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A Qualitative Study of Patient and Provider Experiences during Preoperative Care Transitions

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Abstract

Aims—To explore the issues and challenges of care transitions in the preoperative environment.

Background—Ineffective transitions play a role in a majority of serious medical errors. There is a paucity of research related to the preoperative arena and the multiple inherent transitions in care that occur there.

Design—Qualitative descriptive design was used.

Methods—Semi-structured interviews were conducted in a 975 bed academic medical center.

Results—30 providers and 10 preoperative patients participated. Themes that arose were: (1) Need for clarity of purpose of preoperative care (2) Care coordination (3) Inter-professional boundaries of care (4) Inadequate time and resources.

Conclusion—Effective transitions in the preoperative environment require that providers bridge scope of practice barriers to promote good teamwork. Preoperative care that is a product of well-informed providers and patients can improve the entire perioperative care process and potentially influence post-operative patient outcomes.

Relevance to Clinical Practice—Nurses are well positioned to bridge the gaps within transitions of care and accordingly affect health outcomes.

Keywords

Preoperative care; Care Transitions; Transitions of Care

Hospitals are frequently challenged with caring for complex patients in innovative and cost effective ways. This challenge is especially true for surgical patients, which represent a major source of hospital revenue and profit margins (Robinson, 2011). New technologies that enable minimally invasive surgical procedures have contributed to decreases in the

length of hospital stays for surgical patients. For most elective or non-emergent surgical procedures, the first transition in care within the perioperative environment occurs as patients transfer from the care of the community-based primary care provider to the care of the surgeon. Hence, this preoperative phase of care becomes the genesis of the care trajectory for the surgical patient.

Currently, little research has investigated the actual care transitions that begin in the preoperative environment. The purpose of our qualitative study was to explore key issues and challenges of preoperative care that are relevant for ensuring optimal transitions for surgical patients undergoing elective or non-emergent surgery. We explored these issues and challenges from the perspective of both providers and patients.

BACKGROUND

The *preoperative* phase of care includes an initial surgical evaluation, which may or may not follow a primary care physician referral. Once the need for surgical intervention is confirmed, the care of the patient transitions to include anesthesia care providers who are responsible for assessing the patient's risks for surgery (Fleisher, 2007). Pre-anesthesia care is a component of the preoperative environment, and depending on the model of care, is often carried out by anesthesiologists or nurse practitioners (Kidik & Holbrook, 2008). Early studies (prior to the implementation of the electronic medical record) found that at the time of the pre-anesthesia visit, providers frequently lack relevant medical information about the patient (Gibby, 1998; Parker, 2000). Recent studies suggest that provider receptivity and usage of the electronic record varies, which impacts the input and thus availability of medical information into the patient record (Rudin, Volk, Simon & Bates, 2011). Additionally, as patients often seek care across multiple sites of care (Bourgeois, Olson & Mandl, 2010), availability of medical data is potentially further compromised. Information deficits at the time of the pre-anesthesia visit increase the burden of care for the provider, but more importantly, may compromise the quality of future perioperative care for the patient.

Surgical patients experience multiple transitions of care within the perioperative environment (which includes preoperative- intraoperative- postoperative phases of care). Multiple care transitions expose patients to potential medical errors related to fragmentation of care and lapses in communication (Christian, 2006). Furthermore, the *preoperative* phase of care has been explicitly identified as being vulnerable to inadequate transfer of information and communication error (Nagpal et al., 2010). Nagpal et al's. (2010) study of surgical care found that operating room team members had varying amounts of knowledge of the patient and less than one-third of the total patient medical information was known to all of the primary team members in the operating room. deVries notes that the "majority of surgical errors (53–70%) occur *outside* of the operating room, specifically before or after surgery, making it likely that substantial improvements in safety could be achieved by targeting these areas" (2010, p.1929). Studies investigating patients' experience with coordination of *postoperative* care demonstrate that coordination affects patients' clinical outcomes and satisfaction with their care (Weinberg et al., 2006). Relatively little research has been devoted to studying *preoperative* care processes and their implications for patient outcomes.

