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NURSING IMPLICATIONS OF THE IMPLEMENTATION OF AN WHO SURGICAL SAFETY CHECKLIST AT A SUBURBAN ILLINOIS HOSPITAL

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NURSING IMPLICATIONS OF THE IMPLEMENTATION OF AN WHO SURGICAL SAFETY CHECKLIST AT A SUBURBAN HOSPITAL

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ABSTRACT

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The purpose of this study was to understand how well the WHO surgical safety checklist was able to be adapted to an environment, which already had numerous communication tools in place, including the Situation Background Assessment Recommendation and preoperative checklists. A secondary purpose of this study was to understand how nurses were able to adapt to change in an ever-changing environment. The study was qualitative prospective descriptive. The author developed four research questions for this study: How does the utilization of the Surgical Safety Checklist effect the quality of care provided to the patient? To what degree is it reasonable/advisable to have a Surgical Safety Checklist in addition to a S.B.A.R. and pre-operative checklist already being utilized? To what degree can the Surgical Safety Checklist be adapted to a nurse's daily routine in the operating room? What elements need to be in place to facilitate the incorporation of the new procedure with the standard operating procedure, S.O.P? Respondents were interviewed by the author and were asked questions aligned with the research questions. The interviews yielded 10 respondents, at a 60% response rate. A total of 70% (n=7) respondents stated communication needed the most improvement in the surgical suite. In addition, 60% (n=6) of respondents stated that the WHO checklist improved the quality of care. Only 60% (n=6) respondents remembered having an education material given to them before or during the implementation of the surgical safety checklist. The author developed three conclusions from the study. The nurses at the site understood the importance of communication. There was a lack of support from the surgical administrative staff before and during the implementation of the checklist. Finally, there was a lack of education being offered to the staff regarding the importance of the checklist and why it was being adapted for their work environment.

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CHAPTER I

INTRODUCTION

For the past four and half years, the author has been working as an operating room coordinator. Throughout these years, the author observed how groups of individuals from varying degrees of experience and education were able to work together under some of the most difficult situations. One thing the author observed as being one of the most important in healthcare was communication. Communication was important because it was the passage of important information. A healthcare setting was nothing compared to a factory floor, where widgets are made. It was a complex entity, where patients arrived and the passage of information instantly began. If information on a patient is not communicated properly, errors might occur. Errors were as simple as not giving a patient his or her food, or as serious as errors resulting, in the death of a patient. More importantly, appropriate communication procedures contribute to the highest degree of safety and care for the patient. The basic functions in healthcare produce great quality of healthcare. Basics included proper communication, because in healthcare settings, it may mean the life or death of a patient.

There were numerous communication procedures, which had been completed before a patient receives any type of care from surgical staff. The simplest procedure, which was the first one to be completed, was to check the name and date of birth with the patient. The next was to confirm the type of procedure and the surgeon aligned with the

patient. Then allergies, metal implants, implanted heart devices, and the last time the patient had anything to eat or drink was covered. All of these procedures were confirmed with the paperwork in the chart for verification. Nurses were trained to ask these questions before the patient was brought into the operating room. The nursing staff does not refer to any documentation to ask these questions. It was taught during their operating room orientation. Further communication procedures were utilized in the operating room when the patient was being prepped for anesthesia. This process was called the time-out. The time-out involved the nurse calling out the patient's name, procedure type, and any other notes needing special attention. After the time out, the surgeon and anesthesiologist confirmed with the nurse that the information provided was correct. These communication procedures followed procedure, but do not follow any formal policies. To have the best possible communication between all healthcare practitioners in surgery, tools have been developed to aid this process. Examples of these tools are pre-operative checklists and the situation, background, assessment, and recommendation (S.B.A.R.) checklist. Until recently, these two tools were the only two, which aided surgical staff in providing the best possible care.

S.B.A.R., is an acronym, which stands for Situation, Background, Assessment, and Recommendation. Healthcare practitioners utilized the S.B.A.R. when there was a hand-off of a patient between different units of a given healthcare institution, as seen in Appendix C. The term handoff was defined by the Joint Commission, JCAHO, "as occurring when a patient is transferred from one department to another within the same the same facility, during the shift change, or during transfer to another facility" (2006, Nursing, p.35). The pre-operative checklist was a patient information tool, which was

utilized in addition to the S.B.A.R. when a patient arrived in the surgical services unit. The pre-operative checklist was a tool initiated by the hospital floor nurse, and then utilized by the surgical nurse. As time passes throughout the day, the assurance of receiving a patient with a complete pre-operative checklist or an SBAR form was inconsistent, because there were cases, where the S.B.A.R would not be completed. This inconsistency also applied to the pre-operative process. (See Appendix B for a copy of this checklist). What many employees failed to realize is that the pre-operative checklist was not just a piece of paper, which needed to be filled prior to surgery, but it was a communication tool. In the author's experience, there had been so many occurrences when both of these tools were incomplete, which caused a delay in the procedure start time, and increased the likelihood of accidents. One past study has shown high numbers of preventable errors, and billions of dollars spent. A Harvard Medical Study and Colorado/ Utah study estimated 98,000 errors per year at a cost of $17-$29 billion dollars (Anthony, 2002). Due to these errors, patients were at risk for not receiving the best type of care and also delaying a smooth transition between floor and surgical units. According to the England's National Health Service, between 2006 and 2007, there were an estimated 128,000 surgical incidents, some leading to harm and death of patients (AfPP, 2008). Therefore, the development of a standardized system was necessary in the pursuit of patient safety within the surgical services unit and the hospital.

The World Health Organization identified a need for an improved tool to assist surgical staff in reducing the number of various events such as deaths and infections (WHO, 2010). This tool was developed into "Safe Surgery Saves Lives", an initiative, which has spread across the world. This initiative included the development of WHO's

surgical safety checklist. The WHO checklist included three portions. The portions were: sign in, time out, and sign out, as seen in Appendix A. A modified version of the original checklist has been implemented in various healthcare institutions. The surgical safety checklist was a modified version used by the healthcare setting chosen for this study. The first part of the checklist was the sign-in portion, which had to be completed before the induction of the patient by the anesthesia staff. The next section was the time-out. This section was a more detailed version of the typical time-out performed in the room. Typically, a simplified time-out consisted of the patient's name and type of procedure. The safety checklist's time-out was more detailed consisting of: introductions of all team members, the time out, any medications (allergies and/or antibiotics needed), special precautions, special equipment, and any images needing to be displayed. The third and final part was the sign out. The sign-out portion of the paper included: count status, verification of procedure performed, verification of any specimens, special needs post-ops, and equipment repair notifications.

To further improve patient safety and teamwork within the surgical services, a decision was developed by administration to incorporate a modified version of the World Health Organization's surgical safety checklist. Currently, the modified surgical safety checklist was a mandatory process, which took place during each surgical case. Past studies showed that with an introduction of a surgical checklist rate of complications fell from 11% to 7% and 40% for inpatients having a surgical procedure (HRM, 2009). Not only was the model known for reducing complications in surgical patients, but it also broke down any communication barriers amongst the surgical team. This was due to surgical team introductions during the start of the case, when the WHO checklist was

used (WHO, 2011). Therefore, the checklist was improving communication amongst the surgical team, which aided in improving the quality of care.

The author had difficulty developing various parts of the study. An assessment tool was used to help the author develop the research questions, interview questions, and future recommendations at the close of the study. The author decided to utilize Green & Kreuter's *Precede/Proceed* assessment model in this study. The reasons for having chosen this model over any others were as follows:

Healthcare systems are some of the most complicated work environments. The author chose to break down that complexity with a systematic planning approach. This approach utilized Green and Kreuter's (2005) *Precede/Proceed* model. This model was comprised of two components. The first component was *Precede*. The *Precede* component was made up of a series of phases. The four phases included: social, epidemiological, educational/ecological, and administrative/policy assessment/intervention alignment. This process carried over into the proceed component of the model. The *Proceed* component was comprised of four phases, which included: implementation, process, impact, and outcome evaluations. The purpose of the *Proceed* component was to comprise the information collected in the *Precede* component and develop a proper policy and education plan, which aligned with *Precede* and the desired goals of the author. Further detailed information on the model, aligning each phase, is provided in Chapter III.

Statement of Problem

One of the main causes of healthcare related errors was communication (Guise, 2006). Even though the healthcare organization in this study had an S.B.A.R. and a pre-operative checklist in place to prevent errors from occurring for a number of years, errors still occurred. In reality, the SBAR and preoperative checklists were only used during the start of the cases. After the case started, the chances for a breakdown in communication increases. Therefore, the study's healthcare organization decided to implement another tool, the W.H.O. surgical safety checklist. For the surgical safety checklist to be effective, support from the surgical staff had to be present and in this case it was not.

Purpose of Study

The purpose of this study was to understand how well the WHO surgical safety checklist was able to be adapted to an environment which already had numerous communication tools in place, including the SBAR and preoperative checklists. A secondary purpose of this study was to understand how nurses were able to adapt to change in an ever-changing environment. In addition, the author wanted to understand how incorporation of an additional communication tool would affect quality of care for the patient, and whether or not it was able to be incorporated into the standard operating procedure.

Need for the Study

Past studies have proven that the WHO checklist has positive effects in reducing errors within the surgical unit (HRM, 2009). Since nurses were the largest group of healthcare providers in the United States, it was important to get their perceptions on the effectiveness of a modified version of the WHO surgical safety checklist.

Patient safety was a priority for healthcare systems, whether being a large university system or a small outpatient center. The number one reason for medical errors was lack of communication (Guise, 2006). The two areas, where communication caused these errors was during patient handoffs and in the surgical services unit (Amato-Vealey, 2008). For the purpose of this study, the author utilized the operating room, which was a part of surgical services, as the setting for the study. The reason for selecting the operating room was that one of the areas in a healthcare setting where communication breaks down, was the operating room (Amato-Vealey, 2008). Also, the WHO surgical safety checklist was developed and utilized within the operating room and no other setting.

As previously stated, past studies showed that the WHO surgical safety checklist reduced errors in the operating room. When a new checklist was implemented on top of other checklists already in place, problems arise with staff not willing to be compliant with the task at hand. The goal of using the checklist was not just to fill in boxes, but it to become a natural routine for staff members. Additionally, the staff employed within the surgical unit would become the primary users. The checklist would only be as good as the staff who utilize it. If the quality of care was compromised due to inappropriately trained staff, a checklist might not be a reasonable solution to this problem.

Research Questions

1. How does the utilization of the Surgical Safety Checklist affect the quality of care provided to the patient to the patient?

2. To what degree is it reasonable/advisable to have a Surgical Safety Checklist in addition to a S.B.A.R. and pre-operative checklist already being utilized?

3. To what degree can the Surgical Safety Checklist be adapted to a nurse's daily routine in the operating room?

4. What elements need to be in place to facilitate the incorporation of the new procedure with the standard operating procedure, S.O.P.

Delimitations

The delimitations for this study were the geographical location of the study, as well as the staff utilized. The study took place at an acute healthcare organization's operating room, which was located in the western suburbs of Chicago, IL. Individuals participating in the study were nurses, who only worked within the operating and no other affiliated surgical services units. The reason why the author focused solely on nurses, was that they are primarily in charge of running their specified operating room. The reason why the author included these delimitations was because the WHO surgical safety checklist was being evaluated for the first time in a hospital, which already utilized both an SBAR and a pre-operative checklist. In addition, the time the author had to complete the study was a factor in setting these delimitations. Based on the research questions the author wanted to answer, the study had to be delimited to the criteria listed above.

Limitations

The study included in-person voluntary interviews and not all individuals decided to participate. The sample was limited to one healthcare center.

Assumptions

It was assumed that all participants in this study answered the interviewer's questions honestly and to the best of their ability.

Definition of Terms

S.B.A.R- **S**ituation (What is going on with the patient?)

Background (What is the key clinical background or context ?)

Assessment (What do I think the problem is?)

Recommendation (What do I recommend or what do I want you to do?) (Guise, 2006).

Same Day Surgery or Ambulatory Surgery-This nursing unit is part of the surgical services department. Patients are admitted a minimum of two hours before their scheduled surgery start time. Patients who are admitted through this unit have procedures, which are less critical; therefore they are able to go home with medication and a mandatory ride home (medical-dictionary.com, 2011).

Pre-Operative Checklist-This is the checklist, which an incoming surgery patient has in their chart. It is a quick reference for the nurse to look at and identify facts such as: allergies, previous surgeries, height, and weight (medical-dictionary.com, 2011).

Patient Safety- the reduction and mitigation of unsafe acts within the healthcare system, as well as through the use of best practices shown to lead to optimal patient outcomes (Atack, 2009).

Safety Compromising Events- an action or inaction that significantly increase[s] the vulnerability of the system and [has] the potential to lead to an adverse event (Catalano, 2008).

Sentinel Events-an unexpected occurrence involving death or serious physical-including loss of limb or function or psychological injury, or the risk thereof. The phrase,

“or the risk thereof ,”includes any process variation for which a recurrence would carry a significant chance of serious adverse outcome. Such events are called “sentinel” because they signal the need for immediate investigation and response (Catalano, 2008).

