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# KEY DETERMINANTS OF SUCCESSFUL TRANSITION INTO THE PERIOPERATIVE ENVIRONMENT

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KEY DETERMINANTS OF SUCCESSFUL TRANSITION INTO THE PERIOPERATIVE ENVIRONMENT

CHAPTER ONE

Today’s health care environment is bursting with innovation and transformation in design of patient care delivery systems. Hospitals are challenged with caring for complex patients in innovative yet cost effective ways. As a key driver in revenue and hospital profit margins, the surgical or perioperative environment is burdened perhaps the greatest in meeting these challenges while striving for high levels of quality of care. New technology and minimally invasive surgical procedures have contributed to improved patient outcomes and decreased length in hospital stays. As such, patients are receiving care from multidisciplinary teams and are transitioning within multiple areas of the health care environment more than ever before.

The surgical patient is more vulnerable to transition in care errors or communication lapses because of the number of times the patient travels across sites of care through the pre-admission, intraoperative and postoperative phases. Transitions in care within the perioperative environment are ubiquitous. Commonly for elective surgical procedures, the first transition in care within the perioperative environment occurs as patients transfer from the care of the community-based primary care physician/provider to the care of the surgeon. Hence, this preoperative phase of care becomes the genesis of the care trajectory for the perioperative patient.

The preoperative phase of care includes a preoperative assessment in which risk is identified and interventions are presented to mitigate surgical risk factors. Determination for readiness for surgical care and/- or recommendation for preemptive medical care is made based on the preoperative assessment. The preoperative assessment is therefore the foundation for a meaningful hand-off to perioperative care providers (nurses, surgeons, anesthesiologists). To avoid communication lapses and failures in transitions of care in the perioperative environment,
the preoperative assessment should be comprehensive and up to date with the patient’s medical status and medications. Evidence based guidelines from organizations such as the American College of Cardiology/American Heart Association (ACC/AHA) and the American Society of Anesthesiologist (ASA) have been devised for the preoperative assessment of patient risk (Fleisher, 2008). However, these guidelines are not inclusive and for example, do not include reference to an assessment of patients’ cognitive function or perceived health which can be predictors of health outcomes (Inouye et al., 1999; Rothschild et al., 2000; Fick, 2000; Campbell et al., 2004; Bluestein and Rutledge, 2006). Guidelines related to the appropriate timing of preoperative testing and assessments are somewhat ambiguous. The Joint Commission (2011) requirements state that a history and physical with updates must be completed and documented within 24 hours following admission of the patient but prior to a procedure requiring anesthesia. However, history and physical exams performed within 30 days prior to admission may be used if a physician writes an update and the words “re-examined the patient” are present. There are no formal guidelines related to the specific processes that should occur to ensure that adequate communication and transfer of medical information from referring community primary care providers occurs. Furthermore, despite the known significance of the preoperative assessment, this evaluation in and of itself is a non-reimbursable service which has forced many surgical clinics to eliminate or modify the process in an effort to cut costs (Codapedia, Anesthesia E-M, 2013).

To date, significant work exploring the positive impact of pre-anesthesia care related to decreased costs, operating room case cancellations and delays has been carried out (Parker, 2000; Varughese, 2006). Studies examining work flow processes in pre-anesthesia clinics have been performed. These studies identified the frequent lack of preexisting medical information at
the time of the pre-anesthesia visit and the subsequent increased burden of care (Gibby, 1998; Parker, 2000). The lack of preexisting medical information at the time of the pre-anesthesia visit increases the burden of care for the provider, but more importantly, the inadequate transfer of medical information may compromise the quality of future perioperative care. Communication lapses or failures have been noted to be the root cause of up to seventy percent of sentinel events, half of which are the result of inadequate communication during a handoff or transition in care (Joint Commission, 2012). There is significant work demonstrating the hazards of inadequate transitions in care (Naylor, 2002, 2012; Coleman, 2003, 2005). In addition, studies investigating patients’ experience with coordination of postsurgical care across multiple sites been performed demonstrating that coordination across settings affects patients’ clinical outcomes and satisfaction with their care (Weinberg, Gittell, Lusenhop, Katz, & Wright, 2006).

Though not specific to the preoperative environment, there has been extensive work related to the use of checklists to facilitate communication and transfer of information in the intraoperative environment (Gawande, 2009: WHO, 2012). The World Health Organization (WHO) (2012) reports that at least one half million deaths per year would be preventable with effective implementation of the WHO Surgical Safety Checklist worldwide. These results, obtained in the WHO’s 2007-2008 pilot study of its Surgical Safety Checklist have been confirmed by new studies which indicate that the use of checklists ‘significantly reduces surgical morbidity and mortality’ (WHO, 2012). However, the WHO also reports that less than half of all hospitals globally report that they are actually using the checklist (2012).

To my knowledge there are no studies that look at the dimensions of the transition in care upon admission from the community based primary care physician into the preoperative surgical environment and-/or the impact of patient satisfaction with that care. A gap exists in the current
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research literature regarding the dimensions of the preoperative processes and procedures as well as how and what may be impacting the transition in care into the perioperative arena. Research is needed to investigate and provide clarity around the abstract variables and dimensions that contribute to inadequate transitions in care in the perioperative environment, specifically in the preoperative domain. Through scientific inquiry we can identify the salient dimensions of transitions in care in the preoperative arena that confront us. Furthermore, once identified, these dimensions can guide the development of metrics that can assist with improving efficacy and ultimately improving patient outcomes.

Therefore, the purpose of this study is to identify, through qualitative inquiry, the key determinants of preoperative care that are necessary to ensure optimal transitions of care. Guided by Afaf Meleis’ ‘Transitions Theory’ (1985) integrated with Systems Theory (Bertalanffy, 1968) this dissertation will focus on understanding the complexities surrounding the dimensions of preoperative care as well as provider and patient perception of key determinants and processes of transitions in care. Understanding providers’ perceptions of the key determinants of preoperative care processes may influence how each provider performs their preoperative evaluation as well as the specific content they may or may not include and communicate to the perioperative team. Discerning patients’ perceptions of the important dimensions of preoperative care will serve to assist providers in delivering patient centered preoperative transitions in care. The quality of the care provided to patients is embedded in the transitions of care that we orchestrate. If patients’ vulnerabilities or operative risk factors cannot be lessened, they need to at least be identified and communicated so that they can be managed as they shift and potentially become magnified and distorted within the complexity of the perioperative environment.
The following chapter, Chapter 2 describes the results of a pilot study consisting of focus groups of preoperative and postoperative nurses- to solicit nurses’ perceptions of the utility of the preoperative assessment, gaps in communication that occur as patients move through the perioperative setting and what nurses must do to compensate for the gaps. The findings suggest that nurses cannot change the quality of the outcome or product of patients’ vulnerabilities intersecting with the complexity of the perioperative environment if they have not anticipated or managed one or the other. Given the findings of the pilot study and the current literature documenting the impact of inadequate transitions upon discharge, I believe the paradigm must shift to focus on the transitions of care upon admission to the preoperative environment. Thus, this pilot study provided the foundation for further qualitative study.

As one of the key variables is transitions in care, Chapter 3 explores how others have defined and measured transitions in care. Transitions in care has been operationalized and measured in many different ways from both the patient and provider perspective. Previous research has demonstrated various qualitative methods of determining the validity and reliability of the measure of transitions in care upon discharge. Thus in recognition of the paucity of literature describing the consequences of early transitions specific to the preoperative environment, I believe further study is indicated to provide an understanding of the conditions, elements and processes of care transitions in the preoperative environment.
CHAPTER TWO

NURSING’S CONTRIBUTION TO PREOPERATIVE TRANSITIONS IN CARE

Abstract

Background

Transitions in care in the preoperative environment are ubiquitous and high risk endeavors. The preoperative area is the first transition in care for a surgical patient and should be considered a critical dimension of care transition.

Purpose

The purpose of this study was to identify nursing’s contributions to transitions in care as patients move between care settings in the perioperative environment.

Methods

Qualitative descriptive design was utilized. Focus groups were conducted with nurses in a 975 bed medical center.

Results

Themes (1) understanding patient vulnerabilities (2) multidimensional communication (3) managing patients’ expectations (4) nursing’s role in compensating for gaps occurring

Conclusions

Nurses cannot change the quality of the outcome of patients’ vulnerabilities intersecting with the complexity of the perioperative environment if they have not anticipated or managed one or the other. Based on the literature documenting the impact of inadequate transitions upon discharge, the paradigm must shift to focus on transitions of care upon admission to the preoperative environment.
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*Introduction*

Historically, the goal of preoperative assessment has been to determine patient factors that significantly increase the risk for perioperative complications.\(^1\) Overall, the perioperative complication rate has declined over the past thirty years due to improvements in anesthetic and surgical techniques.\(^2\) However, surgical complications are common and often preventable.\(^3\) Studies have shown the risk of perioperative death from inpatient surgery to be 0.4 to 0.8 % and rates of major complications 3 to 17 %.\(^{1,3-4}\) Data suggest that at least half of all surgical complications are avoidable.\(^{4-5}\) Christian’s work describes the growing complexity of the perioperative environment with an increased use of technology in the setting of institutional production pressures.\(^6\) Christian describes the perioperative environment as being “information intensive and relying heavily on how well information flows between phases, locations and providers”.\(^6\) (p.169) Furthermore, Christian observed wide variation in the type of information that was lost in the perioperative environment. “Notably, handoffs or transitions in care were particularly prone to information loss”.\(^6\) (p.165) Christian noted that communication breakdown and information loss as well as increased workload and competing tasks, pose the greatest threats to perioperative patient safety.\(^6\) As such, the preoperative assessment is undoubtedly a critical genesis of the care trajectory as the patient transitions to and from the perioperative environment.

*Purpose*

This qualitative descriptive study proposed to identify nursing’s contributions to transitions in care as patients move between care settings in the perioperative environment.

*Research questions*

1. What are nurses’ contributions to transitions in care in the perioperative environment?
2. What is the role of the nursing preoperative assessment in the perioperative environment and does it assist with patients’ transitions in care that occurs throughout the perioperative environment?

**Significance to Nursing**

The nursing preoperative assessment assists with defining patients’ vulnerabilities or risk factors for poor surgical outcomes. If patients’ vulnerabilities cannot be lessened they need to at least be identified so they can be managed as they shift and potentially become magnified and distorted within the ambiguity and complexity of the health care environment. The preoperative assessment is a critical dimension of care transition and coordination into the perioperative environment. The consequences of ineffective transitions in care as patients are transitioning through discharge from acute care environments is well documented in the literature. However, there is a paucity of data available related to the consequences of ineffective transitions upon admission to the acute care environment, specifically the perioperative environment. The salient dimensions of transition upon discharge are similar to those that are present upon admission.

**Literature Review**

Over 234 million surgical procedures are performed globally each year. A growing elderly population and advances in surgical technology are challenging our health care system to provide safe perioperative care more than ever before and will continue to do so. Nearly fifty percent of adults over 65 years have three or more chronic illness and over twenty percent live with more than five chronic conditions. Historically, the focus of a preoperative assessment has been to evaluate a patient and identify problems that may put the patient at high risk for poor surgical and anesthesia outcomes. In addition to defining risks, Garcia-Miguel and Aguilar
suggest that additional goals of the preoperative assessment are to improve quality of care and restore the patient to the desired level of function.\textsuperscript{21} When an individual transitions into the perioperative environment care needs change drastically. The surgical patient is more vulnerable to transition in care errors or communication lapses because of the number of times the patient travels across sites of care through the pre-admission, intraoperative and post-operative phases.\textsuperscript{22}

Commonly for elective procedures, the first transition in care within the perioperative environment occurs as patients transfer from the care of the community-based primary care physician to the surgeon.

Fuji, Abbott, and Norris assert that initial preoperative patient meetings with the perioperative care team that are inclusive of the surgeon, anesthesiologist, and nurse among other care team members are ideal for preparing surgical patients and coordinating care.\textsuperscript{23} In discussing the themes of their study, they invoke the value patients placed on preoperative visits. Patients viewed the preoperative visit as beneficial in that it provided necessary information and clarified expectations related to their perioperative course of care early on in the care trajectory.

