, PsychINFO, Academic Search Premier, and Business Source Premier databases were searched for published articles pertaining to organizational learning and healthy work environments in orthopaedic units. With the exception of two editorials on healthy work environments (Satusky, 2011, 2012), no published articles on these topics were found.

The purpose of this study was to explore organizational learning in an orthopaedic hospital unit. Skill in organizational learning is necessary to achieve high reliability in a dynamic healthcare environment, yet organizational learning in hospital units is not well understood. A learning history was conducted with a high-performing orthopaedic unit. Findings were interpreted in the context of a previous learning history conducted with a critical care unit. Despite contextual differences, each unit progressed through the same four developmental stages to achieve its current state of high reliability. On both units, psychological safety and a healthy work environment proved essential for developmental progression. Hospital units may progress through distinct developmental stages to achieve their desired outcomes. Psychological safety and a healthy work environment appear foundational to organizational learning in hospital units. Nursing leaders should work with team members to evaluate their unit’s development and use suggested strategies to facilitate organizational learning.

Organizational scientists define the process of continuous learning as organizational learning (Senge, 1990). Organizational learning involves effective uptake, customization, and implementation of evidence-based practices, use of feedback loops to learn from errors and replicate successes, engagement of organizational stakeholders in the work of improvement, and other interrelated efforts. Learning organizations thrive in a complex environment, continuously improve their ability to use resources as effectively as possible to provide high-quality, patient-centered care (Institute of Medicine, 2012).

Hospitals are challenged with simultaneously improving quality of care, controlling costs, and improving patients’ experiences (Berwick, Nolan, & Whittington, 2008; Institute of Medicine, 2001, 2012; Kohn, Corrigan, & Donaldson, 2000). Because of the complexity of providing healthcare and the dynamic environment in which hospitals operate (Kuehn, 2009; Nembhard, Alexander, Hoff, & Ramanujam, 2009; Singer & Vogus, 2013; Wang et al., 2014), systemic improvement has proven elusive. Achieving sustainable, systemic improvement in hospitals requires continuous learning (Institute of Medicine, 2012).

Organizational learning is crucial to improving hospitals and health systems (Berta et al., 2015; Nelson et al., 2008), yet organizational learning at the unit level is not well understood. Recently, organizational learning was studied in a critical care unit situated in an urban, not-for-profit, regional medical center (Lyman, Ethington, King, Jacobs, & Lundeen, 2017). The critical care unit progressed through a series of developmental stages to achieve high reliability. Its early development involved establishing psychological safety (feeling comfortable speaking up without fear of negative consequences, Edmondson, 1999), which prepared the unit to thrive in an era of increasing accountability. As individual and collective performance on the unit improved, team members adopted and developed systems-based mechanisms to sustain their improvement and reliably achieve excellent performance. These findings support the American Association of Critical-Care Nurses’ (AACN, 2016) position statement that a healthy work environment is essential to achieving clinical excellence in critical care.

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The purpose of this study was to discover new insights about organizational learning in hospital units, thus providing orthopaedic nursing leaders additional guidance for facilitating organizational learning in their own clinical units.

**Methodology**

**DESIGN AND METHODS**

A learning history, a participatory action research design, was selected as the research method for this study. This method is used to explore learning an organization has undergone to achieve important organizational outcomes (Bradbury, Roth, & Gearty, 2015), and helps the organization learn from the experience. Through the research process, members of the organization share their memories, experiences, and perspectives. Ideally, this stimulates collective reflection (and additional learning) within the organization. Furthermore, the process facilitates identification of principles of organizational learning that may be applicable to other organizations (Bradbury, Roth, & Gearty, 2015).

Consistent with the method, an “insider-outsider” research team was formed to conduct this study (Bradbury, Roth, & Gearty, 2015). The research team included one staff nurse who worked on the orthopaedic unit and several individuals from outside the organization. The insider member recruited participants, scheduled interviews, and helped the outsiders understand unit-specific historical-cultural information. The outsider members conducted interviews, analyzed data, and compiled the findings.