CHAPTER II

REVIEW OF LITERATURE

Introduction

Medical errors do occur and some are serious. When they are traced back to the source, it becomes evident that it stemmed from a breakdown in communication (Lingard, 2005). Studies have shown that communication in the surgical suite is often performed with much tension (Lingard, 2005). The author thought it would be necessary to understand how communication has changed healthcare, and how it has led to the development of the WHO Surgical Safety Checklist.

During an international study conducted by the World Health Organization in 2009, reported that the utilization of checklists in the surgical suite reduce morbidity and mortality by half (Birkmeyer, 2010). According to a systematic review, 1 in every 150 patients admitted into a hospital dies, and almost two thirds of in-hospital incidents occur during surgical care (de Vries, 2010). Sentinel events are caused by an average of 70% of communication failures (Gillespie, 2010). This shows how important it was to develop a standardized communication system into a surgical unit, and thus it was the World Health Organization, who developed the surgical safety checklist. There are an estimated 234 million surgical procedures performed each year (Walker, 2011). With numbers like that, it was imperative for the World Health Organization to take action with reducing errors in the surgical unit.

Importance of Communication in Healthcare

Patient safety is a priority for all healthcare systems, whether being a large university system or a small outpatient center. The number one reason for medical errors is with communication (Guise, 2006). The two areas where communication causes these errors are during patient handoffs and in surgical services unit (Amato-Vealey, 2008).

Medical Errors occur in healthcare. There is no denying the data, which proves it. Each year The Joint Commission of Accreditation of Hospital Organizations, JACHO, lists a set of hospital National Patient Safety Goals:

- Identify patients correctly
- Improve staff communication
- Use medicines safely
- Prevent infection
- Check patient medicines
- Identify patient safety risks

Source: Joint Commission, p.35, 2006.

Looking at the areas of focus for these goals, an individual can see that the safety of the patients is not just in one specific area. The main area of focus for the patient safety goals was communication. According to sources communication is one of the main causes of medical errors, which effect the safety of the patient (Simpson, 2006). Hospitals are complex environments that rely on rules and various forms of communications for patient care.

The two areas where communication has become an issue of concern, is surgical services and patient hand-offs, according to AORN Journal in 2008. Surgical services is an area in the hospital where patient go through the process of being admitted and going through surgery. This is a portal of cause because the patient is being transformed from

area to area. This is where the term hand-off comes from. The term is defined by JCAHO, as occurring when a patient is transferred from one department to another within the same the same facility, during the shift change, or during transfer to another facility (Nursing, 2006). Overall, the Joint Commission is the accrediting body that travels the states evaluating healthcare facilities and enabling them able to continue serving, or having to perform additional evaluations after identified changes are made. The Joint Commission offers various recommendations to develop safer patient handoffs. They are:

- Standardize handoff procedures
- Use "what if" scenarios to test the reliability of procedures
- Make a special effort to improve communication when patients are transported for diagnostic testing or procedures
- Audit adherence to the standardized procedure.

Source: Nursing, p.35, 2006.

The standardization of patient handoffs has been a requirement of JCAHO, since their National Safety goals were released as of Jan 1st of 2006. JCAHO lists information, which should be communicated between both parties. The list includes:

- Diagnosis
- Current condition
- Changes in treatment
- Recent or anticipated changes
- What to watch for

Additional items may include:

- Current medical status
- Resuscitation status
- Current medications
- Allergies
- Recent or pending lab values

- Problem list
- To-do-list for incoming physician or nurse

Source: OR Manager, p.12, 2006.

Reviewing the given information from The Joint Commission, one can observe a great deal of information being transferred from one party to another. Therefore in events such as patient information transfer during handoffs, an adequate communication system is necessary. The Joint Commission recommends that to prevent future medical errors, with regards to communication, the solution would be introducing a standardized communication system. One recommended system, by The Joint Commission was S.B.A.R, which is an acronym meaning:

- Situation- What is going on with the patient?
- Background- What is the key clinical background or context?
- Assessment- What do I think the problem is?
- Recommendation- What do I recommend or what I want to do?

Source: Guise, p.313, 2006.

The S.B.A.R. standardized communication system, is a very easy system to understand, and looking at the parts of the S.B.A.R, and individual can see that the core information of a patient is transferred during hand-offs. Having a standardized system in surgery is very beneficial, due to many factors. The operating room revolves around time. The goal is to provide the best service in surgery, while decreasing actually operating time and patient admittance duration. The longer the patient is in the hospital, the higher the likelihood of a medical error occurring. Turnover is a topic which is always emphasized in surgery as being key to providing the best for the patient (Catalano, 2008). Reduction of turnover is emphasized constantly in the surgery, because it reduces the time between cases and delays for upcoming surgical cases. Rushing through things is not

always the best solution. One type of events, which occur due to errors in the operating room, are sentinel events. The Joint Commission identifies two sentinel events, which are common within operating rooms. They are: performing surgery on the wrong patient or wrong body part, and forgetting a instrument in the patient during surgery (Catalano, 2008). An individual can see that these two sentinel events are caused by a lack of communication in the operating room. Again, an improvement in communication will decrease medical errors throughout a healthcare system. One solution for improving communication is adopting a standardized communication system such as S.B.A.R.

Description of WHO Surgical Safety Checklist

To improve quality of care by reducing errors and increasing patient safety in the surgical services unit, checklists have been implemented to strengthen the lines of communication. As previously mentioned, two important communication tools were the S.B.A.R. and pre-operative checklists. Recently the World Health Organization, has developed their surgical safety checklist.

The WHO Surgical Safety Checklist was developed under the Safe Surgery Saves Lives initiative (WHO, 2009). The World Safety Alliance working with WHO, assisted surgical staff, in developing a set of safety checks. These checks were placed in an appropriate manner to reflect the needs of a surgical unit. The important point to be made was that the checklist was not an official document, it is merely a tool, which was out in place to aid clinicians in the operating room (WHO, 2009). In addition, the checklist was developed so that modifications may be made to it, by the facility deciding to utilize the tool (WHO, 2009).

The tool is comprised of three parts. The first part of the checklist was to completed before the induction of anesthesia. This part was called the sign in. It included: patient confirmation (identity, surgical site, procedure, consent), surgical site marked, anesthesia safety check completed, pulse oximeter on patient and functioning, any known allergies, difficult airway/aspiration risk, risk of >500mL blood loss (WHO, 2009). If there will be a blood loss of > 500mL, then a second IV may be needed and blood products should be available. Many critics had noted what was the importance of only referring to one medical device in the surgical safety checklist, the pulse oximeter. A pulse oximeter measures the saturation of oxygen in the patient's blood.

According to Walker, Newton, and Bosenberg, pulse oximeters were the most important medical device for anesthesiologists, when compared to other medical devices. In addition, without a proper working pulse oximeter, the success of the surgical safety checklist would not exist. The authors stated that the pulse oximeter is the most basic piece of medical equipment in the room, which provides a safer environment for the patient. At the time of the study, there were an estimated 78,000 surgical centers without working pulse oximeters (Walker, Newton, & Bosenberg, 2010).

Next is part two, before skin incision. This was called the time-out. It included: confirmation of all team members having introduced themselves by name and role, surgeon/anesthesia professional/nurse verbally confirm (patient, site, procedure), anticipated critical events, have antibiotics been given within last 60 minutes, is essential imaging been displayed (WHO, 2009).

Last part is the sign out, which is completed before the patient leaves the operating room. It included the nurse verbally confirming: the name of the procedure

recorded, that instruments/sponge/needle counts are correct, how the specimen was labeled, whether there are any equipment problems to be assessed (WHO, 2009). Finally the nurse, surgeon and anesthesiologist review any concerns for the recovery of the patient (WHO, 2009).

Success of the WHO Surgical Safety Checklist

Overall, the success of the checklist has been evident with past studies throughout the globe. Initially the *Safe Surgery Saves Lives* alliance developed a study group, which studied the effects of the checklist in eight cities worldwide. The locations of study sites were: Toronto, Canada; New Delhi, India; Amman, Jordan; Auckland, New Zealand; Manila, Phillipines; Ifakara, Tanzania; London, England; and Seattle, Washington (Haynes, 2009). The study included 3955 participants. The study examined the effects the checklist had on the rate of death and the various other complications. The complications included: acute renal failure, bleeding requiring transfusion of 4 or more units of red cells within the first 72 hours, cardiac arrest requiring cardiopulmonary resuscitation, coma of 24 hours' duration of more, deep-vein thrombosis, myocardial infraction, unplanned intubation, ventilator use for 48 hours or more, pneumonia, pulmonary embolism, stroke, major disruption of wound, infection of surgical site, sepsis, septic shock, the systematic inflammatory response syndrome, unplanned return to the operating room, and vascular graft failure, as described by the American College of Surgeons (Haynes, 2009).

The following results were combination of data from all locations in the study. Surgical site infections before implementation of checklist were at 6.2 and after, it was at 3.4 (Haynes, 2009). Unplanned returns to the operating room before the implementation of the checklist were at 2.4 and after, it was at 1.8 (Haynes, 2009). Death rate went from

1.5 to 0.8, after the checklist was implemented (Haynes, 2009). Any complications went from 11.0 to 7.0 (Haynes, 2009). This study has demonstrated very well that the checklist has proven to be effective. It was important to remember the extent of the study and that locations were spread throughout the world. The locations of the healthcare institutions varied in size, environment, and operating room capacity. Therefore, not only was the success of the checklist present domestically, but also on an international scale.

In another study, researchers measured the effects of a comprehensive surgical safety system on patient outcomes. The study took place in the Netherlands, where the study compared 3760 pre-implementation patients against 3820 post-implementation (de Vries, 2010). The checklist was implemented in two academic centers and four teaching hospitals. The study took just under two years to complete. The study had positive results from the utilization of the WHO surgical safety checklist. The total number of complications per 100 patients went from 27.4% to 16.7% (de Vries, 2010). The researcher cited the results of the previously mentioned study, and its positive results, which was why they decided to utilize the checklist for the purposes of the their study. (de Vries, 2010).

In study performed in November of 2011 by WHO showed how the surgical safety checklist reduced morbidity and mortality by half (Birkmeyer, 2010). The study performed by WHO did leave some skeptical. The first area was the pre-intervention/post-intervention and how it failed to control for confounding factors (Birkmeyer, 2010). Critics of the study mentioned that if the workers had previous knowledge that they were being evaluated, then it had a tendency to provide inaccurate results of the true of the effectiveness of the tool (Birkmeyer, 2010). The other problem

was with the items on the checklist itself. Critcs mentioned that any of the serious problems, which commonly occurred in the operating room, were included in the checklist (Birkmeyer, 2010). The items included in the checklist were primarily commonsense items. It was important to understand that it was the simple things, which commonly produced the errors. The simple things were the items that teams in the surgical suite would perform in repetition and rarely would perform them at a perfect level.

Finally, the point was made that checklists are not the ultimate solution to errors occurring in the surgical suite (Birkmeyer, 2010). Dr. Birkmeyer made one recommendation that further population level outcomes would have to be made to further develop a optimal level of care in the surgical unit (Birkmeyer, 2010). The point made by Dr. Birkmeyer shows that the checklist was an initial step to combating the breakdown in communication, which is seen worldwide in surgical units. With the initial step provided by WHO, there was now a new standard communication tool, which can be modified to serve the different environments across the globe.

An article published in *OR Manager,* reported that there has be success with the WHO surgical safety checklist and not just in terms of the reduction of infections and mortality. A total of 48.5% OR's, which used the surgical safety checklist, from the *OR Manager's* online survey (OR Manager, 2009). In addition, there were cases when wrong equipment was brought into a case, such as implant trays by reps, and x-ray films. Mistakes such as these were averted due to the implementation of the surgical safety checklist.

Implementation of WHO Surgical Safety Checklist

Even though past studies have proven that the WHO surgical safety checklist was a success in improving patient safety in a surgical setting, but the real question was how it was implemented? There were still some obstacles in the way of successfully implementing the checklist. In an article published in Hospitals & Healthcare Networks *InBox,* it stated that there was some resistance from physicians (Terry, 2009). The big concern was implementation of the checklist and still meeting The Joint Commission regulations and protocols of correct patient and surgical site (Terry, 2009). In addition to correct patient and surgical site, protocols also required hospitals to verify that they had correct test results, blood products, implants and other surgical equipment in the room (Terry, 2009). This presented a serious obstacle to the implementation of the checklist, because institutions had to follow JCAHO rules and also wanted to utilize the surgical safety checklist at the same time.

The solution was for some healthcare institutions to combine the two checklists, so that both parties would be pleased. For example in Denver, Exempla Saint Joseph Hospital did so and when representatives from The Joint Commission came through they were pleased with the success and overall result from the combination two checklists (Terry, 2009). This was an important point to make because the purpose of the WHO surgical safety checklist was that it should be modified, so that it would be a success in any environment.

The issue, which was raised during the implementation of the surgical safety checklist, was the reaction of the physicians. It was a major hurdle to jump because the surgeons really do have a lot to say when it comes to what happens in their operating

rooms. According to Fran Griffin, who was the Director of the Institute of Healthcare Improvement, the older surgeons were the ones who were the most resistant to the change (Same-day Surgery, 2009). Griffin stated, "They view this as people second guessing their ability, judgment, their intellect, and of course we all know that that's not the goal here" (62).

