A Framework to Assist with the Implementation of Surgical Debriefing

by

Christine Alcantara
MN, University of Victoria, 2013

A Project Submitted in Partial Fulfillment of the Requirements for the Degree of

MASTER OF NURSING

In the School of Nursing, Faculty of Human and Social Development

A Framework to Assist with the Implementation of Surgical Debriefing

by

Christine Alcantara
MN, University of Victoria, 2013

Supervisory Committee

Dr. Gweneth Doane, Supervisor
(School of Nursing)

Dr. Elizabeth Banister, Committee Member
(School of Nursing)

Supervisory Committee

Dr. Gweneth Doane, Supervisor
(School of Nursing)

Dr. Elizabeth Banister, Committee Member
(School of Nursing)

Abstract

A surgical checklist is a tool used to increase safety in the operating room. Checklists are often divided into three parts in order to perform safety checks at different stages of a surgical procedure. Overall, compliance with the use of checklists varies across organizations including the specific checklist components that are implemented. Currently there is greater compliance with the initial parts of the checklist, and dramatically less adherence in the use of the checklist at the end of the surgical procedure. In particular, adherence to the debriefing process is wanting. Informed by Jean Watson's Theory, responsive evaluation methodology, principles of utilization-focused evaluation, and knowledge developed from a review of the literature on the debriefing component of surgical safety checklists, this project outlines a framework that organizations could use to potentially improve the use of surgical safety checklists during the debriefing process, and highlights the role of an advanced practice nurse as the facilitator of this approach.

Keywords: surgery, safety, checklist, debriefing, implementation

Acknowledgements

"We make a living by what we get, but we make a life by what we give."

-Winston Churchill

I would like to thank my husband for giving me the opportunity to pursue my dream. I would also like to thank my family, friends, and colleagues for their words of encouragement—just when I needed them most.

I am thankful for Coby Tschanz for sharing her story on "Slow Thinking." It gave me a new perspective on life. I would also like to express my gratitude to Dr. Madeline Walker for believing in my writing ability. I would like to thank Dr. Elizabeth Banister for helping me to focus my thoughts and further my thinking in ways I never thought possible. Finally, my deepest appreciation goes to Dr. Gweneth Doane for never saying "No" to me, and for helping me to achieve my goals in a timely manner.

Table of Contents

Surgical Safety Checklists: Debriefing and Safety

I remember this event as though it happened yesterday. It was what we call a "near-miss" in the operating room (OR). In layman's terms it means that the perioperative staff almost made a critical mistake during someone's surgery. The patient was diagnosed with bowel cancer, and was scheduled for an eight-hour procedure. The surgeon warned us that it was going to be a difficult operation. Once the patient was put to sleep, the surgeon announced she wanted to perform a sigmoidoscopy. Since we rarely performed these procedures in the OR, we had to borrow the equipment and call in another team to perform the exam. The visiting gastroenterologist took several biopsies with the intent to locate the margins of the cancer. His assistant placed each biopsy into a separate specimen container. My job was to label the containers, fill out the accompanying paperwork, and send the specimens to the laboratory.

Forty-five minutes after their arrival, the visiting team completed their work and was ready to leave the OR. Fortunately I was in the habit of debriefing, so I automatically grabbed the doctor's arm as he tried to walk out the door. I wanted to verify the name of his procedure and the specimens that he collected. My actions surprised him: Clearly he was not accustomed to the debriefing process. His surprise turned to disbelief when he discovered that I had only four containers for the five tissue samples he collected. His assistant had placed two of the biopsies into one container. Unfortunately, we were unable to ascertain the order in which the specimens were collected. Therefore, we had to acquire all new specimens.

This vignette provides a “real-life” illustration on the importance of debriefing in the OR. Had I not followed the recommended practice for debriefing, there would have been negative consequences for the patient and for the health practitioners involved. This event highlighted the

value of using a surgical safety checklist, but taught me that compliance with the debriefing process is not universal.

How Do Surgical Safety Checklists Work?

Most surgical safety checklists are divided into three parts: sign in—briefing, time-out, and sign out—debriefing. Each part contains information to reinforce safety checks at different stages of the surgical procedure. One example of the use of a three-stage checklist follows:

Sign in—briefing.

Briefing occurs after the patient has moved onto the operating room table, but prior to being anesthetized. Each member of the surgical team verbally participates. The surgeon initiates the briefing process by identifying the patient, announcing the procedure, stating the required position for surgery, and ordering a preoperative antibiotic. The nurse verifies the patient's name, medical record number, and surgical consent. This is followed by the surgical technician's confirmation of the required equipment and the sterility of instrumentation. The anesthetist then describes the plan for anesthesia, known allergies, risk for blood loss, and difficult airway information. Finally, verbal consent is obtained from the patient to proceed with the surgical plan.

Time-out.

Immediately before the skin incision the surgeon confirms the patient's name, x-ray imaging, and the surgical procedure—all members of the surgical team verbally agree.

Sign out—debriefing.

Debriefing should take place prior to the patient exiting the OR. Ideally, the surgeon debriefs by confirming the procedure, naming specimens, and verbalizing problems that occurred during surgery. The nurse makes note of the procedure, specimens, and identified problems,

while the scrub technician verifies a correct count. The anesthetist reports fluid status, and voices concerns regarding the patient's recovery.

My experience with the briefing and time-out portion of a surgical safety checklist has been positive, with full participation from each member of the perioperative team. This experience is in line with the findings of Berrisford, Wilson, Davidge, and Sanders (2012) and Blanco, Clarke, and Martindell (2009) where perioperative teams performed a time out in 96.8% and 95% of surgical cases respectively. Notably, briefing and time-out occur before the procedure begins—at a time when everything else is put on hold in order to complete the briefing process. A clear delineation of steps defines this time, whereby one step cannot proceed before the other. Briefing takes place before the patient is anesthetized, and time-out is performed before the procedure begins. In essence, a "hard stop" is created allowing for an uninterrupted briefing and time-out process to occur.

Debriefing, on the other hand, is not dependent on serial steps, and is often ignored. A study conducted by deVries, Dijkstra, Smorenburg, Meijer, and Boermeester (2010) found that the mean percentage of items completed post-operatively (the debriefing process) was only 56.1%. Vats et al. (2010) suggested a similar time out procedure to initiate the debriefing process however, the question of who should initiate the process and at what point during the procedure debriefing should occur remains uncertain. A debriefing process that lacks the full attention of the perioperative team is also of concern. This occurs when the surgeon initiates the debriefing process while other members of the team are engaged in critical activities like counting sponges or emerging the patient from anesthesia. Worse yet, on many occasions, the surgeon leaves the room immediately following placement of the final suture; hence, the process of debriefing does

not occur. My biggest concern, however, is that when the debriefing process is overlooked, essential patient care information is not exchanged that could affect health outcomes.

Project Focus: Debriefing

Despite its mandate and evidence to support the value of debriefing, perioperative teams continue to forego the debriefing process in nearly half of all surgical procedures performed (Berrisford et al., 2012; Salas et al., 2008). In response to the lack of compliance with debriefing, I performed a review of the literature for the purpose of identifying the factors that impede and/or facilitate the implementation of the debriefing process. I used this information, along with Watson's human Caring Theory, responsive evaluation methodology, and principles of utilization-focused evaluation to inform the development of an approach that perioperative teams could use to increase their debriefing practice.

I selected Human Caring Theory to inform my framework because Watson (2007) described the beneficial results of interprofessional teams, and the individuals who make up these teams, working from and with a caring intent. I believe that perioperative professionals working together with this same caring attitude and intentionality can improve and increase the process of debriefing. Therefore, I created a framework to be used as a tool by the Advanced Practice Nurse (APN) to examine the implementation of debriefing. Although Human Caring Theory does not contribute to the how-to details of my approach, it does provide an orientation and theoretical grounding for my framework.

The purpose of this project is to explore evidence of the decreased use of surgical safety checklists during the debriefing process with the goal of suggesting an approach that organizations could use to potentially increase the frequency of debriefing. My intent is to support an increase in the frequency of the debriefing process to ultimately enhance OR safety.