Upon initial surgical evaluation, the need for surgical intervention is determined. Care then commonly takes on the additional dimension of the anesthesia evaluation with the goal of establishing an anesthesia assessment and risk stratification for care across the perioperative environment.\textsuperscript{24} After the surgical procedure, the anesthesia team commonly provides the post-anesthesia care team with a report of the processes that occurred during the surgical procedure. The post-anesthesia nursing care team commonly initiates the transition of care to the post-surgical nursing team who typically care for patients on ‘surgical’ care units and ultimately prepare patients for the transition to home, with or without home care services, or alternatively to another care facility.
Given the numerous transitions in care as patients move from preoperative to postoperative care; the preoperative assessment becomes the critical genesis of the care trajectory as patients transition into the perioperative environment. Nagpal, Vats & Ahmed offer insight into the preoperative assessment, optimization phase, and pre-procedure teamwork which is in contrast to much of the perioperative safety literature which generally speaks to issues of communication failures within the operating room and within context of the post-operative hand off. Their unique examination of communication processes across the spectrum of preoperative, intraoperative and postoperative care is very innovative. Nagpal and Vats unequivocally invoke the susceptibility of the preoperative phase to error related to information transfer and communication. Nagpal, Vats, Ahmed & Moorthy determined that operating room team members had varying amounts of knowledge of the patient and only 27% of the total patient medical information was known to all the primary team members in the operating room (surgeon, anesthesiologist, surgical assistants, scrub and circulating nurse).

Transitions in care in the perioperative area are ubiquitous and should be viewed as high risk endeavors. The preoperative area is the first transition in care for a surgical patient and indeed should be considered a critical dimension of care transition and coordination. It is well documented that defective transitions play a role in a majority of serious medical errors however there has been very little research done that addresses exactly why this happens. Smith and Pope’s findings raise an intriguing question related to the transfer of information in the perioperative environment. In contrast to much of the literature regarding handoffs which define and acknowledge the safety risks inherent in transitions in care, Smith and Pope consider the issue of transfer of professional responsibility for the patient in the context of a handoff or transition in the perioperative environment. Though not specifically aimed at the preoperative
environment, Smith and Pope’s observations reveal how and at what point responsibility was accepted “depended on individual informal negotiation between nurse and anesthetist and appeared to involve mutual trust, differing expectations and the balance of power in the relationship”. 27 (p.336)

Smith and Pope assert that certain aspects of culture and environment within the perioperative environment in which the handoff is occurring could be undermining the very process of transition itself. 27 The professional culture of the intra operative environment has been described as being a fast paced and frequently changing environment that is composed of multidisciplinary teams that change membership often. 28 Though it may not have the ‘pace’ of the intraoperative environment; the professional culture of the preoperative environment is similar in that it is composed of multidisciplinary teams; primary care physicians, cardiologists, pulmonologists, nurses, anesthetists, and surgeons, who change membership frequently as they prepare patients for the transition in to the perioperative environment.

Theoretical Framework

The study utilized Afaf Meleis’ Transitions Theory as a guiding framework for this study. Meleis’ Transition Theory helped us to think more globally about our patients’ vulnerabilities and the dimensions of those vulnerabilities as they intersected with the abundant complexities inherent in the perioperative environment. 29

We conceptualized patient transitions throughout the perioperative environment as a process. With transitions viewed as a process in the perioperative environment the goal is to anticipate points at which the patient is most likely to reach peaks of vulnerability with respect to health. 30 We believe a patient transitioning through the perioperative environment is rendered vulnerable before, during and after their surgical procedures, and assert that the comprehensive
preoperative assessment is one tool nurses can use to identify, document and communicate patient risk factors or ‘vulnerabilities’. Risk assessment is needed to anticipate the potential positive and negative consequences the patient may experience related to their anesthetic as well as to the surgical procedure. The ability to conceptualize and anticipate potential perioperative consequences and provide intervention is the very essence of preoperative assessment and the genesis of nursing care for the patient transitioning into the perioperative environment.

**Research Design and Method**

We used a qualitative descriptive design for this study to discern nurses’ perception of the preoperative assessment and how the assessment is utilized in transitions of care in the perioperative environment. Additionally, we sought nurses’ perceptions of the gaps in communication that occur as patients move between care settings and the role of nursing in relation to compensating for these gaps.

We conducted focus groups, guided by a brief semi structured interview guide consisting of five questions- (Appendix A). We designed the questions based on the focus of inquiry: the use of the preoperative assessment, gaps in communication that occur and nurses’ role in compensating for these gaps. Speziale and Carpenter suggest that “focus groups are most useful when the topic of inquiry is considered sensitive”.\(^3\) Given the phenomena of interest and the potential ramifications of gaps in patient communication, as well as the desire to achieve rich and insightful data, we decided focus groups would be the most appropriate method of data collection for this study.

**Participants**

The study setting was a 975 bed medical center in the Northeast United States. We used purposeful sampling to select nurse providers that could offer the most insight and broadest
range of experience related to the phenomenon of interest. Lucasey suggests that it is particularly useful to invite those participants who have a ‘shared trait’ or knowledge on which the dialogue can build. As such, participants included nurses with perioperative nursing experience who work in the institution’s pre-anesthesia testing area and have a central role in the creation of preoperative nursing assessments for adult surgical patient. Participants also included nurses who worked on five different post-operative surgical care units and whom at times created, but more commonly were the end users of the preoperative nursing assessment.

We conducted four focus groups; the pre-anesthesia focus group had 8 participants, one of the postoperative groups had 4 participants, and the other two postoperative groups each had 6 participants. There were total of 24 participants. Participants in the preanesthesia group experience as nurses ranged from ten to thirty five years. Participants in the postsurgical groups had experience levels from two to thirty years. We did not collect any additional demographic or identifying information from participants. As the phenomenon of interest relates to the perceptions of the direct care nurse provider, we excluded unit nursing leadership from participation. We recruited staff nurses assigned to the designated patient care units at each site through emails and flyers. We provided an informational letter notifying potential participants of the purpose, procedures, risks and benefits and that they were free to participate or not. Those who attended the focus group sessions were considered volunteers. Focus groups occurred in a secure conference room on the patient care units.

**Protection of participants’ rights**

The proposal met the criteria for exemption by the Institutional Review Board (IRB) at both the academic medical center as well as Northeastern University. Appropriate provisions were made to protect the privacy and confidentiality of participants and the data. Participants were
encouraged to not use any identifiers during the focus group. Identities of the participants were kept confidential. All data were de-identified and locked in a password protected computer to protect participant information.

Study procedures

We conducted semi-structured focus group interviews guided by the interview guide. To ensure equivalence as described by Kidd and Parshall across the focus groups, I (the lead author) led all four focus groups. Five open-ended questions comprised the interview guide. We structured the questions to give participants an opportunity to provide detailed information about utilization of the nursing preoperative assessment and the gaps in information that were incurred as patients move between care settings. Schreiber and Stern’s recommendation for inclusion of two key thought provoking questions based on conceptual associations were incorporated at the end of the interviews. These included ‘what advice would you have for others that might facilitate communication and transitions in care as patients move between care settings in the perioperative environment’ and ‘is there anything else I should know that I did not ask’. To avoid loss of detail, I (primary author) recorded field notes as soon as possible after the interview.

We shared all pertinent information with participants about the study and discussed the importance of confidentiality. We conducted the interviews in a private area and audio recorded with the participants’ permission. A professional transcriptionist transcribed data from the interviews verbatim and all data were stored in an encrypted secure electronic database.

Data Analysis

The primary author performed initial descriptive coding to organize and provide an understanding of the narrative data collected. As recurring patterns emerged, the research team identified and categorized important themes. Three members of the research team have had
multiple years of experience doing qualitative analysis. Themes emerging from the data were multidimensional yet were consistent throughout the narrative data. We then discussed the findings together and reviewed the coding for accuracy and consistency. After initial categorization of themes, we reviewed the narrative data in the focus group transcript to ensure good fit. Additionally, we utilized journaling to help discern patterns during the analysis of the data and document an audit trail showing the evolution of our thoughts throughout data collection and analysis.

Credibility, transferability, dependability, and confirmability as described by Lincoln and Guba were attended to in the following ways: experiences were compared across the groups, initial data analysis was performed by the lead researcher, the moderator of the focus groups, and preliminary codes and emerging themes were reviewed with other members of the research team.35 The lead author is a nurse with twenty-nine years of experience in the pre- and postsurgical environment and has worked with some of the participants in the study as a staff nurse. Knowledge of the environment helped the author better understand the interviewee’s descriptions. We viewed this as a strength, however, we also worked to minimize threats to credibility by including all research team members in the data analysis process, as the other members of the team are nurses with a variety of different backgrounds. To ensure internal consistency of coding, the focus groups were audio taped and the verbatim transcription reviewed by other members of the research team.

Findings

- The following four themes emerged from the data:

Understanding Vulnerabilities: ‘Seeing the red flags’.
Preoperatively nurses are interested in understanding those patient vulnerabilities that may impact the care trajectory. The preoperative assessment ‘gives us a quick overview if it’s a healthy patient’, whereas, ‘negative findings allow us to intervene sooner rather than later.’ ‘It allows nursing to see the red flags early and reach out to establish resources like nutrition and case management consults’. The preoperative assessment ‘tells us how the patient functions, can they hear, do they speak English, if they are in a wheelchair, are they incontinent…it is all there’. It ‘indicates any concerns the patient may have and allows the patient to verbalize their concerns’. The preoperative assessment is seen as a tool to ‘help with the handoff and communicate about the patient to other nurses’.

Postoperatively the preoperative assessment ‘gives us the whole picture so you know what you are walking into’. It ‘allows us to identify changes in patient condition, because in the initial postoperative period the patient cannot tell us- if still anesthetized- they all look the same when they are asleep’. In the postoperative period, the preoperative assessment establishes ‘a baseline’ and assists with recognizing vulnerabilities like risk for falls- ‘once you have seen one fall you don’t want to live it again’. ‘If someone uses a cane or a walker and having surgery...most likely afterwards they are going need a PT evaluation’. Postoperatively the interest in vulnerabilities takes on additional dimensions. The desire to understand the home and caregiver situation becomes more immediate; ‘who do they live with, do they have family to help them and is the family going to be able to help them’?

Multidimensional Communication: ‘What we need to know to take care of you’.

Inadequacy of communication is multidimensional, that which occurs between the physician and patient and that which is interdisciplinary. Nurses often hear patients say, ‘the surgeon never told me that’ and often ‘they have no idea about an ICU stay; they think they will
be back in their room that night’. Gaps in communication may occur as patients move between care settings and are often related to inadequate written, verbal and or electronic communication of patient health information, ‘they give meds and it’s not in the computer’. The timing and quality of the transfer of information or handoff which needs to occur preoperatively and throughout the perioperative environment is less than adequate ‘we don’t have good communication with primary care doctors... never a current history and physical, we don’t know if they can walk, don’t know their functional status or if they are mentally or developmentally delayed.’ This is often related to aspects of the environment which include systems issues, i.e. transfer of care responsibility, and or often the production pressure embedded in the transition of patients to the next level of care to accommodate those with greater morbidity, ‘the ED needs to get them out to get the next one in’. Moreover, communication inadequacies are entrenched in the primacy information has for each individual provider. The surgeon’s priority is the communication of information as it relates to the surgical procedure ‘the patient said, I was in there 5 minutes and he said either get it out electively or I’ll see you in the ED’. The perioperative nurse’s feel their ‘perspective is different...it’s what we need to know to take care of you’.

Managing Expectations: ‘Aren’t they going to know this’?

Patients and their families have the reasonable expectation that they are known when they come into the hospital. They have ‘a reasonable expectation that when they arrive here on the day of surgery you know what they are here for and that you understand their situation’. They expect that their complete medical histories and their medications are ‘in the computer’ and they ‘get irritated’ when it is not because they ‘already told someone that six times’. Patients expect that their needs have been identified and their vulnerabilities anticipated ‘when I tell them they need
to let the anesthesiologist know about something- they look at me like…aren’t they going to know this?’ They expect that if they were told preoperatively that they will recuperate in a private room that indeed, they will have a private room after surgery. ‘When they don’t get the private room everything can be downhill from there.’ Patients and families become upset and distrustful ‘they lose confidence in us’ and of the care being provided. Nurses spend time compensating for failed expectations by ‘apologizing’ and ‘repeating’ and ultimately redefining and redirecting care.

Connecting the disconnected: Taking the extra step.

‘We have all these pieces and we put the glue between them, we put them in order and fill the space in between -otherwise you don’t have any continuity’. As the front line staff, nurses not only recognize, but are able to confront gaps in care and ‘take the extra step’ and ‘use resources’ in advocating for the patient. ‘Multiple consults and doctors are coming in and out, this floor sees it all, you are a trauma patient under the trauma service but we have to wait to hear from orthopedics, spinal and renal consults before we can give information’. As such, nurses are routinely confronted with integrating and reconciling data from diverse sources. By using a patient and family centered approach nurses are able to perceive patients’ physical and emotional needs more accurately than other providers as ‘others don’t factor in everything else that goes on’ and ‘the patients depend on us the most’.

