

The Application of a Simulation Model in an Ambulatory Surgery Center:

Developing from Novice to Expert Practitioner

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Abstract

Due to budgetary constraints in healthcare, hospitals are experiencing decreased time in which a newly hired registered nurse is exposed to orientation in a new area of employment. Similarly, institutions which are producing new graduate nurses are witnessing a decline in clinical experiences among hospital systems in which they are being placed to work. The nurse who has obtained their Doctor of Nursing Practice not only promotes the American Association of Colleges of Nursing Essentials of Doctoral Education for Advanced Nursing Practice but has a responsibility to do so which encourages and supports a patient centric practice. Through the application of simulation, the ensuing Doctor of Nursing Practice Project utilized a comprehensive review of evidence-based practice to develop an organizational policy in an ambulatory surgery center specializing in vein and vascular intervention. The implementation of a simulated scenario was utilized to appraise development of nursing staff knowledge by recall and application of organizational policy through the use of a simulated scenario. The scenario used to support the policy, involved a patient undergoing a state of malignant hyperthermia crisis; a low-volume, a high-risk disorder which can occur in the intra or postsurgical phase of a patient's care. Appraisal of the literature and design for implementation of the executed project based on a theoretical and conceptual framework, as well as utilization of evaluative methods of the proposed project will be discussed. Finally, examination of financial elements such as capital expenditures versus implementation of an affiliation agreement post project will be presented.

Keywords: high-fidelity simulation, simulation, debriefing, malignant hyperthermia

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Deterioration of clinical exposure has steadily declined throughout the years. While many variables contribute to the lack of clinical experience a student nurse may be exposed to, one recurrent theme emerges. Surrounding the phenomenon of clinical scarcity, the student often finds themselves competing for clinical placement with the graduate nurse within a unit to allow for orientation of the newly hired nurse to occur. Understandably, hospital education has always and will continue to demonstrate preference towards the hospital's direct investment of training the registered nurse (RN). Spector and Odom (2012) note "major changes in the U.S. healthcare system and practice environments will require equally profound changes in their education of nurses both before and after they receive their licenses" (p. 40).

The discussed phenomenon is not solely contained within a hospital's organizational structure. Due to increased demands of mentorship being placed onto staff nurses, many facilities not associated with a healthcare organization are embracing the opportunity to acquire a newly graduated RN. The hiring organization's other alternative is to employ an individual who possess experience in healthcare but not in the area of specialty in which they have been offered a position of employment. The uneducated versus inexperienced nurse poses numerous concerns with regards to the knowledge and skill set of the RN who may be prematurely placed at the bedside. One area of concern is the freestanding ambulatory surgery center (ASC) who frequently lack an association with a larger healthcare system.

Due to the absence of a stable pool of experienced nurses, the ability to assess an individual's knowledge base concerning the population of interest has witnessed an increase in the popularity of commencing the utilization of simulation, providing for an appraisal of nursing

staff knowledge of item specific processes. The following Doctor of Nursing Practice (DNP) project appraised current evidence-based literature and implemented the development of an organizational policy while evaluating the feasibility and functionality by utilizing a simulation based method of delivery. Enhancing the development of an organizational policy through simulation allowed information to be reinforced at the selected project site. Through the development and implementation phase of the project, identification of knowledge gap deficits was identified to aid the organization in evaluating the need for remediation further reinforcing the new policy.

Background

Those who are currently in nursing school are not the only individuals experiencing changes felt in healthcare based on lack of clinical capacity. Due to hospitals continually transforming organizational and educational infrastructures along with the need for nurses to continue professional/developmental growth, new graduate RN's are experiencing a decreased amount of time spent during orientation which has been routinely spent with an experienced nurse. Due to a shortened length of exposure during orientation of the graduate RN, hospital systems are beginning to see an impact on the safety and quality of patient care being provided.

Schools of nursing are expected to produce graduate nurses who can perform tasks at the fundamental core level. As this occurs, healthcare entities are experiencing the same educational phenomenon which encompasses the inability to provide proper training thus endangering the safety of the patient due to a lack of experienced nurses to orient newly hired staff.

To alleviate the amount of decreased exposure during the clinical experience, various State Boards of Nursing are looking towards the National Council of State Boards of Nursing (NCSBN) seminal study conducted in 2015 which looked at the utilization of the simulated

experience. Alexander et al. (2015) found, "limitations in sample size, a lack of randomization, and absence of a control group limited previous studies towards building the science and providing sufficient evidence upon which to base policy" (p. 39). Through a prolonged literature review and gathering of expert panel opinions, numerous State Boards of Nursing (including the state of Arizona) in conjunction with best practices developed by the NCSBN are presently granting 50% - 100% of the clinical time be obtained through participating in the simulated experience.

As the literature review was conducted a commonality was discovered suggesting simulation is proving to be cost and time effective for both the student and new graduate nurse. According to Shapira-Lishchinsky (2014), "studies have shown that simulations of ethical dilemma can improve the effectiveness of health institutions by reducing the number of errors, increasing the patients' safety, and providing optimal treatment" (p. 61). However, little research has been done which look at the implications in which the application of simulated scenario(s) has on the development of the RN in a subspecialty setting.

Significance

The progression of utilizing simulation to assess for clinical knowledge competency has increased based on various needs of nursing staff. To further give authority to this developmental tool, what was initiated as an advisory opinion from the State Board of Nursing will quickly find itself being integrated as part of the Nurse Practice Act with more stringent protocols. Inconsistencies among the utilization of simulation currently exist as hospital systems seek to integrate more simulated (low, mid, and high-fidelity) experiences within the healthcare arena. Exemplars range from conducting mock code blues to maintaining staff's proficiency during an

emergent situation inclusive of scenarios which deal with how to call the physician to obtain orders based on a needs assessment.

Other uses of simulation have included how to administer and provide care during the acute phase of the patient who receives thrombolytic therapy such as tissue-plasminogen activator (tPA). Patients who receive tPA are considered low-frequency, high-risk causality due to reperfusion injury increasing an individual's risk of developing a hemorrhage causing the implementation of stringent administration guidelines. The prevalence of community-wide education towards stroke prevention along with national patient safety goals such as door-to-needle time practiced through the utilization of simulation has significantly impacted the care of the acute stroke patient. Exemplars such as the one provided have allowed continued growth in the American Heart Association's use of the evidence-based practice of recommending the treatment time frame from three (3) to four and a half (4.5) hours regarding receipt of thrombolytic therapy. Due to collaborative efforts put forth by healthcare workers through the implementation of simulation along with education of the public utilizing various media outlets, stroke has decreased from being the third leading cause of death to now the fourth leading cause.

The increased level of knowledge of disease-specific care allows the ability of a hospital to obtain notoriety. As positive exposure continues, nurse leaders within hospital systems are enthusiastic about the opportunity to utilize simulation as it allows for real-time feedback based on learner responses. To assist in advancing the technology which has impacted patient care through development and implementation of simulated scenarios, the International Nursing Association for Clinical Simulation and Learning (INACSL) was established in 2011.

The standards set forth by INACSL for best practice regarding simulation saw "the original seven standards published in 2011, [be] revised in 2013 [to] include two new standards"

(Sittner et al., 2015, p. 294). Increasing the number of standards demonstrates the impact simulation has played in the development of the professional nurse. With the revision of standards, numerous opportunities for the implementation of the simulated experience have allowed leadership to evaluate a nurse or nurse's strengths and weaknesses through content analysis in conjunction with evaluating debriefing sessions of the simulated experience with the nursing staff.

A comprehensive literature review has shown increased utilization of simulated practices is increasing in favor among hospital leadership as its use increases among schools of nursing. One downfall to the integration of simulation among a hospital system incorporates the financial construct of the need to develop a dedicated simulation center. Schools of nursing and other teaching facilities often possess the funds to implement the technology. In an ironic twist, those who stand to benefit most from the utilization of simulation lack the capacity to afford such equipment. Numerous hospital organizations including freestanding clinics along with ASCs are unable to afford the cost, maintenance, and training of staff or a particular member of the team to maintain the upkeep of the simulation equipment.

Should a healthcare system wish to obtain a high-fidelity simulator along with supportive material, inclusion into the unit's or hospital system's capital budget must be calculated for each fiscal year. Laerdal Medical Corporation provided an itemized quote to this DNP student which incorporated initial startup costs for a high-fidelity simulation mannequin, vital sims monitor, and accompanying laptop. The obtained quote averaged more than \$85,000 less the cost of yearly maintenance and staff (A. Sinyay, personal communication, September 9, 2016). Due to constraints within the healthcare system, hospitals are unable to validate the purchase of simulation equipment based on current healthcare costs and reimbursement rates.

Due to the limitations mentioned above, it may prove to be beneficial for a healthcare system, especially freestanding to establish a partnership with a school of nursing or other approved simulation center who has established equipment. Based on wants versus needs assessment of hospital leadership forming an affiliation could work in both interests of the hospital and nursing school/simulation center.

The importance of feedback demonstrated through a review of the literature, staff discussion, and administration lends itself to the importance of establishing a project as the one implemented. Through establishing an organizational policy by incorporating the utilization of simulation within an ASC, care of the patient can be drastically increased. Due to the nature of the proposed system change, collaboration among nursing staff will be paramount in providing productive nursing results positively affecting patient outcomes.

Problem Statement

With the potential lack of clinical experience for the nurse, one must question the quality of care patients are receiving. The absence of experience stems from many sources, i.e. newly graduated nurse, mean length of experience of nurses found working on desired unit or institution, and decreased time spent during orientation lends itself to an identified need. Schools of nursing are being pressured to produce a graduate nurse who can implement the fundamental skills of nursing care through the adversity of decreased clinical exposure.

The ability to perform a knowledge-based assessment of either the Graduate or experienced nurse needs to be addressed. Capacity to do so exists through conducting a simulated experience. The identified practicum site which is recognized as a free-standing ASC specializing in vein and vascular care currently has five locations throughout the Phoenix area with nursing staff rotating through each location. One location was chosen based on containing

both experienced and novice nursing staff often making it difficult to determine the needs of the individual due to a lack of a formal training program. After meeting with the practicum site's Assistant Director, the needs of ASC were discussed exposing the necessity to develop an organizational policy to advance staff's knowledge base. The following DNP project was discussed with a key stakeholder of the practicum site who granted permission for utilization and implementation of the proposed project. The following project was implemented through the development of an organizational policy used to enhance staff's foundational knowledge of at-risk conditions within the ASC setting.

Through collaboration with a small university and simulation center, Bednarek, Downey, Williamson, and Ennulat (2014) determined "simulation does facilitate learning in medical education under certain conditions" (p. 27). When conducted, the simulated experience will focus its foundational program around four key components of professional growth. Bednarek, et al., (2014) describes the elements as being, "1. recognizing a change in condition; 2. performing an assessment of that situation; 3. identification of interventions for that status; 4. evaluating the effectiveness of said intervention" (p. 27). The chosen simulated experience to assist in the facilitation of the new policy will incorporate the emergent condition of malignant hyperthermia crisis (MHC).

Hospitals are seeing an increase in the number of the rapid response's being utilized while free standing centers are witnessing increased transfers to higher levels of care based on lack of critical assessments of the patient not being discovered in an appropriate length of time. With the acuity of patients increasing the amount of knowledge an RN is expected to know exponentially grown regardless if they received training or not. To foster a healthy learning environment and

not one of fear and intimidation, the utilization of simulated experiences has proven beneficial in establishing quality care while providing knowledge gap assessment.