Donabedian's (1988) conceptual framework for assessing quality provides a robust framework within which to assess the quality of the multifaceted dimensions of preoperative care transitions. Donabedian contends that 'good structures increase the likelihood of good processes and good processes increase the likelihood of good outcomes' (1988). Moreover, Donabedian (1988) informs us that it is imperative that we "accurately elicit the preferences of the patient to arrive at truly individualized assessments of quality" (1988, p.1748). We drew from Donabedian's framework and related work for conducting our study. Specifically, we solicited the perspectives of those providers directly involved in preoperative *processes* who could elucidate the nuances of preoperative care as well as the processes that may not be readily visible to patients. In addition, we also obtained the perspectives of patients in terms of their experiences in the preoperative environment. In line with the Donabedian framework, if good processes increase the likelihood of good outcomes, it is necessary to describe and understand existing preoperative processes and the opportunities for improving them both from both provider and patient perspectives.

STUDY DESIGN

We conducted this study using a qualitative research approach to explore both providers' and patients' perspectives regarding the issues and challenges of the preoperative environment. Qualitative inquiry is valuable when trying to gain a relational understanding of a phenomenon in an environment where little about that phenomenon is known as is the case with preoperative care transitions (Patton, 1990).

SAMPLE/PARTICIPANTS

The study setting was a 975 bed medical center in the Northeast United States. Purposeful sampling was used to select preoperative care providers who could provide the most insight and broadest range of experience related to preoperative care. Primary care, surgical and anesthesia providers involved in preoperative testing were eligible for participation. We recruited providers through emailed flyers and patients through flyers that were made available at the time of their preadmission visit. During recruitment we also provided eligible participants with an informational letter outlining the purpose and procedures of the study, and that participation was voluntary. Patients eligible to participate in the study were those who were greater than 18 years of age, English speaking, and, at the time of recruitment, were in the preoperative phase of surgical care.

DATA COLLECTION

We conducted semi-structured interviews with participants from September 2014–December 2014. The interviews were audio recorded. Five open-ended questions comprised the interview for providers and four open-ended questions comprised the interview for patients (Appendix A). At the time of the interview, participants were informed of the risks, benefits and the method of confidentiality (with disclosure that the interviews would be audio recorded). Verbal consent was obtained after the consent script was read to the participant. Verbal consent was documented in the research records which were de-identified. We conducted the interviews in a private office. Participants were reminded not to use

identifiable data during the audio tape recording of the interview dialogue and, if they did, it was removed from the transcript.

Generally, the questions were structured to give provider participants the opportunity to describe the challenges and issues they experienced in the preoperative environment including any gaps in needed information for patient care. The questions for preoperative patients were also structured to give participants an opportunity to convey detailed information about their preoperative experiences, including the experience of going from one provider to another. The voice recorded data were transcribed verbatim and uploaded as text documents to Atlas software and stored in an encrypted secure electronic database. To help in documenting the progress and process of the study as part of an audit trail, we summarized the information garnered from each interview prior to proceeding with subsequent interviews. We enrolled participants until saturation of themes was reached (Polit & Beck, 2012).

ETHICAL CONSIDERATIONS

The proposal met the criteria for exemption by the hospital institutional review board. All data was de-identified and locked in a password protected computer to protect participant information. Participants were coded numerically to track transcripts.

DATA ANALYSIS

We coded all of the interview transcripts to identify meanings or themes pertaining to the way providers and patients described their experiences with the preoperative phase of care.

Credibility, transferability, dependability, and confirmability as described by Lincoln and Guba (1985) were addressed in multiple ways. All of the interviews were conducted by the lead researcher, a nurse with 30 years of experience in the pre-surgical and postsurgical environment. Knowledge of the preoperative environment from a nurse's perspective helped the research team better understand the interviewees' statements as well as deliberate on why the role of the nurse or experience with nursing in this environment was rarely if at all mention by providers or patients. Initial data analysis was performed by the lead researcher and preliminary codes and emerging themes were reviewed with other members of the research team. We worked to minimize threats to credibility by including all research team members in the data analysis process. The research team was diverse in terms of members' training and backgrounds (e.g., nursing, health services research, and management). To address internal consistency or dependability (Lincoln and Guba, 1985) in coding the data, one member of the research team coded the transcripts independently based on the themes that had emerged from the initial coding effort by the lead researcher. The result was a high degree of agreement in the coding of the statements from providers as well as the patients thus supporting the reliability of the coding process. Internal validity or was attended to by linking data to emerging categories and theory (Lincoln and Guba, 1985).