In a May issue of *Health Risk Management,* participants again voiced some concern. Surgeons would be ok with the checklist as long as they would not be doing something, which they already were performing. Nurses had fears they would have to act as an enforcer. Once the checklist was implemented and some time went by, these concerns were no more.

Griffin (2009) also mentioned that when going into an OR the staff have to go in there with the mentality that everything will be perfect. She mentioned that humans are humans and that mistakes will be made because we are fallible. This was where the surgical safety checklist helps, because it forces the surgical staff to check and re-check the little things, which occurred in the surgical room. In addition, the introductions portion in the surgical safety checklist provided an opportunity for staff to feel more comfortable (Nursing Standard, 2009). Therefore, staff feels more empowered to say something when they observe something not performed correctly (Nursing Standard, 2009).

E. Patchen Dillinger (2008) was a surgeon who advocated the use of checklists in the operating room (Robeznieks, 2009). He implemented the WHO checklist at the University of Washington Medical Center. He stated, items on the checklist were often completed by surgical staff at a 90% level, but it had to be a 100%. He made the point

that whenever something new was implemented into the standard operating procedure of their surgical suite, workers always said, "What's the point" (Robeznieks, 2009, p.20).

When Dilinger pointed skeptics to the data from the study, completed by WHO on the effectiveness of the checklist, the skeptics were soon silenced (Robeznieks, 2009). Currently, the checklist is a universal tool utilized throughout the entire medical center and in all 24 operating rooms a large laminated copy was placed on the wall (Robeznieks, 2009).

Another important fact to be made was how surgical staff members able to breakdown the barrier of silence. According to a study performed by Fauzia Gardezi (2009), there are already numerous points to be made about silence and communication in the operating room. First, nurses often felt constrained that they were not able to say what was really on their minds. Secondly silence in the operating room was due from the fear of feeling incompetent among other healthcare professionals present in the surgical room. Nurses are the ones who complete the checklist in the operating room. The surgical safety checklist offers them a tool, which they can use to make adequate decisions, when something is not right. Even if the issue is small, it was important that the surgical staff felt comfortable to speak out and not remain quiet.

Conclusion

In past studies it has been demonstrated that a breakdown in communication is the number one cause of medical errors. The two areas where this occurs the most were patient hand-offs and in surgery. With the aid of the World Health Organization and their *Surgery Saves Lives* initiative the surgical safety checklist was developed. The checklist had three crucial phases: before induction of anesthesia, before skin incision, and sign

out. Even though the phases did not include most serious issues, which occurred in the surgical suite, it included the simple things in surgery. It was important to be as close to perfection with the simple things that are more repetitive, because those simple things may result in serious problems if not performed properly.

The surgical safety checklist has been demonstrated, improved safety and quality of care for the patient. It was even important to cover how the surgical safety checklist was implemented to result in improving the quality of healthcare. The biggest critics were the surgeons because they didn't want a piece of paper second-guessing their work or even performing something in repetition. Once the surgical safety checklist was implemented, these surgeons realized that the benefits to the patient far outweighed initial complaints.

Although the surgeon is an important individual in the surgical suite, the registered nurse is also important. Registered nurses are the largest group of healthcare providers. Additionally they are the ones, who initiate the surgical safety checklist. Overall, it was imperative to assess registered nurse's reactions to a new communication tool as a part of their standard operating procedure.

CHAPTER III

METHODOLOGY

Introduction

Communication is an essential ingredient in a successful healthcare environment. In this study, the environment was an operating room, a fast paced environment where good communication has led to an improvement in efficiency and quality of care. As previously discussed, the root cause of the majority of healthcare errors is communication. Additionally, one of the top two areas where communication errors occurred was within surgical services (Guise, 2006).

The study was conducted at an acute care hospital in the western suburbs of Chicago, Illinois. The setting in that hospital was the Surgical Services Unit. This was the unit of focus because the Surgical Safety Checklist on trial was initiated within the Surgical Services Unit. The participants for the study included nurses who worked in the operating rooms. The number of nurses, who only worked within the operating rooms was thirty. Since nurses work on each shift and all days of the week, the duration of data collections was one month. This was due to the author having been present on each shift of the weekdays and weekends in an attempt to have all nurses participate in the study. The author of this study conducted all of the interviews. The questions used by the author are provided within Appendix D. Each item was aligned with its corresponding research question.

The author wanted to research the WHO checklist, and how nurses are able to improve communication skills, while they utilized this tool. It was important for the author to understand how operating room nurses were able to adapt to a new tool, which, in theory, was designed to improve the exchange of patient information. The patient should be at the center of healthcare, and the staff should realize what has to be done to provide the best delivery of service. Also, certain questions covered education the nurses received prior to the introduction of the WHO checklist. The author thought it would be important to understand what the baseline educational level was when the checklist was first used. It was important to have an introduction, whenever any new tools were introduced into the standard operating procedures.

Research Design

The study was a qualitative prospective descriptive study. To the author's knowledge, no other like studies have been performed on this topic. The study was qualitative and descriptive in order to explore in-depth, the reasoning behind each participant's response.

Selection Bias

There may have been some selection bias present within the study, since the author did not randomly choose his participants. In order to effectively answer the author's research questions, the decision was made to utilize only operating room nurses.

Sample Population

The sample population for this study included operating room nurses. The nurses in the study ranged in age, work experience, educational experience, and operating room duties. The operating room was chosen as the setting, since the Surgical Safety Checklist

was only being evaluated within the operating room unit. Nurses were chosen to be the only participants for a number of reasons. First, nurses within this operating room were the only employees who were in charge of completing the checklist and actively involving the rest of the individuals in the operating room in effectively completing the checklist. There were situations where other staff members in the room started the checklist. After the checklist was completed, the nurse signed his or her name on the bottom. The second reason for selecting nurses as participants emerged from the literature regarding surgical communication tools. Past studies mainly used physicians as their participants while some used physicians and nurses. Since nurses represent the largest number of healthcare providers in the United States, it was considered appropriate to have nurses be the only sample population involved in the study. The author felt that the nurses need an individual voice and not being grouped together with physicians.

Time Frame

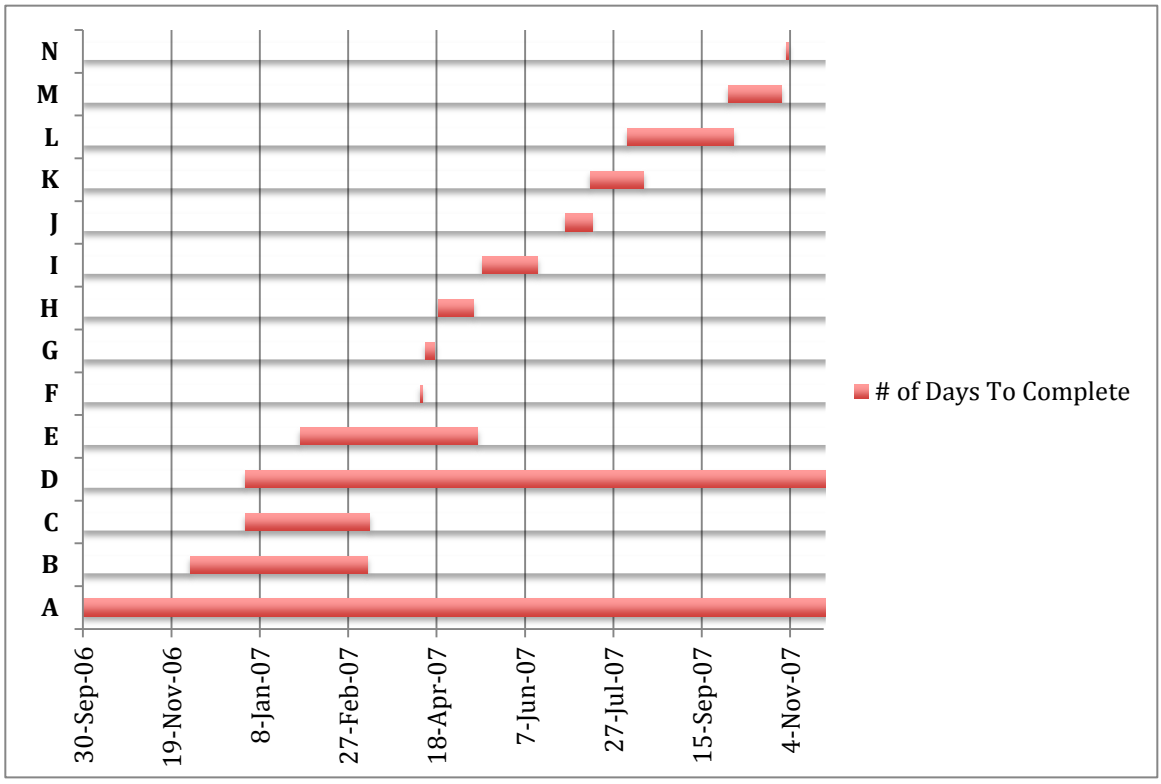


Figure 1. Time frame Gantt chart

Key For Gantt Chart:

A=Duration of WHO Surgical Safety Checklist, B=Thesis committee selection from start to finish, C=Chapter 1, D=Chapter 2, E=Chapter 3, F= Thesis committee meeting, G=Pilot study start to finish, H= IRB approval start to finish, I=Duration of interviews, J= Duration of data analysis, K=Chapter 4, L= Educational In-service development and presentation, M=Chapter 5, N=Thesis defense.

Instrumentation

The author decided to conduct interviews for this study. Even though a survey would have been simple to develop and time effective, it was not an appropriate tool for this study. As seen in Appendix D, the questionnaire was very lengthy, and participant

responses were to be as detailed as possible. Also the author thought even if a survey were to be developed for the study, it would have been quite difficult for the author to get additional information from the respondent if the opportunity presented itself (Gilmore, 2005). Since the author conducted the interview sessions, he was able to discern whether or not the opportunity was there from each respondent's answers. In addition, it made the responses as detailed as possible, which was another advantage of interviews (Gilmore, 2005). For this reason, the author decided to conduct interviews instead of sending out a survey. The time and effort reflected in the results section. Some disadvantages of interviews may have been if the author was not familiar with the environment, but the author had five years of working experience in a surgical services setting (Gilmore, 2005). Therefore, he was able to understand answers provided to him from the questionnaire. After the author and his thesis committee met, it was determined that a pilot study was beneficial to the success of the study. The pilot study included the original key informant questions and a series of questions, which were asked post interview. These questions can be found in Appendix E. The purpose of the pilot study was to fine-tune the key informant questions. The pilot study was performed during the second shift, 2:30 p.m.-11:00 p.m., and utilized second shift nurses. The goal was to have 3-5 participants to be part of the pilot study. It was important to perform a pilot, because respondents would help evaluate the questionnaire, and further strengthen the questions being asked.

Alignment of Interview Questions

The interview questions were aligned according to the research questions. The full version of the interview schedule is included in Appendix D. Questions 1-8 asked

background information. Questions 9-11 aligned with research question 1. Questions 12-14 aligned with research question 2. Questions 15-16 aligned with research question 3. Finally, questions 17-20 aligned with research question 4.

Data Analysis

Once the data was collected, it was analyzed by the author. Since the study was qualitative in nature, the author reviewed each respondent's questionnaire and identified commonalities amongst them. The author understood the importance of including all data whether it would affect the study or not, which was one of the risks researchers may have ran into with qualitative research. Once the data was grouped together according to the answers provided, the author included any necessary statements made by the respondents.

Educational In-service

Based on the results from this study, an educational in-service was developed. The in-service was designed to inform nurses on the basics of communication within a surgical services setting. In addition, recommendations were made on how to improve communication with various levels of staff. The in-service did cover a brief overview of the WHO surgical safety checklist. In addition, it covered important facts and figures on the success of incorporating communication tools, more importantly checklists, and how then it produced positive results in various healthcare settings. Lastly, it covered an overview of results collected from participants. This was important to include, so that participants were able to understand how their responses compared with the fellow worker. A questionnaire was handed out to all in attendance.

Precede/Proceed Model

The author decided to utilize the Green and Kreuter's *Precede/Proceed* model because it provided a framework, which assessed the needs of the population. From their he was able to evaluate the health impact of the surgical safety checklist and how it can best serve to improve the health of the patients and provide a better work environment for the employees.

Precede

The *Precede* portion of the model is comprised of predisposing, reinforcing, enabling factors, and how they relate to educational and ecological diagnosis/evaluation (Green & Kreuter, 2005). By combining all of these parts the author was able to move forward into the *Proceed* portion of the model.

Phase 1: Social Assessment/Situational Analysis

Participants in the study were nurses. They were selected because they primarily initiated usage of the checklist in the operating rooms and were in control of completing the form appropriately. In addition, nurses make up the largest amount of clinical practitioners in the United States. The researcher also was aware of the heavy responsibility the nurse has in the room during a case. Activities included: time outs, control of room traffic, charting, patient safety, and staff safety. In addition, the surgical safety checklist may be an improvement on an already existing standardized communication system, but it was added to an already long list of responsibilities for the nurse.

The area where the checklist was to be utilized was selected based on previous studies on medical errors. The operating room was one of two areas where medical errors

occur due to poor communication (Amato-Vealey, 2008). The other area, which showed similar rates, was during patient hand-offs.