Surgical Safety Checklists Background and Literature Review

In the aviation industry, as the pilot's capacity to remember the required steps to fly a plane was exceeded, a safety checklist approach was created to guide the process (Emerton, Panesar, & Forrest, 2009; Reid, 2011). Lessons learned from the aviation industry to decrease preventable accidents with the use of safety checklists are equally applicable in surgery. Kohn, Corrigan, and Donaldson (2000) recommended that standardization of processes (using a surgical safety checklist) should be instituted in the OR to enable health care providers to avoid their reliance on memory and recall. Hence, surgical safety checklists were created to standardize the process of reviewing information already recognized as best practices in the OR (Reid, 2011).

The Surgical Safety Checklist (see Appendix A) was introduced by the WHO in response to a report issued by the Institute of Medicine (IOM) in 2007 (Gillespie, Chaboyer, & Fairweather, 2012). The authors of the IOM report identified that health care is lagging behind many other high-risk industries when ensuring basic safety (Kohn et al., 2000). Specifically, the OR was singled out as a place where errors were more likely to occur. In fact, in terms of in-hospital adverse events, more than half are attributed to the surgical discipline (de Vries, Ramrattan, Smorenburg, Gouma, & Boermeester, 2008). Sadly, it is estimated that half of surgical complications are avoidable (Gawanda, Thomas, Zinner, & Brennan, 1999; Kable, Gibberd, & Spigelman, 2002). To mitigate the adverse events from surgery, the WHO (2008) published guidelines to identify recommended practices to ensure the safety of surgical patients worldwide. As part of the guidelines, a 19-item Surgical Safety Checklist was recommended for global implementation. Since then, a number of surgical checklists—in various surgical specialties—have been implemented throughout the world (de Vries et al., 2010).

Literature Review: Debriefing

Debriefing has been defined as an information-sharing and event-processing session conducted as a conversation between peers (Lim, Childs, & Gonsalves, 2000). Details of the surgical procedure are acknowledged and verified during the debriefing process. Debriefing provides an opportunity for the perioperative team to reflect on practice, give feedback, recognize lessons learned, and devise a plan for future care (McGreevy & Otten, 2007). Through the debriefing process perioperative team members are able to identify problems that occurred during surgery. Not surprisingly, debriefing has great value following a critical incident in the OR to evaluate what happened, what can be improved, what weaknesses there were, and to set goals for better performance (Salas et al., 2008). The importance of debriefing is underscored by the findings that many adverse events originate in the post-operative stage (de Vries, Hollmann, Smorenburg, Gouma, & Boermeester, 2009; Greenberg et al., 2007; Griffen et al., 2007). Surgical debriefings enhance patient care by reducing adverse events (Berrisford et al., 2012). The debriefing process also improves technical functioning (Ahmed et al., 2012), and facilitates teamwork and collaboration among OR personnel (Haynes et al., 2009).

To provide a more comprehensive summary of the literature on the use of debriefing as part of the surgical safety checklist, I performed a literature search using the CINAHL and PubMed databases from 2005-2012. Given the breadth and depth of the subject, a literature review on the subject in the last 7 years would provide sufficient and manageable information on the subject for the purpose of this project. The search strategy used the terms “surgery,” “safety,” “surgical checklist,“ "debriefing," and related words with the appropriate Boolean operator. A general search using the terms “surgery AND safety AND surgical checklist” revealed 289 articles with the CINAHL and 267 articles with the PubMed databases. The addition of the term

"debriefing" to the search revealed 10 articles in PubMed and 21 articles with CINAHL. The identified abstracts were examined and selected for their appropriateness to the topic of interest and the full manuscripts obtained. Criteria for inclusion in this review were: (a) the manuscript was a primary investigation report; (b) written in the English language; and (c) the manuscript addressed the use of debriefing as part of the surgical safety checklist. In addition, I used the ancestry approach to obtain further literature from full manuscripts obtained.

A total of 24 articles met my inclusion criteria for review on the subject of debriefing in the context of a surgical safety checklist. Four articles involved debriefing as part of a checklist development (Bandari et al., 2012; Berenholtz et al., 2009; Makary et al., 2006; Vashdi, Baberger, Erez & Weiss-Meilik, 2007). Six articles involved debriefing as part of training or education in the OR (Gururaja, Yang, Paige, & Chauvin, 2008; Neily et al., 2010; Paull et al., 2009; Roberts, Williams, Kim & Dunnington, 2009; Robinson et al., 2010; Wolf, Way, & Stewart, 2010). Seven articles addressed compliance with a surgical safety checklist involving debriefing (Arora et al., 2012; Berrisford et al., 2012; Catchpole, Dale, Hirst, Smith, & Giddings, 2010; de Vries et al., 2012; France, Leming-Lee, Jackson, Feistritzer, & Higgins, 2008; Papaspyros, Javangula, Adluri, & O'Regan, 2010; Paull et al., 2010). Seven articles included commentary on the use of the surgical checklist and debriefing in particular (Ahmed et al., 2012; Clarke, Johnston, & Finley, 2007; Emerton et al., 2009; Gilmour & Woodward, 2010; Salas et al., 2008; Turner & Kurtz, 2008; Zuckerman et al., 2012).

I identified four barriers and four facilitating factors to the implementation of debriefing in my analysis of the literature. I refer to these collectively as eight critical factors to the implementation of debriefing. First I will describe the identified barriers followed by a discussion on the facilitating factors to debriefing.

Barriers to the implementation of debriefing.

The implementation of debriefing as part of a surgical safety checklist requires effort and the mobilization of considerable resources (de Vries et al., 2012). Despite the benefits observed from the process of debriefing, there continues to be resistance to its implementation in the OR. I identified four barriers to the implementation process of debriefing in my analysis of the literature. Identified barriers include a lack of knowledge/understanding on the part of participants, an existing professional hierarchical structure, logistical issues, and the timing of performing the debriefing process. A discussion of each barrier and strategies identified in the literature to address each barrier follows.

Lack of knowledge/understanding.

The adoption and implementation of new ideas into practice, such as the use of the debriefing process in the OR, is predicated upon providing a clear rationale for its implementation. Perioperative team members must be educated that compliance with the debriefing process confers benefits to patient safety, maximizes OR teamwork, efficiency, and is aligned with the institution's values and commitment to quality and effective patient care. A lack of knowledge by the perioperative team members, support staff, and management of the "why" and "how" of the debriefing process can result in a lack of understanding, enthusiasm, and buy-in towards its implementation (Conley, Singer, Edmondson, Berry, & Gawande, 2011; Borchard, Schwappach, Barbir, & Bezzola, 2012). In an observational analysis of surgical team compliance with perioperative safety practices following crew resource management training, France et al. (2008) found that surgeons performed postsurgical debriefing in less than a quarter of observed cases due to confusion regarding timing and ownership of the debriefing process. In creating and implementing a comprehensive surgical checklist to guide structured postoperative debriefings in

a university medical center, Zuckermann et al. (2012) experienced challenges in its implementation that highlighted the consequences of not conveying where and when to use the debriefing checklist and its value in improving patient outcomes. Zuckermann et al. (2012) also found that the medical culture prided itself on individuality and expertise, thus surgeons were challenged with the buy-in of the implementation of debriefing. One suggested strategy to overcome this barrier was to educate the OR staff on the why and how of surgical safety checklists.

Hierarchical structure.

The OR is a complex environment distinctive of team members with diverse backgrounds working together to successfully care for patients. Information must be shared rapidly and efficiently among team members with breakdown in communication resulting in catastrophic consequences (Wolf et al., 2010). A traditional, professional hierarchy characterizes the OR where the surgeon has the ultimate authority, and the job of others is to assist the surgeon. This hierarchical structure contributes to a culture that strongly discourages the questioning of decisions made by those of superior status (Vashdi et al., 2007). It has been suggested that more egalitarian verbal communication during the debriefing process would enhance success of the debriefing process (Fourcade, Blache, Grenier, Bourgain, & Minvielle, 2012). Although Mahajan (2011) found that the perceived loss of power and control could result in deep-rooted anxieties by those in positions of authority and manifest as poor compliance with the process of debriefing, several other studies established that a good debriefing has no observation of "rank" and that successful debriefing should be performed in a non-threatening environment (Papaspyros et al., 2009; Turner & Kurtz, 2008).

Logistical issues.

Successful implementation of a surgical checklist has been found to depend not only on its content, but its integration in the individual hospital and how it affects surgical flow (de Vries et al., 2009). Several investigators have raised a number of logistical concerns in regard to surgical checklists. Mahajan (2011) noted that debriefing with the surgeon may be difficult given that the surgeon may be elsewhere tending to other patients or fulfilling other job responsibilities. In developing and implementing a debriefing checklist for neurosurgery, Zuckerman et al. (2012) found that surgeons exit early from the OR. Therefore, the authors advised that for the successful implementation of a debriefing program the early exit of the surgeon should not be resisted, but integrated into the checklist program.