FINDINGS

Thirty provider participants were recruited. The providers included 10 primary care providers (PCPs), 10 anesthesia providers and 10 surgical providers. At least one advanced practice nurse from each specialty was included as they routinely participate in preoperative evaluations. Ten patients were recruited. Each interview lasted 20–60 minutes with a mean time of 35 minutes. The themes reflect patterns in the text that were common across the patient and provider interviews. We grouped the data into the following four themes:

- Need for Clarity of Purpose of Preoperative Care,
- Need for Care Coordination,
- Inter-professional Boundaries of Care, and
- Inadequate Time and Resources.

Need for Clarity of Purpose of Preoperative Care

Patients and providers described the purpose of the preoperative evaluation very differently in terms of purpose and objectives. The first theme is centered in the dichotomy of patient and provider needs in the preoperative environment. Patients described preoperative care as a time of expectation for the perioperative journey and the need for care coordination. By comparison, surgical and anesthesia providers described preoperative care within the context of risk assessment and mitigation. Similarly, PCP providers described preoperative care as a time to assess risk of the surgical procedure but in the context of the underlying medical risks of the patient. Providers in each discipline expressed the need for care coordination across the boundaries of inter-professional relationships and structures inherent in the perioperative environment.

Patients described the value of the preoperative phase of care in the context of preparing them for what to *expect*, not only for the surgical procedure but also the entire perioperative course and after care. Patient 6 offered *“I am the type of person that I have to know what is going on...I have to deal with it afterward”*. Patients expressed a need to know about what was going to happen ‘*next*’ in the context of their preoperative care as well as what was going to happen *after* their surgical procedure. *“God, I just want to know what is going on”* (Patient 7). Being informed early on in the care trajectory was seen as important to aide in decision making. *“Information is power and with information you make sound decisions”* (Patient 7).

Having information in the preoperative phase of care set the expectations for care, *“I know now what to look for...now I know what to expect”* (Patient 8). Patients were cognizant of when expectations were not discussed in their preoperative phase of care; *“They have not told me what all my limitations would be afterwards”* (Patient 3). As such, patients decidedly expressed dissatisfaction when they did not know what to expect; *“I thought they would speak to me before surgery...I don’t like the fact that I don’t know and I cannot have it the last day I am leaving the hospital... people have to organize their lives”* (Patient 6).

Anesthesia and surgical providers consistently described the preoperative evaluation in the context of anticipating risk factors and or identifying comorbidities that patients may have when presenting for a surgical procedure that may impact outcome. *“It is a risk assessment and seeing if there is anything I can do before surgery to make the patients have a higher chance of survival and less chance of getting any complications post op”* (Surg 1). *“It is part of our training to evaluate perioperative risks and mitigate it”* (Anes 5). However, primary care providers noted that they were the ones *“that could provide the most valuable information about the patient”* (PCP 9). However, primary care providers often lack information about the risk of the procedure specific to the patient. *“We have a general knowledge about the risks of various surgical procedures...there [should] be the facilitating of communication between the providers... about level of risk. I think that would be helpful to have some very specific data on risk and benefit in several broad categories”* (PCP 1), and *“we are often advising the patient in an information shortage”* (PCP 4).

Interestingly, primary care, anesthesia and surgical providers frequently perceived the preoperative phase of care as more of a process preparing for the destination (the operating room), rather than preparing the patient. *“It seems like it is more to prepare the OR”* (PCP 6). *“It does not seem as well structured to educate the patient, get whatever resources are needed to help the patient get through surgery”* (PCP 4). *“They get [preop] labs done- that’s not for the patient that’s for the surgeon in the OR”* (Surg 4).