The overall goal of the integration of the surgical safety checklist was to improve the quality of care to patients, while decreasing errors made by poor communication in the operating room. In addition to providing the best possible care for the patient, the staff must be in a safe work environment as well.

Phase 2: Epidemiological Assessment

The epidemiological assessment utilizes three areas to identify health goals and/ or problems, which interact with the goals and/or problems in phase 1 (Green & Kreuter, 2005). The three areas of focus are genetic, environmental, and behavioral indicators. For this study, there was no need to incorporate any genetic indicators.

Environmental factors are the determinants outside the individual that can be modified to support behavior, health, and quality of life (Green & Kreuter, 2005). Environmental factors in the operating rooms were very unexpected even though the majority of cases performed in the operating room are scheduled and the staff knows ahead of time what to expect. Once the patient was in the room, anything can happen, but a surgical safety checklist may be able to modify some environmental factors. Factors, which can be controlled are the equipment uses, certain rooms to perform specified operations, and supplies.

Behavioral factors are those patterns of behavior which put a given population at risk (Green & Kreuter, 2005). By utilizing the surgical safety checklist, clinical practitioners who worked within the operating room were able to control their behaviors, which promoted a higher quality of care. The operating room rarely is a calm

environment. Everything is quite fast-paced and mistakes were kept to a minimum. With the checklist in place, nurses had a reference tool which outlined important steps to be completed.

Phase 3: Educational and Ecological Assessment

The next assessment phase of the *Precede/Proceed* model was comprised predisposing, reinforcing, and enabling factors. Predisposing factors was any previous knowledge or attitudes the population had during any change (Green & Kreuter, 2005). There were a lot of predisposing factors, which affected utilization of the surgical safety checklist. There were always individuals within an organization, who do not like change. As previously mentioned, there were numerous individuals within the surgical department. Dedication from all bodies needed to be present for the checklist to be successful. There were staff members and physicians, who were dismissive about the checklist, and performed a typical timeout and checked the boxes just to check them. This needed to be corrected. By identifying factors such as these, further implementation of the checklist proved to be successful.

Next were the reinforcing factors. Reinforcing factors was anything the population would receive based on the knowledge of results change would produce (Green & Kreuter, 2005). Two factors, which should be emphasized in promoting the checklist to the workers, were improving the care of the patient and efficiency of the operating room. By improving communication, mistakes were reduced and as a result, delays were reduced. Time was critical in the operating room and therefore, if there was a tool available to reduce time, then there should not be any hesitation from the staff to utilize it.

According to Green and Kreuter, enabling factors include skills, resources and barriers to assist or hamper the success of the surgical safety checklist. Staff should understand that an educational investment in the use of communication tools would produce positive results, and reduce errors in the operating room. This benefited all staff including physicians, but more importantly, the patients.

Phase 4: Administrative and Policy Assessment and Intervention Alignment

Phase 4 covered educational strategies and policy regulation and organization to continue work on the purposed issue or problem (Green & Kreuter, 2005). The setting was the surgical services unit, because the implementation of the surgical safety checklist was only within this unit. The study concentrated only on nurses, because nurses were responsible for completing the form accordingly and every other individual should follow his or her verbal demands. The checklist was still in the trial phase and no policy had been developed. In addition, the checklist was not part of the patient's permanent record. A decision was to be made upon completion of the trial.

Administrative Assessment

Time

The resources needed were the first assessment to be covered, beginning with time. The estimated time for the study was ten months. The checklist was implemented in October of 2010. During the fourth month, more background research was done. The fifth month included an initial media outreach to the staff at the first Friday meeting, discussing interviews and a concluding in service. The sixth month included interviews with the staff, which were conducted by the author. The seventh month included data collection. The eighth and ninth months were primarily dedicated to developing an

educational in-service. The tenth month included compiling the data and finishing up the study.

Personnel

The author implemented the assessment of the checklist. The author was in charge of interviewing all subjects, compiling results, and formulating an in service based on the data collected. The commitment of subjects i.e., surgical nurses was necessary throughout the entire assessment for the checklist to be successful.

Policy Assessment

Assessing the checklist and making appropriate changes, not only provided better quality of care for the community, but also provided a better work environment for the employees. This mission was also true for the entire healthcare organization, which included the operating room unit. In addition, the operating room had a code of conduct, which reflected the code of conduct of the healthcare organization.

The policies relating to the surgical safety checklist, pertained to the policies regarding nursing staff. Policies, which included surgical nurses, are only needed, because nurses were in charge of the surgical safety checklist, as previously mentioned. The policy, which referred to the duties of the surgical nurse, did mention to fill out all documentation which pertained to the case. As previously mentioned, the checklist was just a trial and not part of the patient's medical record. Therefore, there were not any policies that specifically referred to the completion of all parts of the checklist. The author assumed if successful, the checklist would eventually either be added to an existing policy or a single policy would be written specifically outlining step by step instructions on how to utilize the surgical safety checklist.

Political factors are a part of administrative work, especially in healthcare. Political factors included employees not stepping over any boundaries, which may have resulted in negative consequences. The author did not anticipate political factors to cause problems with modifications made to the checklist or presenting an in service to the staff, because the checklist was initially implemented by the surgical administrative staff. The checklist was only being utilized within the surgical services unit, and thus, there were not any political factors to interrupt the study.

Proceed

The *Proceed* part of the model was developed to evaluate the findings from the *Precede* portion. Once this was complete the implementation process began by evaluating the process and impact of the surgical safety checklist had, and what the results would be of the final outcome.

Phase 5: Implementation

The author was able to identify nurses as being the only participants needed for this study. Also, there are two priorities for this study. The first priority was education. Staff needed to be educated on the importance of having good communication within a healthcare organization and not just the operating room. The second priority was behavioral. The surgical safety checklist would only be good as the individuals utilizing it. Therefore, even though the checklist was another task added to a surgical nurse's duties, nurses needed to emit a behavior, which paralleled success of the surgical safety checklist.

Phase 6: Process Evaluation

The author intended to determine what information needed to be taught to staff in order for staff to understand the importance of additional checklists for improving communication.

Phase 7: Impact Evaluation

The author predicted that the interviews and in service would have a significant positive effect on changing behaviors towards utilization of additional communication tools, such as the surgical safety checklist. Also, the participants' knowledge would have increased the importance of communication in the workplace, as a result of the in-service provided by the author.

Phase 8: Outcome Evaluation

At the end of the study there was no new program created. The study promoted communication tools and the advantages of incorporating them into daily surgical tasks. In addition, to succeed the author utilized results from interviews. The only outcomes were the in-service and any changes made to the surgical safety checklist.

Effects on Research

There were numerous problems which the author knew in advance which may have affected the study. Problems included finding an appropriate time to interview respondents, and finding available respondents. As with any type of study involving participants there was never a guarantee on how many would actually participate. The author conducted the interviews for this study and knew individuals who were more comfortable completing a survey via email versus a one on one interview.

There were advantages to conducting interviews. The author was present on the worksite to conduct the interviews, which served as a reminder to nurses to participate in the study. The important thing was to have the voices of the nurses be heard. In addition, the interviews were more personal and therefore, the author was able to get more in-depth with the participants versus an online survey.

CHAPTER IV

RESULTS

Introduction

The study took place within the surgical services unit at an acute care hospital in Chicago's western suburbs. The study group was comprised of registered nurses who worked the first shift and only worked in operating rooms. The nurses were asked to be interviewed voluntarily by the author and also answered questions on the WHO Surgical Safety checklist. Results were aligned with demographic characteristics related to the study's research questions.

Demographics

Out of a total of 16 possible participants, the author was able to interview ten, resulting in a response rate of 62.5%. All respondents were nurses from the first shift. Of the ten respondents, 80% (n=8) were female and 20% (n=2) were male. The range for the number years worked as a nurse was 4-27.

When participants were asked whether or not they had previous knowledge and/or experience with past healthcare studies or articles pertaining to improvement in a surgical setting, 70% (n=7) said yes. Respondents who stated "yes" mentioned various topics such as: infection control, patient safety, count boards, time-outs, and various World Health Organization articles. Count boards are dry erase boards in each operating room which allow the nurse and surgical technician in the room to keep an accurate count of surgical rags, needles, and other instruments used in a surgical incision. Once the surgeon

is ready to close an incision, the nurse and surgical technician count instruments to make sure that all supplies are on the instrument table. This prevents any supplies being left inside the patient.

Respondents were then asked which areas, in their opinion, needed the most improvement. The majority, 70% (n=7), responded that communication needed to be improved for patient safety and efficiency to increase. When respondents mentioned communication, they specifically mentioned communication with surgeons and surgical administrative staff. Some of the issues, which were mentioned, were that when mistakes occurred in the operating room, administrative staff did little or nothing to enforce any consequences. Staff believes more should have been done when errors occurred. The other 30% (n=3) stated the need to receive training in various other surgical specialties and sterile technique. After the author had asked questions based on employee's personal history. Questions were asked, which reflected the four research questions.

How does utilization of the Surgical Safety checklist affect quality of care provided to the patient?

Initially the author wanted to understand where the breakdown of communication occurs. A breakdown in communication would be defined as critical information being omitted or not effectively transferred between caregivers. Surprisingly the majority of the respondents stated that there was a breakdown between staff in the operating rooms and surgical services administration (coordinators and team leaders). One of the issues was that the administrative staff did not spend enough time inside each operating room. Therefore, they were unaware of what was actually happening inside the operating rooms. In addition, respondents stated that supplies and/or equipment were not available

and that staff in the room were not made aware of this information before a case began. This delayed the start of procedures and potentially could negatively affect the safety of the patient and staff. If a case such as an emergency open-heart procedure is delayed then the patient may suffer serious consequences, due to waiting or surgical staff rushing through procedures to make up on lost time. This breakdown in communication affected communication with surgeons. Respondents stated that surgeons became familiar with attitudes of the coordinators not having communicated with staff in the room and therefore, were prepared for supplies not being available and cases being delayed.

In addition, respondents stated that there was a breakdown in communication during patient hand-offs, which is the process of patients being transferred from one area to another. This was present not only between surgical nurses during shift changes, but also when patients were admitted into the pre-operative holding area from ambulatory surgery or an inpatient unit as well as when patients were transferred in the post-anesthesia care unit (PACU) or recovery.

According to 60% (n=6) of the respondents, surgical safety checklist improved the quality of care within the surgical setting as depicted in Figure 1 below.

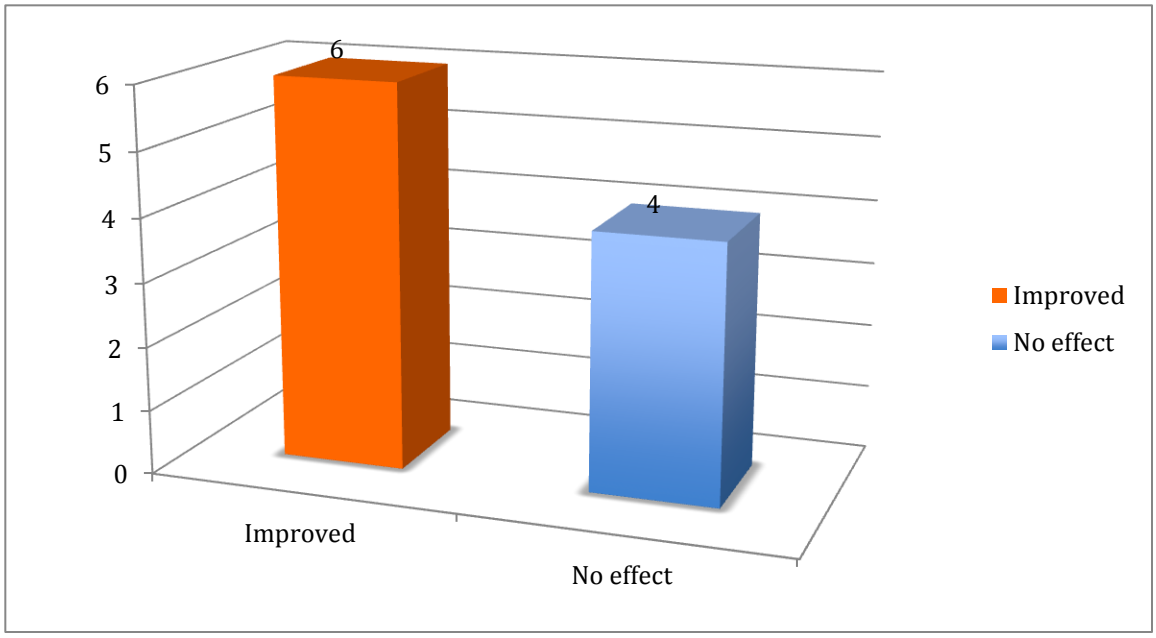


Figure 2. WHO Surgical safety Checklist improved or did not improve the quality of care.

Respondents stated that the surgical safety checklist allowed the opportunity for staff in the operating room to communicate, breaking down barriers, especially among new staff members, who may have not known every staff member or physician present during a case.

The 40% (n=4) of respondents, who thought that the checklist did not improve quality of care within the surgical setting, particularly stated that the sections to be completed on the surgical safety checklist were already performed and was second nature for them to ask all the questions and follow all procedures accordingly.