Vats et al. (2010) found that items in the WHO Surgical Safety Checklist duplicated items in other checklists already in place. In addition to duplication, ambiguity and lack of clarity have also been listed as barriers to successful implementation (Fourcade et al., 2012). Contrary to the quick and standardized design of checklists, the debriefing process offers little in the way of consistency. Other than prior to the patient exiting the OR, there is no specified time for the debriefing process to occur, and the designation as to who is responsible for the initiation of the debriefing process does not exist. To increase clarity, organizations need to set clear and specific expectations relative to how and when to use checklist during the debriefing process (Makary et al., 2006).

Finally, there is a need to modify surgical checklists to accommodate specific surgical procedures and to facilitate its use by the OR staff (Walker, Reshamwalla, S., & Wilson, 2012). Accordingly, the checklist should require minimum documentation; it should be short, simple, and as straightforward as possible (Berrisford et al., 2012; Bochard et al., 2012). Although it is

nearly impossible to create a universal surgical checklist due to the individual complexities and the myriad of surgical procedures, modifying checklists will help to combat its poor compliance.

Time.

Time is another barrier to the implementation of debriefing identified in the literature. There are differing aspects of time within this barrier. For example, in an interview of surgical staff members regarding the lack of compliance with a surgical checklist, de Vries et al. (2009) found that a lack of time was a stated reason for non-compliance. Zuckerman et al. (2012) found that time was a factor with poor compliance with debriefing due to the perception that it caused delays in closing and interfered with surgeon workflow. Emerton et al. (2009) added that a poorly prepared checklist leads to delays in the OR. Yet, other studies highlight more of a timing aspect, or when to perform the items on the surgical checklist (Mahajan, 2011; Ziewacz et al., 2012). Other time aspects include the connection between time and space in mitigating the characteristics of an effective debriefing, and/or insufficient research on where and when to use the checklist (Gururaja et al., 2008; Zuckerman et al., 2012). For example, one author noted that debriefing should occur immediately after surgery since information was close at hand (Makary et al., 2006). A suggested strategy to overcome this time barrier is for organizational leadership to allocate the time needed to complete a successful debriefing process, and for perioperative teams to establish an agreed upon time for debriefing to occur (Berenholtz et al., 2009; Fourcade et al., 2012).

Facilitating factors to the implementation of debriefing.

I have also identified four facilitating factors to the implementation process of debriefing in my analysis of the literature. These factors are organizational leadership and the use of local

champions, buy-in from participants, teamwork and communication, and training and participation.

Organizational leadership/local champions.

A common strategy cited for a successful checklist implementation is the role of enthusiastic team leaders or local champions among the OR staff (Vats et al., 2010). These individuals perceive the rationale and benefits of using checklists, and help to influence others in the OR to adopt a similar view. Local champions combat cultural resistance (particularly among surgeons), build enthusiasm among OR staff, dispel ideas that the checklist is dictated from management, and demonstrate its alignment with their institution's commitment to patient safety (Lingard et al., 2005; Paull et al., 2009). Local champions are those individuals with leadership characteristics who have good skills of persuasion and negotiation with the rest of the OR staff, and are not necessarily part of the senior management team (Walker et al., 2012). In addition, Vashdi et al. (2007) noted that the success of a debriefing program was dependent on placing individuals in a leadership role who possessed the ability to seek and learn from the criticisms of others in a leadership role. Given their roles as leaders, surgeons were recruited as local champions to enhance the probability of success in their program. Strong organizational support and leadership facilitated compliance with the debriefing process and were crucial to setting the tone and pace for implementation and change (Berrisford et al., 2012; Catchpole et al., 2010; Mahajan et al., 2011; Paull et al., 2009; Roberts et al., 2009; Zuckerman et al., 2012).

Buy-in.

The uptake of the surgical checklist has been found to be dependent on its perceived relevance in the OR (Mahajan, 2011; Conley et al., 2011). Both Mahajan (2011) and Conley (2011) described relevance in terms of its alignment to a culture of safety and quality patient care

and has found it to be crucial in gaining support, motivation, and buy-in among OR staff. A lack of buy-in or engagement has been found to present challenges to implementing checklists (Reid et al., 2011; Walker et al., 2012). Berenholtz et al. (2009) and Zuckerman et al. (2012) noted increased compliance with the process of debriefing when physician and staff support (buy-in) was present. Furthermore, Berrisford et al. (2012) found that successful implementation was dependent on choosing an OR team who believed in the benefits of the debriefing process. Finally, Zuckerman et al. (2012) noted that surgeon buy-in at the program's inception greatly improved surgeon and department enthusiasm in implementing the debriefing process.

Teamwork and communication.

Successful teamwork efforts involving shared goals and responsibilities resulted in participatory changes in the OR (Wolf et al. 2010). In other words, when individuals share responsibilities and work together effectively as a team, they are more likely to participate in team activities such as the implementation of surgical safety checklists. Interventions, like debriefing, designed to improve teamwork and communication can have beneficial effects on technical performance and patient outcome (Catchpole, Mishra, Handa, & McCulloch, 2008). A successful debriefing process facilitates a smoother and more collegial communication process between team members. As part of a process towards improving teamwork and communication, checklists may be used to remind the user of a step, or to prevent progress before a critical step is completed (Vats et al., 2010). The completion of the debriefing process requires input from all members of the surgical team. Lingard et al. (2005) found as each individual's contribution is given due consideration, the process of debriefing is democratized and the concept of teamwork is reinforced. Ahmed et al. (2012) deemed non-technical skills such as teamwork and communication as equally important as technical/procedural skills during the debriefing process.

Effective communication leads to improvement in care (Neily et al., 2010; Paull et al., 2010). As such, better communication yields a better implementation process of debriefing in the surgical context. A number of authors have acknowledged the importance of debriefing in improving communication and surfacing errors and defects in the surgical process. These authors suggest communication efforts that contribute to patient safety facilitate the implementation of debriefing (Bandari et al., 2012; Berenholtz et al., 2009; Paull et al., 2009; Salas et al., 2008; Wolf et al., 2010). Further, Turner and Kurtz (2008) wrote that communication during the debriefing process should be confidential, non-threatening, structured, and timely while Gururaja et al. (2008) found that the debriefing process should occur in a safe, respectful, and courteous environment to improve communication. Ultimately, improved communication between team members has been found to contribute to improved professional care practices and lead to better patient outcomes (Neily et al., 2010; Paull et al., 2010). The synergistic relationship between debriefing and improved teamwork and communication occurs in such a way that effective debriefings lead to improved teamwork and communication which in turn lead to enhanced compliance with the debriefing process.

Training and participation.

Training imparts the knowledge, skills, and desire to successfully implement programs. I read a number of studies about the importance of training and technical support, as well as the use of continuous feedback to promote implementing the surgical checklist (Salas et al., 2008; Vashdi et al., 2007). In observing the characteristics of effective debriefing, Gururaja et al. (2008) noted that educating the OR team on the various elements of debriefing and how a team engages in the debriefing process could facilitate greater participation. Other authors voiced similar views by commenting that without appropriate training and organizational commitment

to debriefing, use will be reduced, particularly when its value in improving patient outcome is not conveyed to the OR team (Paull et al., 2009; Salas et al., 2008; Vashdi et al., 2007).

Catchpole et al. (2010) recognized that influential individuals could influence (positively or negatively) the uptake of the surgical checklist through their participation. For example, Paull et al. (2009) noted that physician involvement was associated with successful implementation of the surgical safety checklist and Robinson et al. (2010) found that the participation of OR nurse managers were linked to success of implementing OR debriefing. Wolf et al. (2010) found that success was also due to frequent meetings between representatives from each discipline to address issues raised during the debriefing process, and that full participation by the OR staff was influenced by organizational leadership and local champions.

Summary of critical factors to the implementation of debriefing.

My examination of the critical factors to the implementation of surgical safety checklists during the debriefing process revealed that providing a rationale for its implementation and efforts towards proper training, changing traditional hierarchies to support more equitable team relations, ensuring that logistical modifications are based on system wide input, and adequate and appropriate time is designated for the debriefing process will lead to successful implementation. In addition, organizational leadership and the use of local champions helps tremendously to dispel myths and build enthusiasm for the program, leading to buy-in and full participation by the OR staff.

