

The Development of a Set of Best Practice Guidelines for a Charitable Ophthalmology

Organization with Considerations for Successful Implementation

by

Alison Parker, RN

B.N., University of Calgary, 2003

B.Sc., University of Calgary, 1994

A Project Submitted in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF NURSING
in the Faculty of Human and Social Development

© Alison Parker, 2010

University of Victoria

All rights reserved. This project may not be reproduced in whole or in part, by photocopy or other means, without the permission of the author.

Supervisory Committee

The Development of a Set of Best Practice Guidelines for a Charitable Ophthalmology
Organization with Considerations for Successful Implementation

by

Alison Parker

B.N., University of Calgary, 2003

B.Sc., University of Calgary, 1994

Supervisory Committee

Dr. Gweneth Doane, Supervisor
(Faculty of Graduate Studies / School of Nursing)

Dr. Joan MacNeil
(School of Nursing)

Abstract

Supervisory Committee

Dr. Gweneth Doane, Supervisor
(Faculty of Graduate Studies / School of Nursing)

Dr. Joan MacNeil
(School of Nursing)

The purpose of this project was to develop a set of surgical suite best practice guidelines, with consideration given to successful implementation of those guidelines within the population of interest. This project was undertaken in response to a formal request from a third world charitable ophthalmology organization. Operating room standards from Canada and the United States of America were consulted for guidance through the development stage. The author investigated practice guidelines, change theory, barriers and facilitators to change and cultural competency. The findings brought to light the need to conduct thorough background research and preparation when considering the implementation of a new practice.

Table of Contents

Table of Contents	iv
List of Figures.....	vii
Introduction.....	1
Arriving at the Problem.....	3
Statement of the Problem	5
Part 1 – Development of a Set of Standards	5
The Foundational Background	5
Literature Review – Standards	7
Best Practice Guidelines - Practice Recommendations.....	9
Part II – Engagement and Implementation Process	13
Engaging the Nurses.....	155
Change Theory – Literature Search	16
Lewin’s Field Theory in Change.....	16
Barriers and Facilitators to Change	21
Facilitators to Change.....	25
Culture Considerations	28
Culture Care Theory.....	31
Cultural Competency.....	32
Bringing it all Together	34
Conclusion	36
References	38
Appendix A: Best Practice Guidelines	41
Best Practice Guidelines – Universal Precautions	41
Practice Recommendation 1, Routine Hand Washing	41

Practice Recommendation 2, Personal Protection.....	42
Practice Recommendation 3, Occupational Health Exposures	43
Practice Recommendation 4, Sharp Instruments.....	43
Practice Recommendation 5, Transmission Based Precautions	44
Best Practice Guidelines – Environmental Cleaning and Sanitation	45
Practice Recommendation 6, Preliminary Cleaning.....	46
Practice Recommendation 7, Intraoperative Cleaning	46
Practice Recommendation 8, End of Procedure Cleaning.....	46
Practice Recommendation 9, Terminal Cleaning.....	47
Practice Recommendation 10, Weekly/Monthly Cleaning	47
Practice Recommendation 11, Supplies and Equipment Storage.....	47
Best Practice Guidelines – Traffic Control	48
Practice Recommendation 12, Unrestricted Areas	48
Practice Recommendation 13, Semi-restricted Areas	48
Practice Recommendation 14, Restricted Areas	49
Practice Recommendation 15, Visitors	49
Best Practice Guidelines – Dress Codes	50
Practice Recommendation 16, Surgical Attire: Semi-restricted and Restricted Areas, Staff and Visitors.....	50
Practice Recommendation 17, Surgical Attire: Patients.....	51
Practice Recommendation 18, Jewelry and Nails	52
Practice Recommendation 19, Laundering of Surgical Attire.....	52
Practice Recommendation 20, Policies and Procedures for Surgical Attire	53
Best Practice Guidelines – Scrubbing, Gowning and Gloving	53
Practice Recommendation 21, The Surgical Scrub	53

Practice Recommendation 22, Self-Gowning	54
Practice Recommendation 23, Self-Gloving	55
Practice Recommendation 24, Gowning and Gloving of the Surgical Team.....	55
Practice Recommendation 25, Removal of Soiled Gowns and Gloves.....	56
Best Practice Guidelines – Aseptic Technique	56
Practice Recommendation 26, Eight Principles of Surgical Asepsis	57
Best Practice Guidelines – Instrument Management and Re-Processing	59
Practice Recommendation 27, Intra-operative Instrument Management	59
Practice Recommendation 28, Re-processing	60
Practice Recommendation 29, Decontamination and Cleaning	60
Practice Recommendation 30, Sterilization and Disinfection.....	61
Best Practice Guidelines – Patient Skin Preparation.....	63
Practice Recommendation 31, Skin Preparation Agent	63
Practice Recommendation 32, Skin Preparation Guidelines.....	63
Best Practice Guidelines – Sterile Draping.....	64
Practice Recommendation 33, Drape Material.....	64
Practice Recommendation 34, Draping Technique	64
Appendix B: Best Practice Guidelines Bibliography.....	66

List of Figures

Figure 1.....20

Introduction

“Every five seconds, one person in our world goes blind. A child goes blind every minute” (Operation Eyesight Universal, 2008). Upon reading this statistic, a variety of questions come to mind, including: Is this problem concentrated in one part of the world? What is the main reason for this statistic? Are there any organizations or initiatives that are working to eradicate this problem? Most importantly, is there anything that I as a nurse can do to help eliminate blindness?

I learned of this statistic as a result of a life-changing trip that I took in 2008. My mother had been involved with the non-profit sector in Alberta for over 20 years; I was fortunate to be introduced to one of her good friends, Pat Ferguson, the President and CEO of Operation Eyesight Universal (OEU). I had reached a point in my nursing career where I needed a change of direction and revitalization so, in early 2008, I took a leave of absence from the Calgary Health Region (CHR) and accompanied Ms. Ferguson on a trip to India with OEU. As a result of my ophthalmic operating room experience, a nursing exchange was arranged with the L.V. Prasad Eye Institute (LVPEI) in Hyderabad, India, an affiliate of OEU. I was very well received at LVPEI and the experience was beneficial for both parties. I also had the opportunity to visit a rural eye hospital and to see the care and services that were offered; we took part in a ground breaking ceremony for a new rural eye care facility, on land donated to OEU by a farmer and former patient of OEU. OEU has partnered with an Indian pediatrician, Dr. Gopa Katari, to develop the Child Eye Care Charitable Trust. Together they have identified that blindness in developing countries will only be prevented through grassroots community development in the poorest regions, including both the urban and rural setting. I had the opportunity to tour two slums in Mumbai and to see this community development in action. We saw well baby clinics,

classes in oral hygiene, women's skill development, computer training and, of course, eye care including Vitamin A clinics for children: the goal is to achieve good eye care through the promotion of wellness on all levels. I saw happy, healthy communities working together to improve living conditions.

OEU is a charitable foundation headquartered in Calgary, Alberta: their mission is "to eliminate avoidable blindness" (OEU, 2009) and their vision statement is "for all the world to see" (OEU, 2009). OEU works primarily within India and Sub-Saharan Africa, including Zambia, Rwanda, Ghana, and Kenya. It was established in Calgary in 1963 by Dr. Ben Gullison as a small community organization with the goal of improving eye care in developing countries. OEU was originally partnered with the Lion's Foundation, who is now most notably known for their international eyeglass donation projects. Since their inception, OEU has grown into a world leader in charitable eye care and community development; many of their associates have earned international recognition for their charitable work in eyesight restoration, prevention, and community development.

The OEU website quickly paints the picture of the importance of combating global blindness, recognizing that if current trends continue, 75 million people will be blind by the year 2020 (OEU, 2008). They further identify that 90% of the world's blind people live in developing countries. Prevention within the developing country is the key to decreasing this percentage. "Blind people in developing countries cope with fear, loss of independence and question self-worth" (OEU, 2008), in part as a result of the need to maintain an income for themselves and their families. Unlike Canada where there are social programs in place to support the blind individual and help them to maintain their independence, such as the Canadian National Institute for the Blind, the blind person in a developing country often becomes a burden for the entire

community. In Mumbai, many family members seemed to walk arm in arm: This was often not the closeness of the family but the blind individual's need for support and guidance. OEU is developing programs to alleviate this pressure and to fight blindness through prevention and restoration.

Arriving at the Problem

Through a series of conversations with various OEU staff, both medical and non-medical, a need was identified: The OEU surgical centers were not operating with any formalized standards or guidelines similar to those in developed countries. Ms. Ferguson, although not a medical professional, noted practices in the surgical suites that I perceived to be well below what would be considered acceptable practices within the developed world. If a non-medical individual was questioning practice technique, there most likely was room for improvement. Upon my return to Canada, I had the opportunity to meet with Dr. Boateng Wiafe, Regional Director for OEU for Sub-Saharan Africa, and to discuss my concerns.

Many of the physicians who work with OEU are familiar with the advanced training and rigid operating room standards, as well as the role of the operating room nurse, as known in the developed world (Boateng Wiafe, Personal Communication, 2008). Correspondence with OEU staff has revealed that the surgeons manage the running of the surgical suites and continue to expect a high turnover in patient volume. As stated earlier, 90% of the world's blind population lives in developing countries; 80% of those people are suffering from preventable conditions such as cataracts (Vision 2020, 2009). This leads to a drastically higher patient volume than that which is experienced in developed countries. It is my experience that a rapid increase in patient turnover can lead to the sacrifice of quality patient care, leading to an increase in intra and post-operative complications, most notably higher infection rates. The attention to detail necessary for

good aseptic technique is one of the first areas that is compromised when a hasty turnover is demanded on a regular basis. Nurses realize that they have to cut corners somewhere in order to meet the turnover demand: Unfortunately, the smallest omission in practice technique within the operating room can have drastic consequences for the patient. Neither OEU nor most of Sub-Saharan Africa keep records to monitor infection rates or post-operative complications within their facilities (Boateng Wiafe, Personal Communication, 2008). In addition, my understanding is that the nurses do not have the same responsibility or training compared to those working within Canadian facilities. In Canada, the nurses manage the surgical suite: this enables the nurse to be the ultimate patient advocate. Although this new responsibility may not be within the current scope of an OEU ophthalmic nurse's role, it could certainly be included: All nurses manage patient care through multi-tasking and critical thinking, the same skills that are necessary to oversee the surgical suite.

Through a series of conversations, it was determined that the OEU surgical centers could benefit from a set of standards addressing operating room technique. A central issue appears to be the lack of any formal accountability documents to bind the surgical team to good practice (Pat Ferguson. Personal Communication, 2009). The idea of introducing standards is felt to be a necessary and effective way to improve quality of care and surgical outcomes through evidence based practice within OEU surgical suites. While in India, at the LVPEI, I asked about a formal document that outlined practice standards within their facilities: my host advised me that nothing formal was available. She further stated that all of the information regarding technique and guidelines was taught during the ophthalmic nurse's assistant education course. She explained that the nurses knew the requirements and would put those standards into their practice. As I have yet to connect with the key players within the OEU facilities, I have been unable to obtain

the training curriculum for their organization. Although I am aware that the OEU facilities do not have a formal set of standards, I strongly believe that as I get to know the nurses and learn about their practice, I will learn that they already have an unofficial set of standards. Although I will have produced an initial document, I expect that my role will be to guide the nurses in adapting this document based on their needs and the operating room culture within which they operate. My thoughts are that when I present the initial document to Ms. Ruth Wiafe, a nurse leader with OEU, it will not contain anything that is new to her. These standards of practice, similar to universal precautions, transcend borders and are applicable in any perioperative setting.

Statement of the Problem

The aim of this Master's project is to develop an initial set of operating room best practice guidelines for Operation Eyesight Universal's India and Sub-Saharan Africa Ophthalmology Suites. I will further engage the surgical suite nurses in modifying the guidelines, based on their needs and taking into account considerations for a successful implementation.

As I started to develop the project, it quickly became apparent that the project encompassed three parts: the theory around the development of a set of standards; considerations for a successful implementation; and the actual set of standards.