The Need for Care Coordination

Patient perspective—The need for care coordination was a prominent theme conveyed within both the patient and provider interviews. Patients’ description of the various ways that they entered the preoperative environment illustrates the various pathways through which patients enter the perioperative environment. *“I initiated this independently of my PCP”* (Patient 2). *“We just decided we wanted to come here”* (Patient 5). *“I got here really through my daughter...I was left to my own devices... my daughter started calling friends in the medical profession”* (Patient 2). Additionally, patients described a lack of care coordination once they had entered the perioperative environment that seemed rooted in communication gaps that were recognized by patients during and after provider visits; *“It has been a confusing day”* (Patient 4). *“We probably should have come off [aspirin] sooner...I think that was [an issue] that had less communication...they are probably going to have to reschedule surgery”* (Patient 5). *“I have been feeling there has been no communication ...I am feeling like I am in no man’s land here...unless I make the phone call I do not know what I am doing...I don’t feel better that my information was not here this morning...the gal who took my blood pressure said are you going to have an EKG...and I said I had one done”* (Patient 6).

Provider perspective—Providers consistently describe a lack of standardization of preoperative processes and work flow. Surgeons described *“All different ways – they come all different ways. People coming from out of state with various medical records in a variety of different forms, or tons of medical records; it is very inefficient”* (Surgeon 8). One surgeon noted; *“There is huge heterogeneity and variability on who does what and how it is transferred back...how that information is communicated or not, when it is done and what is*

needed” (Surgeon 5). Surgical and anesthesia providers described situations in which pertinent patient information is not readily available in the preoperative phase of care. “I think of one of the biggest challenges in all the preop visits for the surgeon is to have all the information they need to evaluate the problem in hand. Some people come without their films, without their slides, without their MRI on CD or they just don’t open them. So, there are some system issues... but there is also this pressure to see patients within five minutes” (Surgeon 9).

Anesthesia and surgical providers in our study described the lack of available information at the time of their respective visits related to medical history, patient’s caregiver, and patient functional status. The lack of information was attributed to several factors. Providers cited that patients’ medical information may be present but is often ‘buried’ in the electronic record and thus time consuming to read and synthesize. *“Well, for one thing these notes... they are almost unreadable. It is so difficult to get at... and there is so much noise -the signal is this little piece. It is a huge problem with the electronic medical record. I mean there are so many good things about having things available but I think doctors notes are a real problem. Information is buried”* (Surgeon 7).

Primary care providers lamented the involvement of multiple providers and need for information exchange within the preoperative environment and the challenges related to keeping all informed. *“That’s the thing – there are so many people...It was almost easier when it was just the surgeon and the primary care doctor’s office...it’s just crazy to have this many people”* (PCP 6). Providers alike recognized the need for care coordination. *“To me it sort of takes a village to take that patient through the system safely...no individual can do that alone...it takes an entire team of multidisciplinary providers to do that effectively”* (Surgeon 10).

Inter-Professional Boundaries of Care

Primary care providers frequently expressed a sense of uncertainty related to their specific responsibilities in the preoperative environment. *“Sometimes I’m not sure what my role is... Sometimes I think I’m being asked to provide medical clearance to simply check off that someone is okay to go”* (PCP 3). Primary care providers also noted the variability in their involvement in preoperative care. *“I try to take full responsibility...but sometimes what I say the anesthesiologist changes anyway and they do whatever they want to. That is the problem. The guidelines are not well defined”* (PCP 6). *“There are so many challenges in any healthcare transaction. A patient might come in and ask me (PCP 8) questions about the surgery...and I don’t know...you should talk to the surgeon...that’s a challenge sometime. The patients don’t understand that there are certain questions for me, and then there are certain questions for the surgeon”* (PCP 8).

PCP as well as surgical and anesthesia providers also described issues related to team work and sharing of knowledge. *“The professional teamwork and knowledge of your teammate, it may be sparse. You may not know that person who explained it - you may never have worked with them...you may not trust...you may want to do it yourself”* (Surgeon 8). *“Care is fragmented, and people are discharged [post op] on day two, and they go to rehab. As the [PCP] I don’t know what happens at rehab* (PCP 8).

Inadequate Time and Resources

Providers across disciplines described an environment of care as one of scarce resources; *“Everybody is looking at how to do a better job with fewer resources... in certain patients where it is a combination of a high-risk procedure and a high-risk patient... it is tough”* (PCP 4). *“It’s a tangled mess... If you really want to make it very personalized, and you want to really have more face to face time, you have got to pay for it...find the resources... the people ...to either shift tasks off the physician or shift tasks off the nurse or to a more suitable person so that everyone is functioning at their highest level”* (Surgeon 8).