Knowledge gained from my review of the literature presents a unique opportunity for the APN to demonstrate leadership ability and to address the identified critical factors through the use of a framework developed to potentially increase the frequency of surgical debriefing.

Framework Development

My framework was developed to explore the use of a surgical safety checklist during the debriefing process with the goal of increasing its use. Specifically my framework is an evaluative approach that was created to provide organizations with a unique, new tool to examine the implementation of debriefing. To inform the development of my framework, I have drawn upon Jean Watson's Human Caring Theory, responsive evaluation methodology, and the principles of utilization-focused evaluations. Due to their complex nature, I discretely describe each one and discuss the core elements that informed my framework. Next, I explain how those core elements have been brought together to serve as the foundation of my approach.

Jean Watson's Human Caring Theory

Different schools of thought have given rise to different theoretical perspectives. Each perspective lines up with its' own philosophical underpinnings. From nursing, I found myself aligned with Jean Watson's Human Caring Theory, seeing it as a helpful theoretical orientation for my responsive, utilization-focused evaluation framework to the debriefing process. The assumptions that underpin Watson's Theory are the concepts of love and care are universal, caring is practiced interpersonally, and caring transcends time, space, culture, and language (Watson, 2007). At the core of Watson's Human Caring Theory are the ten caritas processes (see appendix B) that provide the framework for nursing activities. The first three caritas processes provide the foundation for the APN towards a caring-healing framework for specialized care of complex populations. The next two caritas processes relate to interpersonal communication as the basis for the transpersonal caring relationship. The last five caritas processes address those aspects of caring that require assessing priorities and needs, planning to incorporate priorities and needs, achieving identified goals, and evaluating the effectiveness of the caring processes.

The fourth caritas process—developing helping, trusting, authentic, and caring relationships, informed my framework. These relationships define the coming together of professionals to provide safe and quality care for patients. I specifically selected Watson's Human Caring Theory to inform my framework because of her explicit identification of the importance of caring relationships between coworkers, and how these relationships can affect services provided (Watson, 2007). The key to safety and quality is in the care people show toward one another when they work together as a team (Nance, 2008). In particular, successful relationships between perioperative team members involve interprofessional collaboration characterized by accountability, coordination, communication, cooperation, intentionality, respect, trust, and care (Bleakley, Boyden, Hobbs, Walsh, & Allard, 2006). Perioperative teams cannot be effective without mutual caring and support (Nance, 2008).

I also drew upon Watson's Human Caring Theory because it applies to every human being. It does not distinguish between healthcare providers. Human Caring Theory involves phenomena of the human experience including, but not limited to building relationships, acknowledging emotions, perceptions, insights, and intuition. Human Caring Theory's ontological and epistemological pluralism goes beyond nursing. According to Watson and Smith (2002) caring theory delves into the crossroads between the arts and humanities and clinical sciences. Caring theory accommodates diverse ways of knowing from an ethical, intuitive, personal, empirical, and even spiritual/metaphysical ways of knowing and being (Watson, 1997). The scope of caring theory is far-reaching and was chosen for its applicability and universality to professionals from diverse disciplines and multiple contexts. Specifically Watson's Theory helps to orient the exploration of the debriefing process to include all perioperative team members and supports caring, responsive relations as the use of surgical safety checklists during the debriefing

process in the OR is considered through the eyes of the surgeon, nurse, anesthetist, and surgical technician.

Responsive Evaluations

Responsive evaluation is a type of evaluation done with an emphasis on issues and peoples' perspectives. It places importance on understanding different people and programs in context (Curran, Christopher, Lemire, Collins, & Barrett, 2003). This evaluation methodology was selected to inform my framework as it lends itself to focus on a single issue. The issue in my framework is debriefing. While Watson's theory provides a caring orientation, responsive evaluation offers a methodology that can be used to explicitly identify how different members of the perioperative team experience the process of debriefing in different ways. The idea is to suggest a responsive approach between team members that values the perspective of each individual, thus facilitating caring relationships between team members to successfully negotiate and implement what they believe is the best plan of action to improve the debriefing process. Specifically responsive evaluation methodology is used to capture the significance of an individual's point of view during the debriefing process within the context of working together in the OR.

Utilization-Focused Evaluations

Utilization-focused evaluations are driven by utility and are meant to ensure that an evaluation will serve the information needs of its intended users (Widmer, Landert, & Bachmann, 2000). Utilization-focused evaluations can include all types of evaluation from formative evaluations to summative evaluations. Utilization-focused evaluations emphasize process use over the use of findings. Process use implies usefulness from engaging in the process of evaluation itself. An emphasis on use, as opposed to outcomes, can assist perioperative team

members to change their behavior in order to achieve improved results (Patton, 2008). The idea is that by going through the evaluative process itself, behaviors will change as a result of information learned. Usefulness from the participation in a utilization-focused evaluation is also intended to enhance shared understandings between individuals and can generate mutual respect and trust between perioperative team members (Patton, 2008). Joint understandings can be reached by the participation in the evaluative process and can potentially promote the development of deep, caring relationships that facilitate the workings of interprofessional teams.

Creating the foundation.

Watson's Human Caring Theory, responsive evaluation methodology, and utilization-focused principles share common elements that synergistically blend together to inform my framework. Identified core elements of these three systems include caring relationships, holism, valuing the individual's perspective, interprofessional teamwork, process use, and behavior change. Watson's theory highlights the connection of all things and people in a caring and healing field. In both responsive evaluation methodology and utilization-focused processes utility is defined by its intended use. Common to all three is the importance of assessing and prioritizing needs. Central to Watson's Theory and responsive evaluation methodology is a holistic approach where every individual is treated with value and meaning. Holism honors the whole person and identifies the deeper dimensions of nursing practice. A practice that honors diversity of people and their values is consistent with the truism of responsive, utilization-focused evaluation that respects that different people see things differently and have varying interests and needs. Applied to the OR, responsive, utilization-focused evaluation defines perioperative members as real, live, caring human beings with mutual respect for each other. This resonates with the Watson's caritas processes that acknowledge the importance of effective

personal communication towards building relationships. Watson's theory transcends time, space, culture and language just as responsive, utilization-focused evaluation responds to the experience, issues, language, contexts and values of stakeholders (Stake, 2004a). The intent of combining the identified core elements is to provide the foundation for my framework that fosters caring relationships between coworkers, and could change the behavior of perioperative team members as a result of information learned while going through the process of examining the use of surgical safety checklists during debriefing. Ultimately, the use of this framework is intended to increase the frequency of debriefing in the OR. To follow is a description of my proposed framework.

Responsive, Utilization-Focused Evaluation Framework

My proposed framework incorporates the use of an approach I call responsive, utilization-focused evaluation to examine how to improve the implementation of debriefing. For the purpose of this paper the words responsive, utilization-focused evaluation, framework, process, and approach are used interchangeably. Participation in my approach by members of the perioperative team is intended to help individuals direct and focus how to think about debriefing. Participation of team members in the activities of my approach also assists in clearly defining the goal of debriefing and ultimately assists in fine-tuning its implementation in the OR. My approach is a way of making stakeholders aware of debriefing through the process of talking, interviews, and negotiations and using the approach to ultimately improve the implementation of debriefing. Furthermore, I have drawn upon the APN competencies in outlining the role of the APN in the process. While many steps have been described in other evaluation processes such as the steps discussed in responsive evaluation and utilization-focused evaluation, I propose following four steps in my approach. First, the intended users (stakeholders) of my framework

are identified. Second, stakeholders determine the focus of the approach. Third, methodology, methods, activities, and design decisions are negotiated. Finally, analysis is completed and recommendations are made.

Step One: Identification of Stakeholders

A foundational step in developing a plan is to determine what kind of involvement, or stake, each group of stakeholders will have in the process (Patton, 2008). Stakeholders are the persons affected by, and participating in the approach. Stakeholders will be the primary intended users of my responsive, utilization-focused evaluation framework, and will be identified in order to serve their information needs. Before stakeholders move forward in the process, they must take a step back to clarify how assumptions might affect their journey. Assumptions reflect deeply held values, norms, and ideological perspectives that influence program choices (Vogel, 2012). Each member of the perioperative team will have a set of assumptions; some assumptions will be shared between team members while others will be held individually. Stakeholder's assumptions will need to be identified and explored throughout the process to see if they are guiding actions toward the desired outcome. Fortunately, responsive evaluation methodology leaves no room for confusion about the underpinnings and orientations of multiple stakeholders by allowing each member of the perioperative team to state clearly and precisely their perspectives and beliefs (Stake, 2004a). This can be accomplished by the APN initiating a conversation about assumptions during one of the first group meetings. The APN is an active listener and is skilled in identifying opportunities and threats of a program.