**Setting**

The setting for this study was an orthopaedic unit with a reputation for excellence in clinical outcomes and patient satisfaction. The hospital unit is situated in a 136-bed community hospital that is part of a large, for-profit health system. The unit was established approximately 12 years ago, when hospital administrators decided to create a specialized unit for patients recovering from orthopaedic surgery. On this 12-bed unit, registered nurses care for patients admitted after hip and knee replacements, shoulder surgeries, hip fracture repairs, and orthopaedic spine surgeries. All of the nurses have earned certification as orthopaedic nurses, and the majority have maintained their certification. The nurses typically care for no more than five patients at a time, and a nursing assistant is added to the staffing when 10 or more patients are on the unit. The nursing assistants are supplied through a hospitalwide resource staffing pool, and the unit does not have any clerks or secretaries on staff.

**Data Collection and Participants**

To provide a focus for the learning history, the researchers sought to identify what staff viewed as notable outcomes or achievements that represented excellence on the unit. After obtaining the appropriate institutional research board approval for this study, the researchers facilitated a discussion with 12 unit staff members who were present at a regularly scheduled meeting. Staff were asked what unit-level outcomes or achievements they were most proud of. They identified five notable outcomes, which were (1) strong nurse–nurse and nurse–physician collaboration, (2) high patient and family satisfaction scores, (3) low rates of hospital-acquired infections, (4) effective shift change reports, and (5) well-established clinical protocols. These notable outcomes were validated with the stakeholders and were used to guide participant interviews about the unit’s history of learning.

Interview participants were recruited in partnership with the insider member of the research team. Participants were selected on the basis of their personal experience with the hospital unit and their knowledge of current practices and significant historical changes on the unit. The first and second authors conducted semistructured interviews, during which participants were provided a list of the notable outcomes and asked: “Which notable outcome(s) would you like to talk about?” and “How do you think your unit has been able to achieve that notable outcome?” Follow-up questions were used to elicit additional details. Relevant artifacts, including performance data and forms used on the unit, were gathered to complement interview data. Data collection and analysis proceeded concurrently until saturation was reached.

**Data Analysis**

“Distillation” is the term used to describe the data analysis process for a learning history (Bradbury, Roth, & Gearty, 2015). In general, the distillation process is similar to data analysis in a grounded theory study. Data collection and data analysis proceeded concurrently throughout the study. Each of the authors individually engaged in open coding, reviewing the data for major concepts. Then, the authors met together to compare their findings, group similar concepts, identify new concepts, and develop labels that reflected the essence of the concepts. Concepts were then grouped into themes. The participants were given an opportunity to review, discuss, and comment on the researchers’ interpretations of the data. Feedback generated through this validation process was used to add trustworthiness to the researchers’ interpretations.

**Results**

Fourteen individuals participated in this study, including nine staff nurses, two nursing assistants, a physical therapist, an administrator, and a surgeon. Twelve individuals participated in one-on-one interviews, and two additional individuals participated together in a single interview. Through these interviews, an overview of the unit’s history was obtained. In addition, five themes were distilled from an analysis of the interview data and relevant artifacts. These themes were (1) implied structure, (2) authentic caring, (3) shared leadership, (4) thoughtful change, and (5) sustaining culture. These themes represent characteristics and practices on the unit that enable team members to achieve their notable outcomes in spite of the changes and challenges they face.
HISTORICAL DEVELOPMENT

The orthopaedic unit was established about 12 years ago. At that time, hospital administrators purchased a vendor-developed program with the intention of optimizing surgical outcomes and the patient experience. The program included detailed information about how to design the physical layout of the unit, how to establish clinical protocols, how to market services to potential patients, and so forth. Initial responsibility for managing the new unit was given to the manager of the hospital's intensive care unit (who concurrently continued to manage that unit). Nursing staff for the new orthopaedic unit were recruited and selected from among the experienced staff working on other units in the hospital, which afforded them a foundational level of trust and collegiality with each other and the orthopaedic surgeons. The nurses selected through this competitive hiring process felt honored to be selected to work in a specialized unit with a vision of providing excellent patient care. Through a facilitated, collaborative process, the orthopaedic surgeons developed standard protocols and order sets for their patients.