Providers described inadequate structures for communication amongst providers and described an environment of few resources and competing priorities. *“There is always something else to do, time is short”. “The main barrier is time in my schedule as [PCP] to see folks...if they are having surgery in two weeks, they need an appointment now, because often the appointment has to be within a certain time range... if patients don’t plan ahead and my schedule is booked...which it usually is, that can be challenging”* (PCP 1).

DISCUSSION

In our study, patients’ responses pertaining to the need for information during the preoperative phase of care were consistent with what has been reported in the past regarding patients’ preoperative care needs. Sjoling’s et al. (2015) interventional study determined that specific preoperative information influences patients’ experience of pain after surgery and satisfaction with postoperative pain management. Sadati et al. (2013) demonstrated that preoperative nursing interventions that addressed specific patient concerns and provided education decreased not only preoperative anxiety but also postoperative complications. Providing patients with specific information preoperatively satisfies their immediate expectations and desire for information, but indeed, may also influence the overall quality of their perioperative care experience as well as their satisfaction with that experience.

In our study, patients often described the value of ‘being informed’ by their providers in a timely fashion of what to expect during their care process. This is consistent with Donabedian’s (1988) observation that patients are largely concerned about their interpersonal exchanges with providers, whereas providers tend to largely be concerned with technical performance; e.g., arriving at appropriate diagnosis. In our study this was described as the ‘appropriate surgical procedure’ and strategy to be undertaken to mitigate risk. The responses in our study are also consistent with previous research that has demonstrated that patient and providers may not think about transitions in the same way. Patients’ responses in this study were consistent with Coleman (2003), Pakdil and Harwood, (2005) who suggest patients may conceptualize transitions as preparedness and or related to informational needs regarding their anesthesia and surgery.

Patients in our study described various points of entry into the preoperative environment and conveyed a sense of confusion once they were in this phase of care, such as where preoperative labs and EKGs are done. Thus perhaps the lack of standardization in patient entry into the preoperative system combined with an overall lack of standardization in the *processes* for patient care inadvertently contributes to communication gaps and patients’

general perceptions of a lack of care coordination. Wears' work (2010) suggests that this combination of inconsistency in care, ineffective information transfer, and poor communication all negatively affect the quality of patient care. Additionally, as noted, studies investigating patients' experience with postsurgical care have demonstrated that coordination across settings affects patients' clinical outcomes and satisfaction with their care (Weinberg, Gittell, Lusenhop, Katz, & Wright, 2006).

Transitions in care are also inherently inter-professional in the preoperative environment and require coordination of care amongst and within specialty provider groups. In our study, providers frequently described the lack of communication and coordination that existed between the primary care physician, surgeon, and anesthesiologist. Moreover, they expressed a lack of shared knowledge, variability in their involvement and subsequent dissatisfaction resulting from siloed work practices. How healthcare professionals engage in 'inter-professional collaborative practice' has become increasingly a healthcare issue (IPEC, 2011). When health care professionals fail to communicate and interact effectively, patient care can be compromised (Zwarenstein, 2012). Indeed, many studies confirm that poor coordination among providers at various levels in health care organizations appear to affect the quality and safety of patient care (Manser, 2008; Young et al., 1998). Similarly, Naylor's (2002) work related to transitions in care of elders from health care institutions identified breakdown in communication between providers and across health care agencies which were associated with poor outcomes. The breakdown in system factors results in substantial unmet needs and high levels of dissatisfaction with the health care system (Naylor, 2002, 2004).

The responses by participants in our study indicate that the current structure and processes of preoperative care are less than optimal and, in fact, do not meet the needs of either providers or patients. Providers across disciplines in our study describe an environment where there is a lack of time, personnel, and adequate information systems. The lack of resources and a cumbersome electronic medical record coupled with cultural norms of communicating via email, which diminishes 2-way conversation where information can be shared, contributes to the lack of care coordination at the beginning of the perioperative care system between patients and inter-professional care team members. Mintzberg (1979) informs us that organizations function in complex and varying ways and that technology plays a key role because of its importance in 'structuring the operating core'. McIntosh et al., (2014, p.290) demonstrate that "ensuring that providers have the staffing, training, supplies and other resources they need to do their jobs as well as implementing strategies that improve inter-professional communication and relationships" is needed to improve coordination and consequently patient care.