Part 1 – Development of a Set of Standards

The Foundational Background

As I set out to write the standards, I explored the best way in which to succeed. My concerns centered around the very limited experience that I had in taking on such an important task. I wondered where I would begin and who I could draw upon for guidance and support. Although I am certified through the Canadian Nurses Association (CNA) as a perioperative

nurse and have excellent practical experience within the field, I hardly feel like a subject matter expert. My confidence in tackling this project developed through my graduate education in advanced practice nursing. The CNA has published a lengthy and exhaustive position paper that includes several characteristics and competencies of the advanced practice nurse. Some of the characteristics include demonstrating leadership, initiating change for individuals and organizations, the use of in-depth nursing knowledge and clinical expertise, dissemination of evidence based knowledge, initiating programs to meet client needs and improve quality of care, and advanced judgment and decision making skills (CNA, 2008). The CNA competencies that I have noted above are in keeping with each of the different parts of the project that I will outline as the process is described below. Although I may not feel like an expert, I have spent the last four years learning how to incorporate the advanced practice nursing characteristics into my practice and have thereby built a great foundation on which to build this project. In addition, I have completed two practical experiences with two advanced practice nurses and learned from each how to bring the CNA guidelines into both my everyday clinical practice and my role as a program developer.

My many discussions with Dr. Wiafe and Ms. Ferguson regarding guiding better care within their facilities kept coming back to the developed world standards. Dr. Wiafe is very familiar with perioperative care in the developed world and how perioperative standards guide care, leading to favourable patient outcomes. In Canada, the operating room standards are described in a binding document, which is overseen by a specialized group of perioperative experts and endorsed by the Canadian Standards Association. The goal with OEU is to improve surgical eye care outcomes: It is believed that the first step toward that goal will be in providing an evidence based document that guides practice in their facilities. Initially, I believed this to be

a relatively straightforward task, one that would include reviewing the latest evidence related to the practice techniques that I identified as appropriate for the document. However, as I reflected on the project during the proposal stage, I quickly realized that all areas needed to be considered. The first of these considerations was the type of document that I would actually be producing: would this be a set of standards similar to those in Canada or would I be writing a policy manual or set of best practice guidelines (BPGs)? I needed to either learn the difference between these or determine that they were synonymous.

Literature Review – Standards

In order to answer this question, I turned to the literature to learn about standards, policies and best practice guidelines. I conducted an online literature search through the Cumulative Index to Nursing and Allied Health Literature (CINAHL) using the terms “practice guidelines,” “policy,” and “standards.” I was successful in finding literature that discussed the differences and similarities between the terms. I found that a policy is an organizationally driven practice standard: The ITP Nelson Canadian Dictionary (1998) defines a policy as “A plan or course of action, as of a government, political party, or business, intended to influence and determine decisions, actions, and other matters” (p.1062). A policy is further noted as being prudent or advantageous. In my most recent perioperative position, the hospital had a set of policies that were developed by professional practice leaders and that clearly outlined the requirements for select practice events. For example, there is a policy regarding the intra-operative collection of bone and ligament for harvest. The policy is exhaustive and includes several criteria and checklists that must be met in order to consider the specimen for harvest. The nursing staff is obligated to follow the policy without exception. This policy is in place to protect the patients from adverse events as a result of being a bone donor recipient. Although I value the

idea of a policy, I believe that writing the standards as a set of policies would be too rigid and limiting for the nurses as they put them into practice. I feel that the nurses will need to be able to use their clinical judgment to adapt the particular standard to match the situation.

I also found that the terms “best practice guidelines,” “clinical practice guidelines,” “clinical pathways,” “protocol based practice” and “best practice statements” were used interchangeably within the literature. Sinuff, Cook, Giacomini, Heyland, and Dodek (2007) outline that guidelines are simply recommendations for practice. Beyea (2004) noted that a guideline is practical in nature and is oriented to a specific clinical condition. I further learned that guidelines are the foundation behind organizational policies and procedures (St. Pierre, Davies, Edwards, & Griffin, 2007). Building on this concept, I learned that best practice guidelines (BPG) are the foundation behind a policy; they are developed as a result of translating knowledge and evidence into the practice arena. I learned that “Protocol-based care is a mechanism for facilitating the standardisation of practice based on best available evidence” (Rycroft – Malone, Fontenla, Seers, & Bick, 2009, p. 1491). BPGs close the gap between research and practice (Ploeg, Davies, Edwards, Gifford, & Miller, 2007) Much of the literature regarding BPGs note that they are designed as a guideline for care, allowing the clinician to apply critical judgement based on specific care situations (Rycroft – Malone et al, 2009; Ring, Malcom, Coull, Murphy-Black, & Watterson, 2005). I chose to use the term BPG to emphasize that the document is a set of guidelines for practice that can and should be adapted based upon the unique circumstances of each facility. I also chose to include the word “best” to emphasize the importance of the guidelines within the clinical arena. Although they are similar to standards, I feel the need to leave room for flexibility due to this unique practice setting for rural eye care. The intended goal for the OEU facilities BPGs is in line with this thinking: My goal is to develop

a set of guidelines that can be adapted to the uniqueness of the clinical situations. As a result, I am building on the local and international movement that clinical decisions be guided by recent and credible evidence (St. Pierre et al., 2007) as delineated in the Operating Room Nurses Association of Canada (ORNAC) Perioperative Standards (ORNAC, 2008). “Guidelines support effective practice, enhance the appropriateness and consistency of care, inform decision-making, provide benchmarks against which care can be measured, encourage professional accountability and limit clinical negligence and untoward incidents” (Ring et al., 2005, p. 1053). I am striving to meet each of these criteria with the OEU BPGs. Eventually, these guidelines may evolve into OEU policies, but that is well beyond the scope of this project. Through my experiences in India, I have realized that care in developing countries often requires room for adaptation. Financial considerations are an issue and the “make do” criterion is often present; these are not always a factor in the developed world. In my years of perioperative practice, I cannot recall a time when we needed to make do. This is consistent with the literature in that several sources of information guide clinical decision making in addition to BPGs (McCaughan, Thompson, Cullen, Sheldon, & Thompson 2002; McCaughan, Thompson, Cullen, Sheldon, & Raynor, 2005; Bucknall 2003; Manias, Bucknall, & Botti, 2004; Hancock & Easen as cited in Rycroft – Malone et al., 2009), and that the decision making process can be quite complex (Rycroft-Malone et al.). My expectation is that the BPGs will become a part of the OEU perioperative culture and that the quality of care will improve.

Best Practice Guidelines – Practice Recommendations

As I had now determined that I would develop a set of BPGs, my next course of action was to draw upon the existing documents to guide the project. I turned to my own national organization, ORNAC, to begin my search and to learn what other countries had developed

within this field. Operating room standards drive the quality of care within the majority of developed countries, including Canada, the United States, Australia, New Zealand, Korea, South Africa, the United Kingdom and the European Federation (International Federation of Perioperative Nurses (IFPN) (2008). Many of these countries have their own professional associations to continuously monitor and review standards in order to maintain the highest integrity of aseptic and practice technique within the surgical suite. Within Canada, the standards are overseen and managed by ORNAC in conjunction with the Canadian Standards Association (CSA). Canada has further validated the field of perioperative nursing as a specialized practice area through a certification process with the CNA. Work within the operating room is highly demanding and technical and there is never room for error. There is very little wiggle room between sterility and contamination. The unofficial perioperative motto appears to be “when in doubt, throw it out”.

I researched the standards documents from many of the countries associated with the IFPN and found that the core tenets of the documents are very similar. Korea, Australia, Canada, the United Kingdom, and the United States have similar sets of standards, although they are referred to differently by each federation. Because of familiarity and ease of obtaining the complete documents, I decided to use the Canadian and American standards as my guides.

A review of both the Canadian and American operating room standards led to many questions, the foremost being where to begin with this project. I have been certified within Canada, so I am familiar with the Canadian document. Both documents are managed by their respective operating room nurses' associations and they therefore each have a strong influence on the nurse and her role. When I first learned of these standards, during my perioperative nursing course, I was somewhat surprised to find such a focus on the nurse's role and

responsibility within the operating room. I expected to find a highly technical document outlining sterilization temperatures and sponge count procedures: Although there are several technical sections, much of the core of the document deals with the competencies, roles, and responsibilities of the perioperative nurse. The ORNAC standards outline a vision, a mission statement, and practice guidelines for *all* aspects of the perioperative experience. It would be a great accomplishment to develop a similar document for OEU, placing so much more emphasis on the nursing role within the operating room. However, an old adage comes to mind: one must learn to walk before one can learn to run. It is my belief that the development of a mission and vision statement must be driven by the OEU nurses themselves, and that it must be based on their goals and beliefs regarding care. Therefore, I am concentrating my efforts on providing an initial document to address the technical aspects of perioperative nursing. I fully expect that the document will be fluid and modified and further developed by the nurses in question; the Canadian standards are constantly being updated as a result of changing evidence and technology as the field advances.

It was through this process that I drew upon my understanding of the CNA competencies: The dissemination of evidence based knowledge; the use of in-depth nursing knowledge and clinical expertise; and, advanced judgement and decision-making skills. Each of these competencies guided me to consider all of the variables that are important in the surgical suite and how to logically incorporate those within an initial document for a charitable organization.

After a thorough examination of both documents, I determined that the initial set of BPGs would include practice recommendations in the following nine areas. The completed BPGs can be found in Appendix A.

- 1) Universal Precautions

- a) Routine Hand Washing
 - b) Personal Protection
 - c) Occupational Health Exposures
 - d) Sharp Instruments
 - e) Transmission Based Precautions
- 2) Environmental Cleaning and Sanitation
- a) Preliminary Cleaning
 - b) Intra-operative Cleaning
 - c) End of Procedure Cleaning
 - d) Terminal Cleaning
 - e) Weekly/Monthly Cleaning
 - f) Supplies and Equipment Storage
- 3) Traffic Control
- a) Unrestricted Areas
 - b) Semi-restricted Areas
 - c) Restricted Areas
 - d) Visitors
- 4) Dress Code
- a) Surgical Attire - Semi-Restricted and Restricted Areas – Staff and Visitors
 - b) Surgical Attire – Patients
 - c) Jewelry and Nails
 - d) Laundering of Surgical Attire

- e) Policies and Procedures for Surgical Attire
- 5) Scrubbing, Gowning and Gloving
 - a) The Surgical Scrub
 - b) Self Gowning
 - c) Self Gloving
 - d) Gowning and Gloving the Surgical Team
 - e) Removal of Soiled Gowns and Gloves
- 6) Aseptic Technique
 - a) Eight Principles of Surgical Asepsis
- 7) Instrument Management and Processing
 - a) Intra-operative Instrument Management
 - b) Reprocessing
 - c) Decontamination and Cleaning
 - d) Sterilization and Disinfection
- 8) Skin Preparation
 - a) Skin Preparation Agent
 - b) Skin Preparation Guidelines
- 9) Draping
 - a) Drape Material
 - b) Draping Technique

Part II – Engagement and Implementation Process

As with any project, developing the idea is only part of the process. I believe that the main challenge will be the implementation of the BPGs. I have all too often seen a great idea

come into practice only to fail because the implementation plan had not been considered. My goal is that the BPGs not be shelved in the back corner of the facilities but rather become a “green” document that is in constant change as practice and technology advances.

I had a very valuable learning experience in India, one that led me to determine that I needed to learn about project implementation and change. While staying at the LVPEI, I was invited to review their current practice techniques and comment on any areas in which care or technique could be improved from a Canadian standards perspective. I spent four days working and watching within their surgical suites and was pleasantly surprised at the high level of care that they offered. I noted a few areas that could benefit from some minor adjustments; I met with the surgical suite director, a physician, and passed along my recommendations. He was receptive and open to my thoughts and advised me that they would work to incorporate my recommendations. Several months later, through email correspondence with their nurse educator, I asked about the recommendations and whether or not they had made a difference. I was surprised to learn that none had been implemented. Their nurse educator was kind enough to tell me directly that they would never implement the recommendations as they had not come from within. Although the recommendations were valuable in nature, the acceptance was doomed from the beginning as I did not have a true vested interest in the facility, nor was I a member of their operating room ‘family’. Keeping this in mind, what factors do I need to consider so that BPGs will provide OEU with a valuable and useful tool and ultimately improve patient care? How am I going to engage the nurses in the process? How will I have to consider the consequences of introducing a change? How will being part of a different culture affect the implementation?