Discussion.

The perioperative environment is multidimensional, dynamic and comprised of multidisciplinary teams. Providers are challenged with the complex needs of the patients they care for intersecting with the ever increasing complexity of the perioperative environment.
Providers are confronted with caring for patients with multiple risk factors in an environment that is dominated by institutional production pressures imposing on competing tasks being carried out by multiple disciplines who rely on how well information is communicated amongst and between them. Meleis’ Transitions theory provides a conceptual foundation for transitions throughout the perioperative environment as a process. With transitions viewed as a process in the perioperative environment the goal is to ‘anticipate points at which the patient is most likely to reach peaks of vulnerability.’

Understanding Vulnerabilities: ‘Seeing the red flags’

Understanding existing vulnerabilities is important but the desire to identify and recognize those vulnerabilities, *the red flags*, which may emerge during transitions in care as a product of the intersection with the perioperative environment is where the critical significance of the preoperative assessment is embedded for both pre-operative and post-operative nurse providers. Meleis’ transition theory infers that it is important to identify our patient’s vulnerabilities or risk factors for surgery. More importantly, Meleis concludes that we must recognize the dimensionality these vulnerabilities may take on within the context of the perioperative environment. The nurses in this study called these vulnerabilities ‘red flags’ and use the preoperative assessment to communicate these vulnerabilities to other providers.

Multidimensional Communication: ‘What we need to know to take care of you’

Nurses’ priority encompasses the communication of information as it relates to the surgical procedure as well as the impact the surgical procedure and anesthetic may have on the patient’s health status, functional status and family dynamics. The nurses in this study
emphasized the importance of establishing an accurate ‘baseline’ for the patient and deemed this process as critically important. However, they noted that the nature of that baseline information varies amongst provider and the condition of the patient. This finding is congruent with the findings of Nagpal and Vats which identified the vulnerability of the preoperative phase related to information transfer and communication error.\(^{22}\) One could pose that error in information communication is embedded in the primacy that information has for various disciplines and as such, may or may not be conveyed to other disciplines. The nurses in this study cite the lack of communication between the primary care team and the preoperative team as an important contributor to gaps in transitions into the preoperative environment. Congruently, Christian invokes the critical importance of communication between discipline by describing the perioperative environment as ‘relying heavily on how well information flows between phases, location and providers’.\(^{6}\) (p.169)

Managing Expectations: ‘Aren’t they going to know this’?

When there is a failure in meeting patient’s expectations the burden of care is intensified and magnified and patient satisfaction is impacted. The quality of care provided to patients is embedded in the ability of nurses to respond to the ambiguity inherent in transitions in care. The study’s purpose was to discern nursing’s contribution to transitions in care. The nurses in this study noted the dismay of patients whose expectations were not met. They identified the need for frequent nursing interventions employed to redefine and clarify expectations. With transitions viewed as a process, as defined by Meleis, anticipating points of vulnerabilities will guide us in providing nursing care.\(^{29}\) Similarly, anticipating, clarifying and defining expectations assists with guiding nursing interventions. Nursing’s contributions to transitions in care are intricately woven
in their ability to deal with the ambiguity created during a transition in care when vulnerabilities have not quite been defined or communicated.

**Connecting the disconnected: Taking the extra step**.

Nurses have the ability to perceive the complexity of the systems that create institutional environments and to work with the ambiguity of shifting patient care needs not just as patients leave hospitals but when they enter and subsequently traverse them as well. Nurses routinely are confronted with integrating and reconciling data from diverse sources. Nurses are able to identify and unveil vulnerabilities that manifest or have the potential to manifest as a result of the care provided during a transition and or within the environment. Smith and Pope urge consideration of the issue of transfer of professional responsibility for the patient in the context of a handoff or transition into the perioperative environment.29 The nurses in this study cite their contribution to transitions in care as ‘taking the extra step’ and ‘connecting the disconnected’ for patients in a system where fragmentation abounds. Furthermore, because nurses are navigating the environment far more frequently and as noted by nurses in this study, ‘spend the most time with patients’, they understand and have a working knowledge of the complexity of the patient care environment that others do not.

**Limitations**

The study did not include intraoperative nurses because the intent of these focus groups was to explore the nurses’ role in the creation of the preoperative assessment and its value for the end users who were ultimately transitioning the patients back to home. Future research should include intraoperative nurses, surgeons, anesthesia providers and patients.

The experience level in the postsurgical groups had a wider range of nursing experience (2 years-30 years) than the preoperative group (10-35 years), which may have impacted the
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results particularly in the area of communication. Also, this study was conducted in a single academic center in the Northeast, so findings may not be transferable to smaller community health care settings. Though credibility was attended to by summarizing intermittently during the focus groups with participants by the author, we did not go back to the participants after the focus groups to review findings. One assumption going into the study was that gaps in communication exist in the perioperative environment. This assumption was based on the lead researcher’s nursing experience working in the pre and postoperative environment.

Recommendations

With shorter length of stays, many patients’ vulnerabilities, some of which are indeed, a product of the health care environment, may not reveal themselves until patients are being transitioned out of the environment. Based on these preliminary findings, we recommend that the preoperative assessment be more than simply a clearance for surgery. Others have demonstrated improved quality and cost outcomes with the implementation of a transitional care model for at risk, chronically ill older adults as they transition out of hospitals. Meleis’ Transitions theory provides a conceptual foundation for transitions throughout the perioperative environment as a process. Suggestions for further research include inquiry related to the application of a similar conceptual model to patients as they transition into and through health care environments. A rigorous analysis of the process of transitions with attention to the gaps that occur will inform nursing interventions.

Additional research is needed to discern whether a patient can be made less vulnerable and whether nurses can control for patients’ vulnerabilities that are either pre-existing or a product of the disorder that is part of today’s busy clinical environment. Inquiry is needed to discover whether the course of care can be altered by a rigorous analysis of the process of the
transitions with attention to the gaps themselves. Additionally, future studies that include anesthesia providers who assess patients in their transitions should be considered.

Conclusion

In summary, ultimately nurses have the ability to improve the quality of care provided to patients by identifying patients’ vulnerabilities as they transition into and within the complexities of hospitals rather than exclusively evaluating their transitional care needs upon discharge. Nursing cannot change the quality of the outcome or product of patients’ vulnerabilities intersecting with the complexity of the health care environments if they have not anticipated or managed one or the other.

This study suggests that the nursing preoperative assessment can be useful in identifying and defining patients’ risk factors/ vulnerabilities not just for surgery but for the entire perioperative care trajectory. The set forth assumption that gaps exist was supported by the research findings. Communication of these risk factors/ vulnerabilities to the entire perioperative team is critical for a successful transition through the perioperative environment to occur. Patients expect that we have anticipated and understand their needs. Providers expect they will have the information they need to adequately anticipate patients’ needs. When patients’ and providers’ expectations are not met the burden of care is intensified throughout the perioperative environment and patient care and satisfaction with that care is impacted. If patients’ vulnerabilities cannot be lessened they need to at least be identified so they can be managed as they shift and potentially become magnified and distorted within the ambiguity and complexity of the perioperative environment.

Our findings suggest that nursing science needs to consider transitions upon admission into the health care environment as critical as the transitions out of a health care environment.
Early transitions in care in the preoperative environment set the stage for the entire perioperative care trajectory. Others have demonstrated the importance of transitional care upon discharge. Based on the literature documenting the impact of inadequate transitions upon discharge and our clinical experience, we believe that the paradigm must shift to focus on the transitions of care upon admission. Further empirical work is needed to determine the potential impact of inadequate early transitions on the care trajectory and ultimately patient outcomes.
Appendix A

1. How is the preoperative nursing assessment helpful to you in caring for the patient?

2. In your experience what are the gaps in communication that occur as patients move between care settings, (example) moving from site to site- PCP-> PATA->OR->PACU->Surgical floor, ICU->floor, EW->surgical floor?

3. What is the significance of those gaps and what do you have to do to compensate or manage for that missing information?

4. How is it that we as nurses see these gaps when other providers do not?

5. Is there anything else that was not mentioned in our discussion that you think is important to know that might facilitate communication as patients move between care settings that I did not ask?
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Though others have demonstrated the importance of transitional care upon discharge, there is a paucity of literature related to the consequences of ineffective transitions upon admission to the acute care environment. Specifically, transitions into the preoperative environment remain largely unexplored. There are no studies that look at the dimensions of the transition in care upon admission from the community based primary care physician into the preoperative surgical environment and or the impact of patient satisfaction with that care. There is a gap in the current research literature regarding the dimensions of the preoperative processes and procedures as well as how and what may be impacting the transition in care into the perioperative arena. Research is needed to investigate and provide clarity around the abstract variables and dimensions that contribute to inadequate transitions in care in the perioperative environment, specifically in the preoperative domain. Through scientific inquiry we can identify
the salient dimensions of transitions in care in the preoperative arena that confront us.

Furthermore, once identified, these dimensions can guide the development of metrics that can assist with improving efficacy and ultimately improving patient outcomes.

Careful operationalization of concepts is imperative prior to conducting nursing research (Waltz & Strickland, 2012). Therefore the purpose of this review is to analyze how others have defined and measured transitions in care. Additionally, three tools that have been used to measure transitions in care will be discussed in terms of reliability and validity. These include the Care Transition Measure (CTM -15), (Coleman, 2005), Picker Patient Experience (PPE-15), (Jenkinson, Coulter, & Bruster, 2002), and PREPARED (Grimmer & Moss, 2001).

Transitions in Care

The concept of ‘transitions’ has origins in the social sciences. William Bridges PhD, an internationally known speaker, consultant and author was among the first to introduce and describe the phenomena of transitions (Bridges, 2004). Bridges asserts that all transitions are composed of three phases; an ending phase characterized by disenchantment; a neutral phase, characterized by disintegration and disequilibrium; and a beginning phase, characterized by anticipation of new roles. Afaf Meleis PhD, FAAN, has written extensively on the concept of transitions in nursing. Meleis asserts that “Transition denotes a change in health status, or in role relationships, expectations, or abilities, it denotes changes in needs of all human systems” (Meleis, 2012, p.100). Moreover, Meleis contends that “Nursing does not deal with the transition of an individual, a family, or a community in isolation from an environment. How human beings cope with transition and how the environment affects that coping are fundamental questions for nursing” (Meleis, 2012, p.101). The transition itself provides the context in which the period of increased vulnerability to risk occur (Meleis, 1986). Meleis’ perspective forces us to think more
globally about our patients’ vulnerabilities and the dimensions of these vulnerabilities as they intersect with the abundant complexities inherent in the perioperative environment.

**LITERATURE REVIEW**

Transition in care has been operationalized and measured in many different ways. Naylor and Sochalski describe transitional care as providing critically needed service continuity at the most vulnerable points for persons with multiple chronic illnesses during the ‘hand off’ or transition between care settings (Naylor, 2012). 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 continuity due to a communication failure. Naylor’s research has focused on the transitions that occur within the discharge process of vulnerable elders from health care institutions.

Coleman (2003) defines transitions in care as a set of actions designed to ensure the coordination and continuity of health care as patient’s transfer between different locations or different levels of care in the same location (Coleman, 2003). Coleman suggests that improving quality and safety during hand offs are fundamentally different from improving quality or safety in a single setting (Coleman, 2003). He believes that the goal of transitional care is to facilitate a match between an individual’s care needs and his or her care setting. Coleman’s (2005) Care Transition measure CTM -15 is a tool widely believed to provide patient centered insight into the quality of care transitions. The (CTM-15) is a 15 item measure of patients’ perceived quality of care transition. The measure is based on a tested conceptual framework containing items related to patient’s critical understanding, importance of preferences, management preparation and existence of a written and understandable care plan (Coleman, 2003, 2005).
Jenkinson, Coulter, & Bruster (2002) operationalized transitions relevant to the CTM domain of information transfer and expressing treatment preferences and self-management. Jenkinson et al., use the total score on the Picker Patient Experience Survey (PPE-15) which focuses on hospital discharge experience as opposed to care received thereafter to describe quality of care transition. Similarly, Bakshi, et al., (2012) suggest an essential aspect in the measurement of the quality of transition is patient’s experience, as patients and caregivers are often the only common link across care settings. Sepucha’s (2004) work related to patient centered care invokes the need for not only outcome measures of quality of care but also process measures that assess different elements of patient centered care. Jenkinson’s et al., study describing patients’ experience and satisfaction with care informs that detailed questions about specific aspects of patient experience are more likely to be useful for monitoring care (2002). Furthermore, Jenkinson, et al., assert that ‘if satisfaction with process of care is the aim; it must be obtained through the lens of the patient (2002). This invocation for measuring the process of care specifically from the patient’s perspective to assess quality of care is congruent with the work of Coleman’s (2005).