The Project Question

Is there evidence to suggest the implementation of an organizational policy founded upon the application of a simulation model will improve nursing knowledge and comfort levels among ambulatory surgery center staff?

Purpose Statement

With the decline in healthcare reimbursement rates and number of clinical experiences observed implementation of the project developed an organizational policy utilizing simulation to assess gaps in the level of knowledge and comfort in the care of a patient experiencing malignant hyperthermia crisis in an ASC setting. Through this experience, the application of a simulated experience would act as a means of addressing a policy change which focuses on implementing simulation to enhance organizational policies and education needs.

By establishing an area of safety for learning to occur, staff who participate in a simulated experience become appreciative of the safe environment in which they learn and develop their skills (Campbell, 2015). According to Campbell (2015) “as [simulated] scenarios evolved, each participant was able to ask any question” (p. 80). Through the implementation of simulation, the ASC leadership can assess the critical thinking capabilities of its employees as well as develop a process improvement plan based on the identified needs of its staff members.

Project Objectives

The implemented project established an organizational policy utilizing the simulation methodology to conduct a knowledge and skills assessment among ASC staff. To reinforce the means of the policy change, a simulated experience involving low-volume, high-risk scenarios

such as MHC was utilized as an exemplar for evaluative purposes to address the proposed project question. With implementing the policy which centered on the simulated experience, the leadership of the ASC was able to utilize an evaluative tool allowing outcomes to be measured based on individual performance.

After conducting a need based approach, the design of the policy established the ability to evaluate and enhance the ASC staff member's knowledge towards patient care which was carried out to indicate achieved objectives at the conclusion of the DNP project (Table 1).

Table 1. Objectives for Doctor of Nursing Project

Objective	Proposed Action	Anticipated Outcome	Anticipated Completion Date
(1) Integration of evaluation tool	An evaluation tool that measures simulation outcomes will be identified.	An evaluation tool which measures simulation outcomes will be put into place within the organization.	March 30, 2017
(2) Measurement of staff competency	Competencies will be measured to identify proficiencies regarding strengths and weaknesses of malignant hyperthermia crisis.	Utilization of simulation to assess and evaluate identified staff skills will be put into policy.	March 30, 2017
(3) Establish simulation policy congruent with Arizona State Board of Nursing (AZBN) Advisory Board Opinion	Design organizational policy based on NCSBN 2015 Simulation Study and 2015 AZBN advisory opinion.	Policy developed through evidence-based standards set forth through literature review along with the AZBN for the key stakeholder to utilize.	April 1, 2017

An example in which the provided tool would be used to educate nurses incorporates the implementation of ASC's malignant hyperthermia protocol before the patient's condition deteriorates. According to Sheldon (2014) "the evaluation of policy implementation, the development of systems models to explain the multiple factors that influence policy making, and

the advancement of knowledge within specific policy areas, are redefining the field of policy analysis” (p. 102). During the implementation of the DNP project, leadership of the ASC had the opportunity to view a simulated scenario (see Appendix A for more information regarding the malignant hyperthermia simulation scenario) to reinforce the implementation of the proposed policy. Application of such a policy allows for increased retention of staff should leadership look towards the policy as a means of a staff nurse’s return-on-investment. Lapkin and Levett-Jones (2011) state, “it is important that decision-makers have an economic analysis that considers both the costs and outcomes of simulation to identify the approach that has the lowest cost for any outcome measure or best outcomes for a particular cost” (p. 3543).

The capability to conduct simulated scenarios lies in the capacity to emulate as close as possible to an identified situation in which an area of health care is underdeveloped. As an example, ensuring patient safety is of the utmost concern, a patient who undergoes treatment which is seen to be labeled as low-frequency, high-risk can now be examined by a nurse who has been taught utilizing the simulated experience. According to Frick, Swoboda, Mansukhani, and Jeffries (2014) "simulation use has escalated in nursing education programs as well as clinical practice institutions, which use it for the interview process, orientation, and annual competency review" (p. 9).

Equal to the circumstance in which the ASC finds itself, many hospitals are finding themselves stretched thin due to budgetary restraints resulting in an inability to orientate new staff correctly. Specialty areas such as the intensive care unit, cardiovascular critical care unit, and emergency departments are finding themselves with employees who are providing care to patients with minimalistic knowledge of how to care for the critically ill patient. Through self-identification, hospitals have looked internally toward quality improvement efforts of all areas.

Hospitals have found a lack of an established knowledge base through new graduate orientation programs or how "experienced" nurses perform during competency reviews. The potential legal implications of an individual possessing a knowledge deficit regarding patient safety can be detrimental to the organization.

It is in this respect the need for development and implementation of a policy addressing the needs of staff to promote patient safety through knowledge gap was established to enhance an individual's baseline knowledge. The application of simulation allows staff members of the ASC to be placed in a simulated scenario in which staff performance can be evaluated and critiqued. The importance of this lies in the fact staff are being hired with little to no experience within the acute surgical/post-anesthesia setting necessitating the need for performance evaluation.

Organizational policy formation within the ASC was developed to establish standards which lie in congruence with those found within the hospital setting and are in-line with the Arizona State Board of Nursing standards. The predominant goal of the project addressed patient safety while increasing the prospect of staff retention due to the visible support of the leadership team. To make the project successful, each participant who volunteered to be part of the project acquired the ability to increase patient safety when positive feedback was utilized. As the ASC leadership evaluated staff based on ability to perform within the clinical area the focus was not based on previous skill levels or level of degree obtained (i.e. Associated Degree, Bachelor of Science in Nursing) but rather on the employee's ability to critically think. McGaghie, Issenberg, Barsuk, and Wayne (2014) state, "measured outcomes [through simulation] have been achieved in [various] educational laboratories, and has improved patient care practices, patient outcomes,

and collateral effects” (p. 375). Prior to implementation, measurable goals included the voluntary participation of 100% of staff members working in the identified project site.

Search Terms

The research was limited to studies conducted in the U.S. and Europe within the last five years. Keywords were queried through online databases such as CINAHL, EBSCOhost, and PubMed to obtain the most relevant research in how to establish an evidenced-based policy regarding simulation within an ASC specializing in vein and vascular surgery. With “full text” selected and with publication dates selected from 2011 – 2016, an initial search of the term “simulation” resulted in over 3,995 search results which indicated a need to utilize a Boolean search. The word “nursing education” was added to the database search along with “simulation” while continued use of “full text” and publication dates of 2011 – 2016 remained selected. Utilization of these keywords resulted in 375 articles meeting the search criteria. Of the 375 articles, which met the revised criteria, 368 dealt with nursing student education. Narrowing of the items was set when another Boolean search term included “staff education” to the database search resulting in seven articles.

The literature obtained varied with each article review and provided a different definition of simulation, utilization of the debriefing process, acquired information, education, nursing, development, and implementation. Upon initial review of the literature, search terms were altered to obtain different results. Narrowing the search results to include hospital staff and the application key terms such as staff development, simulated learning, nursing program development, program evaluation, high fidelity simulation, and affiliation, yielded numerous responses. After altering search criteria keywords along with utilizing a Boolean search to focus on simulation, debriefing, educational simulation, malignant hyperthermia, and ambulatory

surgery center, literature was obtained to help facilitate the implementation of simulation programs within the acute care setting for existing staff nurses.

Through the application of changing search terminology and criteria, ten research articles were identified.

The necessity to further narrow the search to staff development and simulation demonstrates little research has been conducted surrounding the utilization of simulation for clinical development of staff nurses within the ASC setting. Facility databases were not utilized in the preparation of the proposed method due to lack of formal policy limitations as the practicum site held very few formal policy and procedural protocols.

Review of the Literature

Numerous articles exist which discuss the importance of integrating simulation into the realm of education. However, the primary focus of the first query revolved around simulation within the undergraduate nursing school setting. Numerous State Boards of Nursing are now allowing the simulated experience to occur in place of the hospital setting due to a lack of clinical sites for schools of nursing with minimal regard to the skills obtained as new graduates enter into various specialty areas. Due to the increased prevalence of this practice, research methodologies have been developed to look at the sustainability of developing simulation centered curricula.

Frequent studies have been conducted which examined the use of simulation in the development of clinical skills of nursing students. Studies were initially reviewed with the first attention of the acquired research being focused on the developmental growth of the student nurse was not within the scope of the DNP project. Studies of this nature were reviewed to acquire a description of terms to be utilized while conducting a Boolean search. Educational

constructs within nursing is a broad topic unto itself with the need to be further narrowed to include staff development.

All articles reviewed discussed the education of the staff nurse at various levels of aptitude, yet the authors were able to bring the focus of the research back to the implementation of simulation. Through continued efforts, review of the literature which yielded positive results included topics such as perioperative patient safety, cardiovascular critical care, central venous catheterization, pediatric intensive care of the open heart surgical patient, community care, and sterilization techniques.

Review Coverage and Justification

All literature reviewed including those articles deemed not appropriate for the utilization of the DNP project had a universal theme associated with them – education through the use of simulation. Although studies discussed various outcomes of simulation, two of the ten articles focused their attention on team building among staff members. Neither article discussed a need to increase team camaraderie, but rather group communication as team training through simulation which demonstrated a positive impact on learning within the perioperative setting (Granger, Hebb, Lavalley, Murray, 2011). Half of the articles reviewed occurred in a setting comparable to an intensive care unit. Upon further analysis of the literature, the works needing further evaluation looked at team building in the perioperative area due to a decrease in team communication.

A needs assessment of the ASC was conducted when discussion of the DNP project commenced with the Assistant Director of the practicum site. After a further inquiry into the field of perioperative care resulted in team building exercises, the search criteria were further narrowed down to include MHC which was an identified source of greatest need for the

formation of policy and procedure within the ASC. Malignant hyperthermia crises, first established in the 1960's reveals a high-risk, low-incident syndrome which can be life threatening (Mullen & Byrd, 2013) if intervention is not conducted quickly. No results were found utilizing the second set of search terms which included the terminology malignant hyperthermia.

Initial review of the literature exposed a lack of emphasis on research on the development of the current staff nurse as well as the developing graduate nurse. Based on this observation there is an evident need for further development regarding utilization of simulation within the ASC setting. All articles addressed the positive effects implementation of simulation had during initial baccalaureate training but soon dissipate once the acute care setting is entered.

Two of the items reviewed encompassed a “team building” approach towards simulation and were included in the literature review due to their relevancy towards the policy development. Team training has been found to be vital for advancing healthcare systems towards increased levels of patient safety and quality care (Ballangrund, Hall-Lord, Hedelin, Persenius, 2013).

Review Synthesis

The initial seven articles were examined for value towards the proposed DNP project with only four being considered as appropriate for utilization with regards to the project through the development of a synthesis matrix (see Appendix B for more information on exemplar synthesis model). The other six literary articles were obtained by changing "staff education" to "acute care," "staff development," and "evaluation." Date ranges for the materials included two from 2011, three from 2013, one from 2014, and four from 2015. The literature review demonstrates the process of simulation utilization within the acute care area has not been thoroughly studied when compared to the use of nursing schools and lower acuity care patients.

Of important note regarding the nine standards set forth by INACSL is Standard IV: Facilitation plays a substantial role in the active learning experience which allows the implementation of learning outcomes which must be met for a simulation to be considered successful. All learning outcomes are established and conducted in a manner allowing for congruency to be followed. If objectives were not achieved the simulation had to either be done again or remediation offered to each staff nurse who failed to meet the objectives to allow for growth from the same learning experience.