Engaging the Nurses

As part of my job with the federal government of Canada, I have had the opportunity to train as a group facilitator. This has involved learning tools that can be used interactively within a group in order to guide the change process; part of the theory behind this training involved learning about the change process itself. Many of the considerations that I have learned with the federal government are proving to be applicable within this project. The facilitation process is congruent with the PEACE (Praxis, Empowerment, Awareness, Cooperation and Evolvement) process described by Chinn (2008). Chinn outlines that the outcome of the group process leads to “harmony, trust, and constructive solutions to problems” (2008, p. 9). Each of the five descriptors of the process engages the participants in fostering a positive relationship within the working group and developing a mutual commitment to the problem. The premise of PEACE is solution based rather than problem based. The Praxis descriptor relates to the deliberate actions related to the group values. The strength of Empowerment is found in the power of the collective group to draw strength from the desire to reach a common goal. Awareness is an attentiveness or responsiveness to the environment in which the group functions. Cooperation is an active and mutual devotion to the causes of the group. Evolvement is the commitment to change and the final transformation. My goal will be to use the PEACE principles in conjunction with the tools that I have developed in my facilitator practice to engage the nurses in adopting the BPGs. The PEACE framework has guided me toward the realization that I need to engage the nurses in the process, thereby transferring ownership of the BPGs to them; the BPG document is only a tool to be used in improving care within the facilities.

How will I engage the group, effect a successful implementation and transfer ownership of the document? Central to this challenge is the consideration of how change affects the group.

How do people deal with change and what advance preparations can be used to prepare the group and minimize the impact of change? The goal is to engage the nurse, transfer ownership of the guidelines, and effect a seamless introduction of the BPGs into practice. My next step was looking to the literature to learn about the change process.

Change Theory – Literature Search

I began by conducting a search on CINAHL using the term “change theories.” I had great success with this search and found that experts almost unanimously endorsed one theory: Kurt Lewin’s Field Theory in Change.

Lewin’s Field Theory in Change

Kurt Lewin was a psychologist who worked toward unifying psychology in a logical and precise manner through an analysis of causal relationships within the social sciences in and around the Second World War (Ziegler, 2005). The formal and current theory was compiled from his earlier works and published by scholars in 1951, after his death. Lewin determined that the process of change is the same regardless of whether it is a voluntary or directed process. He further stated that change has a domino effect in that altering one part of a system is going to have an effect, either negative or positive, on other parts of the system. Lewin describes the events around change in relation to organized channels and gatekeepers: in an organized system, events flow through natural gates. These gates are known to the players and are controlled by either rules and/or the gatekeepers. In Canada, the standards are the rules, the perioperative nurses are the gatekeepers and the natural gate is the logical flow of a surgical case from start to finish. In addition, power can be influenced over and above the gatekeepers that determine how and who might pass through the gates. Although the perioperative team places the priority and emphasis on the patient, the team is also bound to key stakeholders who oversee the organization

that provides this care. Surgery does not take place in a vacuum; therefore, outside influences also play a role within this sequence of events. This variation in process can lead to a natural change in how the logical flow progresses and, perhaps, the need for a change in the rules or a change in the gatekeepers. I will explore the change by learning from the nurses how their process works within their environment. I expect that this will be accomplished through participant observation. As a group, we will need to explore the outside influences and how they are going to affect the implementation of the BPGs. Some of the influences might include pressure from the organization (OEU), demands from physicians for a hastened turnover or a lack of physical resources. Managing the influences may result in an adjustment to the rules as outlined by Lewin, with the rules being the BPGs. Adapting the guidelines to meet the needs of the gatekeepers enhances patient care and has the potential to provide a positive work culture.

The premise of Lewin's change theory is developed in three phases, labelled; unfreezing, moving, and refreezing (Healy, Hegarty, Keating, Landers, Leopold, & O'Gorman, 2008). The first phase, unfreezing, involves setting aside the existing beliefs and behaviours (Carter, 2008) and increasing awareness of the status quo and the need to alter that behaviour or rule (Healy et al., 2008). Lewin (1947) originally wrote of the catharsis in the unfreezing phase, stating "To break open the shell of complacency and self-righteousness it is sometimes necessary to bring about deliberately an emotional stir-up" (p. 31). He relates this statement to the need to drive the change from within the group, a bottom-up approach as compared to a top-down approach to change. This is consistent with my experience in India. It was pointed out to me that as the recommendations did not come from within, they were not going to be incorporated. Building on the premise to drive the change from within, I will need to be assured that the changes come from the gatekeepers through the unfreezing stage. This will be accomplished as outlined above

through engaging the nurses in learning about how their organizational process works and then working with them to adapt and modify the original document to reflect that process. My expectation is that as this occurs, it will reflect that the changes are from within and help to position the implementation for success.

This takes us to the second phase of Lewin's theory, which is that of moving the change. This involves shifting the current thought process around the newly introduced method. This phase may involve a period of confusion as the transition occurs (Carter, 2008). Lewin stated that people have inherent actions and behaviours and, as a result, there will be inner resistance to the new change. Moving therefore requires that the participants cognitively redefine their attitudes and behaviours (Zeigler, 2005). Zeigler also emphasizes the importance of the participation of those directly affected by the change, which is encouraged in order to reduce resistance at this level. Healy et al. (2008) completed a study of the introduction of a new perioperative documentation plan and used Lewin's change theory to facilitate the new system. Healy et al. (2008) found that, although they encountered some resistance within the moving phase, much of the anticipated resistance was avoided as a result of the nurses being the initiators of the change and thereby taking ownership of and accepting the new method. I will attempt to accomplish this same process through the initial engagement of the nurses in driving the process from within through ownership, participation, and acceptance.

The final stage of the theory involves refreezing: this is where new behaviours and practices are reinforced and become the norm in daily practice, while pre-change comfort level is maintained. Lewin (1947) further emphasizes the importance of the need to drive from within through this stage in discussing the relationship between motivation and action. Lewin states that

motivation alone cannot lead to successful change but must rather be paired with action from the group.

In applying his change theory, Lewin discusses several concepts that influence the success of the change through the unfreezing, moving, and refreezing stages. These include considering the force field. The force field takes into account all of the behaviours of the group leading to the desired change and includes three sub-groups: driving forces, restraining forces, and the status quo. If I am to apply this theory to the project, the desired change or force field will be the seamless implementation and continued use of the adapted BPGs within the surgical suites. Through the completion of this project and performance of background research on implementation and the stages of change, I am learning how to manage the force field. The driving forces include the possible emergence of a nursing leader, the internal desire to improve quality of care and practice standards, and the desire to increase nursing responsibility and autonomy. Providing the nurses with ownership of the driving forces may be the biggest challenge; I believe that to ensure success, support and guidance of the nursing leader must be present. She will work from within to support and guide the implementation process, counteracting the restraining forces which include uncertainty about the BPGs and the potential lack of support from various members of the surgical suite team. She will be the key individual, with knowledge of the group and, through her unique position as an insider, the ability to gauge how the implementation is proceeding. The status quo includes maintaining the current standard of care and continuing to meet the demands of the suites. Within Lewin's change theory, each of the described stages and factors affects how the group moves through the change process and ultimately plays a role in whether the change will be met with success or failure. The interaction of each of the factors is displayed in Figure 1.

The theory tells me that after the BPGs are introduced within the facilities, I may expect that the surgical team will move through these different phases of change. This tells me that the change will not occur overnight. There will be a period of adjustment. As the group moves forward with new behaviour driven by the guidelines, there could be a disruption to the flow of events within the surgical suite. This will need to be expected and accounted for in how the

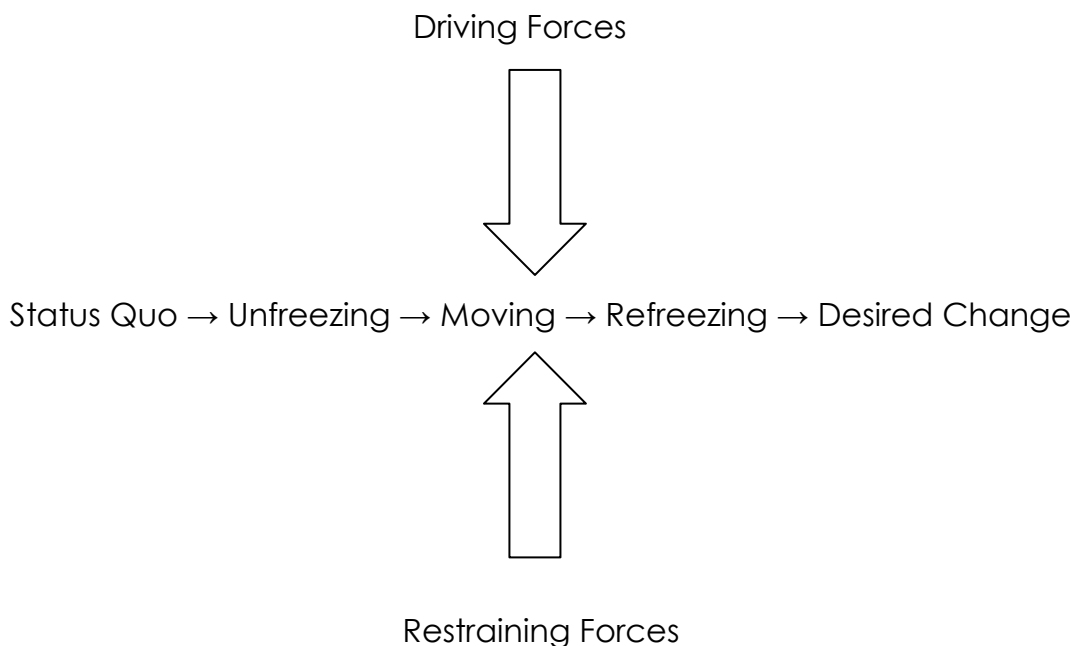


Figure 1

suites are organized during the process. As previously mentioned, I expect that the surgical team already has an informal set of standards guiding their practice. This leads me to believe that the unfreezing stage may not be as disruptive to practice as could be expected. As I expect that I will not be introducing anything that is a foreign concept, actual behaviours around practice will not change. I see the unfreezing stage evolving as the surgical team introduces behaviours around accountability, which was an area that Dr. Wiafe identified as lacking. Fostering an environment where “calling” a colleague on a break in sterility would be seen in a positive light may be difficult. The unfreezing of the possible silence around breaks in technique may pose a

challenge. I am familiar with the difficulty in having the confidence, even as an experienced nurse, to draw a break in technique to the attention of the team. I see that this change will be difficult without the support of the nurse leader and the organization. However, this type of situation is made easier by framing the reference in the context of protecting the patient from an adverse outcome and not blaming the individual for the break. Again, as I have not met formally with the OEU nurses, I cannot predict exactly how the transition will be received and what sort of “unfreezing” need will present. I have realized that identifying the unfreezing behaviour will only come as a result of going to an OEU facility and learning about their administration of surgical care. Bearing in mind the stages of change outlined by Lewin as I move the project forward, I now need to consider potential barriers and facilitators to the change process. Are there problem areas that can be identified in advance in order to transition the nurses through the change process?

Barriers and Facilitators to Change

After considering Lewin’s change theory, I now need to look into exactly what barriers and facilitators could influence the implementation process. What are the other factors that need to be considered when it comes time to actually implement the BPGs, despite not knowing exactly what the changed behavior would be? As with my other questions, I looked to the literature for guidance. I retrieved several studies through CINAHL, using the terms “implementation” and “change theory,” that identified the main barriers and facilitators to successful implementation of the BPGs. I found that there were many themes that were consistent between the studies.

One of the first issues discussed was barriers to implementation. Several themes emerged that were consistent between all of the studies. Several of the studies cited resistance to change

as a major barrier. Ploeg et al. (2007) found that participants were aware of the need to shift negative attitudes regarding change and that “buy-in” (p.215) from all participants is necessary for success. These attitudes and resistance were often a result of other organizational pressures being experienced simultaneously within the unit. Ring et al. (2005) explained the resistance to change as a result of apathy. “The most common problem is...staff [saying] we’ve been doing it our way for years and we’re not interested” (Ring et al., p. 1053). As I believe that an informal set of standards already exists, I do not see that the staff will be resistant to the concepts within the document. I will need to develop the “buy-in” for addressing breaks in technique by fostering a supportive and safe environment. I expect that buy-in will occur through the unfreezing and moving phases (as previously defined within the change discussion). I will be working to engage the nurses within that process, transferring ownership through their active engagement. Sinuff et al. (2007) also found participant apprehension to be a major barrier. These authors further divided implementation into four phases, including pre-guideline, development and adaptation phase, implementation phase, and clinician adherence phase. Participant apprehension in the four phases of their study was driven by organizational factors including workload, patient acuity and complexity, high care responsibilities, high volume of guidelines, conflicting guidelines and complexity of guidelines, time and labour intensity, and inconsistent adherence by staff. An intensivist in the pre-guideline phase of the study was quoted as saying “At any given time on any given day, it boils down to how much time you have and whether you want to take the extra minutes to pull up the [guideline]” (Sinuff et al., 2007, p. 2085). St. Pierre et al. (2007) discussed resistance to implementation through the perceived lack of clinical relevance of the guidelines by staff. In their study at one nursing agency, 20% of staff felt that the guidelines were not helpful to their nursing practice. I expect that apprehension will be a factor, as with the introduction of

any new behaviour; to counter this, the document will be clinically relevant and, I expect, already familiar to the surgical staff. As workload may be a factor affecting implementation, this should be addressed in the implementation plan, which will be developed with the OEU partners well in advance.