The author asked participants how the Situation Background Assessment Recommendation, S.B.A.R. and Pre-operative communication tools affected quality of care in addition to the surgical safety checklist. Seven of the respondents agreed that in some form the S.B.A.R. and Pre-operative checklist increased patient safety in addition to the surgical safety checklist. This finding is shown in Figure 4 below.

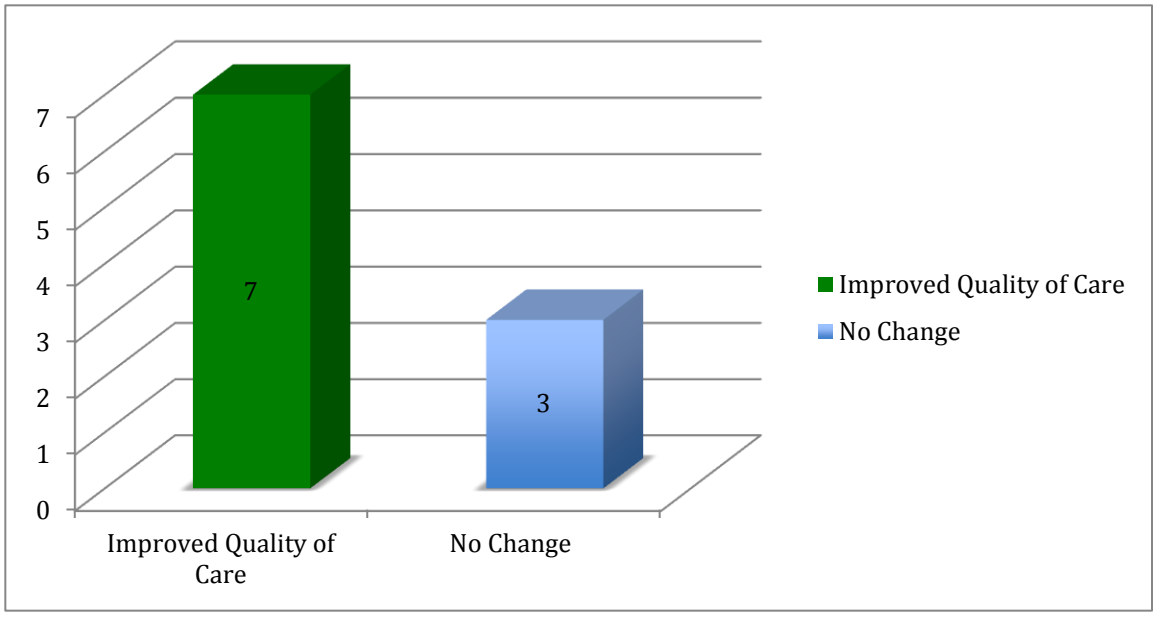


Figure 3. Whether or not all three checklists had an effect on quality of care.

The S.B.A.R. and Pre-operative checklist are forms used by nursing staff, which included patient information pre/post surgical case. They increase communication by not making the nurses rush through paper work. Of the respondents, 30% (*n*=3) stated that there was no difference in the quality of care and that all the communication tools put together have a tendency to make the nurses double chart on top of all the other duties they perform with their patient inside and outside of the operating room. For the respondents, who stated the checklist did affect the quality of care, mentioned several areas. First, it allowed respondents to make sure all equipment in the room was present and in proper working order. Respondents stated that there were times when necessary equipment was not in the room and thus would delay the surgical case. In addition, respondents stated that the checklist broke down communication barriers and created less tension in the surgical room.

To what degree is it reasonable/advisable to have a Surgical Safety Checklist on top of a S.B.A.R. and pre-operative checklist already being utilized?

When the author asked respondents whether or not the surgical safety checklist was appropriate for all surgical cases, 80% (n=8) of respondents stated the checklist should be utilized for all surgical cases. The 20% (n=2) of respondents who said no all agreed that when local cases are performed in the operating rooms, the majority of the surgical safety checklist is not utilized and the S.B.A.R. and pre-operative checklist are more beneficial.

All respondents agreed that having all three communication tools together was satisfactory. Some respondents did mention that initially when the surgical safety checklist was put into trial back in October of 2010, there was doubt on whether or not having three communication tools would improve anything. As time went on, the respondents realized how each separate tool contributed to safety and efficiency in the operating room.

The majority of respondents, 90% (n=9), agreed that there are portions on the surgical safety checklist that should be changed or omitted because they do not pertain to what the surgical nurse is trying to accomplish. For example, respondents mentioned that beta-blockers should be omitted. This could be because beta-blockers were a recent addition to the checklist at the time of the study. In addition, respondents mentioned that it was difficult to accomplish the time-out portion, because there were portions on it should be completed in the pre-operative holding area as opposed to the room. Again, these were comments respondents had made and that the various portions of the checklist be performed at the same time each time, to eliminate and variability.

To what degree can the Surgical Safety Checklist be incorporated into a nurse's daily routine in the operating room?

According to 60% (*n*=6) of the respondents, there was some form of educational material on the surgical safety checklist before it was put into trial. Educational material included a short video and handouts. These respondents mentioned that handouts with data, which consisted of studies on the success of the surgical safety checklist, were given upon request. Resulting with 40% (*n*=4) of respondents stating that there was no information given and thought that if it was given, the effort to make the staff understand the importance of the checklist should have been greater. These data are portrayed in Figure 3 below.

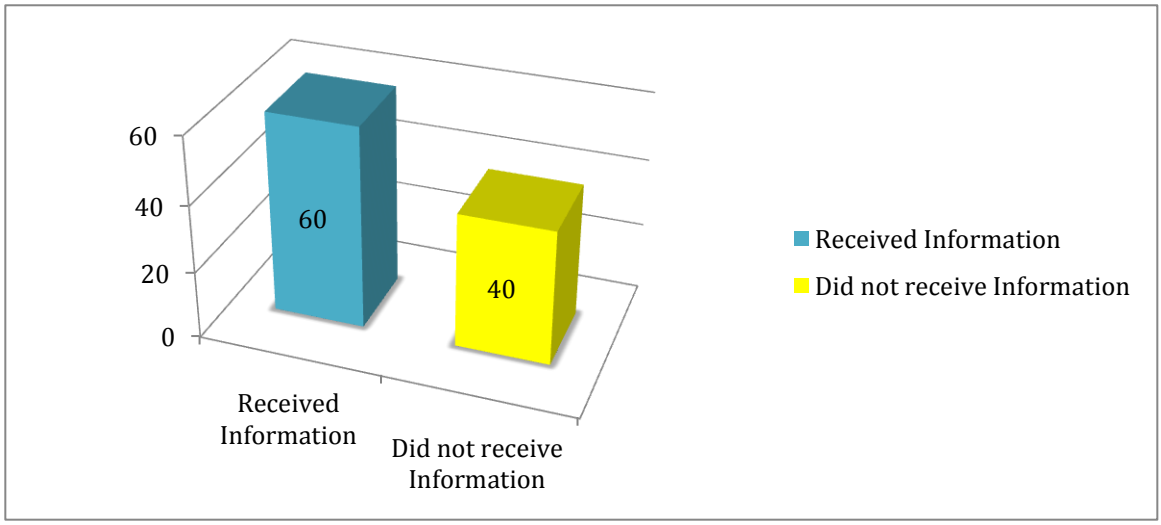


Figure 4. Whether or not nurses received any correspondence on the surgical safety checklist**.**

What elements need to be in place to facilitate incorporation of the new procedure with the standard operating procedure?

Only 20% (*n*=2) of the respondents thought that there were no areas to improve on the surgical safety checklist. The remainder of respondents stated that the surgical safety checklist could be improved. Beta-blockers in the sign-in portion should be

omitted. In addition, respondents commented on the over-complexity of the checklist and thought that it would be beneficial to simplify the checklist. Also, respondents commented on the importance of the surgeon being present in the operating room when a patient is being put under anesthesia.

When respondents were asked how they completed the checklist, 60% (*n*=6) answered that completion was done in an appropriate fashion. Of the 60% (*n*=6) of the reported, completing the checklist in an appropriate fashion, half said they also make notations on the checklist with pertinent information. Only 40% (*n*=6) of the total of respondents said that they check the boxes in an inappropriate fashion. Inappropriate meant that the respondents checked the boxes ahead of time, only because the various steps on the checklist were already engrained in their heads and the respondents did not have a need to look at the checklist.

Only 60% (*n*=6) of respondents reported that during administration of the checklist all parties participated, which included nurses, surgical technicians, surgeons, anesthesiologists, surgical transporters, and surgical assistants. One of these respondents mentioned that he or she made notes on the checklist of individuals who were not cooperative during the administration. Interestingly, 100% (N=10) of respondents stated that the individuals who did not complete the checklist were physicians.

There were multiple commonalities emerging from the review of the results. One of the commonalities, which was voiced by 80% (*n=8*) of respondents, was the inexperience of the administration staff of the operation of the surgical unit. The trend was that employees of the surgical unit wanted to see administrative staff of surgery to have a greater presence in the actual operating rooms. The thought of operating a surgical

specialty or the entire surgical unit could not be run from inside a closed-door office. Participants felt that if presence by the administrative would increase in the operating rooms, then staff would feel more opted to perform operations at 100%, for example, when utilizing the WHO surgical safety checklist.

Another commonality was the lack of any education being mentioned by the participants. With such an important item, WHO surgical safety checklist, being introduced to the operating rooms, more information should have been given out to staff. More on this topic was discussed in Chapter 5. In relation to education, participants were also confused and questioned the various parts of the checklist and their locations in the process. Just as much as education should have been provided on the checklist. More should have been done to educate the employees on the parts of the checklist. Also, when new steps were introduced into the checklist, administrators should have provided information on the critical nature of any additions to the checklist. Participants stated a lack of effort on the part administrators to offer this. The author discussed this is greater detail in chapter and made recommendations accordingly.

Once the author had complied the data from the study, he developed an educational in-service for surgical staff members at the study's site, which is presented in Appendix F. The presentation included the basis of the study: purpose, methods, and research questions. The author also mentioned important facts from separate studies on how a breakdown in communication affects patient safety and the work environment. At the end of the in-service author made three important recommendations to the study site, which were based on responses from the participants. The first was to increase education, and make sure that it was at the core of the training for new and existing employees. In

addition, staff voiced concern that the administrative staff did not make attempts to spend more time in the operating rooms. The author recommended to surgical staff present at the inservice, that surgical administrative staff make an attempt to spend more time with the employees in the surgical environment. Therefore, administrative staff would have primary knowledge of what was occurring in the operating rooms, and staff would be more appreciative with their presence in the rooms. The final recommendation was to maximize communication at all times. The author made it a point that it was important to always provide more information rather than not providing enough. In addition to the presentation the author handed out a survey, appendix G. The surgical staff has to realize why the topic of communication is being brought up constantly. With the support of the entire staff, and them working as a team, the introduction of new communication tools may prove to be more successful.

CHAPTER V

CONCLUSIONS & RECOMMENDATIONS

Introduction

One of the main influences of healthcare-related errors is communication (Guise, 2006). Even though the healthcare organization in this study had an S.B.A.R. , the Situation Background Assessment Recommendation, and a pre-operative checklist in place to prevent errors from occurring for a number of years, errors still occurred. In reality, S.B.A.R. and preoperative checklists were not communication tools utilized throughout a surgical case. After a surgical case had started, the chances for a breakdown in communication increased. Therefore, this healthcare organization decided to implement another tool, the W.H.O. surgical safety checklist. For the surgical safety checklist to be effective, support from the surgical staff had to be present and in this case, it was not initially.

The purpose of this study was to understand how well the WHO surgical safety checklist was able to be adapted to an environment, which already had numerous communication tools in place, including the S.B.A.R. and pre-operative checklists. A secondary purpose of this study was to understand how nurses were able to adapt to change in an ever-changing environment. In addition, the author wanted to understand how incorporation of an additional communication tool would affect quality of care for the patient, and whether or not it could be incorporated into the standard operating procedure. After assessing the needs the author developed an educational in-service,

which was presented after data analysis to the surgical staff at a first Friday of the month meeting. During development of the study, the author devised four research questions, which he wanted to answer with the study. They were as follows:

1. How does utilization of the Surgical Safety Checklist effect the quality of care provided to the patient?

2. To what degree is it reasonable/advisable to have a Surgical Safety Checklist in addition to a S.B.A.R. and pre-operative checklist?

3. To what degree can the Surgical Safety Checklist be adapted to a nurse's daily routine in the operating room?

4. What elements need to be in place to facilitate incorporation of the new procedure with the standard operating procedure, S.O.P.

To facilitate the study, the author decided to perform the study at an acute care hospital in the western suburbs of the Chicago area. Since the WHO surgical safety checklist was specifically designed to be utilized in a surgical setting, the operating room became the setting for data collection. Participants for the study were registered nurses, who only worked in the operating rooms. The decision was made to involve nurses because they were primarily responsible for completing the checklist and signing-off on the completion of it. There were other staff members in the operating rooms, who advised the nurse to begin the surgical safety checklist. The author decided to interview the nurses on a voluntary basis, utilizing the questionnaire found in appendix D.