Less than 1 year after the unit was established, one of the unit's original staff nurses was selected to be the unit's second manager. He was described as “the epitome of compassionate, gentle, human-centered, ‘let’s-sit-down-and-talk-about-this’ care.” Multiple participants noted that, even though he only served as the manager for a short time, he “set the tone” for providing compassionate, patient-centered care. The staff quickly adopted excellent patient outcomes and patient-centered care as their unit's identity. Today, participants explain that they are proud of this identity and feel a sense of responsibility for sustaining it.

The unit's third manager was hired approximately 2 years after the unit was established. She did not have previous managerial experience or clinical experience in orthopaedics. However, participants noted that she was genuinely appreciative and complimentary of the everyday work that nurses performed. One nurse said the manager's relative lack of clinical experience "... actually made her better in some ways ... she still admired very efficient, very effective floor nurses ... instead of taking that for granted." The manager's praise "was very genuine and ... set the tone for the floor that has carried through." She was a "wonderful mentor as far as interpersonal relationships, a wonderful teacher ... very patient and very kind." The participants explained that the staff and the current nurse manager still strive to show each other the sincere kindness and respect that the unit's third manager exemplified.

Approximately 5 years after the unit was established, the unit's current manager began her tenure. She was one of the original nurses hired to staff the unit. Participants described her as "program-focused" and "organized," and more focused on efficiency and accountability than previous managers. For example, she held staff accountable for following staffing guidelines and clocking out within certain time parameters. She also changed some staff members' usual work schedule from day shift to night shift. Although the new manager's style and expectations were unsettling for some staff, one participant explained that "a little maturity happened" as a result of the changes. Specifically, staff pulled together to provide encouragement, reassurance, and support to each other. They consciously committed to staying positive and maintaining open communication while working through challenges. Several participants noted that the experience of working with each other and with their manager through the transition process laid a strong foundation for the shared approach to leadership that they enjoy today.

Currently, participants describe their unit as having a friendly atmosphere and a strong commitment to clinical excellence. They express pride in their patient-focused, team-driven approach to providing care and pursuing improvement on the unit. Participants say the unit is known for its collaborative, collegial interdisciplinary relationships. Performance data indicate that the unit exceeds benchmarks for employee and patient satisfaction. Although the surgeons perform surgeries at multiple hospitals in the area, they often recommend their patients undergo surgery and receive postoperative care at this hospital. The unit's rates of hospital-acquired infections compare favorably to similar units, which participants attribute to using evidence-based protocols throughout the surgical and recovery processes. These protocols include a standard care pathway and order set that help ensure each patient receives appropriate care.

Although the unit has experienced substantial changes over its 12-year history, participants explain that the unit's performance has proven resilient to these changes. Some of these changes include management turnover, introduction of new technologies, changes in processes of care, and implementation of a number of hospitalwide initiatives.

IMPLIED STRUCTURE

The unit has achieved and sustained a healthy culture and excellent clinical outcomes, in spite of having organizational structures that are often more implied than formal. Implied structure refers to a general reliance on unit norms for guidance rather than establishing formal systems and processes. Staff expertise, strong collaboration, and the guiding principle of authentic, patient-focused care all seem to help compensate for this lack of formal structure. For example, rather than using a formal orientation process with clearly delineated competencies, experienced staff largely rely on their expertise to orient of new staff. Also, rather than assigning new employees to a specific preceptor, the manager trusts that a staff member working the same shift as the new employee will assume that responsibility. One nurse described the orientation process this way, "... we talk to them a lot and that's probably the most important thing." Another said, "Most of our nurses are veterans down there so ... By following the same person for so many days they're learning their routines and then they're starting to set their own routines."

Decision-making on the orthopaedic unit also reflects implied structure. When staff become aware of new
to develop a shift report sheet that the nurses truly value. The staff collectively decided what would be included on the report sheet, and after they began using it, gave feedback about what should be changed. On the basis of their suggestions, the manager modified the report sheet. Through several cycles of revision, the staff developed a sense of ownership for the report sheet. The unit typically uses this type of collaborative approach, in which staff members collectively make decisions on the basis of their patients’ preferences and specific orthopaedic needs. Participants expressed that, because team members are engaged in the unit’s ongoing development, proposed changes are more likely to be practical, effective, and thoroughly considered.