A second major theme related to barriers was that of organizational support, including access to resources, knowledge, education, awareness and administrative support. Ploeg et al. (2007) spoke of inadequate staffing for implementation activities, including educational sessions, and lack of integration of guidelines within policy. One nurse commented “That’s where I think we’re lacking... you need to put things in place to support it... changes that would support client centered care are much better” (Ploeg et al., p. 215). This study also acknowledged the multiple changes and stresses from an organizational level within the work environment when BPGs are implemented. These include changes in nursing roles and responsibilities and the incorporation of new models of care. Each of the processes accompanies the BPG implementation and can create a barrier to successful implementation. As the upper organizational support is already identified, I will need to identify in advance the clinical relevance of the document for the surgical staff. This is going to be a difficult task as OEU does not currently keep statistics regarding surgical outcomes. I will need to gather data that supports the idea that I am presenting. Providing the nurses with evidence that BPGs can improve both care and practice will be paramount in demonstrating the clinical relevance of the BPGs. Ring et al., (2005) also acknowledged a lack of resources and awareness barriers. What was interesting with their study was that 13 of the 15 respondents reported they were directly involved with the original initiatives, yet only 7 stated that they actively encouraged the implementation of the BPG. It must be noted that the participants were both nurse leaders and members of the multi-

disciplinary working group to develop the BPG. The authors also acknowledged that the BPG developers may have seen their role lasting only in the short term -through the development phase- and not through implementation, which would affect the overall process. Ring et al., (2005) state the “development cannot be separated from implementation” (p. 1054). Rashotte et al., (2008) identified organizational influences under the concept of team characteristics and resource availability. Team characteristics encompass a lack of knowledge about the implemented BPG in addition to accessing the necessary clinical expertise as outlined in the BPGs. Resource availability took into account the lack of physical equipment needed to carry out the BPGs including lifting devices and appropriate risk assessment tools at the bedside. St. Pierre et al., (2007) expanded within this barrier to include communication. Their results indicated that managers and clinical resource nurses needed to improve communication with staff regarding the changes to BPGs (which were all incorporated within the facilities’ policy and procedure manual). The breakdown was that the front line staff was not made aware of the implementation or change to the policy. The researchers further offered that results from a long term follow-up of the original study showed that sustainability of BPGs was best achieved when they were incorporated within the policy and procedure manuals (Davies in St. Pierre et al., 2007). My initial plan to meet these barriers includes presenting the document in advance of the implementation in order to acquire feedback around its validity. By encouraging the nurses from the very beginning to provide input and feedback, awareness of the implementation and clinical relevance is established, in addition to a transfer of ownership. I acknowledge the BPGs that have been written will most likely not be the final version that is implemented, but rather one in a group of drafts that will be specifically relevant to the OEU facility. The initial introduction of the BPGs will be discussed in a later section.

One final issue that arose, which I have also experienced in clinical practice, was the lack of support from physicians. This issue was explored from two perspectives: either the physicians were not being included in the studies, or there was a lack of support from the physicians regarding new BPGs. Larson, Quiros, & Lin, (2007) studied hand hygiene guidelines as directed by the Center for Disease Control (CDC) and recognized that physicians were often not included in the education and dissemination of BPGs, despite the relevance of the BPGs to their particular practice. The researchers acknowledged that implementation through widespread educational efforts did not include medical staff, nor was it mandated. St. Pierre et al., (2007) also identified lack of support from physicians as a barrier to research utilization and ability to practice as outlined through BPG from a nursing perspective. This project is at a huge advantage in that I already have support and buy-in from the physicians at OEU, as they inspired the project. I expect that their support will be a major advantage within the implementation.

Facilitators to Change

In addition to the many barriers that have been identified, there were many themes that emerged related to facilitating the implementation. One of the first themes that emerged in relation to success was the presence of a champion to sell or market the BPGs. Champions were nurse educators, professional practice leaders, clinical experts or nurse practitioners who encouraged momentum and supported implementation. Ploeg et al., (2007) conducted research that spanned several sites and it was noted that the champions were relied upon to assure consistency and regularity between sites. “We had five agencies trying to work together on one guideline, we had to make sure that everybody was on the same page and doing the same things at the same time” (Ploeg et al., p. 214). Ring et al., (2005) acknowledged the role of a champion, noting that those participants who were able to adopt a leadership role thereby encouraged others

to implement and support the BPGs. This was clearly the case within multi-disciplinary teams, wherein greater success was found when a champion or leader was involved. Rashotte et al, (2008) also found success with their implementation of a pressure ulcer prevention guideline through the unit champion. I have already identified a champion in Ruth Wiafe. She is a surgical suite nurse with many years of experience, currently working with OEU. In addition, she is the spouse of Dr. Wiafe, the individual who is driving the change. I anticipate that Mrs. Wiafe will be the individual in the foreground, actively working with the surgical suite staff to bring about change from within. My plan is to first provide Ms. Wiafe with the BPGs for review and then work alongside her as they are reworked to meet the specific needs of the OEU facilities.

Another key facilitator is the establishment of an enabling culture. This concept is supported within Lewin's change theory through the driving forces. I discussed the need to provide support for the newly learned behaviour in a positive manner through a nurse leader from within the group. Respondents from an ICU study (Sinuff et al., 2007) defined an enabling culture as "one in which team members share the value of knowledge transfer and regard guidelines as crucial to reducing practice variation and achieving best practice" (p. 2084). Respondents in this interdisciplinary study agreed that an enabling culture led to a successful guideline implementation through a shared vision. Ploeg et al., (2007) grouped the enabling cultures from an individual, organizational and environmental perspective. Their research had seven positive aspects, including learning through group interaction, positive staff attitudes and beliefs, leadership support, champions, teamwork and collaboration, professional association support, and inter-organizational collaboration and networking. The study by Rashotte et al. (2008) reviewed BPGs as the tool to minimize the knowledge-to-action gap. This research was the only one of the six that utilized a model to promote a successful adoption of the BPG. The

Ottawa Model of Research Use sets out six elements to consider when implementing BPGs: the practice environment, potential adopters, evidence-based innovation, transfer strategies, adoption, and outcome (Rashotte et al.). St. Pierre et al., (2007) had 29 different BPG implemented over several Ontario sites and found that “a workplace culture that values and encourages evidence-informed practice” (p. 75) through the introduction of BPGs positively influenced nurses’ attitudes and practice habits. These researchers also noted that leadership, trusting interdisciplinary relationships, and adequate resources facilitated successful implementation.

A third and final common theme involved the act of disseminating the actual BPG. The manner in which organizations brought the information into the workplace directly influenced success. Larson et al., (2007) noted that a high intensity strategy of implementation is necessary to increasing the performance of BPGs. High intensity interventions included real-time reminders, audits and feedback, and continuous quality improvement activities. Their results found that compliance was low and that “effective implementation of the guidelines requires a comprehensive approach involving various levels within the organization” (Larson et al., p. 674). Ring et al. (2005) also acknowledged the importance of the method of dissemination. They described success with active dissemination: educational activities, time, enthusiasm, and resources were most important. Passive dissemination was found to be “largely ineffective, rarely leading to behavioural change” (Cheater & Closs, & NHS CRD as cited in Ring et al., p. 1049). I expect to use active dissemination for the implementation process. This will include the active engagement of the nurses establishing the content of the BPGs in addition to gathering their input during the implementation process.

As I worked through the information around the barriers and facilitators to implementation, I began to wonder how culture would factor into the process. I wondered about the culture of the surgical suites and how will that affect the implementation. My experience at LVPEI has educated me regarding the perception of an outsider introducing change. How can I minimize the outsider effect? This has led me to inquire about cultural competency and how to gather information about the cultural context of the surgical suites.

Culture Considerations

I found this aspect of the project to be the most intimidating, as I did not know what to expect within the group. I am at a disadvantage as an outsider, in addition to being at a huge geographical distance from the OEU practice environment. How will I conduct myself and help transfer the knowledge while continuing to be aware of how the OEU practice environment functions in contrast to my own personal experiences and pre-conceptions? I was very aware in India of the many times that I reflected on the way in which *my* operating room conducts business. I brought with me ethnocentric views and expected that they would be equally useful in another culture. I realize that these prejudices and biases are also a result of looking through a feminist lens. Through my practice, I find that I have been guided by a feminist perspective with consideration to the principles of critical social theory. Feminism is driven by the concept of oppression and subordination as a result of many factors including, but not limited to, gender, race, class, and age. The feminist movement identifies “women, their experiences, their roles, and their contribution to society, along with a commitment to end patriarchal domination, and identity and confront injustice and oppression based on gender” (McCormick & Roussy as cited in Varcoe, 2003, p. 39). Considering the feminist perspective as an underlying force, it is important to consider how specific socio-cultural and historical factors will affect the adoption of

the BPGs. Critical social theory brings into play the concept of emancipatory science, which strives to equalize the division of authority and oppression, whereby certain groups are privileged over others. Current ideologies and hegemony will need to be undone and a new process considered. In July 2009, The National Nurses Association of Kenya (NNAK) published an updated Code of Conduct and Ethics. This document was guided by an original document put forward by the Kenyan Anti-Corruption Commission. The Code of Ethics is on par with other codes of conduct from the developed world. The document speaks of developing the professionalism and integrity of their nursing organization through the following guiding principles: Integrity, professionalism, service delivery, respect, transparency and accountability, justice, and leadership. The sections that differ are those concerning abuse of office, misuse of power, workplace harassment, equal opportunity, political association, use of associated property and maintaining records (NNAK, 2009). Publishing these codes acknowledges that oppression and privilege occurs within the practice environment in Kenya. Developing a set of BPGs is on par with the current NNAK Code of Conduct and Ethics by meeting their principles of professionalism, service delivery, transparency and accountability, and leadership. I am uncertain if this will be the case for all the areas where OEU operates as I was unsuccessful in locating similar documents from other nations within practice areas of OEU. I did note that some of the countries had national nursing organizations including Kenya, Ghana, Uganda and India. As a result of being aware of these differences, I decided to start by turning to the literature to learn about cultural competency and arm myself with at least a basic knowledge of how to appreciate my cultural biases and prejudices (which are inherent as a result of my life experiences). I cannot erase or change these values, but I can be aware of how they will affect my interaction with the group and the how the process plays out.

I initially considered the cultural differences between Canada and Sub-Saharan Africa. Although I am knowledgeable regarding the content of the BPGs that I have been asked to develop, I realize that I have very little experience with the culture in which they will be implemented. My hope is that I will have a basic and decent understanding of the operating room culture as a result of my experience in India. However, I am more aware that I have no understanding of the greater cultural considerations and the natural hierarchy that exists within many areas of the world. While in India, the nurse educator and I spoke frequently about what it was like to be a nurse within our two cultures. I am used to being in an equal and supportive environment where nurses are valued and provided with the opportunity to learn and to develop their skills. I have been fortunate to attend conferences and advanced learning sessions in order to benefit my practice. The organization that she works for does not provide the same experiences. While she indicated that she had quite a bit of autonomy to develop the nursing role within the institute, she was restricted by the hierarchy in how she could accomplish that role. She explained that nurses were never given funding for offsite learning and development. She also alluded to the concept that the nurse was, and would always be, in a different (lower) class from the physician. I later reflected on my visit and realized that although I am a nurse, I was placed on a different tier than the LVPEI nurses as a result of my association with OEU and my North American education. This realization will prove to be useful as I begin my interaction with the OEU staff. I may never become a member of the OEU surgical suites 'family' but I may become a valued individual whose knowledge will be accepted.

While looking to the literature, I initially searched for journal articles that would explain the cultural differences. I was quite unsuccessful in finding comprehensive information outlining exactly what I could expect to experience within the group. I realized that I was not going to find

a guidebook detailing the surgical suite nurse in Sub-Saharan Africa. In addition, I also realized that I would be at a disadvantage if I relied too heavily on another's experience in working within a different culture. Although I would acquire some understanding of the difficulties, it would be a better experience if I came to the situation with an open mind and no preconceptions of what to expect. This led me to revisit the teachings of Madeleine Leininger and her Culture Care Theory.