The author decided to initially run a pilot study on five registered nurses from the second shift. After completing the pilot study, the author was assured that he could continue with the questionnaire and collect data on the first shift nurses. There was a total 18 registered nurses on the first shift. The author was able to collect data from 10 registered nurses. The duration for data collection from all participants took

approximately one month. The questions in the questionnaire were based upon background information, such as: sex, years worked as a nurse, years worked in a surgical setting, and the research questions.

Findings

All respondents were nurses from the first shift. Of the ten respondents, 80% (n=8) were female and 20% (n=2) were male. The range for number years worked as a nurse was 4-27. These results offered an opportunity to ask questions of registered nurses fresh out of nursing school or registered nurses who had been in practice much longer.

Respondents were asked whether or not they had any previous knowledge of studies or magazine/newspaper articles on improvements to be made in a surgical setting. The majority, 70% (n=7), stated they had some knowledge of various areas in the surgical setting, which needed improvement. In addition, 70% (n=7) stated that the area, which needed the most improvement was communication.

Respondents stated that the two actions where there was a breakdown in communication were during patient hand-offs, and staff relief. Patient hand-offs occurred during two critical times for a patient in the surgical department. The first was when the patient arrived to the pre-operative surgical holding area and the surgical nurse was given a report by the nurse taking care of the patient on the nursing unit. The second critical time was when the patient was brought out of surgery and taken to the post anesthesia care unit, P.A.C.U. During that time, the nurse, who took care of the patient in the operating room during surgery, handed-off the patient to the nurse in P.A.C.U., who guided the patient to recovery. Respondents stated that the breakdown of critical

information mainly was due to the other party being in a rush to get something else accomplished.

The other area of concern was staff relief. Staff would either be relieved for lunch/dinner breaks and/or when shift changes occurred. Respondents stated, especially during a shift change, nurses were in a rush to leave the room and the report that the replacement nurse received was not detailed enough. Since there was such a serious breakdown in communication during such a critical point, mistakes might have been made, with a decrease in the quality of care.

In addition, respondents voiced their opinions about communication with the surgical administration staff, which included: managers, assistant mangers, directors, and coordinators. Respondents hoped that when staff communicated with administration, something would be done to deal with their questions and/or concerns. Respondents stated that it had come to the point, where staff did not communicate with administrative staff, because they got into a habit of knowing that nothing would be done. The staff in the rooms wanted to have a greater presence of the surgical administrative staff in the operating rooms during the surgical cases. If the administrative staff actually knew what was going on in the rooms, it would cut down on delays and mistakes made.

The majority of the respondents (n=6; 60%) stated that the surgical safety checklist improved the quality of care. One of the biggest influences that it had was that it broke down various barriers. One barrier was if there was a new employee in the room. In the past, respondents had stated that it would sometimes be hard for new employees to say something or even to introduce themselves. The surgical safety checklist provided an avenue for new employees to feel more comfortable during a surgical case. The second

barrier, which was mentioned, was communication with the physicians. The author had previously worked in a surgical setting and knew that sometimes it was difficult to ask questions of physicians. With the surgical safety checklist, that barrier was broken, since physicians knew that certain questions had to be asked of them to proceed and effectively complete the surgical safety checklist and the surgical case itself.

Another observation was that almost half of respondents stated that the checklist did not foster any improvements in quality of care. The main reason was that the process, which is outlined in the surgical safety checklist, was already engrained into their everyday routine. The author observed that this was seen with some of the senior registered nurses. These respondents felt that the checklist was an additional piece of paper they had to fill out and that it just added to an already large amount of work needed to be completed for a surgical case.

When the surgical safety checklist was implemented into the standard operating procedure back in October of 2010, staff had doubts that a piece of paper would have any positive effect or even be able to adapt itself into the standard operating procedure. By the time data collection started, which was late spring of 2011, the staff had realized the positive effect that the checklist actually had on the work they completed each day. In addition, 80% (n=8) stated that the surgical safety checklist should be utilized for all surgical cases. There was some feedback from respondents that the checklist was not useful for shorter cases, such as cases in which there was only a local anesthetic used (e.g., the use of steroid injections). Respondents said that the turnover was so quick with those types of cases that a good portion of the checklist was omitted because there was only a local anesthetic used. They stated that a modified version of the checklist should

be utilized for those types of cases or the checklist should be omitted completely. Primarily the sections, which dealt with anesthesia could be modified or omitted. For surgical cases only utilizing a local anesthetic, there was no reason to have a section for pulse oximeter check, hypothermia risk, deep vein thrombosis prophylaxis, and risk of >500mL blood loss. Since the patient was only being administered a local anesthetic they were not asleep for the surgical procedure.

Respondents also stated that it was satisfactory for all three communication tools to be utilized for each case. Initially, there was some concern from the author that there would be complaints from staff members that the WHO checklist would be another thing to fill out on top of the S.B.A.R. and the pre-operative checklist. By the time data collection began, respondents realized that each of these tools had their own place in the process of a patient having surgery performed.

Education is a necessity when trying to incorporate a communication tool into a surgical setting. Only 60% (n=6) of respondents, stated that they remembered some forms of educational materials being given or shown to them. The author observed that there should have been more emphasis on the positives that can come about from the use of such a tool. None of the respondents reported any important data about the WHO surgical safety checklist or could even recall any being brought forward to them from the surgical administrative staff.

Finally, the author asked in what manner did the respondents complete the surgical safety checklist. The appropriate way to complete the checklist would be to complete each portion of the checklist when the time came to complete it. In addition, notes should be written down on the checklist as an aid for the nurse. Only 60% (n=6) of

respondents stated that they completed the surgical safety checklist in the way as mentioned above. The remainder of respondents stated that they simply checked off boxes ahead of time and then simply sign the surgical safety checklist, which is the incorrect way to complete it.

Conclusions

There were three conclusions drawn from the findings. First was that the nursing staff new the importance of communication in the surgical suite. They knew that there were too many situations, where there had been a breakdown in communication. Even though the staff knew that this was a problem, they did not realize that it was up to them to correct the problem. This is why it was critical for the educator to increase awareness on the importance of communication.

Second, was that administrative staff should have had a greater presence around its staff. Respondents could not state why it was important for the surgical safety checklist to be a part of the standard operating procedure. With such an important tool being placed into an environment, the staff should have been educated on the success of the surgical safety checklist and possibly even some implementation issues which occurred at other locations. Some factors, which may have improved implementation were support from surgical administrative staff and also from a select group of surgical employees. These employees would have been the ones, who had a prominent voice amongst the rest of the staff.

If the administrative staff desires its staff to adapt the surgical safety checklist, they should have showed a greater presence in the operating rooms. Participants stated that if the administrative staff want something to change then they have to show a greater

participation with the staff. This was a critical point to be made because the administrative staff should realize it was not just about introducing a communication tool, but it should be a team effort, and not just an effort from the staff in the room. Without support from administrative staff, surgical employees may not work to the best of their ability's. The work environment, especially patient care, should concentrate more on teamwork and not individuality.

The third conclusion was to increase education. The author did not have the opportunity to sit down with the health educator at the study's location and discuss his or her duties. When respondents were asked about the education they had received prior and during the implementation of the surgical safety checklist, the answers were very vague. This led the author to believe that the education may have been lacking something.

Discussion

Research has shown that the majority of medical errors are caused by a lack of communication (Guise, 2006). Such a deficiency can be significantly detrimental in dealing with the quality of care during surgical procedures. Communication tools such as the surgical safety checklists were created to aid staff in the surgical setting with communications amongst varying surgical roles and responsibilities. The surgical safety checklist was in place for about eight months by the time the author had started his interviews with the registered nurses. Over a period of eight months opinions changed based on the data from the questionnaire. The staff became more aware of the necessity to incorporate such a communication tool. After data were analyzed, the author recommended how this surgical setting could make the surgical safety checklist even better and more efficient.

This study was different in many ways when compared to previous studies mentioned. The study did not review any type of clinical data, such as infection rates or even mortality rates. This study looked at how a new communication tool could be introduced into the surgical environment. This study reviewed at the views and opinions of nurses. The surgical safety checklist had proven itself across the globe with positive results of decreasing infection and mortality rates, but with what difficulty was it to obtain such results, and how surgical staff reacted to the surgical safety checklist.

The next step for the hospital would be to expand on a new study, which is discussed in the recommendations section of this chapter. The implementation of the surgical safety checklist was successful, from the perspective of the registered nurse. It would not only be appropriate to explore the effects the surgical safety checklist has on the patient, but also review on clinical data, since the surgical safety checklist has been in use for more than a year at the study's location.

Recommendations

Recommendations for Implementation

When implementing a new tool into an existing standard operating procedure there will usually be some sense of difficulty. The surgical safety checklist in the setting used for this study had just completed its first year of usage. At this point in time, it would be critical to look at the collected data from this study and make any necessary modifications to the checklist to better provide an efficient and safe environment both for the patient and the staff member. There is no argument that there is a need for communication improvements within a healthcare setting, more importantly a surgical setting. The goal is to make the tool better, which should improve the quality of care and

work environment. Since the implementation, there have been modifications made to the surgical safety checklist, for example beta-blockers were added to the checklist.

In addition to any modifications of the actual tool, an evaluation of the educational system in place should be evaluated. Emphasis should be placed on the education, whenever something new is being proposed. If an educator is already in place at the study's location then he or she should recognize the importance of providing educational materials and tools so that staff will be able to have access. Also education at the start of the implementation should not be all that is done, but continuing education throughout should be provided as well. Currently, nurses are required to have a certain number of continuing education credits per year, depending on policies at their healthcare institution. Therefore, if nurses are already required to have continuing education credits emphasis should be placed on the surgical safety checklist and accompanying communication tools.

Along with continuing education opportunities being added, orientation for new employees should be amplified to include educational materials on the surgical safety checklist and a how to guide on proper procedure of using the surgical safety checklist. The educator on staff should be in charge of conducting this part of the orientation. In addition to the educator on staff being in charge of the continuing education, there should be discussion on whether or not it would be appropriate to have a permanent health educator on staff. Not only would the health educator promote communication in the surgical suite, but also reinforce other important public health practices, such as infection control.

Recommendations for Improving Current Research

Refinements with the current research can be undertaken. First the present study could have benefitted from a larger sample size. It was very difficult to have first shift nurses find time to sit down for an interview. It would have been more appropriate to perform the pilot weekend shift nurses and not 2nd shift nurses as originally done. Doing so would have added an additional 5 respondents to the study. Also, it would have been beneficial if there were incentives for respondents. The author was unable to offer incentives due to time conflicts and the capacity to do so.

Additionally, attempting to have more of a random sample would increase the variety and objectivity of the responses. The schedule of a surgical nurse was nothing set in stone. The author had to ask nurses at the end of their shifts if they would like to participate in their study. This was very difficult because the nurses were already tired and ready to go home. This was the only time when the author was able to meet with the nurses and was not rushed by the work environment.

In addition to the sample, there was a lack of diversity. The study results should have included the responses from all types of nurses, to include those from second, third, and weekend shifts were typically not scheduled cases and trauma surgical cases. It may have been insightful to have those responses included in the study.

Recommendations for Future Research

Future research should be performed on benefits of the surgical safety checklist. The author recommends that if future research is done that would replicate this study, it could only be in a setting, where the surgical safety checklist has been freshly implemented. This type of study was designed to observe what registered nurses think

about such a communication tool being incorporated into their standard operating procedure.

If the surgical safety checklist had been in place at a location for more then one year, then the study should be designed to include clinical-related data. For example two areas the study could look at the impact of the WHO surgical safety checklist on infection and mortality/morbidity rates.

Also, it would be of value to seek responses from other health professionals. The author delimited the study to only seek responses from registered nurses. This was done because registered nurses signed off when the surgical safety checklist was completed. During the data collection, questions were raised by other staff members on why only nurses were asked to participate in the study. The nurse was the only individual, who physically wrote on the surgical safety checklist and signed-off at the end. It would be interesting to see what other staff members thought of the checklist. Other staff members would include surgical technicians, surgeons, anesthesiologists, and surgical assistants. Feedback from those individuals may be beneficial in any future modifications made to the surgical safety checklist, which would better suit the environment in which it is being utilized. The original WHO surgical safety checklist can be modified and it should be adapted and shaped into the environment, in which it will be used.

REFERENCES

AfPP endorses surgical safety checklist. (2008). *Journal of Perioperative Practice*, 18(8), 316. Retrieved from EBSCOhost.

Amato-Vealey, E., Barba, M., & Vealey, R. (2008). Hand-off communication: a requisite for perioperative patient safety. AORN Journal, 88(5), 763-774. Retrieved from CINAHL Plus with Full Text database.

Anthony, M., & Preuss, G. (2002). Models of care: the influence of nurse communication on patient safety. *Nursing Economics*, 20(5), 209. Retrieved from EBSCOhost.

Atack, L., & Maher, J. (2010). Emergency medical and health providers' perceptions of key issues in prehospital patient safety. *Prehospital Emergency Care*, 14(1), 95-102.