Gerolemou et al. (2014) described simulation as an act which allows deliberate and repetitive practice in a typical atmosphere. The standards based on INACSL were further evaluated by conducting a comparison analysis to evaluate the collected articles relevancy towards one another along with the projected outcome set forth within the DNP project. Six of the items reviewed discussed the role, importance, and need for conducting debriefing exercises at the conclusion of each simulation. Of important note is debriefing, located within Standard VI of the INACSL best practice standards. Each study reviewed discussed the importance of debriefing while aligning its use throughout the article utilizing the parameters set forth by INACSL.

Debriefing is an essential component of the simulation experience as two of the six articles focused strictly on debriefing staff at the conclusion of the simulation. Debriefing is considered to be one of the most important elements in simulation allowing for retrospective analysis of the scenario presented (Abe, Kawahara, Yamashina, & Tsuboi, 2013; Fey, & Jenkins, 2015). The utilization of a facilitator in an atmosphere considered to be a "safe zone" and is free of ridicule, allows each individual to describe how they felt during the simulated experience. Studies which discussed debriefing looked at this time as being valuable not only to discuss the

assigned learning outcomes but to receive feedback regarding the effectiveness of the simulation and discuss areas of improvement.

Other articles reviewed included topics encompassing pediatric open heart, central venous access sterilization, community health, and models of education within the operating room. All items expressed the relevancy for instituting “their” methodology of how to structure a simulation-based program. This insight proved to be invaluable as each article proposed policy and procedure development while involving standards set forth by the INACSL including insight in how to debrief staff members who participated in a simulated experience.

Review of Study Methods

During the assessment of the literature, study methodologies were examined for consistency and appropriateness to the DNP project. Numerous methodologies included the incorporation and distribution of a questionnaire utilized by participants to appraise the effectiveness of the simulation. Through the implementation of evaluative surveys, participants showed the simulated experience provided an opportunity for learning to occur (Campbell, 2015). Eight of the ten reviewed articles applied a Likert scale to assign a quantifiable number to be associated with subjective responses. Comment sections are also included in the questionnaires allowing for facilitation of anonymous feedback concerning what learners may or may not have liked about the simulation experience.

The incorporation of simulation as an educational tool was new for many of the participants within the literature whose knowledge of bedside care ranged from 2 to 25 years. To aid those who did not have prior simulation experience or were learning a new skill, lectures within a classroom setting occurred. Prior to conducting the simulation all learners were orientated and provided time to examine the simulation laboratory to allow for acclimatization to

the environment. In some, but not all selected research studies the utilization of videotaping was applied to allow for participant review during debriefing sessions.

Further methodologies implemented the use of a minimum of two different case scenarios based on “real life” complications from patient care. During application, simulations were comprised of both participant’s along with observers who were placed in another location. Though placed in an alternative location, observers had the ability to view via one way window or television monitors real time actions of staff nurses being evaluated. Once completed, participants would follow the simulated scenario with debriefing and exchange places with the observers now becoming the participant.

Significance of Evidence to Profession

Although the scholarly articles varied as to whom the target audience was (intensive care unit nurses, pediatric nurses, etc.) the rationale behind conducting each simulation is evident. Whether to establish new knowledge or enhance skills, the utilization of simulation allowed participants to enhance further knowledge based on developed objectives. Research and evidence accumulated throughout literature review provided understanding into various methodologies in which preparation and application of simulation are developed based on variable skill levels of each individual. Within the ASC, a shortage of evidence which discusses the implementation, evaluation, and development of various skills acquired through simulation is lacking. Based on personal communication and extensive literature review, the necessity to implement an organizational policy utilizing simulation within the ASC based on care of the patient experiencing MHC warranted a need.

As the number of out-patient surgeries performed annually continues to grow so too does the patient population who requires increased nursing care due to complex comorbidities (Ball,

Doyle, & Oocumma, 2015). The clinical significance to positively impact patient safety as well as maintain retention of nursing staff exists among the application of specified case scenarios within the ASC setting. Individuals who participated in changing roles throughout the simulation were found to have greater job satisfaction due to the implementation of new skills and knowledge obtained from the simulated experience (Kirk, 2015). Utilizing various methodologies, results, and discussions found within the literature the introduction of establishing an organizational policy with the utilization of simulation as a means to reinforce the developed policy showed to be feasible within the allotted time frame.

Theoretical Model

The proposed project for the Doctor of Nursing Practice project implemented an organizational policy within an ASC utilizing the application of Patricia Benner's conceptual framework, "From Novice to Expert." Through a comprehensive literature review, little to no evidence was found regarding the application of Benner's theoretical model in the development of simulation.

Theoretical Identification

As the profession progressed, nursing began to play a prominent role as a provider of care, causing the differentiation of conceptual ideas to encompass the perception of nursing. While the evolution of the profession occurred, nursing began to distinguish various philosophical backgrounds based upon several nursing theories. One of the most widely accepted nursing theorists theorized the concept of progressing from a novice nurse to one who has developed into an expert within their field of specialty over time. Through the implementation of the discussed theoretical framework, the DNP Project found itself being built upon the essential core elements of Benner's "From Novice to Expert" theoretical foundation.

In 1984, Patricia Benner developed the concept which observed “students [as being] overwhelmed by the practice of an expert nurse and fails to see their progression toward expert practice” (Carlson, Crawford, & Contrades, 1989, p. 188). Although formally established in 1984, Benner based her theoretical framework off of Dreyfus's skill acquisition model which looked towards the development of nurse educators (Ramsburg & Childress, 2012, p. 313). Originally intended to be applied to the student nurse, the discussed theoretical framework can be applied to any practicing nurse, at any stage of their career. With the introduction of simulated experiences, opportunities are increasing for both the novice and expert nurse to go outside of their comfort levels through participating in simulated scenarios. As the use of simulation increases, the theoretical foundation set forth by Benner can be inverted allowing for the expert nurse to transgress back to the novice nurse. Both the novice and expert nurse may not have experienced a simulated scenario or have been exposed to the situation unfolding before them. It is at this crucial juncture within the expert nurse’s experience that regression occurs causing the expert to become the novice.

To further recognize the application of Benner’s theoretical concept and how it applies to simulated practice, an understanding of Benner’s philosophical definition of “Novice to Expert” must be understood. Based on five levels of proficiency, Benner defined the acquisition of knowledge, which found itself being founded on skill attainment through the Dreyfus model. Carlson, Crawford, and Contrades (1989) reiterated the following definitions of Benner’s theoretical philosophy as being:

Novices are persons who have had no experience of the situations in which they are expected to perform. Their rule-governed behavior is limited and inflexible. Advanced beginners are those who demonstrate marginally acceptable performance and relate with

recurring meaningful situational components. Components begin to see their action regarding deliberately planned, long-range goals with clear priorities. Proficient perceive situations as wholes and their performance as guided by maxims and keen perception. Experts have an enormous background of experience with an intuitive grasp of each situation. They zero in on the accurate region of the problem and are fluid, flexible, and highly proficient (p. 188).

As evidenced by Benner's five cognitive domains, the expert nurse who has not been exposed to a simulation quickly reverts to the novice role based on the simulated experience. The importance of Benner's work demonstrates all developmental knowledge within the realm of providing nursing care is acquired through time. More importantly, Benner's theoretical framework establishes how an individual possesses the ability to transfer the decision-making process to a perceived awareness.

Application of Identified Theoretical Concept

Benner's theoretical concept allows the ability for the attainment of nursing knowledge to embrace the idea of nursing being a transformative process. As nurse's progress through their career, the once novice nurse will develop into the expert as the nurse advances through the stages of skill acquisition (see Appendix C for more information on theoretical framework)

It is important to note, although Benner suggests transformational growth as the nurse is exposed to new experiences, the evolution from "Novice to Expert" is not guaranteed as not every nurse will become an expert. This "stagnant" phase of a nurse's career could be redeveloped through the implementation and utilization of simulated scenarios which place the nurse in an unfamiliar situation allowing for increased cognitive development. Although Benner describes the "expert" as being more of a personality trait, the methodology in which one thinks

is developed through situational experiences, knowledge acquisition, and skill attainment (Altmann, 2007, p. 117).

The discussed theoretical model establishes the foundational framework for understanding the development of nursing proficiency and skill attainment. According to Bultas, Hassler, Ercole, and Rea (2014) patient care and outcomes may improve. Currently, there is debate among nursing scholars as to which categorical development Benner's theoretical model may fall. Regardless of how the theory is categorized (meta-theory, grand nursing theory, etc.) the knowledge identified by Benner has allowed for the implementation of various educational strategies. Knowing how a nurse's conceptual discovery of knowledge is acquired, the application of numerous methodologies can be applied, one of which encompasses this DNP project.

Through conducting literature review based on theoretical models of nursing practice, it was determined other theorists could be utilized to build the foundational philosophy of the DNP project. Theorists such as Kolb's Experiential Learning Theory or the Dreyfus and Dreyfus model of Skill Acquisition are exemplars which can be applied to simulation. Through continued research and evaluation, this author feels Benner's theoretical nursing foundation best demonstrates the true goal in which the DNP project attempted to fill in areas of knowledge gaps such as MHC.

Although Kolb's Experiential Learning Theory demonstrates a cycle of learning, the theory is based on the suggestion the learner touches all of the bases of the four-stage learning cycle. Unlike Kolb's Experiential Learning Theory, Benner's theoretical concept looks to incorporate skills acquisition of nurses across their career. An individual's attainment of knowledge occurs at varying times within their career. It is the idea of growth in which Benner's

theoretical philosophy is best used to implement the utilization of simulation within the ASC with varying levels and experience of the knowledge base.

Tenets of Identified Theoretical Concept

As previously discussed, Benner's philosophical framework utilizes the concept of five modalities of knowledge attainment. Based on her research and observational data, the novice nurse is one who has no experience regarding the situation. Every person who enters into the healthcare field as a graduate nurse possess minimal knowledge which is transferred to the care of the patient unless previously seen during exposure while in nursing school. Benner's research confirmed reflection on clinical narratives as coming closer to reproducing and enhancing experiential learning (Cathcart & Greenspan, 2013, p. 964). Benner's five tenets of nursing are as follows:

NOVICE. Nurse educators working within a hospital-based facility have noted an increase in changes regarding clinical environment which can impact the way in which education can be delivered (Maguire, 2013, p. 645). It is the novice nurse who can obtain all shared knowledge through exposure of awareness as their ability to be "inflexible" begins to change and acclimate to the circumstances and environment which they find themselves.

ADVANCED BEGINNER. Capacity to achieve the advanced beginner stage advances as the person starts to demonstrate acceptable behavior in situational circumstances. An example of transitioning from novice to advanced beginner would incorporate the nurse in knowing how to deal properly with a patient who is experiencing extreme pain. Knowing how to implement both medicinal and therapeutic technique, the advanced beginner nurse has adopted prior knowledge of not being able to control a person's level of pain adequately while in the novice stage of their career.

COMPETENT. As a person progresses through their career, the advanced beginner nurse evolves into the competent stage of proficiency. It is at this juncture; one may argue the actual development and transformational shift of data and knowledge acquisition occurs. Acting as the skilled nurse, one can obtain prior lived experiences while incorporating long-range goals with clear and deliberate priorities. It is within the keyword, “prioritize” in which the actual development and growth and an individual are seen. Without the ability to prioritize care, the nurse remains in a state of need and has not transitioned into a state of want allowing for a proactive state for the patient to be effective.