Culture Care Theory

In order to educate myself around Culture Care Theory, I will refer back to one of my initial graduate courses on nursing theorists. I recall Madeleine Leininger's Culture Care: Diversity and Universality Theory (Culture Care Theory). Leininger's Culture Care Theory is premised upon the relationship between culture and caring which she outlines as "the essence of nursing and the central, dominant, and unifying feature of nursing" (Leininger, 1988, p. 152). During the 1950's, while nursing leaders were initiating the events leading toward building a body of nursing-specific knowledge and working toward professionalization within a nursing paradigm, Leininger was working as a graduate therapist and clinical psychiatric nurse in Mid-Western America. During this period of therapy and guidance, Leininger became aware of recurrent patterns of behaviour in children that were influenced by cultural factors (Sitzman & Wright -Eichelberger, 2004). This was the beginnings of what is now known as Transcultural Nursing; "A specialty within nursing focused on the comparative study and analysis of different cultures and subcultures" (Andrews & Boyle, 2003, p.4). Through her insight into the relationship between care and culture and an indulgence into the existing research, it became apparent to her that nursing did not understand the cultural factors and their behavioural influence and therefore led her to borrow from the field of anthropology. Culture Care Theory

looks at the relationship between caring and culture. Leininger believed that care is the essence of nursing in addition to being the central, dominant, and unifying feature (Leininger, 1988). Leininger discusses caring and human care within her theory as referring to “the abstract and manifest phenomena with expressions of assistive, supportive, enabling, and facilitating ways to help self or others with evident or anticipated needs to improve a health, a human condition, or a lifeway, or to face disabilities or dying” (McFarland as cited in Tomey & Alligood, 2006, p. 478). She further offers two types of caring, a generic and a therapeutic perspective (Zoucha & Husted, 2000). Generic caring, which is deep-rooted and identifiable in all cultures, is often referred to as folk caring or folk practices. Therapeutic caring is cognitively learned and applied and diffused through formal concepts of skills and practices. Culture within the theory is expressed as the “learned, adaptive, shared ways of people with identifiable patterns, symbols, and material and nonmaterial data” (Leininger & McFarland, 2002, p. 73). Leininger’s theory melds these two facets together as one term -culture care- and then identifies this as the central domain of inquiry with multiple factors that influence culture and care. Although in theory we will be implementing a set of BPGs, the underlying goal is to improve the quality of care for the perioperative patient. In essence, this process is a type of culture care as outlined by Leininger. Until I read and truly understood Leininger’s theory, I did not believe that the project had a caring aspect. I now see that caring is the basis for the idea and it will be the common theme between the OEU nurses and me.

Cultural Competency

Upon implementation of the BPGs, my understanding of cultural awareness will be either a barrier or facilitator to the success of the project. My research has enlightened me to the fact that very little formal research has been conducted into the particular roles and responsibilities of

the Sub-Saharan African nurse. I have learned through discussions with OEU stakeholders that the scope of practice in Africa is dependent upon the region (Boateng Wiafe, Personal Communication, 2008; Andrews & Boyle, 2008). In some areas, the nurse can prescribe medications and set fractures while in other areas, monitoring blood pressure is deemed outside their scope of practice (Herberg, as cited in Andrews & Boyle). The International Council of Nurses also notes that in addition to differences in scope, there are differences in standards of performance and quality of care (International Council of Nurses as cited in Andrews & Boyle). As previously noted, discussions with staff at OEU revealed a lack of formal standards for perioperative care. In addition, I know that the OEU facilities are currently organized and managed by physicians. It is my understanding that this role could eventually be transferred to the nurses, providing them with an increased scope of practice. It is this format of operating room organization that I have come to be familiar with and know to be successful... in my environment. Being cognizant that this method of operating is ethnocentric, in that I come to this project with pre-conceived notions around how things should work, I acknowledge a cultural bias (Srivastava, 2007). Although I have not experienced the Sub-Saharan African facilities, I am making the assumption that the flow of events will be different from that with which I am familiar. I have learned that different does not mean better or worse, just different.

I see Culture Care Theory being applied to my own practice through working with OEU to implement the BPGs. The patient in this situation is not in fact the individual receiving surgery but, rather, the perioperative nurses with whom I will be working alongside through this transition. Each of Leininger's (1988) seven cultural and social structure dimensions, including technology, religion, kinship, values, politics, economics, and education will play a role in shaping the development of the change for these nurses. What I will acquire as I work with the

key OEU stakeholders and visit the facilities where the implementation will occur is how each of the dimensions will have an effect. Through the implementation process, therapeutic caring will play a larger role for me, while generic caring will be evident with the OEU nurses. Leininger does note that awareness of one's own culture and that of others is insufficient for the eradication of "prejudice, bigotry, racial, ethnic, or cultural conflicts" (Andrews & Boyle, 2008, p. 9). That being said, although cultural competence may not eliminate cultural bias, awareness of these prejudices and conflicts should help me to move away from an ethnocentric way of thinking and toward culturally congruent care.

Bringing it all Together

Now that I have looked at the literature and learned about change, culture care, and implementation barriers and facilitators, what does all of this knowledge mean to the potential success of the project? How will I take all this knowledge and bring it into play? What might a roadmap look like that brings me through this process? My instinct is to turn to the nursing process to address this question and present the following picture of how I intend to bring about this process.

The first step will be to assess the possibility of implementing the BPGs. I plan on making contact with Ruth Wiafe and providing the BPGs for her review and input. I have stressed throughout that the BPGs are really an initial draft. At this point, Ms. Wiafe can review the concepts and assess the relevance to the OEU facilities, taking into account the training and knowledge base of the surgical staff. Through discussions with Ms. Wiafe, I will learn about the surgical suite culture and the current operating room environment. This is a part of the assessment phase of the nursing process. She will have the opportunity to see, through the BPGs, what the developed world values with respect to technique; she can then assess how their current

practice may vary or be the same. As has been stated, I expect that we will both be pleasantly surprised by how similar the practices are. There may be revisions at this point to make some sections more relevant, and I or we may need to visit areas that I may not otherwise have considered.

The next step that I would propose would be to introduce the BPGs to the nurses through a type of working group whereby they could comment, evaluate, and provide input. This aspect will start the buy-in and ownership process that I have identified is important for success. I am hoping that the group will not find anything within the BPGs that is not already a part of their practice. This is in keeping with the nursing process in that we could say that we are providing a diagnosis of the document for its receptivity and relevance within the OEU facilities.

This naturally leads to the planning stage whereby the organization and the nurses have the chance to develop a design around implementing the BPGs. It must be stressed that the actual date of implementation may be better accepted if it is mutually agreed upon between all the affected medical staff members. This will help to foster support from all sides, including upper management and the front line staff. Consideration of a time when there may be a lighter workload would also be encouraged. As the group plans for the “go live” date, the nurses could be a part of the publicity and education teams. This might include providing information sessions during which the BPGs are learned and discussed and staff can address their questions and concerns. The champion will be involved in guiding this process, leading to a supportive and enabling environment for the nurses.

The next step is the live implementation: the surgical staff will become accountable to a set of BPGs that guide practice. The surgical suite members will be equally responsible to the patient for their surgical technique through a supportive environment of learning and change.

Unfreezing and managing the change will occur through this process. As with the nursing process, a period of evaluation will be established after the process has been in place for a period of time. As I have identified, the BPGs are a green document, and the need to adapt and revise is necessary to ensure the BPGs are clinically relevant and work within their surgical suite culture. Once the necessary revisions have been addressed, the surgical staff can drive the process home and transition through the re-freezing stage. As this part of the process comes to fruition, I see the CNA competencies of initiating change, initiating programs to meet client's needs and improve the quality of care and leadership as evident. The change will have been initiated through both me and the OEU staff. The process will have been facilitated by local leaders and ultimately requested to improve the quality of care provided to the patient.

Conclusion

The original idea to develop a set of operating room standards for a developing world surgical suite seemed like a fairly straightforward process. However, as I looked to the literature and my graduate level education, I realized that production of the standards played only a small part in the process. Inquiry into how to develop a clinically relevant document and successfully implement that document led me to consider areas that I would not have originally considered relevant.

The process began by identifying the sort of document that I would produce and how I would label this document. After the BPGs were written, I learned that I needed to learn about how to successfully manage the implementation. This led to a literature search and an awareness of Chinn's (2008) PEACE process, change theories, cultural awareness, the feminist lens, facilitators and barriers to implementation, and a return to the nursing process. I then looked at incorporating all of this knowledge into a working plan that would ultimately allow the

implementation process to succeed. I cannot help but draw a parallel from this process to that of the Olympics, which are taking place in my city as I work through this project. I look to the athletes who have had successful performances. They did not achieve their results without extensive preparation, hard work and many trips back to the drawing board to evaluate their performances. They did not achieve their results as a matter of chance. I cannot expect that this project could be successful without all of the background research and transfer of knowledge. If I look back to my statement of the problem and the aim being to develop an initial set of operating room best practice guidelines for Operation Eyesight Universal's India and Sub-Saharan Africa Ophthalmology Suites and then further engage the surgical suite nurses in modifying the guidelines based on their needs along with taking into account considerations for a successful implementation, I see that I have achieved this initial goal. Like the Olympic athlete, I have done the background work and now look forward to the implementation, which will be my performance.

References

- Andrews, M.M. & Boyle J.S. (2003). *Transcultural Concepts in Nursing Care*. Philadelphia: Lippincott Williams & Wilkins.
- Beyea, S.C. (2004). Evidence-based practice in perioperative nursing. *American Journal of Infection Prevention*, 32, 97-100.
- Bucknall, T.K. (2003). The clinical landscape of critical care; Nurses decision making. *Journal of Advanced Nursing*, 43, 310-319.
- Canadian Nurses Association (2008). *Advanced nursing practice: A national framework*. Ottawa, ON: Author.
- Carter, E. (2008). Successful change requires more than change management. *The Journal for Quality and Participation*, Spring, 20-23.
- Chinn, P.L. (2008). *Peace and Power (7th ed.)*. Sudbury, MA: Jones and Bartlett.
- Healy, K., Hegarty, J., Keating, G., Landers, F., Leopold, S., & O’Gorman, F. (2008). The change experience: How we updated our perioperative nursing documentation. *Journal of Perioperative Practice*, 18(4), 163-166.
- International Federation of Perioperative Nurses WWW (2008). Member Organizations. Retrieved October 9, 2008 from <http://www.ifpn.org>
- ITP Nelson Canadian Dictionary of the English Language*. (1998). Scarborough, ON: International Thompson Publishing.
- Larson, E.L., Quiros, D., & Lin, S.X. (2007). Dissemination of the CDC’s hand hygiene guideline and impact on infection rates. *American Journal of Infection Control*, 35 (10), 666-675.
- Leininger, M. (1988). Leininger’s theory of nursing: Cultural care diversity and universality. *Nursing Science Quarterly*, 1(4), 152-160.
- Leininger, M. & McFarland, J. (2002). *Transcultural Nursing (3rd ed.)*. New York: McGraw Hill.
- Lewin, Kurt. (1947). Frontiers in group dynamics. *Human Relations*, 1, 5-41.
- Manias, E.M., Bucknall, T., & Botti, M. (2004). Assessment of patient pain in the post-operative context. *Western Journal of Nursing Research*, 26, 751-769.
- McCaughan, D., Thompson, C., Cullen, N., Sheldon, T., & Thompson, D. (2002). Acute care nurses perceptions of barriers to using research information in clinical decision making. *Journal of Advanced Nursing*, 39, 46-60.