**SHARED LEADERSHIP**

Another critical aspect of this unit’s high performance is shared leadership, which is supported by a flattened hierarchy between nurses and the nurse manager. When team members work together to develop and adapt clinical processes, everyone is encouraged to share their opinion. The nurse manager works at least one shift a week, which helps promote trust, understanding, and collegial relationships with the staff. One participant said, “[the manager] knows what we nurses and aides are seeing, what works for us and what doesn’t. It’s easier to communicate with her and find ways that work better.” Another said, “We all speak the same language because she’s one of us and she’s got our backs [and] we’ve got her back.” Multiple participants explained that this flattened hierarchy fosters direct, open communication between the nurses and the nurse manager, which allows them to collaboratively improve the unit.

One example of shared leadership is the process used to develop a shift report sheet that the nurses truly

**AUTHENTIC CARING**

Staff showed authentic caring toward patients and families, and toward each other. Authentic caring is sincere compassion for others and an internal motivation to attend to their needs. One participant said, “We treat the patient like family and the family like patients.” The unit’s design supports authentic caring. For example, the unit has a convenient lounge area with a soda machine for patients and their families. In addition, beds and meals are provided to family members to facilitate familial presence and involvement in the patient’s recovery process. Participants said that these unit design features made it easy to offer amenities that patients’ family members appreciate, and that reflect the staff members’ desire to care for them. Authentic caring toward patients largely began with the unit’s second manager. He emphasized therapeutic patient care over merely completing tasks, and role modeled the importance of spending as much time as necessary with each patient, rather than adhering to a strict schedule.

Authentic care between staff members also improves care of patients on the unit. Adding to the second nurse manager’s emphasis on patient-centered care, the third manager played a large role in developing authentic caring among staff. Her sincere gratitude and kindness helped team members feel truly cared for and appreciated. Today, team members express authentic caring for one another by working together and helping each other whenever possible. Participants explained that, as staff members strive to assist one another, call lights are answered more quickly, medications are administered on time, and patient needs are addressed earlier.

**THOUGHTFUL CHANGE**

The collaborative approach to leadership on the unit ensures changes are made only after they are thoughtfully considered. When practice changes are directed by upper administrators, the manager carefully considers the change’s potential impact on patients and her team. One nurse said, the manager “knows what’s going to work and what’s going to not work … because she actually worked the floor.” If the change seems practical, the manager works with the team to implement it on a small scale. After piloting the change, the team works collaboratively to refine it, with an emphasis on improving patient care. For example, hospital administrators tasked the unit with performing shift reports at the bedside. While piloting the change, staff members found that not every aspect of the hospital’s plan for bedside reporting contributed to improved care or satisfaction for their patients. One nurse explained, “The patients don’t necessarily want to hear us talking about their bowel movements or how much output came out of their Foley catheter or whatever … nurses can relay the information that they need to do the patient care without embarrassing or discussing sensitive topics around patients and family.” On the basis of their experiences piloting bedside shift report, they “kept what was useful and what the patients cared about.” Now, they begin bedside shift reports by discussing sensitive topics at the nurse’s station, and then moving to the patient’s bedside. To introduce the oncoming nurse, to discuss pain management, mobility, the patient’s plan of care, and specific patient preferences, and to offer assistance with any immediate needs (e.g., medications, water, and assistance to the bathroom). One participant explained that the bedside report “helps with patient and family satisfaction … because they know what’s going on and … it also helps [important information] get passed along.” A nursing assistant noted that adopting bedside reporting “increased patient satisfaction … and … reduced call lights,” which encouraged the nurses to more fully adopt bedside reporting. This example demonstrates that changes are made on the unit when they will improve care, and not solely when staff members are given new directives from upper administrators.