Two main groups of stakeholders were identified within my framework. The primary group of stakeholders includes the members of the perioperative team. It is made up of anesthetists, surgeons, nurses, and surgical technicians. A secondary group of stakeholders is

comprised of people from administration and consists of the Director of Surgical Services (DSS) and the Medical Director. Although this secondary group is not the primary intended user of my framework, the secondary group members have considerable influence on both the financial and practical aspects of the approach. Informed by the critical factors in my framework, the APN works in partnership with all members of the healthcare team and is the ideal person to promote support from administrators throughout the evaluative process. Keeping administrators informed can help to further the support of organizational leadership and improve the implementation process of debriefing.

Step Two: Framework Focus

Once the stakeholders have been identified, their issues and concerns regarding the debriefing process must be negotiated. Issues, as opposed to needs, objectives, or hypotheses, are the conceptual organizers of the framework (Stake, 2004b). When professionals work together to achieve similar objectives such as negotiating issues, it imparts a level playing field where physicians, nurses, and surgical technicians can voice their concerns. This is an important concept to acknowledge early on in my approach because power imbalance between perioperative team members can prevent people from speaking up. Of concern, physicians may try to use their position of power to impose their needs and wants on the perioperative team. However, when professionals use tools to enhance their communication processes such as surgical safety checklists during debriefing, hierarchical roles no longer interfere with the team's ability to communicate because the use of checklists requires the voice of every team member be heard (Cvetic, 2011). Therefore, the APN demonstrates leadership ability by initiating an open discussion on the existence of the hierarchical structure and assisting perioperative team members to make explicit the desired outcome to overcome this barrier to the implementation of

debriefing. Next, the outcome of this approach is centered upon a single question or concern (Patton, 2008). With evidence provided by Berrisford et al. (2012) supporting the relationship between debriefing and increased operating room safety, the question identified in my responsive, utilization-focused evaluation framework would be: How can an organization embed the process of debriefing into their perioperative culture?

Step Three: Methodology and Methods

Responsive evaluation methodology is used to justify the methods in my framework and to provide an overall strategy for its approach. Methodology gives reason to the methods used within my approach and links the choice and use of methods to the desired outcomes (Crotty, 1998). Methods are the activities of the framework defined as the techniques used to gather and analyze data related to identified questions (Crotty, 1998). After having negotiated a singular question or concern, the APN and the stakeholders will be ready to consider activities (Patton, 2008). Involvement in the activities increases the likelihood that perioperative team members will care about and participate in the practice of surgical debriefing (Stake, 2004b). Stake (2004a, p. 210) claimed "To become acquainted with a program's issues, evaluators observe its activities, interview those who have some stake in the program, and examine relevant documents." The data collection methods that align with responsive evaluation methodology include survey, group meetings, interviews, and observations.

Survey.

One way to examine relevant documents related to the implementation of surgical debriefing is to conduct a simple survey. Stakeholders will identify the questions asked in the survey. Possible survey questions may include:

1. Did debriefing occur?

2. At what time during the surgical procedure did debriefing occur?

3. Who initiated the debriefing process?

Survey data can be collected for each surgical procedure, and can be used to inform perioperative team members of current practices. Knowing how often debriefing occurs, who initiates the debriefing process, and at what point during the surgical procedure debriefing occurs can help to inform stakeholders' decisions about future actions. Drawing upon information from my literature review, the APN educates perioperative staff on the debriefing process to facilitate compliance with the implementation of debriefing. Survey data may also be collected to inform the overall changes in the use of surgical safety checklists during the debriefing process.

Group meetings.

Stakeholders will attend group meetings for the purpose of devising a plan to increase the use of surgical safety checklists during debriefing. Perioperative team members will identify information needs, issues, problems, and concerns regarding the implementation of the debriefing process. Team meetings help to build relationships among team members, foster trust and mutual respect, and level the playing field where all members of the team come together to make decisions (Berenholtz et al., 2009). Advanced training and competencies, augmented by individual clinical experience and expertise, positions the APN to assist stakeholders in creating the goals and formulating the activities of the program to shape the process. The APN can also provide feedback allowing for stakeholders to continually monitor the process and assess the need for changes. Group meetings will also serve to provide stakeholders with the opportunity to discuss discipline specific perspectives in order to gain a better understanding of others' experiences and priorities during debriefing. Through this process, logistical concerns will be revealed and modifications to the surgical safety checklist will be negotiated.

Interviews.

The interview is one method of gathering information from stakeholders. A sample of professionals from each discipline within perioperative teams will be selected to participate in the interview process. Semi-structured interviews will be used to elicit stakeholders' perspectives—information that is difficult to obtain without directly asking perioperative team members. Interviews will allow for more complex data to be collected, especially when open-ended responses are sought (LoBiondo-Wood & Haber, 2013). Initial questions used to elicit information from stakeholders may include:

1. What should be achieved by a responsive, utilization-focused evaluation approach?
2. What type of information would be helpful to assess the quality and effectiveness of this approach?
3. What is an indicator of success for this approach?
4. Should perioperative teams debrief? Why?
5. What factors facilitate the debriefing process?
6. What are some of the challenges associated with debriefing?
7. What are some of the differing needs of perioperative team members during the debriefing process?
8. How can differing needs of multiple individuals be met simultaneously when debriefing?

The strategy of conducting interviews is to elicit reflection on individual perspectives and issues during the debriefing process so that perioperative team members will share their views and negotiate a plan for debriefing that will meet the needs of all team members. The participation of each team member in this process cannot be over-emphasized as each member

has valuable information to contribute to the debriefing process. Subsequent interviews may be used throughout the process of this approach to augment data sources.

Observations.

Observations provide rich, detailed information that will contribute to the understanding and meaning of the debriefing process. Gathering data, during and immediately following observation, will provide a record of actions in the context of debriefing. Initial data collected will be revised continuously as new observations will yield new knowledge. All aspects of the debriefing process will be observed, examined, and recorded in the way of notes. A journal will be kept in order to organize notes into two halves. The left side will record observations, while the right side will record interpretations, comments, and insights. The APN is trained in the methods of data collection and interpretation. This will contribute to the accuracy of the data and assist in the analysis of the debriefing process.

Step Four: Analysis

A responsive, utilization-focused evaluation approach is cyclical in nature. As such, the inquiry will begin with questions and includes group meetings, interviews, observations, and analysis of data collected. The process may return to the field until saturation is reached whereby no new data emerges and all possible aspects of the questions appear to have been answered. Analysis will begin as soon as data is collected and will continue throughout the process until stakeholders determine its end. Most data will be in the form of notes, so analysis of text will involve reading and re-reading the written word to make sense of the data. The APN exhibits critical appraisal skills to analyze the current literature, synthesize the information, and use knowledge-transfer techniques to put research-based knowledge into practice (Canadian Nurse Association, 2009). Critical thinking skills will be required throughout the process with an

emphasis on key issues or concerns of stakeholders (Stake, 2004a). Further understanding will be reached through clarifying issues with stakeholders. Data from multiple sources (survey, observations, extensive descriptive notes, and face-to-face interviews) will contribute to a better understanding of stakeholders' perceptions and improving the validity of findings (Maiwald, de Rijk, Guzman, Schonstein, & Yassi, 2011). The APN who initiates and participates in the planning, coordinating, and implementing of an evaluative strategy to maximize the implementation of debriefing contributes to the professional practice of perioperative nursing and demonstrates the need for AP nurses in the OR setting.

Implications for an Advanced Practice Nurse: The Role of Facilitator

The APN demonstrates leadership by identifying problems and needs unique to patient populations, and initiating change in patient care. An APN identifies trends that may impact the health of the individual or populations (Canadian Nurses Association, 2009). One such trend is the decreased use of surgical safety checklists during the debriefing process. The resulting development and application of a framework used to address this trend will serve to illustrate leadership abilities and core competencies of the APN.