- McCaughan, D., Thompson, C., Cullen, N., Sheldon, T., & Raynor, P. (2005). Nurse practitioner and practice nurses use of research information in clinical decision making: Findings from an explorative study. *Family Practice, 22*, 490-497.
- McFarland, M. (2006). Culture care theory of diversity and universality. In A.M.Tomey & M.R. Alligood., *Nursing Theorists and Their Work* (6th ed.).(pp. 472-496) St. Louis, MO: Mosby Elsevier.
- National Nurses Association of Kenya WWW (2009). *Code of Ethics and Conduct*. Retrieved November 2, 2009 from <http://www.nnak.or.ke>.
- Operation Eyesight Universal WWW (2009). *Mission Statement*. Retrieved October 10, 2008 from <http://www.operationeyesight.ca/Page.aspx?pid=208>
- Operation Eyesight International WWW (2008). *Blindness Statistics*. Retrieved October 10, 2008 from <http://www.operationeyesight.ca/NetCommunity/Page.aspx?pid=224&srcid=299>
- Operating Room Nurses Association of Canada (2008). *Recommended standards, guidelines and position statements for perioperative registered nursing practice* (6th ed.). Canada: Author.
- Ploeg, J., Davies, B., Edwards, N., Gifford, W., & Miller, P.E. (2007).Factors influencing best practice guideline implementation: Lessons learned from administrators, nursing staff, and project leaders. *Worldviews on Evidence-Based Nursing, 4*(4), 210-219.
- Rashotte, J., Thomas, M., Gregoire, D., & Ledoux, S. (2008). Implementation of a two-part unit-based multiple intervention: Moving evidence-based practice into action. *Canadian Journal of Nursing Research, 40*(2), 94-114.
- Ring, N., Malcom, C., Coull, A., Murphy-Black, T., & Watterson, A. (2005). Nursing best practice statements: An exploration of their implementation in clinical practice. *Journal of Clinical Nursing, 14*, 1048-1058.
- Rycroft-Malone, J., Fontenla, M., Seers, K., & Bick, D. (2009). Protocol based care: The standardisation of decision making? *Journal of Clinical Nursing, 18*, 1490 – 1500.
- Sinuff, T., Cook, D., Giacomini, M., Heyland, D., & Dodek, P. (2007). Facilitating clinician adherence to guidelines in the intensive care unit: A multicenter, qualitative study. *Critical Care Medicine, 35*(9), 2083-2089.

- Sitzman, K., & Wright Eichelberger, L. (2004). *Understanding the Work of Nurse Theorists*. Sudbury, MA: Jones and Bartlett Publishers.
- St. Pierre, I., Davies, B., Edwards, N., & Griffin, P. (2007). Policies and procedures: A tool to support the implementation of clinical guidelines? *Nursing Leadership, 20(4)*, 63-78.
- Srivastava, R.H. (2007). *Guide to Clinical Cultural Competency*. Toronto, ON: Mosby Elsevier.
- Varcoe, C. (2003). *The context of health and health care*. Victoria, British Columbia: The University of Victoria.
- Vision 2020 WWW (2009). *Vision 2020: Mission, Goals, Aims and Objectives*. Retrieved February 10, 2009 from <http://www.v2020.org/page.asp?section=000100010009>
- Ziegler, S.M. (2005). *Theory-Directed Nursing Practice (2nd ed.)*. New York: Springer Publishing Company.
- Zoucha, R. & Husted, G. (2000). The ethical dimensions of delivering culturally congruent nursing and health care. *Issues in Mental Health Nursing, 21*, 325-340.

Appendix A: Best Practice Guidelines

Best Practice Guidelines – Universal Precautions

Universal precautions, formally standard precautions, are well established guidelines that direct practice techniques for nurses in all aspects of patient care. Universal precautions should be implemented in all aspects of care within the OEU surgical facility. These precautions are in place to protect both the health care worker and the patient and should be considered a two way precautionary system.

The application of universal precautions works best when they are combined with the aspects of risk assessment which include assessing the infection risk of the patient and the invasiveness of the surgical procedure. Basic principles as outlined within the Practice Recommendations should be adhered to at all times. When a risk assessment of the patient and the procedure identifies a higher risk, additional safety measures should be considered based on this increased risk. Conversely, when it is determined that the patient is not in a high risk group, there is no need to carry out precautions related to the high risk group. High risk groups may include, but not be limited to, patients diagnosed with HIV, Hepatitis A, Hepatitis B, Hepatitis C, CJD, MRSA+, VRE+ and Tuberculosis.

The following are Practice Recommendations for Universal Precautions.

Practice Recommendation 1, Routine Hand Washing

1.1 All members of the health care team should practice routine hand washing as hand washing is the single most important step in breaking the cycle of transmission of pathogens from one person to another. Hand washing should be completed using warm water and a facility

approved hand washing product. Hand washing should be conducted at times including, but not limited to:

- Whenever hands are visibly soiled
- At the start and end of each shift
- Prior to and after patient contact
- Upon removal of gloves
- After using the toilet and personal contamination
- Prior to and after leaving the surgical suites
- After invasive procedures
- When in doubt as to the need

Practice Recommendation 2, Personal Protection

2.1 Personal protective equipment (PPE) should be used by all members of the health care team to improve safety and protect against exposure to potentially infectious blood and body products. PPE should include, but not be limited to:

- Head cover
- Gloves (either non-sterile or sterile as indicated)
- Gowns (non-sterile or impervious sterile as indicated)
- Eye goggles and/or full face protection
- Surgical mask
- Shoe covers

2.2 Members of the health care team should receive adequate training and education regarding the appropriate use PPE, including, but not limited to, how to safely don and remove PPE .

2.3 PPE should be removed and changed between patients, after becoming visibly soiled, or as needed (for example: if gloves become torn).

2.4 Disposable articles are not to be rewashed and re-used between patients. Re-usable PPE should be properly laundered, repaired and stored after each use.

2.5 Health care team members with open wounds, exudative lesions or weeping dermatitis should not be in direct contact with patients through patient care or invasive procedures.

Practice Recommendation 3, Occupational Health Exposures

3.1 Members of the health care team should report adverse exposures to blood and body fluid (for example: splashes received to the eyes and mucous membranes) to the designated facility occupational health representative.

3.2 Individuals who are performing the scrub role and experience an adverse exposure to blood or body products should be removed from the scrub role as soon as is safe and practicable.

3.3 Facilities should have occupational health exposure policies in place that include safe prevention techniques and post-exposure treatment regimens, including the naming of an occupational health representative.

Practice Recommendation 4, Sharp Instruments

4.1 Safe technique should be taken while handling sharp instruments so as to avoid injury and exposure to infectious contaminants.

4.2 Used needles should not be recapped, bent, broken, sheared, or resheathed by hand. A hands free technique should be employed for sharps.

4.3 A neutral zone for sharps in the surgical field should be considered to minimize the risk of injury to surgical team members.

4.4 All disposable sharps should be placed in the designated puncture resistant sharps container for disposal upon completion of use.

Practice Recommendation 5, Transmission Based Precautions

5.1 Droplet and Contact Precautions should be implemented when caring for patients who are known to have certain infections.

5.2 Droplet precautions for patients should be implemented for, but not limited to, the following infections:

- Para influenza
- Croup
- Pertussis
- Influenza
- Bacterial meningitis
- Rubella
- Mumps
- Parvovirus B19.

5.3 Droplet precautions should include, but may not be limited to, placing a surgical mask on the patient during transport within the facility; posting precaution signs in and around the area where the patient remains; personal protective equipment to be worn by the health care team including eye protection; removing additional equipment from the vicinity of the patient; scheduling surgical procedures for the end of the day.

5.4 Contact precautions should be implemented for patients with the following infections, but not limited to:

- Scabies, impetigo, herpes simplex, or other skin infections

- Antibiotic resistant organisms
- Clostridium difficile
- Wound infections including necrotizing fasciitis

5.5 Contact precautions should include, but may not be limited to; posting precaution signs in and around the area where the patient remains, wearing gloves and a protective gown when performing care to the patient or touching objects that have been in direct contact with the patient; removing additional equipment from the vicinity of the patient; scheduling surgical procedures for the end of the day.

5.6 Droplet and contact precautions should be carried out during terminal cleaning of the theatre after the case has been completed.

Best Practice Guidelines – Environmental Cleaning and Sanitation

Environmental cleaning and sanitation is a necessary topic for consideration when striving to provide the patient with a clean and safe environment. The ultimate responsibility for maintaining a clean and safe environment resides with the perioperative nursing team.

Environmental cleaning should be conducted on a regular basis and in accordance with facility policy.

The surgical suite shall be designed in a manner that allows for easy and thorough cleaning. This should include, but not be limited to: i) hard, seamless floors; and ii) wall and ceiling finishes that are hard and non-porous, fire resistant, waterproof, seamless, and non-reflective. In addition, equipment that is routinely stored in the surgical suite should be easy to clean and kept to a minimum. Shelving and wall cabinets should also be constructed and positioned in a manner to allow for easy and thorough cleaning.

The following are Practice Recommendations for Environmental Cleaning and Sanitation.

Practice Recommendation 6, Preliminary Cleaning

6.1 The perioperative nurse should conduct an initial visual inspection of the surgical suite for cleanliness and readiness prior to the commencement of any procedure. Deficiencies should be rectified in a timely manner, ideally prior to the commencement of the surgical case.

Practice Recommendation 7, Intraoperative Cleaning

7.1 Spills and contamination occurring during a surgical procedure should be contained promptly using facility approved products. This helps to maintain a safe and clean environment for the patient. Personnel containing an intraoperative spill or contaminant shall don the appropriate personal protective gear as indicated by the nature of the event.

7.2 Unless necessary for patient and staff safety, the remnants of the spill or contamination should not be removed from the surgical suite until completion of the procedure.

Practice Recommendation 8, End of Procedure Cleaning

8.1 The surgical suite should be promptly and thoroughly cleaned between each patient.

8.2 Garbage, used suction containers, instruments and dirty linen should be removed from the theatre at the end of the procedure, prior to cleaning of the suite. All non-fixed items that came into contact with the patient should be considered contaminated and either removed from the theatre or cleaned at the end of the case.

8.3 Clean-up should proceed from the least contaminated area to the most contaminated area. The floor need only be cleaned to an area within 1 to 1.3 meters around the operative area. The area shall be expanded to encompass visibly soiled areas as indicated.

8.4 Cross contamination should be avoided with cleaning equipment used during the end of procedure cleaning process. Mop heads and cleaning clothes should not be re-introduced into multiple use cleaning containers or buckets.

Practice Recommendation 9, Terminal Cleaning

9.1 The surgical suites should be terminally cleaned once during a 24 hour period, regardless of whether or not they were used. This helps to develop a clean surgical environment.

9.2 Terminal cleaning should include, but not be limited to, lights, tables, telephones, computers, theatre furniture, door handles, and floors.

9.3 Although not recommended, if refillable containers are used, they should be properly cleaned and disinfected between fillings and should not be “topped up”. This will help to prevent microorganism build up and reduce the risk of infection and contamination.

Practice Recommendation 10, Weekly/Monthly Cleaning

10.1 It is suggested that a rotating cleaning schedule be established and followed.

10.2 Weekly/monthly cleaning should include, but not be limited to, air duct grills, ventilation hoods, cupboards, walls, ceilings, lights covers, store rooms, sterilizers, offices and closets.

Practice Recommendation 11, Supplies and Equipment Storage

11.1 The movement of soiled equipment and supplies shall be kept separate from the movement of sterile equipment and supplies. Separation shall include time, location, distance and traffic pattern.

11.2 Clean and sterile supplies shall not be transported in open containers. They should be covered so as to maintain their integrity.

11.3 Dirty and contaminated supplies shall be covered when transported in order to reduce cross contamination.

11.4 Areas considered for storage should be protected from moisture, the entry of dust from adjacent areas, protected from vermin, and provided with space so that packages are not crushed or damaged by overcrowding.

11.5 Traffic within storage areas should be restricted to those persons whose function requires them to pass through the storage area.

11.6 The temperature within the storage areas should be maintained between 15 and 30 °C and humidity should remain between 30 and 60%.

Best Practice Guidelines – Traffic Control

Traffic control is an important part of reducing the risk of cross contamination. Traffic control acts as a protection system for patients, personnel and supplies and defines the flow of movement into and out of the surgical suites. Ideally the surgical area should be divided into 3 levels of access: Unrestricted, Semi-restricted and Restricted. In addition, visitors should be monitored and adhere to the requirements for each level of access.

The following are Practice Recommendations for Traffic Control.

Practice Recommendation 12, Unrestricted Areas

12.1 These areas normally comprise an area where traffic is not limited. Surgical attire is not required to enter. Designated unrestricted areas may include the surgical suite reception area, change rooms, recovery room, lounges, booking area and designated offices.

Practice Recommendation 13, Semi-restricted Areas

13.1 These areas require the individual to don appropriate surgical attire, including a scrub suit, head cover, and booties if designated by the facility. Entry within these areas is

limited to authorized and pertinent individuals. Designated semi-restricted areas may include surgical suite corridors, storage core, processing department, and other designated support areas.

Practice Recommendation 14, Restricted Areas

14.1 The restricted area includes any area where scrubbed personnel or sterile supplies have been opened. This may include the operating theatre during a procedure, the scrub sinks when the surgical hand scrub is in process. In addition, the clean core is considered a restricted area in order to minimize unnecessary traffic.