**SUSTAINING CULTURE**

Team members are proud of what they describe as a supportive, patient-centered culture, and they make an intentional effort to sustain that culture. The unit’s
culture was initially developed when a mix of experienced nurses were selected to staff the unit. Now, the culture is maintained through a careful hiring process. Because of the unit’s low turnover rate and positive reputation, open positions are rare and the manager can choose candidates who strengthen the culture of the unit, rather than simply filling a vacancy. The manager and staff strive to hire individuals who are patient-focused, team-oriented, self-directed, respectful, and not afraid to ask questions. One nurse who has participated in the hiring process said, “I look for somebody that isn’t too timid. I don’t want somebody that thinks they know everything and never asks a question … They don’t have to be experienced. I just want somebody that’s not so timid or afraid to do anything.” Another said, “If their motivation is the patient, the care of the patient, I think we can trust them.” When new staff members are hired, the unit’s culture is informally passed on by expressing expectations through everyday interactions, coaching how to communicate with physicians, and role modeling culturally appropriate behavior.

**Discussion**

To situate these findings in the context of the literature on organizational learning in hospital units, the results were interpreted in relation to the four distinct developmental stages proposed by Lyman et al. (2017). Lyman et al. (2017) identified developmental stages that a cardiovascular intensive care unit (CICU) progressed through to achieve notable outcomes (see Table 1). Although both units progressed through the same developmental stages, the stages were less distinct in the orthopaedic unit. In both cases, developing psychological safety (Edmondson, 1999) and a healthy work environment proved essential to achieving their desired outcomes, which helps validate NAON’s (2010) position on the importance of healthful work environments. A finding unique to the orthopaedic unit was its informal approach to *reliability and sustainability*, which may be related to its unique context and historical development.

**Identity and Ownership**

In the CICU studied by Lyman et al. (2017), a 6-year process was required to establish *Identity and ownership*. In contrast, *identity and ownership* have essentially been present on the orthopaedic unit since its inception. Orthopaedic unit staff felt their unit was established for a positive, inspiring reason—to provide excellent care for patients with unique postoperative needs. They readily accepted excellent orthopaedic care as their unit’s identity, and quickly took ownership for achieving and sustaining that purpose. Years later, the unit’s core identity (which now includes patient-centered care) remains relevant and motivating to the staff, whose sense of ownership for sustaining that identity seems to be as strong as ever. Although the influence of *identity and ownership* on the orthopaedic unit reinforces the importance of establishing a unit identity team members can be proud of (Lyman et al., 2017), the contrasting developmental experiences of the CICU and the orthopaedic unit highlight the wide variation nursing leaders may experience in their efforts to foster *identity and ownership* in their units.

**Team & Respect**

In the CICU (Lyman et al., 2017), *identity and ownership* preceded the development of *team and respect*. In this orthopaedic unit, because both *identity and ownership* and *team and respect* were present very early in the unit’s history, it is difficult to determine whether these developmental stages were achieved simultaneously or sequentially. *Team and respect* developed quickly among the orthopaedic unit staff, perhaps because they had developed friendships and respectful, professional relationships while working together previously. Later in its history, the unit continued to develop in both *respect* and *team*. Specifically, participant accounts suggest that the third manager’s influence deepened the team’s sense of mutual respect and that the team’s experience adapting to the current manager and engaging with her in shared leadership further strengthened teamwork on the unit. It is important to note the important role nurse managers fulfilled in advancing *team and respect* in the CICU (Lyman et al., 2017) and the orthopaedic unit. In both cases, nurse managers role modeled positive behavior, offered meaningful recognition to their staff, and engaged in true collaboration with their teams—which are all standards for establishing and maintaining a healthy work environment (AACN, 2016).