PROFICIENT. Advocacy is continually seen at all levels of proficiency. The difference rests with the first two in which a clear and decisive plan may not be successfully carried out. As opposed to the novice nurse, the advanced beginner may advocate on behalf of the patient who is in pain, yet the ability to prioritize the needs of the patient are lacking. Once the capacity of the competent nurse has been attained, the next step in the evolutionary cycle of the nurse is to evolve into the realm of proficiency. At this level, Aristotle’s (n.d.) notion of “the whole becoming greater than the sum of its parts” can be seen evolving through skills sets. Based on keen observational skills, the proficient possess the ability to evaluate the patient as being inclusive of a larger picture consumed by numerous moving parts (i.e. collaboration among interdisciplinary members, long-term plan of care, and discharge evaluation/teaching). It is within this realm of the theoretical model which one truly begins to see the development of one’s coordinated effort between a person’s performance and increased cognitive ability.

EXPERT. Lastly, Benner incorporated the term expert into her theoretical model allowing an individual to see actual developmental growth. The person who has achieved expert status carries with them an extensive background of experiential knowledge with an instinctive

grasp of complex conditions. Much like prioritization was essential within the competent stage; the expert can utilize an instinctual knowledge base. Able to identify a problem-based approach, the expert can act in a manner which is fluid, flexible, and demonstrates high proficiency (Carlson, Crawford, & Contrades, 1989, p. 188). Of vital importance, no timeframe exists as to how a person should progress among the five stages. Each assimilates and acquires knowledge at different rates from one another; it nearly becomes impossible to place a quantitative timeframe on how an individual should develop.

Identified Theoretical Concept to the Doctor of Nursing Practice Project

Although limited evidence exists connecting the simulated experience to a theoretical framework, this author feels utilization of Benner's "From Novice to Expert" theory is a necessary component to successful implementation. It is this breakthrough among nursing theorists in which the discussed conceptual framework identifies the need for application during the nurse's developmental phase throughout the simulated experience.

The application of scenarios such as the one implemented during the DNP project whose focus was on low-volume, a high-risk condition such as MHC can cause the expert nurse to revert backward in their knowledge of skill acquisition without difficulty. For some, this regression may not be as involved as returning fully back to the novice state, but a transformational shift will be able to be seen due to infrequent exposure to the patient situation. Although Benner describes the expert as having a vast background of experience, not every person will be able to recall which goals/objectives are to be accomplished in a low volume scenario.

According to Inch (2013) "competence in the perioperative environment requires specialist knowledge. . . allowing for newly qualified staff in this environment to experience

difficulty in making the transition into practice” (p. 1166). With no evidence to support or formally define quantifiable terms, “newly” qualified staff may include a nurse who has numerous years working in subspecialty areas (intensive care unit, orthopedics) who may not have any exposure to peri/post-operative care.

Clinical practice has advanced to incorporate simulation to evaluate a nurse’s performance but also introduce and reinforce concepts which the nurse may or may not have experienced. After a needs-based assessment and depending on the scenario, the expert nurse can be taken back to the novice state without difficulty founded upon the particular situation faced with, i.e. MHC. The integration of simulation to reinforce conceptual ideas increases attainment of knowledge allowing transferability to the clinical setting while enhancing the safety of patient care.

The importance of implementing nursing theory into the integration of simulation allows the nurse and observer to determine what is known and what needs to be known. As cognitive domains begin to develop, it is important to understand "theories are based around helping individuals to fulfill their physical and mental needs" (Colley, 2003, p.34). The implemented DNP Project was able to do just that by establishing an organizational policy utilizing simulation in which a patient experiences MHC. Permission to utilize a pre-established simulation focusing on MHC was obtained from the Association of periOperative Registered Nurses (AORN) (AORN, 2014). The prewritten simulation developed by AORN will be conducted to reinforce the implementation of the developed simulation policy allowing for current trends in evidenced-based practice in healthcare to be provided.

As previously discussed, one of the most important constructs of concluding a simulated experience is the debriefing process which allows the simulation expert to facilitate a group

discussion while encouraging open dialogue free of criticism. Individually, the simulation specialist in conjunction with leadership may choose to further debrief an individual on a one-on-one basis allowing for constructive, yet positive feedback without causing the individual to become defensive should remediation be deemed as necessary. According to Gregory, Bolling, and Langston (2014) "key components of the initial approaches [affiliation] included an externship for nursing students and a revised internship for experienced nurses" (p. 96) are paramount to success. With the implementation of the DNP Project, the ability for the ASC to continue developing a needs assessment concerning knowledge deficits, a draft of an affiliation agreement was provided as an exemplar should the center wish to pursue outside resources to help integrate a collaborative learning environment.

The establishment of such an association would be financially appealing as the cost of obtaining simulation equipment along with monitoring equipment exceeds \$86,000 based on the data collected and through the implementation of the DNP Project. The development of an organizational policy reinforced by a 'patient' undergoing MHC, would act as a model allowing the progression of further simulation scenarios enhancing staff growth, retention, and patient safety. Upon implementation and review of the process has been discussed with key stakeholders, dissemination of the policy can be applied to the other ASCs inside the organization.

Project and Study Design

Without the ability to formulate a comprehensive project design, information obtained from the literature and time utilized executing change would be for not. One of the significant components an individual must assess when steering change among clinical practice is to consider the dissemination of the project to determine if results yielded an outcome favoring the

intended intervention. Through continued literature review, the role of the DNP has an impact on healthcare by utilizing existing literature while translating it into a clinical platform which is patient centric. According to Ingham-Broomfield (2016), “nurses need to be competent in evaluating the strengths and weaknesses of . . . studies and the applicability of them about their working environment” (p. 41). As the DNP, prepared nurse begins to formulate change; the individual must continually evaluate the intervention for efficacy and its effects on different areas of the healthcare system including knowledge acquisition and patient care. If evaluative efforts find the intervention not to be well received or needing adjustment, it becomes the obligation of the DNP prepared the nurse to notify key stakeholders (i.e. leadership) while reexamining which phase of the intervention may need to occur.

Permission from the site administrator to perform the implementation project was granted after discussing the benefits of how a simulated experience allows for enhanced learning opportunities. Evaluative measures of the staff who participate in the simulated experience, as well return-of-investment opportunities including increased retention of staff while maintaining evaluation of annual competencies based on low-volume, high-risk scenarios were also discussed.

After permission was granted and prior to implementation, the proposed DNP Project was submitted to the Institutional Review Board (IRB) utilized at Touro University at Touro University, Nevada located in Las Vegas, Nevada who determined the proposed DNP Project to be exempt from full IRB review. The project involved little to minimal to no risk of the participant. In accordance with §46.101(b) of 45 CFR 46, activities which involve human subjects will be deemed as exempt status if the project involves minimal to no risk. Further

examples of exempting a study/project from IRB review include "research involving the use of . . . survey procedures" (Health and Human Services, 2009, para. 4).

The project involved the application of an organizational policy change which utilized simulation to implement and enforce the new policy which encompassed MHC protocols developed by the ASC. Voluntary participation in the project included distribution of a multiple-choice pretest to establish participants baseline knowledge of MHC. At the conclusion of the simulation, an identical multiple-choice posttest questionnaire with the inclusion of open-ended questions was provided to allow participants to offer feedback on the execution of the project. Both pretest and posttests were administered online via SurveyMonkey which did not ask for or contain any personal, identifiable information.

At the conclusion of the simulation and debriefing session, an end of course evaluation (reflective of the subject's feelings regarding the implemented organizational change through simulation to reinforce the organizational policy) was provided. Due to the project being voluntary, payment for participating in the project did not result in monetary compensation from the DNP student or affiliated school. Since the project did encompass an organizational policy change, compensation was held at the discretion of the leadership of the ASC as the date for project implementation occurred on Thursday, March 30, 2017, during ASC staff members scheduled work time in which surgical cases were not conducted on a weekly basis (primarily Thursday's).

Ethics and Human Subject's Protection

According to Goodwin (2016), human subject testing is something "in hindsight; governments now find that the ethical breaches on which atrocities manifested clearly transgressed basic moral principles and respect for the dignity of others" (p. 372). In 1947, the

Nuremberg Code was established outlining the role of the human subject stating voluntary consent essential (U.S. Army, 1949, p. 181). Ethics encompassing the topic of research has had a questionable past, and without providing careful deliberation, the potential for research to do harm will always be present (Doody & Noonan, 2016).

Unlike its predecessor, the introduction of the Belmont report in 1979 caused participation from subjects in a project to be more ethical as boundaries between practice and research were further defined. Of note, the vast difference among the two includes the integration of behavioral research as opposed to biomedical research which saw the establishment of the Nuremberg Code. Similarly, the Belmont report demonstrated a clear distinction between research and practice. Similar to the two declarations mentioned above, one must also remember the Declaration of Helsinki. According to Meruman (2016), the declaration recognized, “ethical principles for medication research involving human subjects, including research on identifiable human material and data are always the first priority” (p. 1205).

Based on the creation of doctrines such as the ones described actions have been taken to protect the ethical treatment of human subjects. Alongside ethics, one of the most important notions is the inherent ability to provide for the protection and privacy of human subjects. Without proper protection, the reliability and validity of research conducted on human subjects can come into question. When involving a human subject whether implementing a project or conducting research, it is imperative the ability to protect the subject's identity be secured.

One aspect of protecting a subject's identity often overlooked is the capacity to take an individual's culture into account while obtaining voluntary informed consent (see Appendix D for more information regarding voluntary informed consent). Before the implementation of any project, demonstrating a knowledge base of cultural practice improves the quality of the work

conducted (Halkoaho, Pietila, Ebbesen, Karki, & Kangasniemi, 2015). Along with securing a subject's identity, according to the Department of Health and Human Services (2009), when obtaining consent for participation the element of informed consent must include:

1) a statement the project involves research, an explanation of the purposes of the research and the expected duration of the subject's participation; 2) a description of any reasonably foreseeable risks or discomforts to the subject; 3) a description of any benefits to the subject or to others which may reasonably be expected from research; 4) a statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is entitled (para. 3).

Population of Interest

The population of interest studied comprised of volunteers who were RN's currently working at the identified project site within the peri-operative and post-anesthesia care unit areas of the practicum site. Individuals who held either an associate, bachelor's, or master's of science in nursing degree, aged 18 to 75-years-old, and either male or female were asked to participate in the project voluntarily. Inclusion criteria for participants also included individuals who held a current unencumbered Arizona nursing license issued by the Arizona State Board of Nursing and possess a current advanced cardiac life support (ACLS) certificate.

Volunteers must also not have had limitations placed on their ability to work; have worked within an ASC peri-operative and PACU area for at least six months, and have not been recently trained in MHC within the past three months. All participants must be able to read, write, and speak English. These last three components are critical for any individual wishing to volunteer to be informed by providing consent to participate in this project the individual

understands participation is voluntary and may choose to stop involvement at any time without penalty.

Therefore, exclusionary criteria of the targeted population consisted of individuals who did not hold a current ACLS card or were in the process of obtaining a current ACLS card due to a lapse between renewal. Registry nurses holding an unencumbered license who work within the ASC were not included in the project proposal due to inconsistent time spent at the practicum site. Limitations of the project were restricted to RN's and excluded other healthcare members, i.e., physicians, surgical technicians. Individuals who do not have a current basic life support card, are unable to perform cardiopulmonary resuscitation, or have physical limitations due to being placed on active light duty by a healthcare provider were also excluded from the project.

Due to the size of the ASC, an estimated four to seven staff members will be informed of the organizational policy along with criteria to participate in the MHC simulation project. The setting of the simulated experience occurred in one of the identified ASC's five post-anesthesia care unit (PACU) recovery stations to mirror the environment in which the staff could encounter a patient undergoing MHC.