Grimmer and Moss (2001) base their work related to transitions on community stakeholder perception of the quality of the process and outcome of discharge planning activities undertaken in the acute hospital setting as measured by the total score on the PREPARED Instrument. PREPARED is an acronym derived from elements of the phase of healthcare to which it refers: Prescriptions, Ready to re-enter the community, Education, Placement, Assurance of Safety, Realistic Expectations, Empowerment, Directed to appropriate services. Employing a different approach, Jeffs et al. (2013) utilized a structured panel process to define quality measures for care transitions which yielded five top measures. These include (1)
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readmission rates within 30 days of discharge, (2) primary care visit within 7 days of discharge for high risk patients, (3) medication reconciliation completed at admission and prior to discharge (4) readmission within 72 hours and (5) time from discharge to homecare nursing visit for high risk patients. Halasyamani, Kripalani, and Coleman (2006) also used a panel of care transition researchers and process improvement experts and operationalized transition of care as discharge from the hospital. Perhaps indicators deemed appropriate for the measurement of quality of the transition of care upon discharge from health care environment can be adopted and modified for measurement of the quality of the transition of care upon admission to a health care environment.

CRITICAL ANALYSIS OF RELIABILITY AND VALIDITY

Transition in care is a criteria-referenced measure. A criteria-referenced measure is concerned with the measurement of process and outcome variables (Waltz & Strickland, 2010) Validity assessment is necessary to inform as to whether the ‘measure’ is indeed measuring what we think it is measuring. In quantitative research, procedures for validity assessment include those related to content validity and construct validity. Waltz and Strickland suggest that “content validity of a criterion-referenced measure is the first type of validity that should be established and is a prerequisite for all other types of validity” (2010, p.187). Content validity assessment can be conducted with content specialists through the use of; inter rater agreement (Cohen’s Kappa), the average congruency percentage and or the content validity index (CVI). Construct validity can be assessed through a contrasted groups approach. Reliability for a criterion referenced measure can be determined by evidence of stability; (test, retest), equivalence (inter rater agreement), and internal consistency.
Establishing ‘trustworthiness’ as described by Lincoln and Guba (1984) and Waltz and Strickland (2010) is appropriate and of paramount importance in qualitative inquiry. Descriptive validity in qualitative research can be defined as ‘trustworthiness’ of the data and the resultant analysis and interpretation (Waltz & Strickland, 2010). Internal validity is described as credibility or authenticity (Lincoln & Guba, 1985). External validity or ‘transferability’ is whether the findings can be transferred to other contexts, and generalizable to other groups (Waltz & Strickland, 2010). Reliability or ‘confirmability and objectivity’ as described by Lincoln and Guba (1985) in qualitative research is concerned with consistency over time and across researchers. External reliability or ‘dependability’ as described by Waltz and Strickland (2010) is defined as whether independent researchers would generate similar constructs for the data in the same way as the original researchers and or the ability to replicate the study.

**The Care Transition Measure (CTM-15)**

The Care Transition Measure (CTM-15) was developed and designed using both qualitative and quantitative approaches. The CTM-15 tests overall care transition experience and not just the hospital discharge phase. The total score on the 15 item tool measured from the patient’s perspective is based on the actual experiences both positive and negative of older adults and their caregivers. Domains are thought to reflect critical components of transitions that include information transfer, patient and caregiver preparation, self-management support, and empowerment to assert preferences (Coleman, 2003). Standard qualitative techniques were employed for analysis of the qualitative data garnered from the focus groups. Of importance, reliability was attended to by having more than one investigator independently analyze the raw data to evaluate key domains and subsequently having the group assemble to reach consensus.
Initial psychometric evaluation of the CTM instrument included content validity, construct validity, floor and ceiling effects and intra item variation. The measure was constructed from data obtained from patient focus groups; once drafted these items underwent a series of pilot tests to refine content. Descriptive and internal validity or credibility was attended to by having these draft items reviewed by experts in geriatric health care. After review, the items underwent pilot testing via administration by telephone (N= 20). Though the sample size of 20 patients was small and potentially compromising to external validity or transferability, having the items reviewed to establish content validity by experts provided additional clinical credibility. Construct validity was demonstrated by comparing related items on the newly developed CTM to similar items included in a measure by Hendriks (2002) which of note, is a measure designed to assess the quality of hospital discharge from patient’s perspective. The Spearman inter item correlation ranged from .388 -.594. These correlation coefficients were within the range of being acceptable by hypothesized a prior values of 0.25 and 0.75. Reliability of the CTM was demonstrated in a study conducted by Coleman (2005) in which a total of 623 patients were identified from a health care delivery’s system administrative data in Oregon, Washington and Alaska. Two hundred were selected for participation using random consecutive selection and participated in the CTM survey in which the CTM interview schedule was administered. The dimensionality and content domain structure of the items was assessed with exploratory and confirmatory factor analyses. An exploratory factor analysis establishes construct validity whereas confirmatory test construct validity. Coleman was thorough in his strategy as exploratory approach generates theory; whereas confirmatory approach validates ‘what’s there’. The goal of factor analysis is to explain the most variance with the fewest number of factors. Subsequently, to test the hypothesis that the items constituted 4 content domains as part of a
single overarching factor (quality of care transitions) the 4 latent domain structure was evaluated using confirmatory factor analysis (Coleman, 2005). The 4 factors sufficiently comprised a unidimensional instrument. Cronbach’s alpha for the 15 item measure was 0.93.

In summary the overall strength of the CTM is that it was developed from the perspective of the patient. It is based on actual experiences of older patients and identified elements such as fear, anxiety, caregiver support, and preferences that perhaps providers may not have identified. It is a unidimensional measure of the quality of the post hospital care transitions experience. The CTM was developed using rigorous methods including both qualitative and quantitative approaches. The factor structure closely resembles the initial content domains identified in the qualitative analysis. Though the utility of the measure has been demonstrated on the quality of transitions upon discharge, it does not infer quality of the construct of care as related to transitions upon admission. As the items or elements should be meaningful to the providers and the patients who receive care during a transition; the measure provides some guidance, however, it begs for further development of a measure of care elements received during transitions upon admission.

**Picker Patient Experience (PPE- 15)**

Picker Institute instruments are founded on extensive qualitative research to determine which aspects of care are important to patients. The Patient Experience questionnaire (PPE-15) was developed to test a core set of questions to measure patients’ experiences of inpatient care (Jenkinson, Coulter, & Bruster, 2002). Content validity was established through literature review and put into a questionnaire formant by an expert advisory group. This produced a pilot version of the instrument which was tested using cognitive interviews with patients and then redrafted and piloted (test-retest). The questionnaire measures seven core dimensions: information and
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education; coordination of care; physical comfort; emotional support; respect for patient preferences; involvement of family and friends and continuity of care. To develop the PPE 15, forty questions were selected from the bank of items developed for use in in-patient surveys undertaken by the Picker Institute for the purposes of assessing quality of care. A total of 62,925 questionnaires (response rate of 65 %) were returned from 5 countries United Kingdom, Germany, Sweden, Switzerland, and the USA. Questionnaires were mailed to patients’ homes within one month of discharge. Twenty five items were removed from the original 40 questions because their removal resulted in an increase in the reliability of the instrument. Internal consistency or Item to Item correlation (Spearman correlation) was .3. All correlations exceeded the criterion of 0.3. The PPE-15 index was highly correlated with the total number of items selected as ‘problems’ on the original measure correlations ranged from 0.93 (Jenkinson, Coulter & Bruster, 2002). In summary, the PPE-15 provides a valid and reliable basic set of questions that are applicable and relevant to all hospitalized patients. Analysis of the development of the questionnaire demonstrates high internal consistency and validity across the countries in the study, and very high association with the gold standard total ‘problem score’ from the long form of the instrument. The PPE -15 has been demonstrated to be valid and reliable and reflects a measurement of specific aspects of patient experience. The PPE- 15 and provides a basic core around which additional questions related to process of preoperative transitions can be added.

PREPARED Instrument

PREPARED is an acronym derived from elements and processes of the discharge phase of healthcare; Prescriptions, Ready to re-enter the community, Education, Placement, Assurance of Safety, Realistic Expectations, Empowerment, and Directed to appropriate services (Grimmer & Moss, 2001). Content validity of PREPARED was assessed simultaneously with the
development of the content and design of the measure through findings from expert opinion coupled with interviews with patients, caregivers and hospital staff. It was trialed and modified to ensure sensitive measurements of key attributes of discharge planning process and outcome. The original number of items was reduced by factor analysis. Four key process domains were identified; information exchange (community services and equipment), medication management, preparation for coping after discharge and control of discharge circumstances. The validity of the instrument was further tested by comparing its responses with interview data and by correlating the process and outcome domains. The validation trial involved surveying 834 elderly medical and surgical patients immediately following patient discharge from the hospital using the revised PREPARED instrument and the 1 week version of the SF 36 quality of life survey. Key questions in 4 domains described 57% of the total variance for patients (Grimmer & Moss, 2001).

Halasyamani, Kripalani, and Coleman (2006) operationalized transition of care as ‘discharge from the hospital’. To establish content validity, they assembled a panel of care transition researchers, process improvement experts and hospitalist to review existing literature and develop a check list of processes and elements required for discharge. The discharge checklist was presented at the Society of Hospital’s Annual Meeting where it was reviewed and revised by more than 120 hospitalist, nurses, case managers and pharmacist. The checklist focused on medication safety, patient education and follow up plans. The initial list contained 24 items and 3 domains- discharge planning, medications and the discharge summary documents. To establish further validity; the checklist was sent to 3 experts in the field of geriatrics and transitions. Items approved by 2 of the 3 experts were retained. The authors believe the checklist highlights what is believed to be the key information about the transition of care and its process.
In summary, a rigorous method of evidenced based review and expert panel was used to determine content and criterion validity. A limitation in the method was the limited number of controlled trials of ‘gold standard’ delivery processes.

SUMMARY OF FINDINGS

IMPLICATIONS FOR CLINICAL NURSING RESEARCH

It is well documented that inadequate transitions play a role in a majority of serious medical errors however there has been very little research done that addresses exactly why this happens (Friesen, 2008). Transitions in care that occur throughout the perioperative arena are numerous. Consequently the surgical patient is more vulnerable to lapses in communications associated with transitions in care (Nagpal et al., 2010). There is overwhelming evidence in the healthcare literature that demonstrates the existence of serious quality problems for patients undergoing transitions across sites of care (National Transitions of Care Coalition Measures Workgroup, 2008). It is through discerning the complexity of the processes of the preoperative environment through the use of valid and reliable measures; that include both the provider and the patient perspective, that we will gain a relational understanding of the consequences of this phenomenon on perioperative patient care.

Previous research has demonstrated various qualitative methods can be used to determine the validity and reliability of the measure of transitions in care. This work also demonstrated that provider and patient perception is critical and should be sought to define the process indicators that not only challenge us in how we gather critical information within the preoperative environment but also to bring clarity to the information that is actually required for a successful transition in care to occur.
As transition in care is a criterion referenced measure; interviewing both providers and patients is an ideal way to establish content validity which is a prerequisite for all other types of validity (Waltz & Strickland, 2010). Previous research has demonstrated that patient and providers may not operationalize transitions in the same way. Providers may operationalize transitions as related to systems or processes that are not inherently visible to the patient. Naylor (2002) identified system factors associated with poor outcomes. These include; breakdown in communication between providers and across health care agencies, inadequate patient and caregiver education, poor continuity of care, and limited access to services. The breakdown in system factors results in substantial unmet needs and high levels of dissatisfaction with the health care system.

Patients may operationalize transitions as preparedness and or related to informational needs regarding their anesthesia and surgery (Coleman, 2003; Pakdil & Harwood, 2005). The value of patient perception of transitions in care cannot be underestimated as the patient and or caregiver are the only common thread traversing the perioperative environment. Hibbard (2004) suggests that efforts of measuring quality of care has fallen short if it has not included or incorporated patients’ values and preferences for care. Patient perception is entwined with patient satisfaction. Pakdil and Harwood (2005) suggest that patient satisfaction with care can be measured by determining the gap between patient’s expectations and perceptions about services delivered.

Current literature describes the consequences of ineffective transitions in care as patients are transitioning through discharge from acute care environments and offers valid and reliable methods to measure the quality of the care transition process (Brock, 2013; Joint Commission, 2012; Saleh, 2012, Ong, 2011; National Transitions of Care Coalition Measures Workgroup,
There is a paucity of literature describing the consequences of early transitions specific to the preoperative environment. There is even less known with regards to how to measure this phenomenon and its impact on care delivery and patient outcomes.