**Accountability & Support**

In the CICU (Lyman et al., 2017), a strong sense of psychological safety “helped ensure team members had the

**Table 1. Developmental Stages**

<table>
<thead>
<tr>
<th>Developmental Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity and ownership</td>
<td>Team members have a collective identity they are proud of. The identity may be composed of shared experiences, a common purpose, and/or pride in their performance. Team members take ownership for advancing and sustaining the identity.</td>
</tr>
<tr>
<td>Team and respect</td>
<td>Team members work together toward a common purpose, sometimes prioritizing the team’s needs above their own. They show respect to each other through language and actions.</td>
</tr>
<tr>
<td>Accountability and support</td>
<td>Clear standards of accountability exist within the organization. Team members also hold themselves and each other accountable to high standards of performance. Each team member is supported toward meeting performance standards by both the organization and fellow team members.</td>
</tr>
<tr>
<td>Reliability and sustainability</td>
<td>Team members collaborate to build systems that make excellent performance more reliable and sustainable.</td>
</tr>
</tbody>
</table>

*Data from Lyman et al. (2017).*
support necessary to successfully progress through” (p. 83) a formal, concerted effort to increase accountability on the unit. The term “psychological safety” refers to feeling confident about speaking up when necessary, without fearing the consequences (social and otherwise) of doing so (Edmondson, 1999). In psychologically safe environments, staff feel confident holding each other accountable, lending support, and being open to feedback from others (Edmondson, 1999). The presence of psychological safety on the orthopaedic unit was reflected in the team’s commitment to mutual support, positivity, and open communication while adapting to a new manager. Similar to the CICU, psychological safety played an important role in allowing the orthopaedic unit to successfully navigate an era of increasing accountability. This finding reinforces the importance of fostering psychological safety (Edmondson, 1999) and a healthy work environment (NAON, 2010), particularly when establishing accountability and support (Lyman et al., 2017).

RELIABILITY AND SUSTAINABILITY
In both the orthopaedic unit and the CICU (Lyman et al., 2017), sustained progress toward reliability and sustainability only occurred after progressing through the previous three developmental stages. For nurse leaders, this finding validates the importance of thoughtfully selecting developmentally appropriate strategies to advance their units’ developmental progression (Lyman et al., 2017).

Although the CICU (Lyman et al., 2017) used a systematic, comprehensive approach toward reliability and sustainability, the orthopaedic unit has used a more informal approach to refining and standardizing its clinical processes (e.g., standardized report sheet, hourly rounding, bedside report, and clinical protocols that include standard physician orders). Although the orthopaedic unit does have a reputation for sustained, excellent performance, the implications of using a somewhat informal approach to reliability and sustainability are not clear.

Contextual differences between the CICU (Lyman, et al., 2017) and the orthopaedic unit may provide some insight into why the units’ approach to reliability and sustainability differs. For example, patients on the orthopaedic unit are likely to be more physiologically stable than those admitted to the CICU, so orthopaedic unit staff may not require such formal processes to anticipate and respond appropriately to urgent clinical situations. Staff turnover is very low on the orthopaedic unit, so adequate orientation and training may be possible with a less formal orientation process. In addition, the orthopaedic unit has fewer staff than does the CICU, and may be able to maintain adequate communication and decision-making capabilities without structured huddles or formal shared-governance committees. Chronologically, the orthopaedic unit is slightly younger than the CICU and may therefore have experienced fewer events that would signal the need for formal processes. Finally, the CICU is part of a corporation that pressed heavily to develop formal organizational processes (i.e., policies and protocols) to support reliability and sustainability in its constituent hospitals, whereas the orthopaedic unit’s parent corporation has not. These findings suggest achieving reliability and sustainability will likely require a sustained, focused effort from leaders at multiple levels of the organization.

LIMITATIONS
Although focusing the study on only one hospital unit allowed for a rich description of the unit’s organizational learning and the context in which it occurred, this narrow focus limits generalizability of the findings. However, similar findings from the present study and a contextually different hospital unit suggest some of the findings may be generalizable across hospital units, regardless of context. Another limitation is that much of the data for this study is self-reported and based on the participants’ memory, yet consistent responses across multiple interviews and the participant validation process lend to increased confidence in the findings.

FURTHER RESEARCH
A multisite, grounded theory study of organizational learning in hospital units could be used to build upon this study and develop a testable model of organizational learning in health systems. To get a broad, rich perspective on this phenomenon, the grounded theory study could include multiple units within a single hospital, as well as similar units across various hospitals. This model of organizational learning would make it possible to conduct theory-driven hypothesis testing. Eventually, intervention studies to facilitate organizational learning in health systems will be possible.