Through dialogue with the stakeholders (staff and administration), the utilization of the simulated experience was discussed in how it could be applied as both a learning and evaluative tool. Apprehensive feelings towards involvement in clinical trials and project development characteristically exist through a lack of knowledge of what it means to participate in a clinical trial or project implementation (Chu, S., Kim, J., Jeong, S., Park, & G., 2015). Feelings of anxiety, fearfulness, etc. allowed for assessment of therapeutic communication which provided supportive evidence to the nursing process with regards to critical thinking while encouraging open communication.

Recruitment Methods

Recruitment of participants was discussed with the project site administrator who was supportive of staff participating in how an organizational policy change regarding MHC was to be delivered through the implementation of simulation. The project design was further discussed with the project site administrator in which explanation of the inclusion of staff would need to be on a voluntary basis per the Belmont report which protects human subject research participants based on three fundamental principles: respect for the person, beneficence, and justice (Miracle, 2016). The rights of the members of the ASC staff also included the ability to participate in the project if completion of the pretest was not conducted due to anonymity as well as being allowed to stop participation at any point within the intervention.

Recruitment materials were not be utilized due to the project site administrator informing the staff implementation of a project to reinforce an organizational policy would be occurring once approved by the IRB at the time introductions with employees and this DNP student occurred. Once IRB approval was obtained, advertisements to help staff members remember application of a simulated experience would be occurring on a date predetermined in conjunction with the project site administrator.

The staff has a vested interest to learn more about their profession and chosen area of specialty. Interest by staff members participating in the simulated experience was visibly seen reinforcing the decision to implement the project scheduled to occur on a day in which no surgical cases has been scheduled. After conducting a simulated experience, 40% of people interviewed reported learning something new with at least one positive change to implement during their practice (Bissett, 2016). Staff members found the timeline appealing for those who

wished to participate voluntarily and could be present on March 30, 2017, the day in which the simulation was scheduled to occur.

Implementation

The project was implemented on March 30, 2017, and introduced organizational policy formation within an ASC and was reinforced through the utilization of a simulated experience of a patient undergoing MHC. According to the Malignant Hyperthermia Association of the United States [MHAUS] (2016), “MH crisis is a biochemical chain reaction response, “triggered” by commonly used general anesthetics and the paralyzing agent succinylcholine, within the skeletal muscles of susceptible individuals. . . thus, death, primarily due to a secondary cardiovascular collapse, can result” (MHAUS, 2016, para 2). Due to MHC being a low-volume, high-risk syndrome occurring in 1/5,000 – 1/100,000 patients (American Association of Nurse Anesthetists, 2017), the risk of knowledge deficit, an increased error in prevention, and development of a screening system needed to be examined by the ASC. When it comes to MHC, patients are placed at risk regardless of whether surgery is elective or emergent (Komasawa & Berg, 2016).

In alignment with the Arizona State Board of Nursing Advisory Opinion on Simulation, only five individuals at a time can be actively participating in the simulated experience (AZBN, 2015). For those who were observing, application of a 10-question “Observer Assessment Tool” developed by this author was provided for those who were following the scenario until participants exchanged roles to assume care of the patient in MHC. Domain objectives utilized throughout the “Observer Assessment Tool” included observation of the simulated experience; situational monitoring; observed communication techniques; and advocacy/support of the patient.

According to Burbach, Barnason, and Thompson (2015), use of a specified methodology incorporated during the simulated experience resulted in the “think aloud strategy in which subjects are instructed to verbalize thoughts as they occur while completing an assigned task” (p. 1). Verbal communication is an essential component in working collaboratively as a team to provide the best care available. Implementation of the “think aloud” strategy was encouraged during the implementation of the project as evidenced by utilization of the “Observer Assessment Tool.”

To develop an intervention which would yield formative results, this author utilized the ACE Star Model of Knowledge Transformation to determine the identified problem (MHC) through discovery and research to provide feedback based on the last stage model which encompasses outcome evaluation. The DNP Project should be built around a model “[which] guides. . . through program design, implementation, and evaluation” (Goetzel, 2016, p. 576). Application and utilization of a “Nursing Clinical Simulation Policies and Procedure Guideline” (see Appendix E for more information on organizational policy simulation proposal) which was developed for the ASC was applied during the implementation phase of the project.

Tools/Instrumentation

Utilizing standards set forth by the Arizona State Board of Nursing Advisory Opinion, it is recommended, but not mandatory each simulated experience be video recorded to allow for review during the debriefing session (AZBN, 2015). Due to the introduction of a new organizational policy, utilization of a new methodology to reinforce said policy (simulation) in conjunction with utilizing debriefing techniques this author made a choice to omit video recording of the simulated experience to decrease potential anxiety among ASC staff members. If utilized in the future, language incorporated in the policy does reflect the option to use video

recording during a simulation should the project site wish to use the option in agreement with the standards set forth by the Arizona State Board of Nursing.

On the day of the scheduled simulation a "Confidentiality Agreement for Simulation," was presented to members of the ASC staff who, a week prior, meet the inclusion criteria and signed voluntary consent forms to participate in the project. The agreement allows for accountability on the learner's part to act as if the simulation scenario focused on a real patient. The agreement also discusses the Health Insurance Portability and Accountability Act to maintain 'patient' confidentiality along with consent to be video recorded. The latter section was discussed with each individual as not being utilized during the implementation of the project.

Evaluation

Individuals who voluntarily participated were provided a copy of the newly developed policy while the concept behind clinical simulation was explained. Although the simulation took place in the staff member's place of work, time was permitted for each individual to inspect and familiarize themselves with the location of equipment before beginning the simulation. Each individual was also reminded of the voluntary consents they signed and were each reminded they reserved the right to choose to stop participation at any time during implementation of the project.

Formative and summative evaluation of the individual's knowledge and retention of a new policy regarding MHC was conducted online through the utilization of SurveyMonkey (see Appendix F for more information regarding pre-and-post simulation high). Done one week prior and two weeks after project implementation, a questionnaire consisting of 10 multiple choice questions was given to staff members who met inclusionary criteria in the ASC and provided consent to participate in the project voluntarily. The 10 multiple choice questions

provided after the implementation phase of the project included open ended questions to allow individuals to provide thoughts and opinions regarding the reasoning in choosing a specific answer. Fit-for-purpose competency tools are typically utilized during the application of simulation to evaluate staff needs about improved recognition of the deteriorating patient which need continual development (Waldie, Tee, and Day, 2016).

After the first questionnaire has been conducted, answer choices will be discussed with staff during the discussion of the new organizational policy. Debriefing of the simulated experience will be presented upon completion of the simulated experience. Utilization of the “Plus Delta Debriefing Tool” as well as the “Promoting Excellence & Reflective Learning in Simulation” tool will be applied allowing all participants to contribute feelings while providing feedback regarding the simulation experience. Both tools allow for individuals to reflect on how they felt they performed during the simulated experience. Questions include areas the participants felt they needed to improve on based on their experience throughout the simulation.

Data collection procedures

During the consent process, it was emphasized to the participants no personal identifiers would be collected during the pre-and post-test analysis nor from post-implementation surveys. All collected material and data will be secured in a locked drawer at the home of the individual implementing the project and upon successful completion of the DNP program, destroyed, as well as deletion of the online questionnaires implemented through SurveyMonkey after being kept for a period of 3 months. A 10 question, multiple choice pre-simulation questionnaire was provided via SurveyMonkey to participants the week prior to the scheduled simulation scenario, testing the individual's baseline knowledge of MHC. A post-simulation questionnaire consisting of 10 multiple choice questions based on the same pre-test questions was provided along with the

ability to offer a narrative for each question was provided to participants and remained open for two weeks. Immediately after the debriefing session, utilizing a Likert scale surveys were provided to each individual which elicited participant opinions regarding if they felt objectives were met, improvements needed, etc.

The pre-and-post questionnaire tool consisted of 10-multiple choice questions inclusive of four select all that apply questions and one rank order question to evaluate the participant's knowledge of Dantrolene, a first-line medication used in MHC, as well as other components of the patient experiencing MHC. Throughout the simulation phase of the project, correct answers were incorporated to assess retention of material learned and assessed through the post-test questionnaire to evaluate if the application of cognitive growth occurred.

Upon completion of the simulated experience and in a combination of the pretest and post questionnaire, all participants were requested to complete a "Participant Evaluation of the Simulation Experience" survey (see Appendix G for more information about organizational objectives). Results provided feedback allowing for determination of areas for improvement, development, and proposed methodology in the implementation of the new organizational policy to the key stake holder(s).

A Likert scale was utilized, where scoring of the tool implemented a system of allocating a 1 equaling "not at all" through 5 equating to "extremely." During the consent process, each participant was informed they would be asked to complete essentials of the project which consisted of pretest, posttest, and postimplementation surveys. Provider knowledge before and after the simulation was evaluated to assess for areas of improvement based on the proposed organizational policy. The goal was to have all ASC staff members participate in the project. If voluntary consent was not obtained, the individual was still allowed to take part in the simulated

experience and debriefing session but was not provided access to the questionnaire delivered via SurveyMonkey for pretest and posttest feedback analysis of informational knowledge obtained.

Analysis of the results

According to Tingle (2016), *Montgomery v. Lanarkshire Health Board* established case law stating, “the legal duties regarding informed consent is not achieved by bombarding the patient with information and facts. There must be proper, informed and comprehensible dialogue” (p. 1269). During procurement of the consent process and in accordance with TUN IRB and the Belmont Report. All six participants verbalized an understanding of the inclusionary criteria with additional questions addressed during the consent phase of the project. All questions asked by each participant were satisfactorily answered.

Six (n=6) individuals currently working in the ASC PACU who met inclusionary criteria provided voluntary consent to participate in the project to further develop organizational change through the implementation of simulation. Of the six individuals, four participants were female (66.7%). Utilizing SurveyMonkey, the pretest was opened for a period of one week (March 22, 2017 – March 29, 2017) prior to the implementation of the simulated activity (March 30, 2017) allowing individuals who chose to participate in the project time to answer the pretest which consisted of 10-questions encompassing MHC. Prior to implementation of the project, a 100% pretest response rate was obtained.

At the conclusion of the scenario, participants were asked to anonymously complete two survey tools consisting of a Likert scale scoring system utilizing a value structure of 1-5 (1 equaling strongly disagree/not at all to 5 equaling strongly agree/extremely) which focused on how the participant felt the simulated scenario was perceived (see Appendix E & G). The “Simulated Scenario Observer,” “Participant Evaluation,” and “Evaluation of Organizational

Objectives” questionnaires were collected by having participants place the documents into a manila envelope, anonymously and unwitnessed. Upon review of the collected documents, 100% of participants (n=6) completed all three forms. Utilizing descriptive statistics, analysis of the three forms was conducted. Organizational objectives yielded a mean score of 4.91 out of a 5-point Likert Scale (Table 2) with participant evaluation of the simulated experience yielding a mean score of 4.90 out of a 5-point Likert Scale (Table 3).

At the conclusion of the simulation, participants were reminded of the posttest examination which was open for two weeks (March 31, 2017 – April 13, 2017). It was shared with the participants the posttest consisted of an area at the end of each question to provide narrative comments to allow for further expansion of feedback based on the questions asked. Upon closing of the posttest questionnaire, five of the six individuals had completed the posttest resulting in an 83.3% response rate.