In conclusion, an initial qualitative approach to evaluating transitions in preoperative care is feasible and congruent with methods invoked in prior studies that have measured transitions in care. Furthermore, it may provide an understanding of the conditions, elements and processes of care transitions into the preoperative environment if defined from both the provider and patient perspective.

A validated measure that captures the essential domains of successful transitions into the preoperative environment is the first step in improving the transition in care into the preoperative environment. Refining this measure for patients with specific needs and circumstances may assist with the innovation and development of interventions needed to ensure high quality perioperative care.
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INTRODUCTION

In the midst of health care reform hospitals are challenged with caring for complex patients in innovative and cost effective ways. As a key driver in revenue and hospital profit margins, the surgical or perioperative environment is perhaps burdened the greatest in meeting these challenges while striving for high levels of quality of care. New technology and minimally invasive surgical procedures have contributed to improved patient outcomes and decreased length in hospital stays. As such, patients are receiving care from multidisciplinary teams and are transitioning within multiple areas of the health care environment more than ever before.

The surgical patient is more vulnerable to transition in care errors or communication lapses because of the number of times the patient travels across sites of care through the preadmission, intraoperative and postoperative phases. Transitions in care within the perioperative environment are ubiquitous. Commonly for elective surgical procedures, the first transition in care within the perioperative environment occurs as patients transfer from the care of the community-based primary care physician/provider to the care of the surgeon. Hence, this preoperative phase of care becomes the genesis of the care trajectory for the perioperative patient.

The preoperative phase of care includes a preoperative assessment in which risk is identified and interventions are presented to mitigate surgical risk factors. Determination for readiness for surgical care and or recommendation for preemptive medical care is made based on the preoperative assessment. The preoperative assessment inherently creates the foundation for a meaningful hand-off to perioperative care providers (nurses, surgeons, anesthesiologists). To avoid communication lapses and failures in transitions of care in the perioperative environment,
the preoperative assessment should be comprehensive. The current guidelines for the
preoperative assessment are not inclusive and for example, do not include reference to an
assessment of patients’ cognitive function or perceived health which can be predictors of health
outcomes (Inouye et al., 1999; Rothschild et al., 2000; Fick, 2000; Campbell et al., 2004;
Bluestein & Rutledge, 2006).

To date, significant work exploring the positive impact of pre-anesthesia care related to
decrease in costs, operating room case cancellations and delays has been carried out (Parker,
2000; Varughese, 2006). Studies examining work flow processes in pre-anesthesia clinics have
been performed. These studies identified the frequent lack of preexisting medical information at
the time of the pre-anesthesia visit and the subsequent increased burden of care (Gibby, 1998;
Parker, 2000). The lack of preexisting medical information at the time of the pre-anesthesia visit
increases the burden of care for the provider, but more importantly, the inadequate transfer of
medical information may compromise the quality of future perioperative care.

Communication lapses or failures have been noted to be the root cause of up to seventy
percent of sentinel events, half of which are the result of inadequate communication during a
handoff or transition in care (Joint Commission, 2012). There is significant work demonstrating
the hazards of inadequate transitions in care (Naylor, 2002, 2012; Coleman, 2003, 2005). In
addition, studies investigating patients’ experience with coordination of postsurgical care across
multiple sites been performed demonstrating that coordination across settings affects patients’
clinical outcomes and satisfaction with their care (Weinberg, Gittell, Lusenhop, Katz & Wright,
2006).

To our knowledge, there are no studies that look at the dimensions of the transition in
care upon admission from the community based primary care physician into the preoperative
surgical environment and or the impact of patient satisfaction with that care. There is a gap in the current research literature regarding the dimensions of the preoperative processes and procedures as well as how and what may be impacting the transition in care into the perioperative arena. Through scientific inquiry we can identify the salient dimensions of transitions in care in the preoperative arena that confront us. Furthermore, once identified, these dimensions can guide the development of metrics that can assist with improving efficacy and ultimately improving patient outcomes. Therefore, the purpose of this dissertation is to identify, through qualitative inquiry, the key determinants of preoperative care that are necessary to ensure optimal transitions of care.

LITERATURE REVIEW

Over 234 million surgical procedures are performed globally each year (WHO, 2012). Overall, the perioperative complication rate has declined over the past thirty years due to improvements in anesthetic and surgical techniques (Poldermans, 2008). Inconsistency in classifying and reporting events has made the analysis of surgical complication data challenging (Clavien, 2009). However, surgical complications are common and often preventable (Haynes, 2009).

Increased age and preexisting illness both increase the incidence of perioperative complications from surgical procedures (Poldermans & Hoeks, 2008). A growing elderly population and advances in surgical technology are challenging our health care system to provide safe perioperative care more than ever before. Nearly fifty percent of adults over 65 years have three or more chronic illness and over twenty percent live with more than five chronic conditions (Bradway & Trotta, 2012). Furthermore, it is estimated that older adults with one or more chronic conditions visits up to eight different health care providers over the course of one year (Coleman, 2003). When an individual transitions into the perioperative environment his or her
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care needs change drastically as a result of the anesthetic and surgical procedure. The surgical patient is more vulnerable to transition in care errors or communication lapses because of the number of times the patient travels across sites of care through the pre admission, intraoperative and postoperative phases (Nagpal et al., 2010). In their analysis of critical processes prone to information transfer and communications failures in the perioperative environment, Nagpal et al., (2010) identified that the majority of ‘failure modes’ in surgical care occurred in the preoperative assessment and optimization phase. In addition, 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 improvement in safety could be achieved by targeting these areas” (2010, p.1929).

Multiple transitions of care create a venue within the perioperative environment that predisposes surgical patients to a degree of vulnerability related to lapses in communication or hand offs associated with the transitions in care (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). In fact, upon transition to the intraoperative phase of care, Nagpal et al., determined that operating room team members had varying amounts of knowledge of the patient and only 27% of the total patient medical information was known to all the primary team members in the operating room (surgeon, anesthesiologist, surgical assistants, scrub and circulating nurse) (2010).

Scientific inquiry related to nursing phenomena requires us to start with a clear framework to examine potential strategies for answering the underlying questions. Fitzpatrick and Whall (2005) suggest that theory guides all disciplinary practice, research and education. A theory that provides a certain level of understanding or knowing about events is fundamental to
developing nursing knowledge. The integration of Systems Theory and Afaf Meleis’ Transitions Theory provides a framework from which to examine the dimensions of the preoperative assessment process and the inherent transitions of care that occur in the preoperative environment. There is utility of each of the aforementioned theories in providing an appropriate framework for inquiry in relation to how the research question has been formed. Moreover, this integration has assisted with discerning the most appropriate research method to gather data that will allow us to garner insight related to our research question. Integrated with Systems theory, Transitions theory lends a quintessential framework for this study. Meleis’ perspective forces us to think more globally about our patients’ vulnerabilities and the dimensions of these vulnerabilities as they intersect with the abundant complexities inherent in the perioperative environment. Hence, it is through the application of both theories that we will gain greater insight into the dimensions of preoperative assessment and evaluation. It is through discerning the complexity of the preoperative environment through the lens of Systems Theory that we will gain a relational understanding of the consequences of this phenomenon on patient care. Nursing research guided by Transition theory through the lens of Meleis is needed to define the abstract indicators that not only challenge us in how we gather critical information within the preoperative environment but also to bring clarity to the information that is actually required from the patient’s perspective for a successful transition to occur.

RATIONALE

The findings of this research study will contribute to the state of the science of transitions in care in the perioperative environment. Currently little is known about the essential determinants of care that predict successful transitions of care through the preoperative environment. Identifying dimensions, elements, conditions, and or vulnerabilities that predispose a patient to poor transitions in care can guide perioperative care planning. Furthermore, unveiling
patients’ perceptions and or vulnerabilities can assist with designing interventions that mitigate
the effect these vulnerabilities generate as they entwine with the perioperative environment.

The preoperative assessment is a critical dimension of care transition and coordination into the
perioperative environment. There is a paucity of literature related to the consequences of
ineffective transitions upon admission to the acute care environment, specifically the
preoperative environment. Others have demonstrated the importance of transitional care upon
discharge. Based on the literature documenting the impact of inadequate transitions upon
discharge and our clinical experience, I believe that the paradigm must shift to focus on the
transitions of care upon admission.

SPECIFIC AIMS

1) Explore how providers affiliated with a large academic medical center in the
Northeastern United States describe the key determinants and dimensions of preoperative
care processes necessary for optimal care transitions in the perioperative environment.

2) Explore how preoperative patients describe their experience with preoperative care in a
large academic medical center in the Northeastern United States and their expectations
for that care.

3) Identify the variables and dimensions that contribute to inadequate transitions in care in
the preoperative environment.

METHODS

Design

A qualitative descriptive design was used to study the phenomenon of interest.

Qualitative inquiry is extremely valuable when trying to gain a relational understanding of a
multifaceted phenomenon in a particular environment when little is known (Patton, 1990). As interviewing allows us to understand relationships between processes that are occurring, it was deemed the most appropriate technique for generating the data needed to answer the research question. Currently there is little known about the dimensions of preoperative care and the nature and impact of care transitions that begin in the preoperative environment. Inquiry focused on the dimensions of admission care requires a paradigm shift in relation to patients undergoing transitions in care. Qualitative research was thus necessary in order to provide a foundation that is descriptive in nature and robust in detail; characteristics that a quantitative approach would not afford.

**Participants**

Purposeful sampling was used to select providers who could provide the most insight and broadest range of experience related to the phenomenon of interest. The 30 provider participants in the study had 7 years to 35 years of experience in their respective specialty area and included 10 primary care providers, 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. The 10 patient participants in the study ranged from age 53 years to 79 years of age. All were English speaking and had completed their preoperative evaluation in the Preadmission Testing Area.

**Procedures**

Participants were recruited from an academic medical center in the Northeastern United States Pre-Admitting Testing Area (PATA). After internal review board approval for the study was obtained, eligible participant primary care providers, anesthesia and surgeon providers were contacted via email and were sent the information sheet explaining the study. Once the provider
agreed to participate we scheduled a time to meet and verbal informed consent was obtained. Participants engaged in a single, semi-structured interview. An interview guide which included a series of open-ended questions was used to guide the interview (Appendix A) Providers’ perception of their role in the preoperative process, what information should be included in the perioperative medical history and physical evaluation and the challenges in the preoperative environment to obtaining this information was sought. Patient participants were recruited at the time of the PATA visit. The PATA front desk staff were given an education session regarding the study and participant eligibility. Upon arrival to the PATA clinic, based on the daily clinic schedule; eligible patients were given the information sheet explaining the study by the front desk staff. If they agreed to participate, I (the primary author) interviewed them after their visit was completed in a private office in PATA. Following the patient interview guide (Appendix B) and using appropriate probes where necessary, I asked each participant about their PATA experience. I inquired about patients’ perceptions of the preoperative care transition experience, their expectations, and the value of the experience. Each interview lasted 20-60 minutes with a mean time of 35 minutes.

The interviews were digitally recorded in their entirety. During the interviews I took brief notes, including body language or facial expressions and any other information relevant to later analysis. To avoid loss of detail in the data, I recorded field notes and memos as soon as possible after each interview. Summarizing what was garnered from each interview prior to proceeding with subsequent interviews was performed to help in documenting the progress and process of the study as part of an audit trail, and assist in reflexivity. Throughout the study I wrote notes on my own thoughts and ideas as they emerged in the form of memos. Voice-recorded data were uploaded to Same Day Transcription Service, Inc. via their secure server after each data
collection session. The text document was then uploaded to my password-protected account on their server where I could retrieve it. The transcripts were then uploaded to Atlas software (Berlin). All study related materials, including transcripts were encrypted for additional security using a secure encrypted drive.

**Analysis**

Transcribed interview text documents were reviewed for accuracy as I (the lead researcher) listened to the interview recordings. Significant statements were extracted from the transcripts and became the raw data for analysis. Meanings or codes were formulated from the significant statements. The aggregate of formulated codes was organized into groups of themes. Internal validity or credibility (Lincoln and Guba, 1985) was attended to by linking data to emerging categories and theory. Confirmability was attended to in the following ways; experiences were compared across participant interviews, initial data analysis was performed by the lead researcher and preliminary codes and emerging themes were recorded. Additionally, to attend to inter rater reliability or internal consistency in coding the data; the verbatim transcription text documents were reviewed by another member of the research team. Other members of the research team were given the generated constructs and evaluated whether the constructs match the data in the same way. Interviews continued until saturation of themes was reached (Polit & Beck, 2012). Four major themes emerged from the data. Descriptions of these themes and selected quotes supporting the data were reviewed by experts with agreement reached.