Employed as a responsive facilitator of my evaluative approach, the APN works to capture, represent, and interpret varying perspectives under the assumption that each is valid and valuable (Patton, 2008). The identified problem of decreased debriefing necessitates professionals from diverse disciplines to pool their knowledge in order to achieve the best possible outcomes (McBride, 2011). Responsive-minded facilitators take issues and concerns into account, and work with stakeholders to inform their decisions. The primary role of the APN as facilitator of the examination process is to advise stakeholders about options (Stake, 2004b). Outcomes improve through the use of consultation and collaboration with the APN acting as

facilitator toward ethical and evidence-informed clinical decision-making (Canadian Nurses Association, 2009). An APN is adept at appraising scientific literature and has the ability to apply evidence-based findings into practice. Together, the APN and stakeholders collaborate to select the issues around which to organize the evaluative approach (Stake, 2004a).

Working from a perspective of intentionality and a caring consciousness, the APN can affect the working environment by creating a positive energy field that leads to greater possibilities and better outcomes (Watson, 2008). Congruent with Watson's Theory and paramount to a responsive approach, is the ability of the APN as facilitator to be a good communicator, to form trusting relationships, and to know how to work with a variety of people (Patton, 2008). An APN uses an egalitarian approach to communicate well with others and is skillful at managing and negotiating differences of opinion. It is said that the responsive facilitator is always a negotiator (Stake, 2004b). An APN is trained to respect the differences of others based on their values, beliefs, attitudes, religion, and culture. Therefore, the APN is well positioned to ensure the honesty and integrity of the entire process, respecting and sensitive to the diversity of interests of each member of the perioperative team.

Project Discussion

A truism in responsive, utilization-focused evaluation is that people see through different lenses and have varying interests and needs (Patton, 2008). It is the expectation that what stakeholders know and believe to be true about their experience of debriefing is constructed, in part, by their relationships and interactions with members of the surgical team and with their own inner experience. Knowledge generated from a responsive, utilization-focused evaluation approach can only be created by interacting with the members of the perioperative team and by participating in the debriefing process. Furthermore, the constructs formed from this approach

are valid, but nonetheless can be altered by the effects of time, through dialogue, and new interactions and experiences of the perioperative team.

The philosophical underpinnings and contextual influences of my framework reflect the embrace of the whole of the human condition. This project illustrates how an individual's worldview shapes the assumptions that underlie professional practice. When appropriately aligned, the use of the fundamental components theoretical perspective, methodology, and method will ensure the integrity of my project. Responsive evaluation methodology using survey, interviews, focus group, and observational methods can be used to explore the use of surgical safety checklists during the debriefing process. This approach highlights the value and perspectives of others and showcases how different perspectives contribute to improving the implementation of the debriefing process. This approach provides a means to directing, focusing, fine-tuning, and facilitating the use of a debriefing process in the OR. A responsive, utilization-focused evaluation framework can be used as an approach to tackle the important issue of implementation of the debriefing process as part of the surgical safety checklist.

In this project, I describe a framework to facilitate the implementation process of debriefing in the OR. The framework also highlights the role of the APN in this facilitation and showcases competencies of the APN. Despite studies demonstrating the value of debriefing to improving performance in the surgical setting, improving teamwork and communication, identifying errors, and the overall promotion of safety in the OR, my summary review of the literature on the use of debriefing as part of, or independent of, a surgical safety checklist demonstrates the scarcity of research and the subject remains largely unexplored. To address this deficit, I proposed a framework founded on Watson’s Human Caring Theory, responsive evaluation methodology, and principles of utilization-focused evaluation to examine the

processes and effectiveness of surgical debriefing.

Project Significance

Sharing perioperative team members' perspectives of the experience of debriefing can potentially benefit the implementation process of surgical safety checklists. Using strategies and techniques outlined in my responsive, utilization-focused evaluation framework as a guide, organizations can create their own responsive, evaluative process to potentially increase the practice of debriefing. Engaging in this process empowers all stakeholders to consciously and deliberately act, react, and adapt to the complexities and dynamics of the OR. The strategies and techniques outlined also define the role of the APN in the process while showcasing the competencies of leadership, research, consultation and collaboration, and clinical expertise. A synthesis of current information on debriefing and identified concepts that facilitate and impede the implementation process of surgical safety checklist should be considered in the development of an evaluation of the debriefing process. This project has outlined the issue of debriefing and the significance of the debriefing process. Knowledge generated can be used to assist perioperative teams in establishing best practices for surgical debriefing, and to inform and update policies and procedures. With practice guidelines encouraging the use of surgical safety checklists, this project offers an approach that organizations can use to contribute to safer quality care that can potentially benefit everyone by increasing the current practice of debriefing.

Final Thoughts

A reflection of time spent working as a surgical nurse and the many patients I have provided care for triggered a memory of Mr. Frank. He was one of those patients a nurse can never forget. He was scheduled to have surgery on a broken wrist; an injury he sustained during rescue efforts following the 9/11 terror attack. It was January 2002. Mr. Frank waited four

months before seeking medical attention. His response to the delay in care was attributed to taking his wife on an anniversary trip around the world. He said his injury could wait, but the love for his wife could not. He was a giving man, and I wanted to return the favor. I held Mr. Frank's hand while the anesthetist put him to sleep. I took great care in prepping his arm for surgery. Following the incision, the surgeon exposed the site for repair and asked for a left, five hole plate. After searching frantically, the scrub technician replied that he only had plates for the right side. Unable to locate a replacement implant, the surgeon closed the wound—without fixing the wrist. Shamefully, we took Mr. Frank to recovery and rescheduled his surgery. Amazingly, Mr. Frank was not angry. He simply replied, "Don't worry, it could happen to anybody." But I knew better.

A decade later I look back on that incident, conscious of how it would have been prevented during the sign-in process of a surgical safety checklist. Today, with nearly 100% compliance of briefing and time-out activities, I take solace in knowing that I will never experience that type of mistake again. I am proud to be part of a group of professionals who incorporated new tools such as surgical safety checklists to enhance communication and promote safety in the OR. I have experienced the benefits of performing the briefing, time-out, and debriefing processes during surgical procedures. Looking towards the future, I am hopeful that research and projects similar to my own will further the investigation of the implementation challenges associated with debriefing and continue to inform the practice and success of the debriefing process.

References

Ahmed, M., Sevdalis, N., Paige, J., Paragi-Gururaja, R., Nestel, D., & Arora, S. (2012). Identifying best practice guidelines for debriefing in surgery: A tri-continental study. *American Journal of Surgery, 203*(4), 523–529.

Arora, S., Ahmed, M., Paige, J., Nestel, D., Runnacles, J., Hull, L., Darzi, A., & Sevdalis, N. (2012). Objective structured assessment of debriefing. Bringing science to the art of debriefing in surgery. *Annals of Surgery, 256*(6), 982-988.

Bandari, J., Schumacher, K., Simon, M., Cameron, D., Goeschel, C., Holzmueller, C., Makary, M., Welsh, R., & Berenholtz, S. (2012). Surfacing safety hazards using standardized operating room briefings and debriefings at a large regional medical center. *The Joint Commission Journal on Quality and Patient Safety, 38*(4), 154-160.

Berenholtz, S., Schumacher, K., Hayanga, A., Simon, M., Goeschel, C., Pronovost, P., Shanley, C., & Welsh, R. (2009). Implementing standardized operating room briefings and debriefings at a large regional medical center. *The Joint Commission Journal on Quality and Patient Safety, 35*(8), 391-397.

Berrisford, R., Wilson I., Davidge M., & Sanders, D. (2012). Surgical time out checklist with debriefing and multidisciplinary feedback improves venous thromboembolism prophylaxis in thoracic surgery: A prospective audit. *European Journal of Cardio-Thoracic Surgery, 41*(6), 1326–1329.

Blanco, M., Clarke, J., & Martindell, D. (2009). Wrong site surgery near misses and actual occurrences. *Association of Operating Room Nurses Journal, 90*(2), 215–218.

Bleakley, A., Boyden, A., Hobbs, A., Walsh, L., & Allard, J. (2006). Improving teamwork climate in operating theatres: The shift from multiprofessionalism to interprofessionalism. *Journal of Interprofessional Care, 20*(5), 461-470.

Borchard, A., Schwappach, D., Barbir, A., & Bezzola P. (2012). A systematic review of the effectiveness, compliance, and critical factors for implementation of safety checklists in surgery. *Annals of Surgery, 256*(6), 925-933.