14.2 Surgical attire is required within restricted areas. A face mask is required for anyone in and around open sterile supplies, entering a theatre when surgery is in progress, in and around the scrub sinks when a surgical scrub is in process, and in and around the flash sterilizer when sterile equipment is being prepared and / or wrapped for use.

14.3 Air may be considered a source of micro-organisms therefore excessive movement of air within the surgical suites increases the risk of surgical site infection. Doors to surgical suites should remain closed during the set-up and procedure in order to limit and reduce the movement of air within the surgical suite thereby reducing the risk of airborne contamination.

Practice Recommendation 15, Visitors

15.1 Visitors should report to a central reception desk and be identified prior to entering the surgical suite environment. Visitors should be limited to only those individuals who are necessary. This is essential for both patient confidentiality and to reduce the risk of surgical site infections.

15.2 Visitors should be adequately oriented to the policies and procedures of the surgical suite environment prior to entering the surgical suites. Visitors are required to adhere to the outlined dress protocols and should wear identification at all times.

15.3 Visitors within the surgical suites should be limited to essential individuals only.

This includes limiting the flow of staff, visitors, and other individuals in and out of the theatre so as to reduce the risk of infection through decreasing air movement.

Best Practice Guidelines – Dress Codes

Appropriate guidelines regarding dress within the surgical suites is necessary for patient safety and to reduce the risk of surgical site infections. The human body is a major source of bacteria and micro-organisms and as such, dress codes are necessary to protect both the patient and the surgical suite staff by providing a barrier to the various micro-organisms and potentially infectious materials encountered within the surgical suite.

The following are Practice Recommendations for Dress Codes.

Practice Recommendation 16, Surgical Attire: Semi-restricted and Restricted Areas, Staff and Visitors

16.1 Surgical attire may include the following:

(a) Two piece pant suit – the top should be tucked into the pants or be close fitting to the body. The aim of the pant suit is to reduce microbe shedding and promote infection control.

(b) Head cover – all hair should be confined to a clean hat or hood. Disposable hats should be changed daily and as needed. Re-useable hats should be changed daily and as needed and laundered after each use. Hair is a substantial source of bacteria and can have a negative effect on surgical site infection as a result. Therefore adequate coverage of hair within the surgical suite is necessary.

(c) Foot wear and shoe covers – appropriate and facility approved footwear should be worn by all members of the surgical suite. Shoes that are protective and can be easily

cleaned are recommended. Show covers should be worn when there is an increased risk of spills or body splashes. This will help to prevent the tracking of contamination outside the theatre.

(d) Surgical mask – an approved surgical mask should be worn during procedures and within the presence of open sterile supplies and scrubbed personnel. Masks protect both the patient and the surgical team members from environmental particles present within the surgical suite. These may include surgical plume, particles from power instruments, and aerosolized particles from lasers. Masks should be worn over the nose and mouth and be adjusted for proper venting. Masks should only be removed by the ties to reduce the risk of transferring of micro-organisms that are found in high numbers on used masks.

(e) Personnel Protective Equipment should be worn as dictated within BPG.

16.2 Visitors entering the surgical suite for a short period of time may wear an approved one-piece coverall. This may include a parent accompanying a child to the surgical suite. Visitors that will remain within the surgical suite for longer periods of time should wear the attire as indicated in Practice Recommendation #16 – 16.1 (a) – (e).

Practice Recommendation 17, Surgical Attire: Patients

17.1 Patients should remove street clothing and wear a clean facility issued gown. Patients may wear undergarments if they do not interfere with the surgical procedure and are clean. Clothing can be considered a source of micro-organisms and this should be assessed and removed by the admitting staff member as indicated.

17.2 Patients should wear a head cover to help reduce the risk of infection due to hair being a high source of bacteria as outlined in Practice Recommendation #16 – 16.1 (b).

Practice Recommendation 18, Jewelry and Nails

18.1 Patients should have all jewelry removed, including body piercings, earrings, rings, bracelets and necklaces.

18.2 Staff should not wear jewelry while a part of the surgical suite team. This includes rings and watches which can harbor bacteria and micro-organisms. Necklaces and earrings promote shedding that could increase surgical site infection. Earrings should be totally confined, like hair, if worn by the surgical staff within the surgical suite.

18.3 Staff are encouraged not wear nail polish due to a risk of shedding of the polish in and around the surgical field. If nail polish is to be worn, it must be freshly applied and not chipped or worn. Nails should be kept short and well groomed so as to reduce the risk of harboring micro-organisms. Nails should be natural and not artificial as artificial nails have a higher number of micro-organisms and promote the growth of gram negative bacilli, yeast and staphylococcus aureus.

Practice Recommendation 19, Laundering of Surgical Attire

19.1 Clothing designated for the surgical suite shall be worn only within the surgical suite and not outside. This helps to limit the spread of infectious material.

19.2 Surgical attire should be laundered by the facility approved and monitored laundry. Staff should not take their attire home to be laundered. This will reduce the transmission of micro-organisms while being transferred outside the facility and protect the greater population. In addition, facility approved laundries are specifically equipped with the appropriate means of adequately cleaning surgical attire as it may be soiled with any number of different contaminants including blood and body fluids.

19.3 Surgical attire should be changed daily or as needed as a result of visible soiling. After wearing, it should be placed in an approved area or receptacle for transfer to the laundering environment.

Practice Recommendation 20, Policies and Procedures for Surgical Attire

20.1 Each facility should develop appropriate policies and procedures around where surgical attire should be worn. These should be reviewed on an ongoing basis and adapted as necessary to the changing surgical environment and in relation to current literature.

Best Practice Guidelines – Scrubbing, Gowning and Gloving

Attention to the practice of scrubbing, gowning and gloving is necessary to help reduce the risk of infection transmission and maintain the integrity of sterility within the surgical procedure. Special attention should be given to enforcing proper technique amongst all members of the team, regardless of role. Although members of the surgical team will be wearing gloves and gowns for the procedure, scrubbing reduces the amount of flora on the hands and forearms in the event of a break in sterility as a result of a tear in a gown or glove.

The following are Practice Recommendations for scrubbing, gowning and gloving.

Practice Recommendation 21, The Surgical Scrub

21.1 The purpose of the surgical scrub is to remove dirt, oils, and microbes from the hands and forearms. The facility should standardize the scrub procedure and the approved technique should be posted at all scrub sinks or stations for continued consultation for personnel who carry out the scrub.

21.2 Scrubbed personnel should have intact skin free of cuts, abrasions, and hangnails. This helps to reduce the risk of transmission of flora or microbes from the hands and forearms. Staff should inspect their hands and forearms to ensure that there are no visible cuts, abrasions,

or hangnails prior to beginning the scrub. If the staff notes cuts, abrasions, or hangnails, they should not scrub until the wounds have healed.

21.3 A facility approved broad spectrum anti-microbial agent should be used. Individuals with a known sensitivity or allergy to the standard agent should consult with the facility in order to acquire a suitable product. The scrub agent could be either water facilitated or non-water facilitated product.

21.4 All staff conducting the surgical scrub shall be in the appropriate surgical attire. Staff commencing a surgical scrub shall don a mask in advance of beginning the scrub.

21.5 The towel, gown and gloves of the scrub nurse should be opened on a separate table from the sterile set-up. This prevents possible cross contamination of the sterile field.

21.6 The scrub nurse should take care to complete a full and thorough scrub in accordance with both the manufacturers recommended guidelines and the facility policy. This may differ between sites dependent on the type of surgical scrub agent being utilized.

21.7 The scrub procedure should be periodically reviewed and updated as clinical information and evidence becomes standard practice.

Practice Recommendation 22, Self-Gowning

22.1 Sterile gowns should be impervious to micro-organisms and fluids and should be a wrap around style.

22.2 Gowning of the scrub nurse should be completed away from the sterile field on a separate table after the nurse has completed the approved surgical scrub. The scrub nurse should grasp the gown at the neck line and move into an area without risk of contamination. The gown should be held away from the body as it opens. The nurse then places both arms through the arm holes and dons the gown.

22.3 The circulating nurse assists the scrub nurse by reaching on the inside of the gown and pulling it up onto the scrub nurses shoulders, paying attention not to contaminate the gown. The circulating nurse then ties the upper tie at the neckline of the gown. The gowning individual should be turned by another sterile individual or with the circulating nurse using a sterile item (for example a sponge stick).

22.4 If a gown becomes contaminated, it should be removed and the scrubbed individual should be re-gowned by another member of the team using the assisted gowning procedure and open gloving technique.

22.5 Gowns are only considered sterile in the front from the chest to the level of the sterile field and on the sleeves from the elbow to cuff line. All other exposed areas are considered unsterile.

Practice Recommendation 23, Self-Gloving

23.1 The scrub nurse shall use the closed-gloving method during the initial set-up. This technique requires the gloves to be handled through the gown sleeves. The hands should not protrude through the cuffs as the gown is donned but rather when they enter the glove. The scrub nurse should ensure that the gloves remain above the cuff of the gown as it is not impervious and is considered unsterile as a result.

Practice Recommendation 24, Gowning and Gloving of the Surgical Team

24.1 Members of the scrub team will be assisted with gowning and gloving by the scrub nurse using an assisted gowning procedure and open gloving technique. Assisted gowning entails the scrub nurse holding the gown in an unfolded manner on the outside of the gown and presenting it to the member so as to place their arms into the gown. The scrub nurse ensures that the gown protects the nurse from contamination and a break in sterility. The circulating nurse

then assists the member as previously done with the scrub nurse. The scrub nurse can then turn the member using sterile technique. Open-gloving involves the scrub nurse everting the cuffs of the gloves allowing the member to place their hand in the glove and not touch or contaminate the scrub nurse.

Practice Recommendation 25, Removal of Soiled Gowns and Gloves

25.1 Scrubbed personnel should adhere to the following practices when removing soiled gowns and gloves. First, the scrubbed individual should remove any excess debris from their gloves. Next the circulator unties the back of the gown for the scrubbed individual. The scrubbed person then removes the gown by grasping it at the shoulders and removing from the outside and protecting their arms and hands from the contaminants outside of the gown by rolling it forward. The gown is then placed in the appropriate receptacle. Next the scrubbed individual removes their gloves taking care not to touch the outside of the glove with their bare skin.

25.2 The scrubbed individual should ensure that their hands are washed upon completion of a scrub after removing the gown and gloves.

Best Practice Guidelines – Aseptic Technique

Aseptic technique stems from the principles of asepsis which is considered to be the absence of infectious organisms. Aseptic technique is designed to reduce or eliminate the risk of exposure to exogenous organisms at the surgical site and employs sterility to meet this objective. Although an instrument may look clean, it may not be sterile as many exogenous organisms are invisible to the naked eye. The sterile environment stems from rigid guidelines around infection control practices and empirical research.

The following are Practice Recommendations for Aseptic Technique.

Practice Recommendation 26, Eight Principles of Surgical Asepsis

26.1 Only sterile items should be used within the sterile field. Introduction of non-sterile items increases the risk exposure of the patient to harmful exogenous organisms which could result in a negative surgical outcome. Both the scrub nurse and the circulating nurse are equally responsible for assuring the integrity of sterile items introduced to the sterile field. Sterile items should be opened as close as possible to the time required and not any earlier. Opened sterile items should not be left unattended as the sterile integrity cannot be guaranteed. Breaks in sterility should be immediately identified and corrected. As identifying a break in sterility may cause a delay or disruption to the procedure, the individual who has indentified the break should not be chastised but rather applauded. The correction prevents further contamination and risk to the patient and allows the surgical team to identify potential changes in practice and increases the quality of care the facility provides. In addition to correcting the break, documentation and patient follow-up should occur as indicated.

26.2 All items added to the sterile field should be assessed for sterile integrity. If there is doubt to the integrity, the item shall not be added to the sterile field. This may include, but not be limited to, items whose permeability has been compromised, if an item has been dropped or is past the sterility expiration date. This principle applies to all sterile items, either packaged externally or on site. Sterile items shall contain an external chemical indicator that clearly indicates the success of the sterilization process. An absent or questionable indicator would deem that item unsterile. An additional internal chemical indicator is desired to ensure the sterilization process has permeated the inside of the package.

26.3 Sterile gowns are only considered sterile in the front from the chest to the level at the sterile field and on the sleeves from the elbow to cuff line. All other exposed areas are

considered unsterile. Sterile individuals should avoid dropping their hands below the level of the sterile field and leaning against unsterile areas.

26.4 Tables are only considered sterile at table level. The portion of the sterile drape that falls below the level of the table is not considered sterile. In addition, any part of the drape that falls below the top of the table cannot be brought back up to the table level. Sterile drapes are used to create the sterile environment of the patient. As with the table, any item that falls below the level of the operative field cannot be brought back up to the level of the operative field.