Implications
This study has several practical implications for orthopaedic nursing leaders who are either establishing a new unit or striving toward high reliability with an existing unit. In either case, nurse managers can facilitate their unit’s progression through the developmental stages, described in Table 1. Nurse managers should lead their team members to collectively reflect on and advance the unit’s developmental progression (Lyman et al., 2017). Some specific ideas for facilitating unit development are described in Table 2.

Nursing leaders must foster psychological safety (Edmondson, 1999) and a healthy work environment (NAON, 2010) on their units, which may be necessary to successfully achieve accountability and support. Leadership behaviors that promote psychological safety include being inclusive (Nembhard & Edmondson, 2006), trustworthy, change-oriented, and ethical (Aranzamendez, James, & Toms, 2015). By acknowledging their own fallibility, managers help make it safe for team members to discuss errors and offer suggestions to improve care (Edmondson, 1999). Leaders can further reinforce the importance of speaking up by being accessible (Tucker & Edmondson, 2003), receptive, and responsive to staff input (Tucker, 2007). Resources for leaders building a healthy work environment are abundant (AACN, 2016; Shirey, 2017). Efforts to establish psychological safety and a healthy work environment
TABLE 2. SUGGESTIONS TO FACILITATE UNIT DEVELOPMENT

| Identity and ownership | Collaborate with staff to establish a unit purpose that team members can be proud of
| | Recruit and retain staff who are passionate about and committed to the unit’s identity
| | Empower staff to take ownership of the unit—seek and respond to their input in staff meetings and/or through shared governance
| Team and respect | Strengthen team relationships by helping staff get to know each other on a personal level
| | Foster a team atmosphere by building on positive relationships that already exist among staff
| | Build credibility and solidarity with the team by engaging with frontline staff
| | Give meaningful recognition for individual and team accomplishments
| Accountability and support | Ensure that psychological safety is present on the unit before increasing accountability
| | Establish clear mechanisms for accountability, including linking pay with performance, setting standards for staff leadership, and expecting staff to communicate with each other directly
| | Provide adequate support for staff to meet expectations, including a thorough orientation, just-in-time training, coaching among team members, and manager presence on the unit
| Reliability and sustainability | Assess the unit’s readiness to develop systems for reliability and sustainability
| | Develop policies and protocols to standardize existing, effective clinical practices
| | Invest in long-term success by collaborating with team members to develop formal mechanisms for reliability and sustainability
| | Hire qualified applicants who value the unit’s identity and will contribute to the unit’s culture

serve as a foundation for pursuing accountability and support (Lyman, et al., 2017).

To achieve high reliability in a unit, leaders must work collaboratively with staff to build systems that support reliability and sustainability (Lyman et al., 2017). When team members feel psychologically safe and have had success with the first three developmental stages, they may be ready to establish systems for reliability and sustainability. Hospitals and units may develop these systems through any of several different strategies for “robust process improvement” (Chassin & Loeb, 2013, pp. 470).

Conclusion

The orthopaedic unit progressed through a series of developmental stages to achieve its desired outcomes. On the orthopaedic unit and the CICU studied by Lyman et al. (2017), establishing psychological safety (Edmondson, 1999) and a healthy work environment (NAON, 2010) was essential for ongoing development. The orthopaedic unit made it possible for accountability and support to emerge. Formal processes for reliability and sustainability were more common on the CICU than on the orthopaedic unit, perhaps because of necessity and the organizational priority placed on systematization in the CICU. Conducting grounded theory research with multiple hospital units could be used to develop a theoretical model of organizational learning in hospital units. Nursing leaders should collaborate with team members to collectively reflect on their units’ developmental progression, foster psychological safety, and plan specific steps to facilitate organizational learning on their units.

REFERENCES


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**Upcoming Events**

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February 8, 2018—Exploring Trends in Orthopaedics, 2018. Comfort Suites, 1951 Bond Street, Green Bay, WI.


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