According to Dibley (2011), “pure naturalistic enquiry often seeks to understand personal experiences and adopts data collection methods that can generate vast amounts of rich, thick text” (p. 13). The obtained narrative results aligned with Dibley’s statement and proved to be as informative as the posttest questions in providing insight regarding the individual’s knowledge base when it came to caring for the patient experiencing MHC.

Comments obtained from participants included feedback such as 1) “[knowing] minimum knowledge of MHC;” 2) “[MHC involved] increased body metabolism;” 3) “I knew that we gave Dantrolene which is a muscle relaxant but did not know the dose;” 4) “no – this knowledge was never presented in prior MH training (regarding hypothyroidism as a risk factor); 5) “I don’t think our anesthesia uses it [vecuronium bromide]. They use succinylcholine;” 6) “no – although it (Dantrolene) is the only medication to treat MH so you would want it available and ready.”

Descriptive statistics were utilized to compare pretest and posttest survey scores acquired via SurveyMonkey post project implementation. Upon review of the 10 questions asked, five questions saw an increase in the percentage of change in answer choices from the pretest (Table 4). Of most interest, question one saw a decrease among answer choice “A” based on pretest results with an increase of those who chose “B” as their answer based on posttest results. question number six witnessed a variable shift in scores obtained when comparing pretest answer choices to posttest results: demonstrating participants changing their pretest answer choices to various combinations. This phenomenon could be based on several variables including question structure, question topic, or true lack of knowledge when questioned on hypothyroidism and its effects on MHC.

The ability of the participant to take the same pretest and posttest allowed this student to evaluate if cognitive development encompassing MHC had changed through the implementation of an organizational transformation with specified goals and objectives through a new methodology in delivery utilizing simulation. In doing so, the primary goal of the analysis conducted was to evaluate whether the implementation of simulation answered the clinical question, “Is there evidence to suggest the implementation of an organizational policy founded upon the application of a simulation model will improve nursing knowledge and comfort levels among ambulatory surgery center staff?”

Discussion of the Findings

Through utilization of a pretest and posttest, it was demonstrated if an individual’s skill is not reviewed, at a minimum, annually, the inability to recall information decreases. Due to its low volume, high-risk, utilization of MHC as the initial scenario provided varied responses from those who worked within the ASC. Narrative comments also resulted in signifying a need for

more exposure to the simulation as evidenced by the feedback “the utilization of succinylcholine being [used as] the primary drug of choice” for the treatment of MHC in the ASC.

Through the application of descriptive statistics, pretest data was compared against posttest data to determine if a variance in results existed. Question one demonstrated a +/-3.33% differentiation in how the question, “What is malignant hyperthermia?” was answered. On the pretest, answer choice “A,” “sudden unexpected death of a healthy individual undergoing general anesthesia,” saw a decrease in being chosen by declining from 83.33% (pretest) to 80.00% (posttest). Conversely, answer choice “B” “sudden unexpected death of a healthy individual undergoing local anesthesia,” saw an increase from 16.67% (pretest) to 20.00% (posttest) a difference of +3.33% based on posttest results. The information obtained from this question represents an acquisition of knowledge occurred based on the implementation of the simulation.

Further analysis of the results revealed question number six as signifying interesting changes with regards to pretest and posttest answers obtained. In conducting further analysis of the question asked, “a patient with hypothyroidism who experiences trauma, emergency surgery, or a severe infection is at risk developing which of the following conditions,” each answer choice presented a dramatic change from pretest “A” (83.33%), “B” (83.33%), “C” (50.00%), and “D” (0.00%) when compared to posttest results, “A” (0.00%), “B” (80.00%), “C” (0.00%) and “D” (20.00%). Although the data varied, most answers changed post implementation to focus on malignant hyperthermia.

Post simulation survey results were consistent with participant feedback based on the “Observer Assessment Form,” revealing consistency from participants who felt disorganization existed until delegation occurred, as evidenced by one participant stating, “it was a bit chaotic at first until roles were assigned.” Utilizing a low volume, high risk syndrome with the

implementation of a new organizational policy format along with a delivery of methodology supplements utilization of Patricia Benner's inversed theory of coming from a place of expertise back to novice practitioner if core competencies are not part of annual competencies.

Significance/Implications for Nursing

Significance and implications of the findings regarding the nursing role necessitate the implementation of an organizational change which utilizes a simulated experience to conduct a gap analysis. In establishing such a policy evaluation of knowledge deficient areas, such as MHC, areas of further knowledge need to be further addressed. Utilizing Skype, this author utilized 30-minutes during a staff meeting to present the findings to the ASC nursing staff after speaking with the project site administrator. Particular areas of discussion included a focus on current best practice in providing further information regarding MHC and hypothyroidism (question #6) and well as the need to utilize extreme caution when working with Succinylcholine as best practice indicates the drug as contraindicated in a patient who is at risk for or has a history of MHC.

The staff members of the ASC were appreciative to have the results shared allowing them to hear which answers were correct based on the posttest taken. Further educational opportunities need to be made available as evidenced by one employee stating, "I think we need more education" during the results review. Utilizing the acquired data along with the statement made by the employee, this student recommended a bi-annual or quarterly in-service be performed to enhance employees' knowledge base during a one-on-one discussion with the project site administrator, who agreed more education needed to be offered in the interest of the patient.

Due to the limited amount of education a new graduate nurse can obtain or be provided with, several areas needing improvement remain to be evaluated. One such example was brought

to this author's attention several days post implementation during a visit to the host site when information was shared regarding unsuccessful removal of a vascular sheath in the PACU area. A root-cause-analysis was conducted, showing the individuals involved did "not know how to perform the procedure properly" (M. Danielson, personal communication, April 6, 2017) resulting in the patient experiencing blood loss and a prolonged length of stay within the ASC.

Based on the example above and the results obtained from the implementation of the project, a need for organizational policy implementing utilization of simulated scenarios needs to be implemented. Based on analysis of the data along with participant feedback, suggests the implementation of an organizational policy implemented through the application of a simulation model would improve nursing knowledge and comfort level among ASC staff.

Though answers may have changed from the pretest to the posttest, participants who were introduced to a new methodology of learning were limited to the lack of nuances obtained through real life interactions. Examples of not being able to physically draw up the Dantrolene to ensure the proper dose is being given due to cost constraints limits the tactile functionality of conducting the simulation. Of the six participants, none had interacted in a simulated scenario inhibiting the learner's ability to focus on the scenario. The consciousness of knowing the participant is being observed by this author and the project site administrator could have hindered the participant's ability to function fully due to the provocation of the Hawthorne effect.

Further implementation of simulated scenarios encompassing various disease states and skill sets would support the confidence and knowledge base of the ASC staff as enhancement of developmental needs increases. Participants considered "new" (1-year experience or less within the ASC) by the project site administrator were able to set aside initial feelings of doubt while

the more experienced nursing staff was able to set aside pride for the well-being of the patient through the simulation. Utilization of the debriefing session immediately conducted at the conclusion of the simulated experience allowed each participant to voice their thoughts and feelings. The debriefing session, established a “safe zone,” allowing each individual to share how the simulated experience made the participant feel.

During the debriefing session, all participants were asked if they would have handled the situation any differently? A recurring theme appeared in which the ASC staff were unsure of their role when it came to implementing the MHC protocol, i.e. who was responsible for calling the MH hotline or drawing up the Dantrolene. Continued debriefing allowed for discussion of how reacting in a “calm manor while calling for help and contacting the MH hotline” would create a sense of working as a team regarding the simulated scenario. Feedback based on each participant working together as a team is thought-provoking as each participant who was involved in the simulation scenario did not feel they were part of a team until assigned a specific role.

Limitations of the Project

Due to a small sample size with five out of six participants completing the post-test questionnaire makes it difficult to determine if descriptive analysis would have been skewed regarding questions one and six. Additional limitations include each participant’s lack of exposure to a simulated scenario.

Analysis of the results based on the pretest and posttest questionnaire while utilizing the knowledge acquired through debriefing would have been further looked into due to none of the participants having prior exposure to a simulated scenario. Allowing participants to call “time out” during the simulation may have yielded better results in increasing the participant’s

confidence level while allowing for real time education and remediation if needed. Further limitations of the project include not providing education of the ASC staff members prior to providing care of the patient undergoing MHC.

Continued organizational development through implementation of a simulated scenario in an ASC is needed to guarantee best practices are being utilized while appropriate and safe care of the patient within an ASC is being conducted. Little to no literature incorporating the utilization of simulation in an ASC setting could be found. The lack of literature demonstrates the importance of further implementation of such scholarly projects to continue to be implemented.

Initial dissemination of the findings involved meeting with the project site administrator to demonstrate the need for further follow-up and development of the established organizational policy change employing the practice of simulation. This was evidenced by the ASC staff's reaction during the review of the results via Skype during a staff meeting.

Sustainability

To further assist the ASC a "toolkit" consisting of 1) a copy of the simulated scenario on malignant hyperthermia; 2) developed organizational simulation policy implementing necessary documentation inclusive of debriefing materials; "Observer Assessment Tool," "Participant Evaluation of Simulation," and "Evaluation of Organizational Objectives" in accordance with the AZBN Advisory Opinion; 3) price quote obtained from Laerdal Medical Corporation inclusive of obtaining a high-fidelity simulation mannequin; 4) mock affiliation agreement for the ASC to utilize in accordance with the ASC's compliance department. The "toolkit" will act as a starting and reference point for the practicum site to further implement proposed organizational policies utilizing simulated scenarios should they wish to proceed further. Through the provision of the mock affiliation agreement when compared to the acquired quote for the purchase of equipment

from Laerdal Medical Corporation, it is hoped a partnership with one of the numerous institutional agencies within the greater Phoenix, Arizona area will be utilized based on analysis of the results suggesting PACU nurse competencies be evaluated on a quarterly basis to demonstrate a return-on-investment through the retention of staff and provision of safe patient care.

Further dissemination of the findings obtained are currently being worked upon with the intent to disseminate obtained evidence from this authors project in the form of a poster presentation to the Nursing Education Research Conference (NERC) 2018: Generating and Translating Evidence for Teaching Practice hosted by the National League for Nursing in conjunction with Sigma Theta Tau International Honor Society of Nursing to be held in Washington, DC, April 19-21, 2018. The theme of the conference aligns with the DNP prepared the nurse to, “demonstrate a direct link to the theme “*Generating and Translating Evidence for Teaching Practice*”” (National League of Nursing [NLN], 2017) through the submission of an abstract regarding evidence-based practice in nursing education.

In addition to submitting the call for abstract based on the NERC 2018, this author will also look at generating a manuscript with the intent to submit to the *AORN Journal* whose mission is congruent in, “supporting clinical, research/quality improvement, education, and management strategies related to the nurse’s role in caring for patients before, during, or after operative and other invasive and interventional procedures in ambulatory and inpatient settings” (AORN, 2017). Based on the two identified dissemination methods a conflict of interest could not be found (unless accepted by one of the entities discussed) allowing this author to proceed with the dissemination of the project and evidence found.

Through organizational change such as the implementation of increased simulated experiences within the acute care, setting deficiencies can be evaluated and corrected causing an increase in critical thinking while developing a sense of confidence as one begins to become familiar with the scenario being presented such as MHC. As hospitals are developing simulated experiences to support the knowledge base of the staff, outpatient centers such as the one identified to implement the proposed project are often forgotten.