Birkmeyer, J. (2010). Strategies for improving surgical quality - checklists and beyond. New England Journal of Medicine, 363(20), 1963-1965. doi:10.1056/NEJMe1009542

Catalano, K. (2008). Knowledge is power: averting safety-compromising events in the OR. *AORN Journal*, 88(6), 987-995.

de Vries, E., Prins, H., Crolla, R., den Outer, A., van Andel, G., van Helden, S., & ... Boermeester, M. (2010). Effect of a comprehensive surgical safety system on patient outcomes. New England Journal of Medicine, 363(20), 1928-1937. doi:10.1056/NEJMsa0911535

Gardezi, F., Lingard, L., Espin, S., Whyte, S., Orser, B., & Baker, G. (2009). Silence, power and communication in the operating room. Journal of Advanced Nursing, 65(7), 1390-1399. Retrieved from EBSCOhost.

Gillespie, B., Chaboyer, W., & Murray, P. (2010). Enhancing communication in surgery through team training interventions: a systematic literature review. AORN Journal, 92(6), 642. doi:10.1016/j.aorn.2010.02.015

Green, L.W, & Kreuter, M.W., (2005). *Health program planning: An educational and ecological approach.* New York. McGraw-Hill Companies Inc.

Guise, J., & Lowe, N. (2006). Do you speak SBAR?... Framework for effective briefing of oncoming team members to rapidly get everyone on the same page. *JOGNN:*

Journal of Obstetric, Gynecologic & Neonatal Nursing, 35(3), 313-314. Retrieved from CINAHL Plus with Full Text database.

Haynes, A., Weiser, T., Berry, W., Lipsitz, S., Breizat, A., Dellinger, E., & ... 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. doi:10.1056/NEJMsa0810119

Healthcare Risk Management, (2009). Patient handoffs can always be improved. 31(9), 105-107. Retrieved from CINAHL Plus with Full Text database.

National push under way for surgical safety checklist. (2009). Same-Day Surgery, 33(6), 61-62. Retrieved from EBSCOhost.

Nursing, (2006). Safety guidelines: JCAHO sets standards for patient handoffs. 36(3), 35. Retrieved from CINAHL Plus with Full Text database.

OR Manager, (2009). In Survey, About Half of ORs Are Using The WHO Checklist., 25(9), 1-8. Retrieved fromc CINAHL Plus with Full Text database.

OR Manager, (2006). Tips for introducing SBAR in the OR. 22(4), 12. Retrieved fromc CINAHL Plus with Full Text database.

Pre-surgery checklist aims to promote safety. (2009). Nursing Standard, 23(20), 9. Retrieved from EBSCOhost.

Robeznieks, A. (2009). Check, please: WHO pre-surgical checklist boon to safety: Study. *Modern Healthcare*, 39(4), 20. Retrieved from EBSCOhost.

Simpson, K., James, D., & Knox, G. (2006). Nurse-Physician Communication During Labor and Birth: Implications for Patient Safety. JOGNN: Journal of Obstetric, Gynecologic & Neonatal Nursing, 35(4), 547-556. doi:10.1111/j.1552-6909.2006.00075.x.

Terry, K. (2009). Push for hospitals to use surgical checklist getting results. H&HN: Hospitals & Health Networks, 83(7), 12. Retrieved from EBSCOhost.

Walker, I.A., Newton, M., & Bosenberg, A.T. (2011). Improving Surgical Safety Globally: Pulse Oximetry and the WHO Guidelines for Safe Surgery. Pediatric Anesthesia, 1-5.

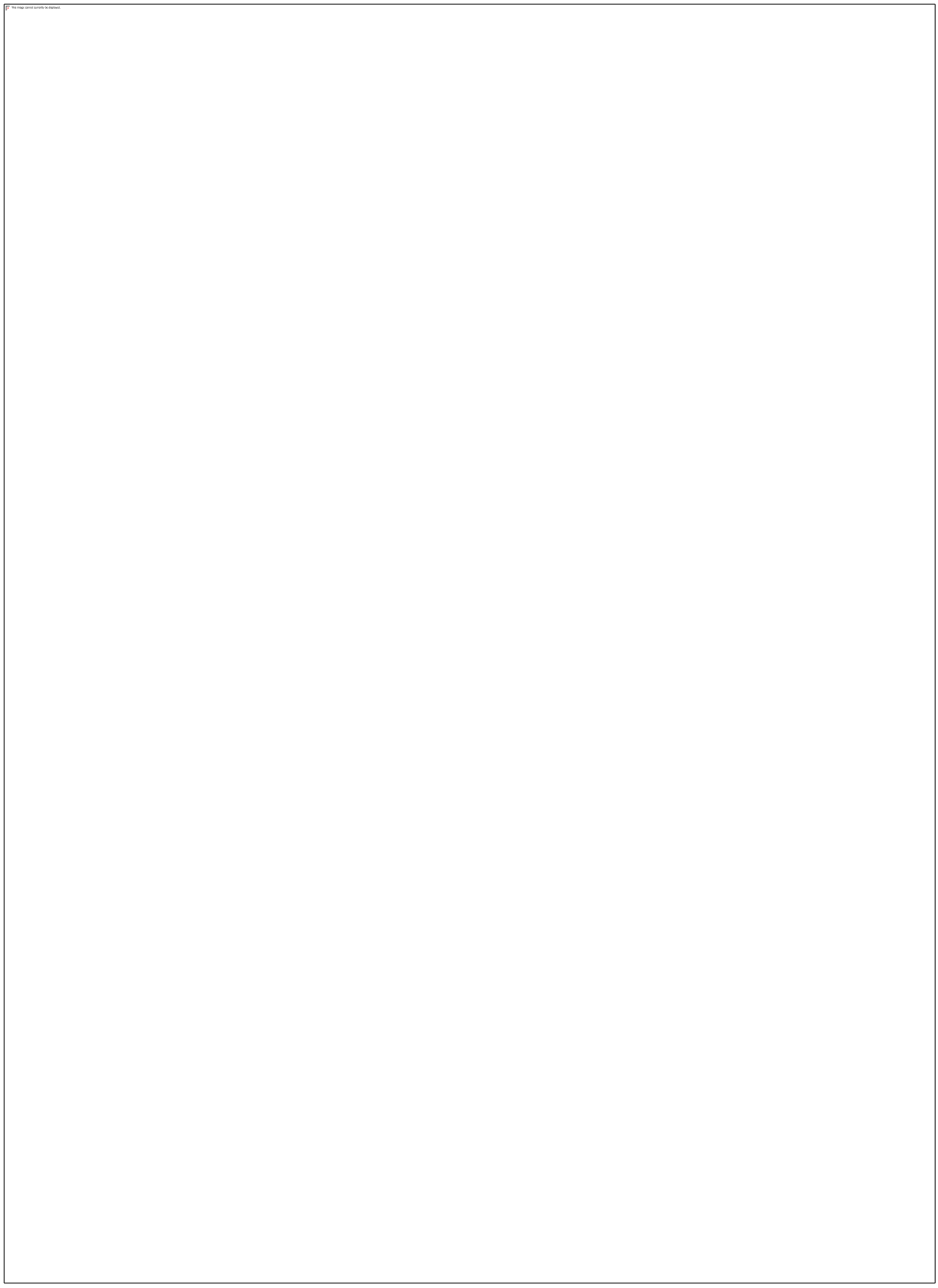
WHO, 2010. http://www.who.int/patientsafety/safesurgery/ss_checklist/en/index.html

APPENDIX A

WHO SURGICAL SAFETY CHECKLIST

APPENDIX B

PRE-OPERATIVE CHECKLIST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APPENDIX C

SITUATION BACKGROUND ASSESSMENT RECOMMENDATION FORM

APPENDIX D

INTERVIEW QUESTIONNAIRE

Protocol Title: Nursing Implications of the Implementation of an WHO Surgical Safety Checklist at a Suburban Hospital

Principal Investigator: Gracjan Szulc, BA
210 E. Park Ave.
Elmhurst IL. 60126
630-336-6075

Emergency Contact: Gracjan Szulc, BA
630-336-6075
630-941-4535

Purpose

The purpose of this study is to gain feedback from nurses working in the operating rooms with the Surgical Safety Checklist. By participating in this study you are providing information to the author, so that he has a better understanding, where to make improvements and how to create an educational in-service. These goals will be completed based on your responses and responses of other nurses participating in the study.

Procedure

The interview will last about 20-45 minutes. The length of the session depends on the extent of your responses. The interviewer will be taking hand written notes, while the participant answers his or her questions. All responses to questions will be confidential. The participant has the right to stop the interview at any time.

Rights & Confidentiality

All responses to questions will be confidential. The participant has the right to stop the interview at any time. The results of this study may be published in scientific literature or presented at professional meetings using grouped data only. All information will kept confidential through the use of number codes. My data will not be linked with personally identifiable information.

Questions regarding study procedures may be directed to Gracjan Szulc, (630-336-6075), the principal investigator, or the study advisor Dr. Gary Gilmore, Department of Community Health Education/Public Health, UW-L (608) 785-8163). Questions regarding the protection of human subjects may be addressed to the UW-La Crosse Institutional Review Board for the Protection of Human Subjects, (608-785-8124 or irb@uwlax.edu).

Participant_____ Date_____
Researcher_____ Date_____

Key Informant Questions Regarding Surgical Unit Communications

Date: _____

Interview Questions

Background:

1. Sex : M / F

2. Work Shift: 1 / 2 / 3

3. Years worked as a nurse: _____yrs

4. Years worked in a surgical setting: _____yrs

5. Are you familiar with any past studies where researchers attempted to identify key areas of improvement within the surgical setting? If so, please identify some areas?

6. Based on past experience as a nurse, are there areas within the surgical setting, where you would like to see an improvement?

Questions Based Research Questions

The following questions are listed according to the research questions they pertained to.

How does utilization of the Surgical Safety Checklist affect quality of care provided to the patient to the patient?

7. Where do you observe a breakdown in communication, while at work?

8. What have you observed regarding utilization of the Surgical Safety Checklist, with regards to the quality of care provided?

9. What have you observed regarding utilization of any communication tools, with regards to the quality of care provided?

To what degree is it reasonable/advisable to have a Surgical Safety Checklist on top of a S.B.A.R. and pre-operative checklist already being utilized?

10. Are there any specific surgical cases, where there is no need for the Surgical Safety Checklist? Explain.

11. Do you think that having a S.B.A.R. and pre-operative checklist is satisfactory in your work setting? Why or why not?

12. Are there portions of the Surgical Safety Checklist, which should be completed at different times, than they are now?

To what degree can the Surgical Safety Checklist be incorporated into a nurse's daily routine in the operating room?

13. What were you told about the W.H.O. Surgical Safety Checklist before it was put into trial?

14. Was there any educational material given to you prior to the checklist being put into trial?

What elements need to be in place to facilitate the incorporation of the new procedure with the standard operating procedure.

15. How would you improve the Surgical Safety Checklist, and why?

16. Do you complete the Surgical Safety Checklist in an appropriate fashion, or do just check the box, Explain?

17. When utilizing the Surgical Safety Checklist during a surgical case, are all parties involved cooperative w/ the Surgical Safety Checklist?

18. What parties are least cooperative with the utilization of the Surgical Safety Checklist?

APPENDIX E

PILOT STUDY QUESTIONNAIRE

Pilot Study Questions Regarding Surgical Unit Communications

Date: _____

INTRODUCTION

Thank for agreeing to participate in this pilot study. Your responses to the questions are very valuable. Please remember that this interview should be like a conversation.

PURPOSE

The purpose of this study is to gain feedback from nurses working in the operating rooms with the Surgical Safety Checklist. In addition the purpose of this pilot study is to gain feedback from the participant. By participating in this study you are providing information to the author, so that he has a better understanding, of how to improve on the study. These goals will be completed based on your responses and responses of other nurses participating in the pilot study.

PROCEDURE

The interview will last about 20-45 minutes. The length of the session depends on the extent of the responses by the participant. The interviewer will be taking hand written notes, while the participant answers his or her questions. All responses to questions will be confidential. The participant has the right to stop the interview at any time.

AFTER YOU HAVE READ THE INFORMATION ABOVE, PLEASE INITIAL BELOW. BY INITIALING BELOW YOU GIVE CONSENT TO THE AUTHOR TO UTILIZE YOUR RESPONSES FOR THE PUPOSE OF THIS STUDY.

INITIALS :_____

DATE:_____

Interview Questions

Was anything unclear in the questions?