**Results**

The themes reflect patterns in the text that were common across the patient and provider role groups. From the analysis, four major themes emerged the first of which is centered in the
dichotomy of patient and provider needs in the preoperative environment. Patients described the preoperative care as a time of expectation or being prepared for the perioperative journey and the need for care coordination. Whereas, providers described preoperative care within the context of risk assessment and mitigation, the need for care coordination within the boundaries of interprofessional relationships and structures inherent to the perioperative environment. We deliberated upon these thematic results within the context of the existing literature related to the perioperative environment and the respective implications they may impose.

**Need for Clarity of Purpose of the Preoperative Phase of Care - A Dichotomy of Patient and Provider Goals**

*Preparing the Patient for The Journey: “I just want to know what to expect”*

Patients and providers described the purpose of the preoperative evaluation very differently in terms of purpose and objectives. 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. “I am the type of person that I have to know what is going on…I have to deal with it afterward” (PT 6). “He has always been excellent and straight forward in telling me what he thinks, preparing me for what I should expect and things like that…preparing me so I am not caught off guard with anything” (PT 1). 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. “I had no idea what to expect in here…but it gets you more ready for surgery” (PT 3). “God, I just want to know what is going on…that’s all” (PT 7). Being informed early on in the care trajectory was seen as important to aide in decision making “information is power and the more you have as a patient the more informed you are, I think the better you are for it…with information you make sound decisions…you are informed” (PT 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” (PT 8). “She explained everything…I got all my running orders here” (PT 4). Being prepared for the perioperative journey was seen as having enormous value for patients. “After this visit I feel more prepared for surgery” (PT 7). 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” (PT 2), and as such decidedly expressed dissatisfaction when they did not know what to expect; “I thought they would speak to me before surgery…because then I would know what to expect…if you are going to make arrangements it would be nice if you had a little time…I don’t like the fact that I don’t know” (PT 10). “I don’t have any of that information yet…and I cannot have it the last day I am leaving the hospital…I don’t know if people are concerned about that, people have to organize their lives” (PT 6).

**Literature/ Implications:**

Donabedian (1988) one of the leading authorities on evaluating quality of care, 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). In our study, patient’s responses focusing on expectations related to the need for information preoperatively were consistent with what is known related to patients’ preoperative care needs. Sjoling’s et al. (2015) interventional study determined that specific preoperative information influences the experience of pain after surgery and satisfaction with postoperative pain management. Various preoperative interventions to prepare patients and reduce preoperative anxiety have demonstrated significantly reduced postoperative anxiety (p <0.05) (Alanazi, 2014). Sadati et al. (2013) demonstrated that preoperative nursing interventions that addressed specific patient concerns, education about the OR, surgical team, and anesthesia, as well as postoperative processes, decreased not only
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preoperative anxiety but also postoperative complications. Providing patients with specific information preoperatively satisfies their immediate expectations and desire for information; but indeed, may perhaps be influencing the overall quality of their perioperative care experience as well as their satisfaction with that experience. Patient perception of quality of care is entwined with patient satisfaction and some authors suggest that patient satisfaction with care can be measured by determining the gap between patient’s expectations and perceptions about services delivered (Pakdil & Hardwood, 2005). Pakdil & Hardwood (2005) assert that patient satisfaction is one of the most important quality dimensions and key success indicators in health care. Their study in a hospital based preoperative assessment clinic found that patient’s most highly ranked expectation was related to informational needs regarding their anesthesia and surgery (2005). In their non-experimental study using data from hospital medical records as well as patient surveys post discharge Larson and Nelson (1996) concluded that patient satisfaction and health behavior become entwined if providers nurture the ‘dialogue between themselves and the patient’.

Furthermore patient’s perceptions of quality of care as well as quality of life are associated with ‘providers’ ability to transfer information to the patient’ (1996, p.447). They hypothesize that that ‘understanding patients and their ‘need to know’ can produce more knowledgeable and competent patients who are in a better position to assist with and manage their own care” (1996, p.448).

*Preparation Patient for The Destination: “It’s to assess risk, to optimize the patient to handle the risk that’s going to be undertaken…”*

Providers consistently describe 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’s 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” (Surg1). “The purpose in my mind is to ensure that there are no medical conditions that would make surgery either inadvisable or dangerous; or things that need to be specially managed around the time of surgery” (PCP1). Additionally, risks of the surgical procedure itself need to be considered: “In patients who have complicated or any medical issues, making sure there are no contraindications for surgery…or looking at it as a primary care provider that maybe it is not an ideal time for the patient to have surgery” (PCP 2). “It is to assess both the risk of the procedure and the underlying medical risks of the patient, and see what can be done to modify those risks perioperatively” (PCP 4). Often, the preoperative evaluation was often seen as a phase for ‘optimization’.

I think it's a time to read patient's health status preoperatively, talk to them about what they can optimize about their health preoperatively, talk about health risks they need to avoid--like, medications that need to be stopped, medications that don't need to be stopped. Sometimes there are misunderstandings about that if a patient stops medicines in advance of surgery at their accord; not anybody telling them to do that. It's a time to confirm, the patients understand what the operative and the anesthesia risks are. If it's preop with me, it's a time for me to sometimes confirm that they're ready for surgery especially if it's elective”. (PCP3)

Some of them lack any prior medical care…they are now meeting with a medical practitioner who might find something terribly wrong with them and might be able to correct those issues ahead of time…to optimize the patient’s care before the operation. (Anes1)

Interestingly, the preoperative phase of care was often perceived by providers as more of a process preparing for the destination (the OR), rather than preparing the patient; “It seems like it is more to prepare the OR. 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). “I will say the pre-op stuff – I felt like we were doing it more to kind of make information more accessible for people in the OR… it was more for the OR rather than the patient” (PCP 6). “If you ask me it’s more of preparing the OR and less of preparing the patient…they get some [preop] labs done-that’s not really for the patient that’s for the surgeon in the OR” (Surg 4).
The different priorities of patients and providers can be conceptualized within Donabedian’s (1988) framework of technical vs interpersonal dimensions of quality. Donabedian’s sentinel work encourages us to think beyond providers’ sense of purpose. In Donabedian’s (1988) framework, providers tend to largely be concerned with technical performance; i.e. arriving at appropriate diagnosis, which was described in our study as the ‘appropriate surgical procedure’ and subsequent strategy to be undertaken given individual patient risk factors. Patients are largely concerned about the interpersonal exchanges with providers (Donabedian, 1988); in our study, patients often described the value of ‘being informed’ by their providers in a timely fashion of what to expect of their care trajectory. The responses in our study are also consistent with previous research that has demonstrated that patient and providers may not operationalize transitions in the same way. Patients’ responses in this study were consistent with Coleman (2003), Pakdil and Harwood, (2005) who suggest patients may operationalize transitions as preparedness and or related to informational needs regarding their anesthesia and surgery.

Kelly describes systems thinking as a “discipline of seeing wholes” (2013, p.22) and that it is necessary to examine the relationships ‘between the elements of a system to understand how they are connected’. In this study, patients and key stakeholders/providers involved at the beginning and the end phases of preoperative care were interviewed to discern their perceptions of care as well as how their roles were interrelated. An understanding of how well the elements of the preoperative phase of care relate to other phases of perioperative care may reveal processes that maybe impacting overall patient outcome. In the perioperative environment, the preoperative phase of care is the genesis of the care trajectory for the surgical patient. Patients’
and providers’ responses suggest there is perhaps a ‘disconnect’ related to patient and provider
perception of the purpose of the preoperative phase of care. The purpose or ‘reason for being’
“should guide the way processes are designed” (Kelly, 2006 p.68) and therefore must be clear
and understood by key stakeholders (Kelly, 2006). In previous work Kelly et al., (1997)
determined that inconsistencies related to providers shared sense of purpose in an ambulatory
surgical unit contributed to inefficiencies and patient dissatisfaction. In Kelly’s work clarifying
the purpose of individual phases of ambulatory surgical care promoted an awareness and
reconciliation of processes that were indeed interrelated and were in fact impacting the way the
care was being delivered. Senge offers that ‘systems thinking’ provides a lens for “seeing
interrelationships, rather than things; for seeing patterns of change rather than snap shots”
(Senge, 2006, 68-69). Perhaps acknowledging patients’ perception of preoperative care as ‘a
time of expectation or being prepared’ for the perioperative care trajectory will offer an
opportunity to redefine the purpose of preoperative care and guide processes that fulfill this
objective and in doing so impact not only preoperative care but ultimately the entire
perioperative care trajectory.

Patient centeredness in the preoperative environment is paramount. Providers may
operationalize transitions in care as related to systems or processes that are not inherently visible
to the patient. The current processes as described by providers in this study seem generally aimed
at preparing providers and the surgical environment as opposed to preparing the patient for the
entire perioperative care trajectory or ‘journey’. In this study, the responses from providers
regarding the purpose of the preoperative phase of care are often described within the context of
‘assessing risk and optimizing the patient’ to ‘mitigate risk’ in the surgical environment. This is
consistent with The American College of Cardiology and the American Heart Association’s
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Guidelines for preoperative evaluation for patients undergoing non cardiac surgery are commonly used to guide the preoperative risk stratification (Fleisher, 2007). These guidelines focus primarily on the assessment of co-morbidities, current medical status and assist with risk stratification. In conforming with this recommendation however, specific patterns or abilities of patients’ activities of daily living including social and emotional dimensions, cognitive function, perception of quality of life, environment of care issues, or care giver issues are typically not included in the traditional preoperative anesthesia assessment. The responses of providers in this study similarly suggest that these dimensions of risk in the patient history are not traditionally readily available to them at the time of their preoperative evaluation. The absence of such dimensions related to patient history may perhaps be due to the nature of the provider centric processes in place which are not as inclusive and interconnected with patient needs as they perhaps could or should be in the preoperative transition in care.

Patients in transition tend to be more vulnerable to risks that may in turn affect their health (Meleis & Sawyer, 2000). The transition provides the context within which the health-illness episode or period of increased vulnerability to risk can occur (Meleis, 1985). “How human beings cope with transition and how the environment affects that coping are fundamental questions for nursing” (Meleis, 2012 p.101). The preoperative phase of care is indeed the first transition in care for perioperative patients. It can be defined as a period of change in patient health status, and in role relationships, and expectations as described by Meleis (2012). Thus there is a need for the difference in patients and provider’s sense of purpose for the preoperative phase of care to be reconciled to a more holistic unified purpose.

The Need for Care Coordination “I feel like I am in no man’s land” (Patient perspective)
The need for care coordination was a prominent theme described within both the patient and provider interviews. Patients’ description of the various ways that they entered the preoperative environment illustrates the lack of standard pathways patients traverse to enter the perioperative environment…“I initiated this independently of my PCP” (PT 2). “Our PCP is in another state… did not give us a name or referral here…we just decided we wanted to come here…” (PT 5). “I got here really through my daughter…I live 60 miles from here…I was in shock over my diagnosis…my GP was not particularly helpful…I was left to my own devices…my daughter started calling friends in the medical profession”…(PT 7).

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…sometimes we do not know exactly - I did not know where this place was [anesthesia clinic]” (PT 4). “We probably should have come off [aspirin] a bit sooner…I think that was something there- that had less communication…they are probably going to have to reschedule surgery” (PT 5).

I have been feeling there has been no communication from Dr. H’s office other than saying this is what we have down for you…I feel like I have been floating and my husband said if we are going to one of the best hospitals in the country…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 (PT 6).

**Literature/Implications:**

Systems theory as described by Heylighen and Joslyn (1992) focuses on the arrangement of and ‘relations between the parts which connect them into a whole’. To truly understand the inter relatedness and consequences of transitions within the perioperative environment, it is
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critical to begin the exploration at the *first* transition of care or entrance into the preoperative phase of care. Patients in our study describe various points of entry into the preoperative environment. Patients also describe a sense of confusion once they were in the preoperative phase of care, such as where preoperative labs and EKGs are done. Thus perhaps the lack of standardization in patient entry or access into the preoperative system entwined with a lack of standardization of processes for patients; is inadvertently contributing to communication gaps and contributing to the subsequent overall patient perception of lack of care coordination. Patient responses in our study are consistent with studies examining work flow processes in pre-anesthesia clinics that have identified the frequent lack of preexisting medical information at the time of the preoperative visit which may also contribute to perceived communication gaps and lack of care coordination (Gibby, 1998; Parker, 2000). The lack of preexisting medical information at the time of the preoperative visit increases the burden of care for the provider, but more importantly, the inadequate transfer of medical information may compromise the quality of future perioperative care. 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, studies investigating patients’ experience with coordination of postsurgical care across multiple sites have demonstrated that coordination across settings affects patients’ clinical outcomes and satisfaction with their care (Weinberg, Gittell, Lusenhop, Katz, & Wright, 2006).