26.5 The edges of sterile packaged items are considered non-sterile. Therefore, items introduced to the sterile field should be dispensed in a manner that recognizes this premise and preserves the sterile integrity. The circulating nurse should use good judgment in determining if the sterile integrity of an item can be maintained during flipping. If sterile integrity cannot be assured, the item shall not be flipped. Splashing should be avoided when pouring a solution onto the sterile field. The circulating nurse should hold the solution away from the sterile field so to reduce the risk of spilling and contamination.

26.6 Sterile persons should only be in contact with sterile items and areas and non-sterile persons should only be in contact with non-sterile items and areas. Non-sterile persons should not reach over the sterile field. Both the scrubbed and non-scrubbed persons are equally responsible for maintaining the integrity of the sterile field.

26.7 Movement in and around the sterile field should be limited so as to reduce the risk of cross contamination and the introduction of exogenous organisms into the sterile field. Scrubbed persons should remain within the sterile field. Unscrubbed persons should keep a safe distance from the sterile field; this is generally at least 1 foot. Unscrubbed individuals should not walk between two areas of the sterile field.

26.8 If a patient has entered the surgical suite where sterile supplies have been opened and the procedure is subsequently cancelled, those supplies cannot be re-used for another procedure and are considered contaminated. Additionally, if a sterile bottle of solution has been opened, it must be discarded at the end of the procedure and cannot be used between patients. This prevents the risk of cross contamination of exogenous organisms between patients.

Best Practice Guidelines – Instrument Management and Re-Processing

Instrument management and re-processing is a vital component to maintaining the integrity of the sterile procedure. Rigid guidelines must be adhered to in order to protect the patient against the introduction of exogenous organisms into the sterile procedure. Instrument management considers not only the sterile integrity of the surgical instrument, but also includes safe handling and care of the surgical instruments throughout all aspects of the procedure. Instruments are a necessary and vital part of the procedure, are often delicate in nature, expensive and therefore require a level of care to ensure their continued use and longevity. Re-processing involves the cleaning, disinfection, and sterilization of surgical instruments for sterile operative procedures.

The following are Practice Recommendations for Instrument Management and Processing.

Practice Recommendation 27, Intra-operative Instrument Management

27.1 Care should be taken to handle instruments in a delicate manner and protect instrument tips and functioning.

27.2 The scrub nurse should ensure intraoperative cleanliness of the instruments to guard against pitting and deterioration and promote longevity. In addition, instruments free of excess

blood or debris allows for better handling and use throughout the procedure. This is especially necessary when conducting precise work with the use of a microscope.

Practice Recommendation 28, Re-processing

28.1 Re-processing includes, but is not limited to, the following tasks: decontamination and cleaning, inspection, preparation, assembly, packaging, wrapping, sterilization, storage, handling, and quality assurance.

28.2 Personnel carrying out re-processing should wear the appropriate PPE as outlined by the particular facility.

28.3 Personnel completing the re-processing action should receive the appropriate training and education so to ensure the integrity of the processing and the safety of the personnel. Competency and monitoring should be conducted regularly to ensure the integrity of the re-processing action.

Practice Recommendation 29, Decontamination and Cleaning

29.1 The scrub nurse should prepare the instruments for processing by ensuring that excess blood and gross soil be removed at the end of the procedure. In addition, preparation for processing may include disassembling instruments, flushing lumens, and separating instruments from each other. Care should be taken when returning instruments to their pans so to protect them from damage during transport.

29.2 The scrub nurse should ensure that all sharp objects have been removed from the instruments and pans and placed in the appropriate sharps containers. This helps to reduce the risk of injury for members of the surgical processing team.

29.3 Instruments ready for reprocessing should be transported in a closed or covered container immediately after completion of the surgical procedure. If immediate processing is not

possible, instruments should be wrapped or covered with a water moistened towel or sprayed with an approved spray agent.

29.4 Instruments should be thoroughly cleaned of blood and gross soil before being prepared for sterilization. Manufacturer's guidelines should be consulted and followed during the decontamination and cleaning phase. Cleaning can be done either manually or mechanically. Facility approved detergents, disinfectants and chemicals should be used during the cleaning process.

29.5 Instruments should be sorted in like groups so that similar items are decontaminated and cleaned together. This allows for similar cleaning products and methods to be conducted together.

Practice Recommendation 30, Sterilization and Disinfection

30.1 Spaulding's criteria for medical devices should be considered when re-processing medical devices. Spaulding's criterion assesses the re-processing criteria based upon the type of contact and risk of infection outlining 3 categories including critical, semi-critical and non-critical. Critical items come into contact with sterile body tissue and should be sterilized between uses. Sterilization involves the complete destruction of all pathogenic micro-organisms and their spores. Semi-critical items come into contact with mucous membranes or broken skin and should be disinfected at a high level. Non-critical items contact intact skin and must be at a minimum thoroughly cleaned.

30.2 Appropriate packaging material shall be designed to ensure the sterility of the product through the sterilization process. Packaging should include the following characteristics: allow adequate air removal, penetration, and evacuation of the sterilant; be stable during the sterilization process; be resistant to punctures and tears; protect the contents from external and

internal damage; provide a barrier to external microbes; be economical; allow for the aseptic removal of the contents; be flexible and memory free; and, remain sealed during the sterilization process. Packaging material can be made of the reusable fabrics, single use fabrics, or rigid sterilization containers.

30.3 Sterilized packages should contain both an internal and external chemical indicator. The indicators identifies that both the external package and the internal contents have met the parameters of the sterilization process. An internal indicator is necessary to ensure that the sterilization process has adequately penetrated the internal contents of the package. In addition, a tamper evident device should be attached to each package to further ensure the integrity of the sterilized product.

30.4 Medical devices should be sterilized according to manufacturer's instructions.

30.5 Sterilizers should undergo planned and preventative maintenance. In addition, the efficacy of the sterilizers should be monitored daily. Each sterilizer should also be subjected to a daily biological test to ensure the sterilizer is meeting the indicated parameters of sterility. The facility should have the appropriate recall and follow-up procedures in place in the event that a sterilizer should fail a biological test. Sterilizer print-outs should be consulted after each load to ensure the sterilizer parameters have been met.

30.6 Items being considered for flash sterilization should be thoroughly cleaned and prepared for the sterilization process. Flashed items should be used immediately after the flash sterilization process. A chemical indicator should be placed in the sterilizer during the flash sterilization process to ensure the integrity.

Best Practice Guidelines – Patient Skin Preparation

Skin preparation is an integral part of reducing the risk of surgical site infection. The aim of the skin preparation is to remove dirt and transient organisms on the skin surface, reduce the microbial count, and prevent the rebound growth of microbes during the surgical procedure.

The following are Practice Recommendations for Skin Preparation

Practice Recommendation 31, Skin Preparation Agent

31.1 The facility should choose an appropriate skin preparation agent within the following guidelines. The agent should be safe for the area that is being prepped. For example, alcohol-based agents should not be considered for use in and around the eyes, ears, and mucous membranes or in the presence of burned or irritated skin. The agent should be a broad spectrum anti-microbial in nature with the ability to decrease the microbial count, be non-flammable, and have the ability to be quickly and thoroughly applied to the desired area.

31.2 The agent should be administered in accordance with manufacturer's guidelines. Generally, skin preparation solutions should not be warmed as this may change the desired effect of the agent.

Practice Recommendation 32, Skin Preparation Guidelines

32.1 The skin preparation should be completed by a non-scrubbed individual in advance of the surgical procedure. The agent should be applied using a sterile sponge or applicator while maintaining aseptic technique.

32.2 Exposure of the patient should be reduced to only those areas being prepped in order to maintain the privacy and dignity of the patient.

32.3 Areas of exposure should not be shaved unless the hair may interfere with the surgical procedure. If hair removal is deemed necessary, it should be completed as close as possible to the surgical time.

32.4 The surgical area should be inspected in advance and any skin conditions and irregularities should be noted and documented in advance. In addition, the area to be prepped should be clean and free of debris.

32.5 The skin preparation should proceed from areas that are cleanest to those that are less clean. The skin preparation will normally begin at the incision site and proceed outwards. The agent should be applied in a manner that prevents pooling of the agent under the patient. Care should also be taken to ensure the agent does not come into contact with electrodes or ESU contact pads. The agent should be dry prior to draping the patient.

Best Practice Guidelines – Sterile Draping

Surgical drapes are used to create the sterile field. Drapes are placed in such a manner as to expose and isolate the prepped area.

The following Practice Recommendations for sterile draping.

Practice Recommendation 33, Drape Material

33.1 Surgical drape material should have the following characteristics: provide a barrier to micro-organisms and moisture; maintain their integrity during the sterilization process; be durable; resistant to tears and punctures; free of toxic chemicals; and, cost effective.

Practice Recommendation 34, Draping Technique

34.1 The scrub nurse should consider the following when choosing the appropriate drapes and establishing the drape sequence: the size of the sterile field; location, size, and number of

incisions; the number of members a part of the surgical team; and, the instrumentation to be used during the sterile procedure as some instruments cause more wear to surgical drapes.

34.2 Always drape from a sterile to an unsterile area by draping the incision site first and allowing for adequate exposure.

34.3 Drapes should not be re-adjusted after initial placement. This reduces the risk of cross contamination. Drapes are considered sterile only at table level and areas below table level are considered unsterile. Drapes should hang 30 cm below the table level so as to provide an adequate margin of safety.

34.4 Devices employed to secure tubing or to hold the drapes in place should be non-piercing so to protect against punctures and perforations of the drapes.

Note: The above noted practice recommendations were developed through consultation and guidance from the sources outlined in Appendix B: Best Practice Guidelines Bibliography.

Appendix B: Best Practice Guidelines Bibliography

- Association of Operating Room Nurses (2003). *Standards, recommended practices, and guidelines*. United States of America: Author.
- Canadian Standards Association. (2003). *Z314.15-03 Warehousing, storage, and transporting of clean and sterile medical devices*. Mississauga, ON: Author.
- Canadian Standards Association. (2009). *Z314.3-09 Effective sterilization in health care facilities by the steam process*. Mississauga, ON: Author.
- Center for Disease Control. (2008). *Guidelines for disinfection and sterilization in healthcare facilities*. Retrieved September 16, 2009 from http://www.cdc.gov/ncidod/dhappdf/guidelines/Disinfection_Nov_2008.pdf
- Center for Disease Control. *Guidance for the selection and use of personal protective equipment (ppe) in healthcare settings*. Retrieved September 18, 2009 from <http://www.cdc.gov/ncidod/dhappdf/ppe/PPEslides6-29-04.pdf>
- Gilmour, D. (2008). Instrument integrity and sterility: The perioperative practitioner's responsibilities. *Journal of Perioperative Practice*, 18 (7), 292-296.
- Hind, M., & Wicker, P. (2000). *Principles of perioperative practice*. London: Churchill Livingstone.
- Laboratory Center for Disease Control. (1998). *Hand washing, cleaning, disinfection, and sterilization in health care*. Canada Communicable Disease Report Volume 24S8. Canada: Health Canada.
- Laboratory Center for Disease Control. (1999). *Routine practices and additional precautions for preventing the transmission of infection in health care*. Canada Communicable Disease Report Volume 25S8. Canada: Health Canada.
- Lynch, R.J., Englesbe, M.J., Sturm, L., Bitar, A., Budhiraj, K., Kolla, S.,... Campbell, D.A. (2009). Measurement of foot traffic in the operating room: Implications for infection control. *American Journal of Medical Quality*, 24 (1), 45-52. Doi:10.1177/1062860608326419.
- Morbidity and Mortality Weekly Report. (2002). *Guideline for hand hygiene in health-care settings*. Retrieved September 16, 2009 from <http://www.cdc.gov/mmwr/PDF/rr/rr5716.pdf>

Operating Room Nurses Association of Canada (2008). *Recommended standards, guidelines and position statements for perioperative registered nursing practice* (6th ed.). Canada:

Author.

Rothrock, J.C. (2003). *Alexander's care of the patient in surgery* (12th ed.). St. Louis: Mosby Elsevier.

Rutala, W.A., Weber, D.J., & The Healthcare Infection Control Practices Advisory Committee. (2008). *Guidelines for disinfection and sterilization in healthcare facilities, 2008*. United States of America: Center for Disease Control.

Tanner, J. (2006). Surgical gloves: Perforation and protection. *British Journal of Perioperative Nursing*, 16 (1), 148-152.