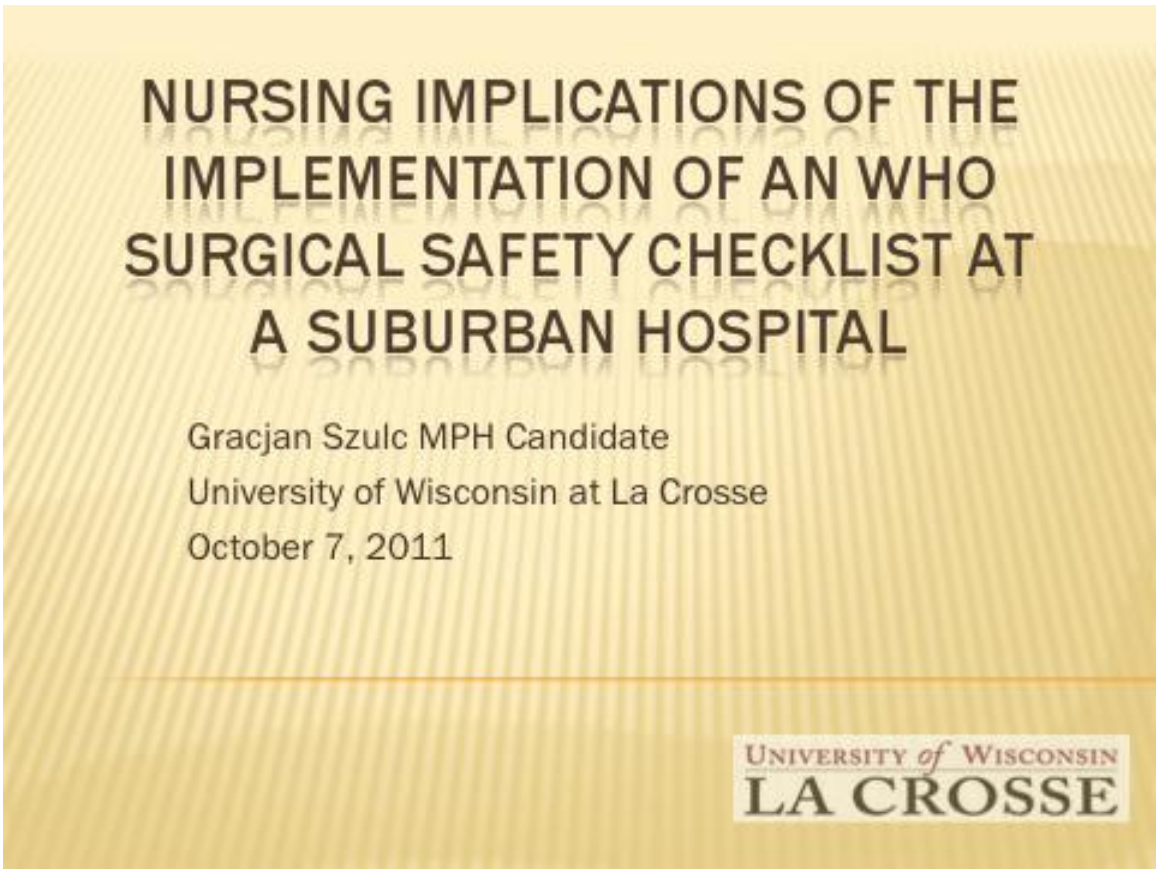
Should any other questions be asked? Why?

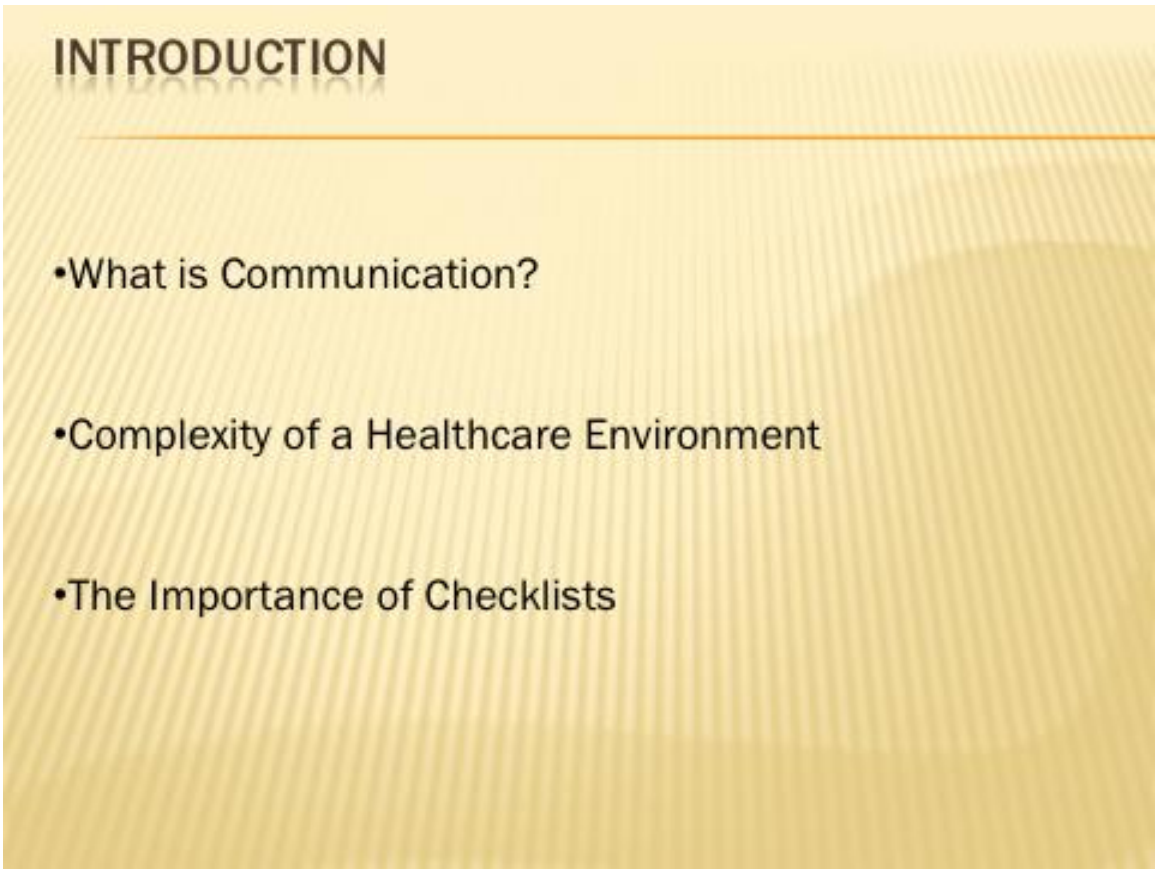
Should any questions be removed? Why?

Do you have any suggestions for the overall interview process that was used?

APPENDIX F

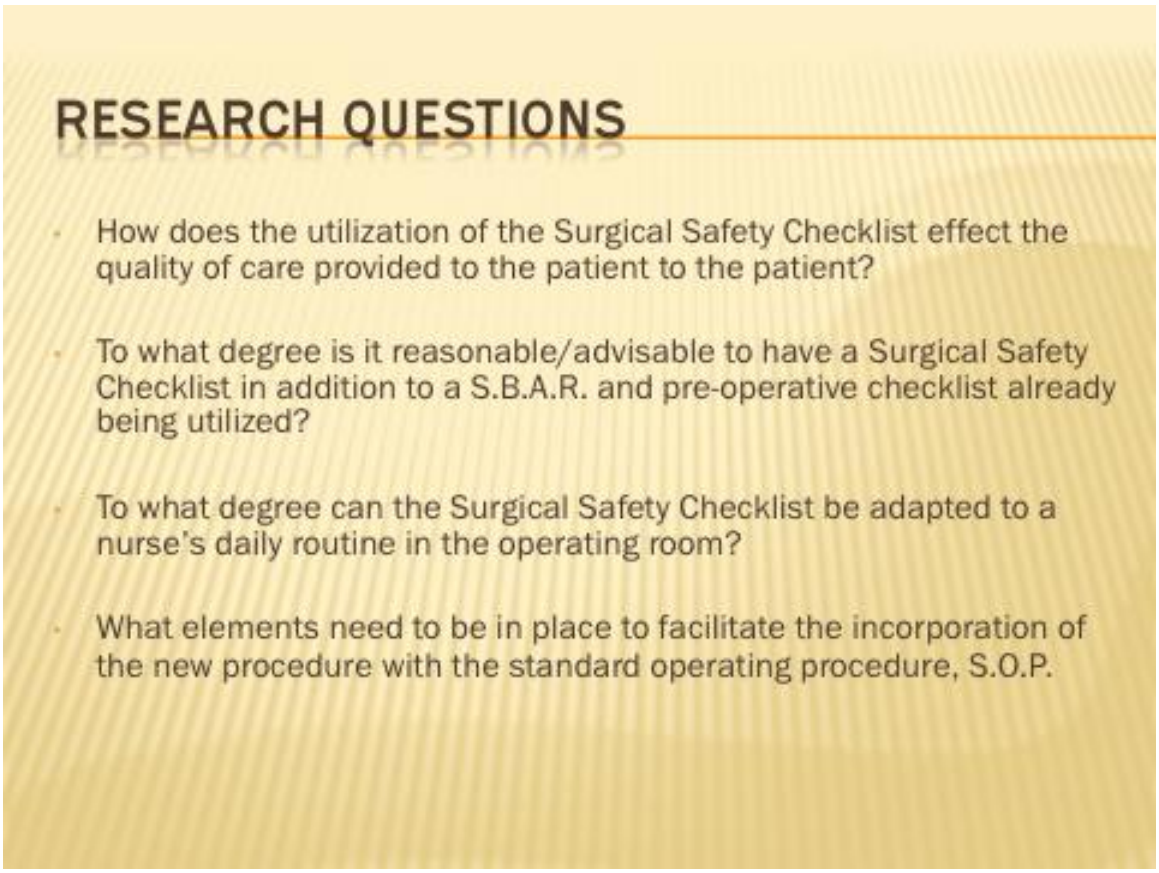
EDUCATIONAL IN-SERVICE PRESENTATION


NURSING IMPLICATIONS OF THE IMPLEMENTATION OF AN WHO SURGICAL SAFETY CHECKLIST AT A SUBURBAN HOSPITAL
Gracjan Szulc MPH Candidate
University of Wisconsin at La Crosse
October 7, 2011
UNIVERSITY of WISCONSIN
LA CROSSE


INTRODUCTION
•What is Communication?
•Complexity of a Healthcare Environment
•The Importance of Checklists

PURPOSE OF THE STUDY

- understand how well the WHO surgical safety checklist was able to adapt to an environment
- understand how nurses were able to adapt to change
- understand how incorporation of an additional communication tool would affect quality of care for the patient


RESEARCH QUESTIONS
How does the utilization of the Surgical Safety Checklist effect the quality of care provided to the patient to the patient?
To what degree is it reasonable/advisable to have a Surgical Safety Checklist in addition to a S.B.A.R. and pre-operative checklist already being utilized?
To what degree can the Surgical Safety Checklist be adapted to a nurse's daily routine in the operating room?
What elements need to be in place to facilitate the incorporation of the new procedure with the standard operating procedure, S.O.P.

METHODOLOGY

- Setting: Surgical Services Unit
- Respondents: Day-shift Registered Nurses
- Voluntary Questionnaire

RESULTS

- N=10
- Range of Number of years worked as a nurse: 4-27
- Range of Number of years worked in surgical setting: 4-22

RESULTS CONT'D

- 70% (*n*=7) stated communication needed the most improvement
- Biggest breakdown in communication during patient handoffs and staff relief
- 60% (*n*=6) stated that the WHO checklist improved the quality of care
- 60% (*n*=6) stated that they complete the checklist in an appropriate fashion


RECOMMENDATIONS
Maximizing communication at all times
Increased education
Increased teamwork and collaboration

APPENDIX G

EDUCATIONAL IN-SERVICE QUESTIONNAIRE

PRESENTATION SURVERY SURVEY

Author/Presenter: Gracjan Szulc, MPH Candidate – University of Wisconsin at La Crosse
Date:_____

For each item identified below, circle the number
to the right that best fits your judgment of its quality.
Use the scale above to select the quality number.

Questions	**Scale**				
	Weak		**Neutral**		**Strong**
1. How important do you consider communication in the surgery?	1	2	3	4	5
2. How important do you consider teamwork in the surgery?	1	2	3	4	5
3. Do you find communication tools to be beneficial in surgery?	1	2	3	4	5
4. Did you find that the research was appropriate?	1	2	3	4	5
5. Did you find the presentation beneficial for yourself?	1	2	3	4	5
6. Did you learn anything from the presentation?	1	2	3	4	5
7. Did you think the author was clear when presenting?	1	2	3	4	5
In the Following Blank you may add a question of your own.					
	1	2	3	4	5

APPENDIX H

IRB APPROVAL FORM

UNIVERSITY of WISCONSIN
LA CROSSE

To: Gracjan Szulc

From: Bart Van Voorhis, Coordinator
Institutional Review Board (IRB) for the
Protection of Human Subjects

Date: May 23, 2011

Re: **RESEARCH PROTOCOL SUBMITTED TO IRB**

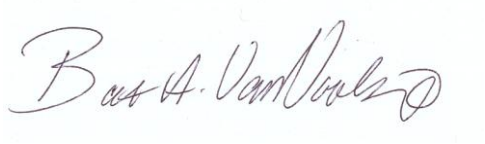
The IRB Committee has reviewed your proposed research project: ***"Nursing Implications of the Implementation of a WHO Surgical Safety Checklist at a Suburban Hospital"***

Because your research protocol will place human subjects at minimal risk, it **has been approved under the expedited review category in accordance with 45CFR46, 46.110(a)(b).**

Since you are not seeking federal funding for this research, the review process is complete and you may proceed with your project. Remember to provide participants a copy of the consent form and to keep a copy for your records. Consent documentation and IRB records should be retained for at least 3 years after completion of the project.

Please note that this approval is for a one year period only, from the date of this letter**. If the project continues for more than 12 months, an IRB renewal must be requested using Attachment C on the IRB website. Please submit Attachment C one month prior to the date on this letter. Continued data collection beyond this date will place your project in non-compliance. The IRB is required to report instances of noncompliance to the Federal Office of Human Research Protections.**

Good luck with your project!



cc: IRB File
Gary Gilmore, Faculty Advisor