*The Need for Care Coordination; “It takes a village” (Provider perspective)*

Providers consistently describe a lack of standardization of preoperative processes and work flow. “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” (Surg 8).

There is huge heterogeneity in how we do that and there is huge 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. Some people are self-referred. Some people are referred by someone for the management of something but they don’t know all the risks and benefits of what is being done and whether it is indicated or not and the details of the perioperative care. (Surg 5)

It is different for every patient. So for instance I got a huge packet from someone who is from an outside hospital. That can take [time]…then that is a whole packet of stuff and 95 percent of it is stuff we do not need. It is their physical exam from 14 years ago. It is just not really relevant. But it depends. Sometimes if it is within the hospital it is easy because everything is on the computer but sometimes there is just a patient who calls and we have nothing. There is a wide variety of what we get. (Surg 6)

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 surgeons is to have all the information they need to, first of all 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's also this pressure to see patients within five minutes and then calling to be seen. (Surg 9)

I would say you definitely have to go digging [for information]. Sometimes it is not available. It depends where the patient is coming from, of course…if they are in our system that is a big difference from outside the system. If they are in our system you certainly, I mean nobody is, or rarely is someone teeing the patient up with okay, they are going to have colon surgery… Here is the latest heart evaluation… so you do not have to worry about that. I mean people do not do that for us. (Surg 7)

Anesthesia and surgical providers in our study described the lack of available information related to medical history, patient caregiver, and functional status. PCP providers, however, described a lack of information related to the surgical procedure and risk of the procedure specific to the patient.

We have a general knowledge about the risks of various surgical procedures. But I guess there could be the facilitating of communication between the providers… about level of risk. Say someone is having cataract surgery and it’s someone who is on anticoagulants. I can never remember; does that matter for that. I do not know, I forget, do we need to
worry about bridging, or do they need to be off… anticoagulation is a big one. How much
do we need to worry about this, how long do you want them to be off anticoagulants
before ... before having the surgery? (PCP 6)

I think that would be helpful to have really specific, some very specific data on risk and
benefit in several broad categories. Like how many times in certain categories of patients
is there a postop wound infection. How many times is there an MI or a stroke? How
much functional benefit is there from the procedure? And we are seeing old patients
mostly. So it is really different if it is a sports surgeon doing it or is it an urgent
appendectomy on a young person than it is for an elective surgery on an older patient…..
So it ought to be more specific to patients and in a sense, it ought to be more specific to
primary docs because we get asked what we can do to help diminish the risk. But patients
ask us, “Geez, should I do this procedure?” And so we are often advising the patient in an
information shortage. (PCP 4)

Furthermore, lack of information was attributed to many reasons. Of note, providers often cite
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. Most medical evaluations or
surgical evaluations too…just in general. With the cut and paste of information… to
figure out what is really relevant, what has happened now as opposed to ten years ago? It
is so difficult to get at and there is so much noise -the signal is this little piece. I think that
is a huge challenge. (Surg 7)

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. It is
buried. Because, I mean, it is just the way medicine is practiced now. If you get an
oncology follow up note, I mean I get these notes dozens every day, follow up notes. The
oncology notes just as an example they have the entire history and CAT scans and PET
scans and biopsy and surgery and it is on every note and you have to scroll through. It is
like forget it. Tell me if there is anything important here or whatever. But that is a
problem I think, as things do get lost (Surg 7).

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. Like they ordered this, this and this, and then – but for a lot of
other procedures it’s just crazy to have this many people” (PCP 6). Providers 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” (Surg 10).

**Literature/Implications**

The National Committee for Quality Assurance (NCQA, 2009) defines care coordination as “a function that supports information sharing across providers, patients, types and levels of service, sites and time frames. The goal of coordination is to ensure that patient’s needs and preferences are achieved and that care is efficient and of high quality. Care coordination is most needed by persons who have multiple complex needs that cannot be met by a single clinician or by a single clinical organization and which are ongoing with their mix and intensity subject to change over time”. In our study, providers often described the challenge of providing care in the context of information ‘shortages’ which poses a challenge as the preoperative phase of care is one of risk assessment based on patient’s medical parameters. Inadequate transfer of medical information from previous providers is a burgeoning theme in today’s surgical environment and often attributed to the lack of a central repository of patient medical information (Nagpal et al., 2010). Despite access to hospital wide electronic records, Gibby, (1998) calculated that 30 % of the time, the anesthesia team needs more preexisting information than was available at the time of the patient’s visit. Almost 10 % of the time the information resides outside of the institution. Anesthesiologists have to retrieve and add to the preoperative evaluation from previous encounters almost 20 % of the time (Gibby, 1998). This is consistent with the findings of Christian (2006) who observed wide variation in the type of information that was lost in the perioperative environment. “Notably, handoffs or transitions in care were particularly prone to information loss” (2006, p.165). Based on observational studies, Christian describes the
perioperative environment as being “information intensive and relying heavily on how well information flows between phases, locations and providers” (2006, p.169). Christian noted that communication breakdown and information loss as well as increased workload and competing tasks, pose the greatest threats to perioperative patient safety. Through mechanisms that ensure better care coordination perhaps information from referring providers would be present and accessible during the preoperative transition in care.

Transitions in care are inherently interdisciplinary 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 exists between the primary care physician, surgeon, and anesthesiologist. 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, Charns, Desai, Khuri, Forbes, Henderson, & Daley, 1998). According to Young et al., one of the deficiencies of earlier research from the 1980’s with regards to the evaluation of coordination of care, was that the focus of coordination of care was based on staff’s perceptions of quality as opposed to actual clinical outcomes (1998). Though not specifically addressing the preoperative arena, in their innovative evaluation of patterns of coordinating surgical staff and clinical outcomes, Young et al. determined that, “high coordination groups descriptively had the lowest mortality and morbidity outcomes”(1998, p.1211). 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).
Providers in the study 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. I wonder sometimes if that's redundant. I sometimes don't see the difference between my evaluation and an anesthesiologist's evaluation. So many times, I feel like it's a waste of the patient's money and certainly of mine and their time because they have comprehensive evaluation in anesthesiology. So to be honest, often I don't know why I'm asked to do it. For patients who are more complicated, I think there's a role in medication reconciliation, assessing for any concerns about the surgery. I double check on appropriateness of surgery. Certainly it's happened to patients who come to me for preoperative evaluation that we've decided that they aren't going to go through with surgery. (PCP 3)

Well, I think for primary care docs, given that we are not really experts in surgery, it is to make sure that there is an accurate database since patients often are not sure of the details of their own history and the electronic medical record is often out of date or contradictory. Even something as simple as a medication list or the details of diagnoses that would influence surgery. I think we are less able to give up to date opinions on specifics of perioperative management but at least we can help provide the information necessary to guide the people who are going to do that and also, prepare us for what needs to be done afterwards. For example, someone that is going to Rehab, the anticoagulation issue, if they need bridging, anticoagulant – that, we need to be able to pick that up. (PCP 4)

Providers also note the variability in their involvement in preoperative care depending on their specialty. “I try to take full responsibility for that. But sometimes what I say the anesthesiologist change anyway and they do whatever they want to. That is the problem. The guidelines are not well defined” (Surg 6).

So I get pretty involved. I am not saying everybody does or this is what they should. But I certainly make sure that the meds that they are on are managed properly, that people get appropriate cardiovascular assessment, and there are occasionally situations where I will say we ought to probably do some preoperative stress testing. I think there’s a big range of comfort among primary care doctors in terms of preoperative assessment, particularly for complicated people. So I think in many cases, certain doctors will feel comfortable up until a certain point. And then after that they say oh, we should really probably make sure PATA is involved for the medical preoperative risk assessment. (PCP 5)
There are so many challenges in any healthcare transaction I think… a patient might come in and ask me questions about the surgery…and I don't know. You should talk to the surgeon. And so, 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)

Provides also describe 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 in PATA- you may never have worked with them…you may not trust…you may want to do it yourself” (Surg 8).

I would say in general, over 80% of the time, we refer the patient to the surgery. But we do not know the specifics of what they will recommend... And it is not so much there the surgical risk but the weighing benefits and risk. And then, the elderly patient deciding to go ahead and having four months of rehab. But that is kind of a broader issue of surgical risk is the weighing of benefits against risks. And there has always been some difference of opinion between procedural docs and primary docs, with us being a little more skeptical, particularly as age advances…(PCP4)

Another challenge might be asking about recovery time, and asking about things with which I don't have good experience. So care is fragmented, and people are postop discharged on day two, and they go to rehab. I don't know what happens at rehab. I don't know how quickly--I don't know. And so there's a lot of stuff I don't actually know, and so that's a challenge too because I don't know what happens. What else? I think another one would be that you have to preop somebody and you have one day to do it--like, their surgeries tomorrow, and that's unrealistic. What if I don’t have my blood work done, and you need an EKG. So there are some time pressures that are sometimes problematic. (PCP 8)

**Literature/Implications**

Providers in our study express a lack of shared knowledge, variability in their involvement and subsequent dissatisfaction resulting from siloed work practices. How healthcare professionals engage or ‘interprofessional 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). Transitions in care are inherently interdisciplinary in the preoperative environment and require coordination of care amongst and within specialty provider groups. It is imperative to find a way
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to bridge the boundaries between scopes of practice within the preoperative environment.
Successful transitions may in fact have a reciprocal relationship with the ability/capacity of
providers to cross and or bridge the chasm between the boundaries of their scope of practice.
Analyses of adverse event reports inform us that lack of communication and teamwork are
among the most frequent contributing factors-up to 30% in these events (Pronovost, 2006).
Kripalani et al (2007) determined that direct communication between hospital based physicians
and primary care physicians occurred infrequently (3-20%) and adversely affected quality of
care in 25% of follow up visits. In their investigation of factors that influence unsafe practices in
an inter-professional team setting in healthcare; Espin, Lingard, Baker, and Regehr cite the
importance of evaluating the “microsystems where small group of practitioners and patterns of
practice create the context for improving safety” (2006, p.165). The preoperative environment is
in fact a ‘microsystem’ of the perioperative environment and indeed is worthy of a similar
evaluation.

Smith and Pope (2008) urge us to consider the issue of transfer of professional
responsibility for the patient in the context of a handoff or transition into the perioperative
environment. Though not specifically aimed at the preoperative environment, Smith and Pope’s
observations reveal how and at what point responsibility was accepted ‘depended on individual
informal negotiation’ between providers and appeared to involve ‘mutual trust, differing
certain aspects of culture and environment within the perioperative environment in which a
handoff is occurring as potentially undermining the very process of transition itself. The
professional culture of the intraoperative environment has been described as being fast pace with
‘changing team membership’ where teams are working together in circumstances that are in flux
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(Manser, 2008). Although it may not have the ‘pace’ of the intraoperative environment; the preoperative environment can surely be characterized as one of ‘ever changing team membership’ and circumstances.

Young et al (1997) studied the role of coordination in the surgical environment and determined that ‘low outliers’ (services with mortality or morbidity rates that were significantly lower than expected) were more likely to use peer interaction (and more effectively) to ensure there was adequate input from all interdisciplinary professionals; surgeons, anesthesiologists and nurses. Peer interaction among ‘low outliers’ was particularly strong at the level of service leadership which often occurred through regularly scheduled meetings or strategy sessions that focused among other things tactics for strengthening the interaction of surgical staff.

Furthermore, healthcare provider role based relationships or are thought to be a causal mechanism that connects task integration and outcomes (Collins and Clark, 2003; Smith, 2006, Gittell, 2009). Gittell invokes the importance of developing “relational coordination; a mutually reinforcing web of communication and relationships carried out for the purpose of task integration” (Gittell, 2009, p.2). According to the theory of relational coordination, ‘coordination that occurs through frequent, high quality communication supported by relationships of shared goals, shared knowledge and mutual respect enables organizations to better achieve their desired outcomes’ (Gittell, 2006, p 2). Relational coordination enables more consistent communication and a reduction in the probability of errors leading to higher-quality outcomes (Gittell, 2009).

Gittell and et al., (2009) found that quality of care of surgical patients was significantly improved by relational coordination (P <0.001) and each of its dimensions.

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 (2002) transitional care model. Naylor (2002) 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. Naylor and Sochalski (2012) describe transitional care as providing critically needed service continuity at the most vulnerable points for persons with multiple chronic illnesses during the ‘hand off’ or transition between care settings. 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 continuity due to a communication failure.