According to Renolen and Hjalmuhult (2015), “nurses may have the knowledge and positive attitudes, but this does not mean that they are basing their work on evidence-based practice [EBP], knowledge is still lacking about what is needed to implement EBP successfully” (p. 633). The pressures placed upon the units from upper management has amplified causing increased early discharge rates, regular admission of chronic patients, and a sub-par orientation due to the increasing number of nurses retiring. To fully assess how a nurse functions and to allow room for growth and development, the utilization of simulation has increased significantly within healthcare. To meet the demands of simulation and clinical experience, the implementation of allowing 50% of simulated clinical experience among nursing schools within the State of Arizona has been granted by the Arizona State Board of Nursing. The Board of Nursing has a single job which is to “protect and promote the welfare of the public by ensuring each individual holding a nursing license or certificate is competent to practice safely” (AZBN, 2016).

Basing the project on the theoretical foundation of Patricia Benner, the conceptual component of developing from “novice to expert” can be applied to both new and experienced staff. Nurses who possess more than one-year experience are now considered as developing into an expert. However, the expert nurse within his/her field may choose to pursue work in areas

with subspecialties causing an inverse in Benner's theory to occur where the expert has now become the novice.

Through implementing an organizational change within an ASC, the ability to support staff using process improvement has the potential to observe increased skill sets and retention rates. The results of the project are expected to impact the practice throughout the ASC while employing the theoretical framework of Patricia Benner through inverting the main conceptual idea of the theory. In implementing a simulated scenario, the experienced nurse is now purposefully placed into the role of a novice to illicit an ability to learn new technology along with the methodology of how and why an organizational policy has been implemented.

With the implementation of the organizational policy, change reinforced through the utilization of simulation, long-term projections following the completion of this DNP Project includes key stakeholder(s) seeing a return-on-investment. Policy guidelines set forth within the developed project can be utilized to evaluate behavioral objectives; provide an overview of the scenario; define time allotment for each section of the simulation; identify simulation instructors; methodology; and evaluative measures used.

Due to the size of the ASC, it will be at the suggestion of this DNP student for the project site to utilize a third-party "vendor" due to the estimation obtained from Laerdal Medical Corporation exceeding \$258,307

for the acquirement and implementation of a high-fidelity mannequin and supportive equipment (see Appendix H for more information regarding vendor quote). Acquisition of simulation materials proves to be cost-prohibitive for the ASC demonstrating the necessity to establish an affiliation agreement with either a school of nursing or healthcare organization who possesses simulation equipment. To achieve the later portion of sustainability of the project, the

ASC will be provided with a mock affiliation agreement written to the specification of the ASC. In doing so, the center will have an example protecting the center's interests to prohibit entering into an agreement "blindly" by knowing what to look for should they choose to pursue utilization of a partnership to conduct simulated scenarios.

Conclusion

As evidenced through the AZBN's determination of increasing simulated lab experience to 50% of the clinical time, healthcare organizations can no longer afford to turn a blind eye to the lack of clinical experience. Working in conjunction with the standards set forth by the Board of Nursing through simulation integration and the American Association for Accreditation of Ambulatory Surgery Facilities (AAAASF) acting as the accrediting agency for the organizational body whose purpose is to regulate and develop the quality of healthcare in outpatient facilities must also be taken into consideration.

The ability to implement a project such as the one proposed possesses the capacity to influence change not only at the organizational level but acts as a catalyst in which policy formation is utilized as an exemplar in how staff will be evaluated based on clinical proficiency within other outpatient centers. At the conclusion of the project, sustainability must be maintained to allow AAAASF to witness how continuing education is occurring. Similar to any organizational restructuring of policy and procedure, the possibility may arise for the project to experience pitfalls. It is in learning from these mistakes and continually improving the process, will allow the identified ASC to act as a model for freestanding surgical centers.

With simulated clinical experience increasing to 50% among nursing schools or greater, it could be argued the Arizona State Board of Nursing, in combination with its mission statement, witnessed a deficiency in the ability to provide care at the fundamental level. Should

this be the case, does one cast blame onto the school, the organization (hospital, clinic, etc.), or the healthcare system as a whole? This author feels all of the above play an integral part in not providing a quality orientation process for the new graduate or experienced nurse transferring to a new department. Due to increasing acuity of patients being cared for, numerous nurses are often left to utilize little knowledge of how to care for critically ill individuals.

Through hard work during the implementation phase of the project, including organizational policy formation, development and implementation of evaluative tools, along with creating a mock affiliation agreement (see Appendix I for sample affiliation agreement), contains the ability to impact organizational change on a larger scale. The potential to influence current programs, policy, and/or regulatory body practices invigorates this author regarding the possibilities of what lay ahead by increasing the knowledge base of ASC staff members while maintaining patient centric care.

It is this author's hope through the established collaboration among an ASC and DNP Project expansion of the experienced nurse to provide quality care by maintaining clinical skills which encompass low volume, high-risk scenarios will be embraced. Through the establishment of a partnership which positively affects both stakeholder(s) and DNP student, the proposed intervention will serve as a model allowing for continued growth to occur in the practicum site as well as other ASC's.

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Table 2. Evaluation of organizational objectives

	Average of scores obtained based on Likert-scale
Were the objectives clear and realistic?	5.00
Did you learn what you expected to learn?	5.00
Was the material presented at an appropriate rate?	4.83
Were the instructional techniques appropriate?	5.00
Were you allowed to actively participate to your expectations?	4.83
Did the content as well as pre-test challenge you?	4.83

Table 3. Participant evaluation of simulation

	Average of scores obtained based on Likert-scale			
	Was the simulation valuable to you?	Did the content extend your knowledge of the topic?	Was the simulation clear and understandable?	Were equipment, audiovisuals, or handouts easy to follow?
Orientation to clinical simulation	5.00	4.83	4.83	4.83
Clinical simulation of the malignant hyperthermia patient	4.83	5.00	5.00	5.00
Preparation of work prior to conducting clinical simulation	4.83	4.67	5.00	5.00
Debriefing	5.00	4.67	5.00	5.00

Table 4. Pretest versus posttest survey

Question	Answer Choice	Pretest	Posttest	Difference among pre-and posttest
		Percentage Answered	Percentage Answered	
#1	A	83.33%	80.00%	-3.33%
	B	16.67%	20.00%	3.33%
	C	0.00%	0.00%	0.00%
	D	0.00%	0.00%	0.00%
#2	A	66.67%	100.00%	33.33%
	B	16.67%	0.00%	16.67%
	C	16.67%	0.00%	16.67%
	D	0.00%	0.00%	0.00%
#3	A	66.67%	100.00%	33.33%
	B	66.67%	100.00%	33.33%
	C	83.33%	100.00%	16.67%
	D	33.33%	40.00%	6.67%
#4	A	83.33%	100.00%	16.67%
	B	83.33%	100.00%	16.67%
	C	16.67%	60.00%	43.33%
	D	66.67%	100.00%	33.33%
#5	A	0.00%	0.00%	0.00%
	B	100.00%	100.00%	0.00%
	C	0.00%	0.00%	0.00%
	D	0.00%	0.00%	0.00%

Question	Answer Choice	Pretest	Posttest	Difference among pre-and posttest
		Percentage Answered	Percentage Answered	
#6	A	83.33%	0.00%	-83.33%
	B	83.33%	80.00%	-3.33%
	C	50.00%	0.00%	-50.00%
	D	0.00%	20.00%	20.00%
#7	A	83.33%	100.00%	16.67%
	B	83.33%	80.00%	-3.33%
	C	50.00%	40.00%	-10.00%
	D	0.00%	0.00%	0.00%
#8	A	1.00%	1.00%	0.00%
	B	2.00%	2.00%	0.00%
	C	5.00%	3.00%	0.00%
	D	3.00%	5.00%	0.00%
	E	4.00%	4.00%	0.00%
	F	6.00%	6.00%	0.00%
#9	1	16.67%	20.00%	3.33%
	2	0.00%	0.00%	0.00%
	3	16.67%	0.00%	-16.67%
	4	0.00%	0.00%	0.00%
	5	0.00%	0.00%	0.00%
	6	66.67%	80.00%	13.33%
#10	A	50.00%	60.00%	10.00%
	B	16.67%	0.00%	-16.67%
	C	16.67%	20.00%	3.33%
	D	0.00%	0.00%	0.00%
	E	16.67%	20.00%	3.33%

Appendix A
Malignant Hyperthermia Simulation Module

Malignant Hyperthermia



Perioperative Simulation Scenarios

Scenario Overview

Summary

Tom Jones is a healthy 18 year old scheduled for a left ankle arthrodesis who weighs 165 lbs (75 Kg). During the preoperative assessment, the nurse notes that he was diagnosed with Becker muscular dystrophy at age 17. He does not use any ambulatory assistive devices. His past surgical history includes a tonsillectomy at age 7. There is no other significant health history to report, and no history of problems with anesthesia. The patient is scheduled to have a general anesthetic.

The surgery has been completed for 15 minutes with the patient recovering in the post-anesthesia care unit. Team enters room. After 2 minutes, the patient will begin to exhibit signs of MH.

Setting

Post-anesthesia care unit
/Simulation center

Time

Simulation 10 - 15 minutes
Debrief 40 minutes

Participants

Simulation facilitator
Post-anesthesia care unit nursing staff, charge RN
Additional learners will act as observers

Progressive Complexity

Patient interview
Physiological system
failure Resuscitation of
the patient

Potential Systems Explored

Facility policy protocol
Roles of the postoperative team members during a Malignant
Hyperthermia (MH) crisis
Supporting technical and developmental skills
Interprofessional training in communication and
professionalism

Malignant Hyperthermia



Perioperative Simulation Scenarios

Learning Objectives

Learning Objectives

- 1) The learner will communicate with members of the multidisciplinary team during a MH crisis.
- 2) The learner will demonstrate the correct mixing protocol for dantrolene sodium.
- 3) The learner will demonstrate immediate crisis action per the procedure in the MH management checklist.

Malignant Hyperthermia



Perioperative Simulation Scenarios

Participant Preparation

Pre-simulation

Review contents of the MH emergency cart
 Review the MH algorithm
 Visit the Malignant Hyperthermia Association of the United States website <http://www.mhaus.org>
 Read the article: Dirksen, Van Wicklin, Mashman, Neiderer, Merritt.
 Developing effective drills in preparation for a malignant hyperthermia crisis. AORN J. 2013;97(3):329-353.

Pre-Brief:

Team is provided with the following information:
 Please treat this scenario as if happening in your PACU.

Inject medications per usual.

Cardiac monitor displays real time vital signs.

Patient History

Tom Jones is a healthy 18 year old scheduled for a left ankle arthrodesis who weighs 165 lbs (75 Kg). During the preoperative assessment, the nurse notes that he was diagnosed with Becker muscular dystrophy at age 17. He does not use any ambulatory assistive devices. His past surgical history includes a tonsillectomy at age 7. There is no other significant health history to report, and no history of problems with anesthesia. The patient is scheduled to have a general anesthetic.

You are the PACU RN receiving the patient at 10:55 am. RN (confederate) (Confederates are experienced healthcare professionals, such as physician, nurse or other practitioners, who act as team members during a simulation to provide realism or additional information for the learner) gives report: This is Tom Jones, 18 year old left ankle arthrodesis. He does not use any ambulatory assistive devices. There is no health history except for a tonsillectomy as a child. We have been done with the case for 10 minutes.

Additional Medical History

The patient has no allergies.

Baseline Vital Signs

BP 120/70, HR 65, Temperature 37° C, 98 F

Baseline Test Results

Sodium 136
 Potassium 4.4
 Chloride 100
 CO2 26
 Urea nitrogen 20
 Creatinine 1.0
 Glucose 275
 A1C 5.4
 Anion gap 15.0
 HCT 40.9
 WBC 6.8
 RBC 4.88
 Albumin 3.9
 O2 Sat 99

Malignant Hyperthermia



Perioperative Simulation Scenarios

Set-up

Room

PACU or simulation equipped PACU room.