Canadian Nurses Association (2009). Position statement: Clinical nurse specialist. Retrieved from http://www.nanb.nb.ca/PDF/CNA_Nursing_Leadership_2009_E.pdf

Catchpole, K., Dale, T., Hirst, D., Smith, J., & Giddings, X. (2010). A multicenter trial of aviation-style training for surgical teams. *Journal of Patient Safety, 6*(3), 180-186.

Catchpole, K., Mishra, A., Handa, A., & McCulloch, P. (2008). Teamwork and error in the operating room: Analysis of skills and roles. *Annals of Surgery, 247*(4), 699-706.

Clarke, J., Johnston, J., & Finley, E. (2007). Getting surgery right. *Annals of Surgery, 246*(3), 395-403.

Conley, D., Singer, S., Edmondson, L., Berry, W., & Gawande, A. (2011). Effective surgical safety checklist implementation. *Journal of American College of Surgeons, 212*(5), 873–879.

Crotty, M. (1998). Introduction: The research process. In *The foundations of social research: Meaning and perspective in the research process* (pp. 1-17). Thousand Oaks, CA: Sage Publications.

Curran, V., Christopher, J., Lemire, F., Collins, A., & Barrett, B. (2003). Application of a responsive evaluation approach in medical education. *Medical Education, 37*(3), 256-266.

Cvetic, E. (2011). Communication in the perioperative setting. *Association of Operating Room Nurses Journal, 94*(3), 261-270.

deVries, E., Dijkstra, L., Smorenburg, S., Meijer, R., & Boermeester, M. (2010). The SURgical PAtient Safety System (SURPASS) checklist optimizes timing of antibiotic prophylaxis. *Patient Safety in Surgery, 4*(1), 6.

de Vries, E., Hollmann, M., Smorenburg, S., Gouma, D., & Boermeester, M. (2009). Development and validation of the SURgical PAtient Safety System (SURPASS) check-list. *Quality & Safety in Healthcare, 18*: 121-126.

de Vries, E., Prins, H., Bennink, M., Neijenhuis, P., van Stijn, I., van Helden, S., van Putten, M., Smorenburg, S., Gouma, D., & Boermeester, M. (2012). Nature and timing of incidents intercepted by the SURPASS checklist in surgical patients. *British Medical Journal Quality & Safety, 21*(6), 503-508.

de Vries, E., Ramrattan, M., Smorenburg, S. Gouma, D., & Boermeester, M. (2008). The incidence and nature of in-hospital adverse events: A systematic review. *Quality & Safety in Healthcare, 17*(3), 216-223.

Emerton, M., Panesar, S., & Forrest, K. (2009). Safer surgery: How a checklist can make orthopaedic surgery safer. *Orthopaedics and Trauma, 23*(5), 377-380.

Fourcade, A., Blache, J., Grenier, C., Bourgain, J., & Minvielle, E. (2012). Barriers to staff adoption of a surgical safety checklist. *British Medical Journal Quality & Safety, 21*(3), 191-197.

France, D., Leming-Lee, S., Jackson, T., Feistritzer, N., & Higgins, M. (2008). An observational analysis of surgical team compliance with perioperative safety practices after crew resource management training. *American Journal of Surgery, 195*: 546–553.

Gawanda, A., Thomas, E., Zinner, M., & Brennan, T. (1999). The incidence and nature of surgical adverse events in Colorado and Utah in 1992. *Surgery, 126*(1), 66-75.

Gillespie, B., Chaboyer, W., & Fairweather, N. (2012). Interruptions and miscommunications in surgery: An observational study. *Association of Operating Room Nurses Journal, 95*(4), 576-590.

Gilmour, D., & Woodward, S. (2010). The surgical safety checklist: legacy and next steps. *Journal of Perioperative Practice, 20*(3), 78.

Greenberg, C., Regenbogen, S., Studdert, D., Lipsitz, S., Rogers, S., Zinner, M., & Gawande A. (2007). Patterns of communication breakdowns resulting in injury to surgical patients. *Journal of American College of Surgeons, 204*(4), 533-540.

Griffen, F., Stephens, L., Alexander, J., Bailey, H., Maizel, S., Sutton, B., & Posner, K. (2007). The American College of Surgeons' closed claims study: New insights for improving care. *Journal of American College of Surgeons, 204*(4), 561-569.

Gururaja, R., Yang, T., Paige, J., & Chauvin, S. (2008). Examining the effectiveness of debriefing at the point of care in simulation-based operating room team training. In K. Henriksen, J. Battles, M. Keyes, & M. Grady (Eds.), *Advances in Patient Safety: New Directions and Alternative Approaches.* Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK43676/

Haynes, A., Weiser, T., Berry, W., Lipsitz, S., Breizat, A., Dellinger, E., Herbosa, T., Joseph, S., Kibatala, P., Lapitan, M., Merry, A., Moorthy, K., Reznick, R., Taylor, B., & Gawande, A. (2009). A surgical safety checklist to reduce morbidity and mortality in a global population. *New England Journal of Medicine, 360*(5), 491-499.

Kable, A., Gibberd, R., & Spigelman, A. (2002). Adverse events in surgical patients in Australia. *International Journal for Quality in Health Care, 14*(4), 269-276.

Kohn, L., Corrigan, J., & Donaldson, M., (2000). *To Err Is Human: Building a Safer Health System*. Washington, DC: National Academies Press.

Lingard, L., Espin, S., Rubin, B., Whyte,. S, Colmenares, M., Baker, G., Doran, D., Grober, E., Orser, B., Bohnen, J., & Reznick, R. (2005). Getting teams to talk: Development and pilot implementation of a checklist to promote interprofessional communication in the OR. *Quality & Safety in Healthcare, 14*(5), 340-346.

Lim, J., Childs, J., & Gonsalves, K. (2000). Critical incident stress management. *American Association of Occupational Health Nurses, 48*(10), 487-497.

LoBiondo-Wood, G. & Haber, J. (2013). *Nursing research in Canada: Methods, critical appraisal, and utilization* (3rd Ed). Toronto, Canada: Elsevier.

Mahajan, R. (2011). The WHO surgical checklist. *Best Practice & Research Clinical Anaesthesiology, 25*(2), 161–168.

Maiwald, K., de Rijk, A., Guzman, J., Schonstein, E., & Yassi, A. (2011). Evaluation of a workplace disability prevention intervention in Canada: Examining differing perceptions of stakeholders. *Journal of Occupational Rehabilitation, 21*(2), 179-189.

Makary, M., Holzmueller, C., Sexton, J., Thompson, D., Martinez, E., Freischlag, J., Ulatowski, J., Heitmiller, E., Rowan, L., & Pronovost, P. (2006). Operating room briefings. *The Joint Commission Journal on Quality and Patient Safety, 32*(7), 407-410.

McBride, A. (2011). *The growth and development of nurse leaders.* New York, NY: Springer Publishing Company.

McGreevy, J., & Otten, T. (2007). Briefing and debriefing in the operating room using fighter pilot crew resource management. *Journal of American College of Surgeons, 205*(1), 169-176.

Nance, J. (2008). *Why hospitals should fly: The ultimate flight plan to patient safety and quality care.* Bozeman: Second River Healthcare Press.

Neily, P., Mills, P., Lee P., Carney, B., West, P., Percarpio, K., Mazzia, L., Paull, D., & Bagian, J. (2010). Medical team training and coaching in the veterans health administration; Assessment and impact on the first 32 facilities in the programme. *Quality & Safety in Healthcare, 19*(4), 360-364.

Papaspyros, S., Javangula, K., Adluri, R., & O'Regan, D. (2010). Briefing and debriefing in the cardiac operating room: Analysis of impact on theatre team attitude and patient safety. *Interactive CardioVascular and Thoracic Surgery*, *10*(1), 43–47.

Patton, M. (2008). *Utilization-Focused Evaluation* (4th ed.). Thousand Oaks: Sage Publications.

Paull, D., Mazzia, L., Izu, B., Neily, J., Mills, P., & Bagian, J. (2009). Predictors of successful implementation of preoperative briefings and postoperative debriefings after medical team training. *American Journal of Surgery, 198*(5), 675-678.

Paull, D., Mazzia, L., Wood, S., Theis, M., Robinson, L., Carney, B., Neily, J., Mills, P., & Bagian, J. (2010). Briefing guide study: Preoperative briefing and postoperative debriefing checklists in the Veterans Health Administration medical team training program. *The American Journal of Surgery, 200*(5), *620–623.*

Reid, J. (2011). Surgical never events should never happen. *Association for Perioperative Practice*, *21*(11), 373-378.