*Time and Resources … “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… somehow”*

Providers describe an environment of care as one of scarce resources; “Everybody is looking at how to do a better job with fewer resources…but particularly in certain patients where it is a combination of a high-risk procedure and a high-risk patient, you know… 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. (Surg 8)

Providers describe inadequate structures for communication amongst providers; “There are a lot of challenges. I think the electronic medical record is the huge challenge. (Surg 7) “I think that originally in the Obamacare, people figured there would be a National Electronic Medical Record. But it is very complex. It is much more complex than people were led to believe at the time…it is hard to find information” (Surg 8).

I think it is a little more challenging these days when I first started. I would call referring physicians because that is the way they used to do it- to say thank you for the referral.
Now they are like- why are you calling me- send me an email. Right? So sometimes like for instance I was gone last week but I still get my emails on my phone so it is like hard to respond…sometimes I think the electronic era makes it less personal and perhaps easier to lose sight of things instead of you have a message you need to return. I do not know…(Surg 6)

Occasionally I’ve gotten emails from PATA about somebody. “This EKG looks a little funny. What do you think?” I mean can’t we talk about it over the phone? Can’t we learn that way? I think it’s better for the patient, it’s more personal that way. I don’t know- I like working that way better than just typing up an email. I mean I like that too. I think that’s fine for certain situations, but – so I think sometimes there should be just more reaching out. It takes time. You have to wait for people to call back. It’s a pain in the neck…everybody’s busy. (PCP 6)

To have something that kind of moves along with the patient. Either within the system or like on…If you cannot get all the people in the room…if you could get all of the information in one spot that everybody can then look at…that would be wonderful (Surg 6).

Providers describe an environment of not only fewer resources but also one of competing priorities. “There is always something else to do, time is short” (PCP 4).

Time…Time and resources…The question is how much you are willing to invest in it. It is not a, I mean…. It is almost like buying a car. It depends how much and how many options you would want to put on it and what you are willing to pay for it. Let me put it to you that way. (Surg 8)

The main barrier would be time in my schedule to see folks… Often it is 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…So, sometimes, and particularly if patients don’t plan ahead and my schedule is booked…which it usually is and that can be challenging. (PCP 1)

And then we have to be attentive to time, and I got to keep on a schedule and yada, yada, yada. The purpose of the visit is that I am cardiovascularly risk stratifying you today. That is what I’m doing. And so I think that’s the challenge in that you’ve got so much time that you have to do this. So if you start to-- If I had all of the time in the world, I could address all of these issues. But that's not reality. (PCP 8)

The compliance regulations require you to fill out all sorts of fields in your History and Physical; which really are not helpful and take care of the patient, right…I am sure I could take good care of patients, if I just dictated one paragraph on each patient and left it at that; but then I would be violating the requirements for coding and everything else. It is kind of a tangled mess. (Surg 8)
In Donabedian’s (1988) framework for assessing quality of care the category of ‘structure’ denotes the attributes of the setting in which care occurs. Donabedian defines structures as including; “the attributes of material resources (such as facilities, equipment and money), human resources (such as number and qualification of personnel), and of organizational structure (such as medical staff organization and methods of reimbursement)” (1988, p.1745). Furthermore Kelly informs us that structures; terms of how people are organized, roles are defined and tools and technology are selected should be “guided by the requirements of the process” (Kelly, 2006, p. 68). The responses by participants in our study indicate that the current structure of preoperative care is less than optimal and in fact does not meet the requirements or needs of the providers or preoperative process. Donabedian (1988) informs us ‘that good structures increase the likelihood of good processes and good processes increase the likelihood of good outcomes’. Providers across disciplines in our study described an environment where there is a lack of time, personnel, and inadequate information systems. The lack of resources and a cumbersome electronic medical record coupled with cultural norms of communicating via email which in turn 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 interprofessional 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’. The current communication and medical information technology that supports preoperative processes perhaps have not evolved at the same pace as the technology of the complex procedures for which it is arguably preparing patients to undergo. 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 interprofessional communication and relationships’ is needed to improve intraprofessional coordination and consequently patient care.

Studies have demonstrated that a high quality preoperative evaluation is critical and can prevent a surgical case from being delayed or cancelled as well as prevent unsafe anesthesia care (Parker, 2000; Varughese, 2006). The preoperative evaluation which is informed by multiple disciplines is perhaps a tool of transition as there are multiple ‘end users’ of a preoperative evaluation including the surgical and anesthesia team as well as the postoperative nursing teams whose work is entwined with transitioning the patient in the postoperative phase of care. Successful transitions in the perioperative environment may in fact be predicated on the existence of having the structural capacity and resources that facilitate the coordination of preoperative care.

CONCLUSION

In summary the integrated perceptions of preoperative patients and their care providers affords an understanding of the key determinants of successful transition into the perioperative environment. To discern the key determinants of successful transition into the perioperative environment the perception of those who work is bound within the structures of the environment of care and the perception of the recipients of that care must be realized and reconciled. Patients described the preoperative period as a time of expectation or being prepared for the perioperative journey and the need for care coordination. Whereas, providers described preoperative care within the context of risk assessment and mitigation, the need for care coordination within the boundaries of inter-professional relationships and structures inherent to the perioperative environment. Perhaps through redefining the purpose of the preoperative evaluation through the
lens of patients as well as the perioperative intraprofessional team members; a model that reconciles these differences can be employed.

Theoretical perspective offer insights to frame the technical, interpersonal and structural aspects of the perioperative environment which ultimately provide the foundation from which complex work processes are born. As they become entwined with the chaos of the clinical environment certain processes perhaps have 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.

Aspects of relational coordination or ‘coordination that occurs through communication supported by relationships of shared goals, shared knowledge and mutual respect’ may enable perioperative providers to better prepare both the patient and the operating room more effectively. 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 multidisciplinary 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.

The key determinants of successful transitions in the preoperative environment may be rooted not only in the conditions and elements of care transitions but also in the ability of
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providers to bridge the scope of practice barriers through the development of relational coordination. Furthermore, determinants of successful transitions may be contingent on the existence of an organization’s structural capacity to facilitate this coordination. The challenge for future research is to examine the relationship between patient perceived quality of care and preoperative relational coordination and surgical outcomes. Research is needed to further develop and validate instruments for measurement of transitions in preoperative care. Future studies need to investigate the lived experience of patients’ entire perioperative experience, needs, and expectations and whether surgical outcomes are affected by the quality of transitions in preoperative care.

LIMITATIONS

This study has some limitations. This study was conducted in a single academic center in the Northeast; findings may not be transferable to smaller community health care settings. Though credibility was attended to by summarizing intermittently during the interviews with the participants by the author, we did not go back to the participants after the interviews to review the findings.

From an economic perspective, inadequate transitions in care can be quite costly. Inadequate transitions in care upon discharge from acute care hospitals have been linked to readmissions (Coleman, 2006). Under the Medicare Hospital Readmissions Reductions Program (HRRP) established in the Affordable Care Act, a financial penalty will be imposed on hospitals with excess readmissions (Axon and Williams, 2011). Nearly 13 percent of Medicare beneficiaries discharged from hospitals experience three or more provider transfers during a thirty day period (Coleman, 2004). This movement of patients from hospitals to the community and back again accounts for an estimated $15 billion in annual Medicare spending (MedPac, 2007).

Stewart and Fernandes’ (2010) findings provide additional insight into a critical economic concern related to transitions in care. Stewart and Fernandes invoke the economic ramifications of inadequate pre hospital transitions due to unnecessary and often duplicative laboratory studies on patients that occur during ineffective transitions in care (2010). Much of
the preexisting literature regarding transitions in care promotes the use of electronic health records (EHRs) to minimize communication errors during transitions in care. Stewart and Fernandes determined that the transfer of records containing important clinical data is imperfect— even when both institutions have electronic record systems when patients are transferred from one health care institution to another (2010). Stewart and Fernandes’ (2010) findings related to the economic ramifications of inadequate communication upon prehospital transitions in care provides support for the argument that indeed inadequate prehospital transitions do occur frequently and can be quite costly. The high financial burden associated with inadequate communication during these patient transitions further supports the critical need for additional investigation into the dimensions of transitions of care in the preoperative environment.

Naylor (2004) was able to demonstrate a decrease in thirty-day readmission rates and overall hospital costs through the use of a transitional care model that employed Nurse Practitioner led interventions prior to and after transition from the acute care environment to the community. With more than 3 million members, the nursing profession is the largest segment of the nation’s health care workforce (IOM, 2011). Advanced Practice Registered Nurses are uniquely poised to serve as sentinels in recognizing and providing patient centered medical care especially in the procedure-centric preoperative environment. Currently there is a 30% shortage of primary care physicians, with most new doctors choosing more lucrative specialties (Pickert, 2009). APRNs could indeed be a key to filling this gap as they are capable of providing many of the same services more cost effectively. The quality of care transitions is perhaps a summation of patient centered care amongst multiple care providers and clinical settings. APRNs have demonstrated excellent outcomes (Bauer, 2010; Newhouse et al, 2011) and 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.

In one of its most controversial recommendations the IOM report (2011) called for reforming state scope of practice laws which restrict the role of advanced practice nurses. Scope of practice laws may limit or deny altogether the authority to prescribe medications, admit patients to the hospital and assess patient conditions and order and evaluate tests (IOM, 2011). Presently lobbying efforts are underway to remove existing barriers to APRN practice in Massachusetts. Legislation is the first step but organizational buy in will be critical if APRNs are indeed able to care for their patients as they were trained to do. Kapu and Kleinpell (2013) assert that developing metrics that relate to quality of care measures as well as patient outcomes based on the specific practices of an APRN can help to specifically identify the impact and value of APRN care.

Furthermore, the Core Competencies for Interprofessional Collaborative Practice (IPEC, 2012) provide guidance for professional competencies and provide a framework for effective teamwork and team based care. The goal of interprofessional collaboration is a safer and patient centered health care environment (IPEC, 2012). The interdependent yet multidisciplinary nature of the perioperative environment, more than any other healthcare environment perhaps, may benefit from using the competencies as a guidepost for professional competencies such as team based care to optimize patient care.

In summary, many of the risks of operative care are modifiable and careful preoperative assessment is the key to modifying the risks (Harari et al., 2007; Audisio, 2005; Liu and Leung, 2000; Fukuse, 2000). Garcia-Miguel and Aguilar (2003) suggest that the goals of the preoperative assessment are to improve quality of care and ‘restore the patient to the desired
level of function’. Restoring a patient to the desired level of function is perhaps more likely to occur if all members of the perioperative healthcare team are working at the full extent of their education and training in an environment of mutual collaboration and coordination- perhaps with nursing at the helm. Nurses are navigating the health care environment far more frequently and as noted by nurses in our pilot study, ‘spend the most time with patients’, they understand and have a working knowledge of the complexity of the patient care environment that others do not. Our initial pilot findings suggest that nurses cannot change the quality of the outcome or product of patients’ vulnerabilities intersecting with the complexity of the perioperative environment if they have not anticipated or managed one or the other. Patients expect that we have anticipated and understand their needs. Providers expect they will have the information they need to adequately anticipate patients’ needs. When patients’ and providers’ expectations are not met the burden of care is intensified throughout the perioperative environment and patient care and satisfaction with that care is impacted. If patients’ vulnerabilities cannot be lessened they need to at least be identified so they can be managed as they shift and potentially become magnified and distorted within the ambiguity and complexity of the perioperative environment.

There are no formal guidelines or measures in place related to the specific processes that should occur to ensure the adequate communication and transfer of medical information from referring community primary care and surgeon providers in the preoperative environment. Previous research has demonstrated various qualitative methods of determining the validity and reliability of the measure of transitions in care upon discharge. We believe the paradigm must shift. Further study of the conditions, elements and processes of care transitions on admission in the preoperative environment can be useful in identifying and defining patients’ risk factors/
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vulnerabilities not just for surgery but for the entire perioperative care trajectory which may ultimately improve surgical patient outcomes.
Appendix A            Research Interview Schedule

Provider Interview Guide

1. What is the purpose of the preoperative evaluation?

2. Who should be involved in the preoperative evaluation?

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

4. What processes are amenable to improvement?

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

Appendix B

Patient Interview Guide

1. Can you tell me about your experiences during your evaluation in the pre-admitting area visit?

2. Did the provider in the pre-admitting area seem to have all the information about you in order to provide you with the best care possible?

3. Were you satisfied with this experience?

4. Is there anything else I should know about your experience that I did not ask?
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Panel, Interprofessional Education Collaborative Expert, American Dental Education Association, American Association of Colleges of Nursing, & American Association of