Gittell suggests the use of "cross functional boundary spanner roles" (2009, p.2) to improve outcomes. 'A cross functional boundary spanner role' perhaps can be likened to the role of Advanced Practice Nurses in Naylor's (2004) transitional care model. Naylor (2004) repeatedly demonstrated the efficacy of the role of advanced practice nurses in facilitating successful care transitions that occur within the discharge process of vulnerable elders from health care institutions. The complex surgical patient with multiple medical co-morbidities is

potentially the most vulnerable as they progress through the perioperative environment if there is a lapse in coordination of care.

LIMITATIONS

A key limitation of the study is that all data were from a single academic center in the Northeast. Accordingly, transferability of findings needs to be established.

CONCLUSION

In summary, the integrated perceptions of preoperative patients and their care providers afford an understanding of the key determinants of successful transition into the perioperative environment. Perhaps by redefining the *purpose* of the preoperative evaluation through the lens of patients as well as the perioperative inter-professional team members, a model that reconciles these differences can be employed. As they become entwined with the chaos of the clinical environment, certain processes have perhaps become modified to the point that they no longer serve the purpose for which they were intended. Many of the current preoperative processes appear to prepare the OR for the patient at best. The current structures that support preoperative processes, specifically communication technology, perhaps have not evolved at the same pace as the technology of the complex procedures for which it is arguably preparing patients to undergo. The quality of care is embedded in the transitions of care that we create and which reflects our capacity to partner not only with our patients but also with our fellow inter-disciplinary care team members. Nurses through their education and training are ideally positioned to coordinate the transitions that occur for preoperative patients, yet the scope and breadth of nursing's role was notably invisible in this setting. Perhaps structural barriers within the perioperative environment such as financial resources and lack of reimbursement are preventing nursing from participating at their highest level of training in this particular care setting. Ample data suggests that less than optimal preoperative care transitions negatively impact perioperative care. The challenge for future research is to propose and investigate new models of patient centered peri-operative care.

IMPLICATIONS FOR PRACTICE

The preoperative phase of care is a critical dimension of care transition and coordination into the perioperative environment. Care transitions are a summation of patient centered care amongst multiple care providers and across clinical settings. In our study, nurses were largely absent from patients' and providers' experience of the preoperative phase of care, perhaps as a result of reimbursement-driven same day admissions and thus reduced lengths of inpatient hospital stays for surgical care. Yet nurses are uniquely poised to serve as custodians of care in recognizing and providing patient centered medical care that reconciles the differences of patient and providers' expectations that we observed as part of the preoperative environment. Nurses are well positioned to make important contributions to shift the paradigm of care toward more patient centered methods and bridge the gaps within transitions of care. Accordingly, an important step to improving transitions through the perioperative environment is to consider interdisciplinary models of care that are attentive to

the needs of the preoperative patient. Interventions that employ strategies to bridge the gaps in care and expectations between patients and providers may improve the overall quality of surgical outcomes.

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APPENDIX A

Provider

What is the purpose of the preoperative evaluation?

Who should be involved in the preoperative evaluation?

In an ideal world, what information would you need to ensure the patient is optimized for surgery?

What processes are amenable to improvement?

Is there anything else I should know about the preoperative environment that I did not ask?

Patient

Can you tell me about your care/experiences during your evaluation(s) during the preoperative phase of care; for example- preoperative visits with your PCP (if applicable), surgeon and anesthesiologist?

Did the providers in the preoperative phase of care seem to have all the information about you in order to provide you with the best care possible?

Were you satisfied with your experiences in the preoperative phase of care as you went from one provider to another provider, including PCP- surgeon- anesthesiologist?

Is there anything else I should know about your experience that I did not ask?

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Summary Box

What does this paper contribute to the wider global clinical community?

- The integrated perceptions of preoperative patients and their care providers afford an understanding of the key determinants of successful transition into the perioperative environment.
- Providers and patients comments reflect four themes that arise during the preoperative phase of care: (1) Need for clarity of purpose of preoperative care (2) Care coordination (3) Inter-professional boundaries of care (4) Inadequate time and resources.
- Nurses are well positioned to make important contributions to shift the paradigm of care and bridge the gaps within transitions of care. Accordingly, an important step to improving transitions through the perioperative environment is to explore new models of perioperative care.