Roberts, N., Williams, R., Kim, M., & Dunnington, G. (2009). The briefing, intraoperative teaching, debriefing model for teaching in the operating room. *Journal of the American College of Surgeons, 208*(2), 299-303.

Robinson, L., Paull, D., Mazzia, L., Falzetta, L., Hay, J., & Neily, J. (2010). The role of the operating room nurse manager in the successful implementation of preoperative briefings and postoperative debriefings in the VHA Medical. *Perianesthesia Nursing, 25*(5), 302–306.

Salas, E., Klein, C., King, H., Salisbury, M., Augenstein, J., Birnbach, D., Robinson, D., & Upshaw, C. (2008). Debriefing medical teams: 12 evidence-based best practices and tips. *The Joint Commission Journal on Quality and Patient Safety, 34*(9), 518-527.

Stake, R. (2004a). Stake and responsive evaluation. In M. Alkin (Ed.), *Evaluation roots: Tracing theorists' views and influences* (pp. 203-217). Thousand Oaks: Sage Publications.

Stake, R. (2004b). *Standards-based & responsive evaluation.* Thousand Oaks: Sage Publications.

Turner, S., & Kurtz, W. (2008). Debriefing for patient safety: If only I could do it over again. *Patient Safety and Quality Healthcare, 12*(58), 42–46.

Vashdi, D., Baberger, P., Erez, M., & Weiss-Meilik, A. (2007). Briefing-debriefing: using a reflexive organizational learning model from the military to enhance the performance of surgical teams. *Human Resource Management, 46*(1), 115–142.

Vats, C., Vincent, C., Nagpal, K., Davies, R., Darzi, A., & Moorthy, K. (2010). Practical challenges of introducing WHO surgical checklist: UK pilot experience. *British Medical Journal Quality & Safety, 14*(b5433), 340-346.

Vogel, I. (2012). *Review of the use of theory of change in international development.* Retrieved from: http://www.isabelvogel.co.uk

Walker, I., Reshamwalla, S., & Wilson, I. (2012). Surgical safety checklists: Do they improve outcomes? *British Journal of Anaesthesia, 109(*1), 47–54.

Watson, J. (1997). The theory of human caring: Retrospective and prospective. *Nursing Science Quarterly, 10*(1), 49-52.

Watson, J. (2007). Transpersonal caring relationships and the caring moment defined. Retrieved from: http://www.nursing.ucdenver.edu/faculty/jw_transpersonal.htm.

Watson, J. (2008). *Nursing: The philosophy and science of caring.* (Rev. Ed.). Boulder: University Press of Colorado.

Watson, J., & Smith, M. (2002). Caring science and the science of unitary human beings: A trans-theoretical discourse for nursing knowledge development. *Journal of Advanced Nursing, 37*(5), 452-461.

Widmer, T., Landert, C., & Bachmann, N. (2000). *Evaluation standards of SEVAL, the Swiss Evaluation Society*. Retrieved from: http:// http://www.seval.ch/en/documents/SEVAL_Standards_2000_en.pdf

Wolf, F., Way, L., & Stewart, L. (2010). The efficacy of medical team training: Improved team performance and decreased operating room delays: A detailed analysis of 4863 cases. *Annals of Surgery, 252*(3), 477-485.

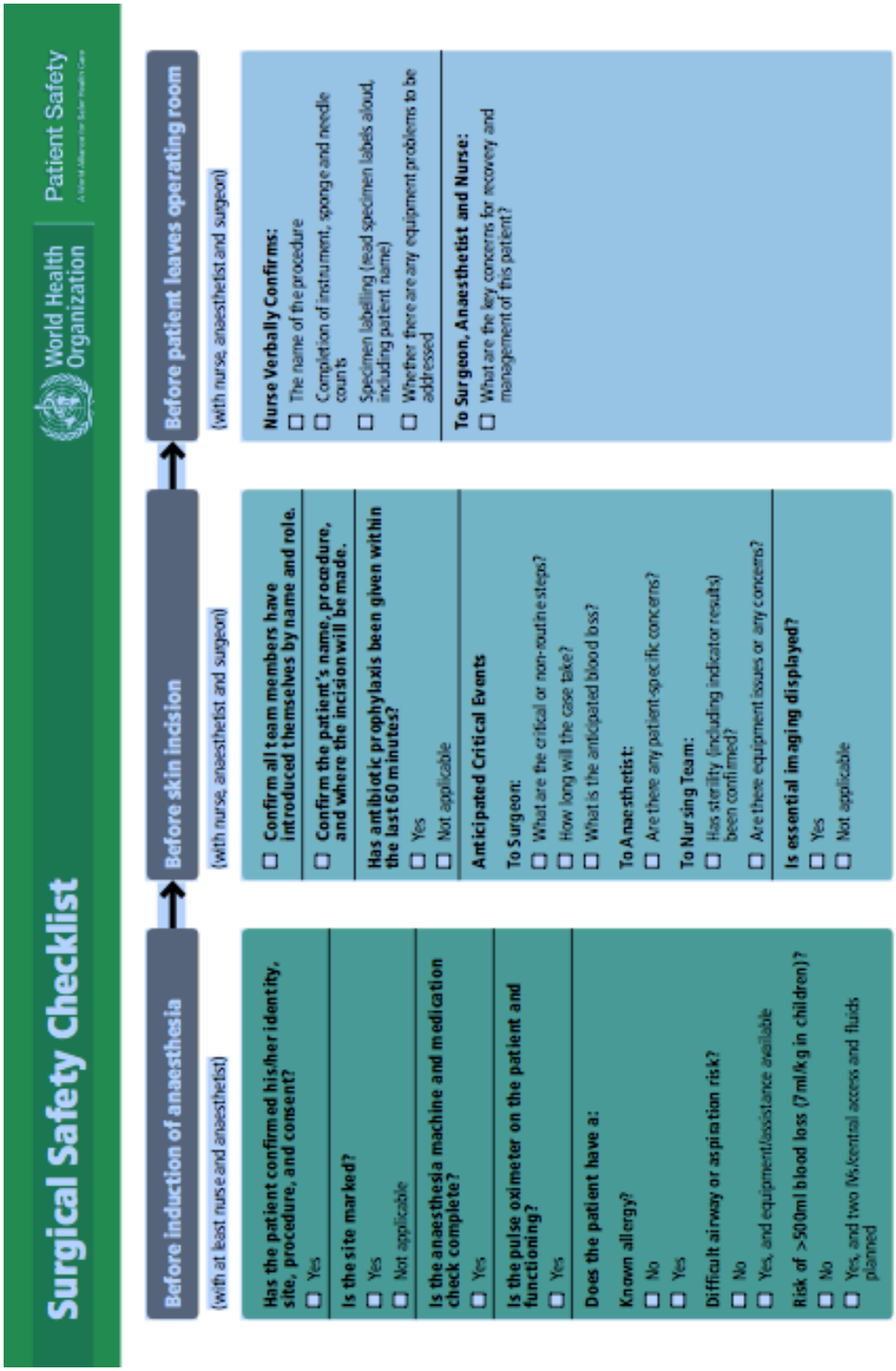
World Health Organization, (2008). *Surgical safety checklist.* Retrieved from: http://www.who.int/patientsafety/safesurgery/ss_checklist/en/index.html

Ziewacz, J., Berven, S., Mummaneni, V., Tu, T., Akinbo, O., Lyon, R., & Mummaneni, P. (2012). The design, development, and implementation of a checklist for intraoperative neuromonitoring changes. *Neurosurgical Focus, 33*(5), E11.

Zuckerman, S., France, D., Green, C., Leming-Lee, S., Anders, S., & Mocco, J. (2012). Surgical debriefing: A reliable roadmap to completing the patient safety cycle. *Neurosurgical Focus, 33*(5), 1-8.

Appendix A

World Health Organization Surgical Safety Checklist:



Appendix B

Ten Caritas Processes:

1. Practice loving-kindness and equanimity for all
2. Be authentically present and inspire faith and hope
3. Cultivate one's own beliefs and practices
4. Develop helping-trusting, authentic caring relationships
5. Accept positive and negative feelings
6. Participate in the artistry of caritas nursing
7. Engage in genuine teaching-learning experiences
8. Create a healing environment at all levels
9. Tend to basic human needs with care
10. Allow for miracles