Equipment

Hospital gurney

Mannequin dressed in a hospital gown, with hospital identification and allergy band on

Patient warming device applied

Intravenous solution running in right forearm

Mannequin

Intubation equipment Sequential Compression Device

Emergency Code Cart - item requested by team

MH Cart – item requested by team

MH Medications (Simulated)

Syringe of succinylcholine

Syringe of rocuronium

Propofol 100 mL vial

Regular insulin 10 units IV

D50 brioject,

Sodium bicarbonate brioject

Calcium gluconate brioject,

Dantrolene sodium vials

(10 vials [20 mg] will equal 187.5 mg)

Sterile water preservative free vials

Simulator Preparation

Mannequin draped

Instrument table (basic set up), basin and mayo stands in place

1 liter of Lactated Ringers Intravenous solution to right antecubital space –

Intubated with 7.0 OETT

FiO2 100%

Warming blanket and machine

MH cart and Code Blue cart outside of room/view

Mock PACU documentation for RN Charge Nurse

Documentation

MH participant activity sheets

MH worksheet that includes dantrolene mixing instructions

Medical and perioperative records

(forms completed to 10:55am)

Surgical verification process form (completed)

Visual aid to guide the preparation of dantrolene sodium

Malignant Hyperthermia



Perioperative Simulation Scenarios

Sequence of Events

2 minutes into the scenario:

Temperature 39 C

RR increases

BP 80/40

Heart rate 90

Periodic premature ventricular contractions

3 minutes into the scenario: BP 70/30

Temperature 42 C

RR continues to increase

PACU nurse (or confederate) can announce suspicion of MH

Continue with the simulation until the following action/treatments are completed:

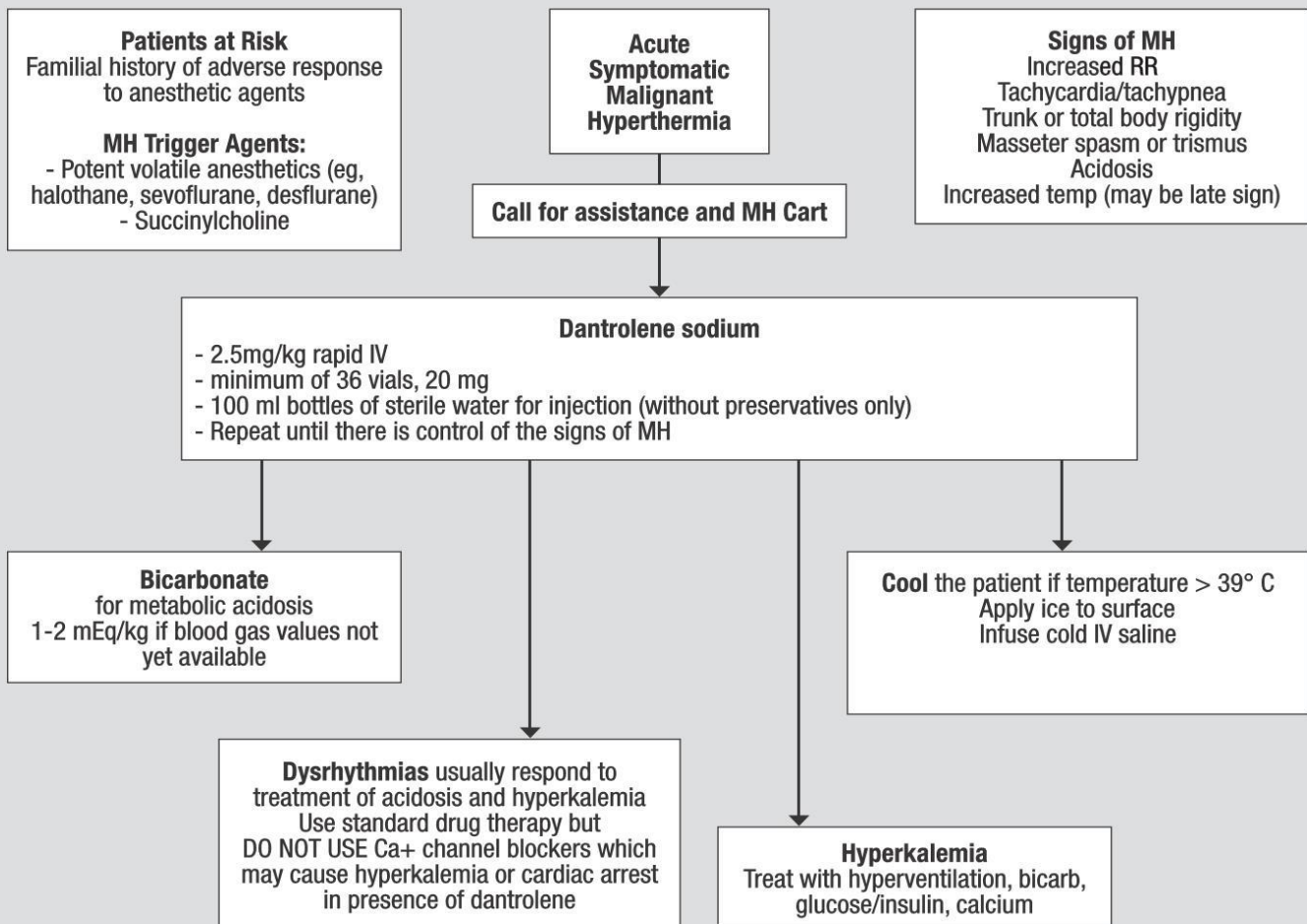
Responsibility	Skill met	Action/Treatment Checklist
1st Respondent Any Team Member		Call for an MH Cart AND code cart to PACU Appoint a team leader.
PACU Charge RN		Hyperventilate with 100% oxygen Obtain lab tests per physician order Call or assign a team member to call the MH Hotline 1-800-644-9737 Assist with starting arterial line and/or any additional IV lines Treat hyperkalemia – calcium chloride 10mg/Kg or calcium gluconate 10-50mg/Kg; regular insulin 10 units IV in 50 mL of 50% glucose, give Na+ bicarbonate if metabolic acidosis is present (1-2 mEq/kg) per physician orders Treat dysrhythmias -beta blockers (no calcium channel blockers) per physician orders Place nasogastric tube Notify Surgeon/Physician
PACU RN		Call for additional help Start dilution of dantrolene sodium of 9-12 vials. This will provide the initial dose (2.5 mg/kg for all patients). Reconstitute with 60 mL of diluent – preservative free sterile water only.
Other respondents if available. If unavail. delegate as appropriate		Apply cooling measures; obtain chilled saline/ice and place on groin, axilla, around head Insert Foley catheter Insert rectal tube for lavage Cool IV fluids
		Prepare for patient to be transferred to higher level of care Call report to the receiving emergency room charge nurse

Malignant Hyperthermia



Perioperative Simulation Scenarios

Algorithm



Follow RR electrolytes, blood gases, creatine kinase (CK), core temperature, urine output and color, coagulation studies. If CK and/or K⁺ rise more than transiently or urine output falls to less than 0.5 mL/kg/hour, induce diuresis to > 1mL/kg/hour urine to avoid myoglobin-induced renal failure.

- Venous blood gas values may indicate hypermetabolism better than arterial values.
- Central venous or pulmonary artery monitoring as needed and record minute ventilation.
- Place Foley catheter and monitor urine output.
- Consider sedation and analgesia as indicated.

Malignant Hyperthermia



Perioperative Simulation Scenarios

Debrief

Standardized debrief questions:

- How did the simulation experience of caring for this patient make you feel?
- Did you have the knowledge and skills to meet the objectives of this simulation experience?
- What gaps did you identify in your own knowledge?
- If you performed the scenario again, how would you handle the situation differently?
- In what ways did you perform well?
- How well did the team work together?

Debrief questions for observers:

- What did the group do well?
- What did the group not do well?
- Is there anything else you would like to discuss?

MH specific debrief questions:

- Have you experienced a MH crisis in your career?
- During the MH scenario, what communication strategies did you use to validate the accuracy of your information or decisions with your team members?
- Were you satisfied with your ability to work through the MH crisis?

- Review learning objectives.
- Review participants, roles and team expectations.
- Review of communication expectations

Malignant Hyperthermia



Perioperative Simulation Scenarios

Resources

Typical Contents of a Malignant Hyperthermia Cart

- 3-way stopcocks
- Luer-lock vented dispensing pins
- Secondary IV extension tubes
- 18 G needles
- 60 mL syringes
- 10 mL syringes
- Lab test tubes
- Cooling equipment
- 18 French nasogastric tube
- Rectal tube
- 5-to-1 connectors
- 16 French foley catheter/urimeter
- Plastic bin for ice
- Kelly clamps
- Plastic bags for ice or ice packs
- Ambu bag

Medications

- Dantrolene sodium
- Metoprolol injection
- Calcium chloride
- Esmolol
- Preservative free sterile water
- Mannitol 20%,
- Amiodarone
- Lasix
- IV NS

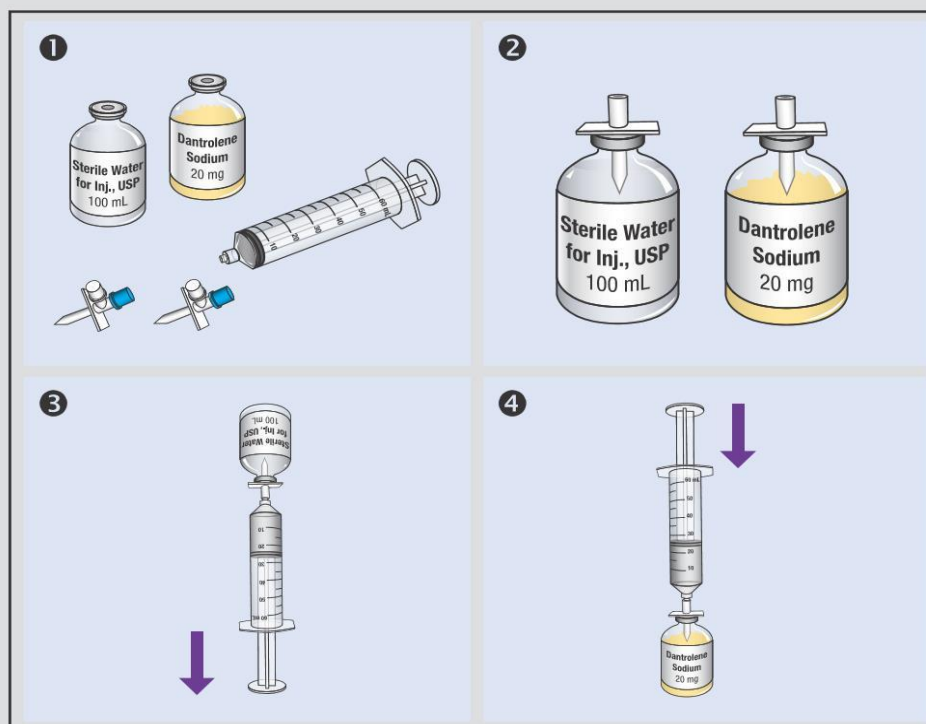
Malignant Hyperthermia



Perioperative Simulation Scenarios

Resources

Example: Visual aid to guide dantrolene sodium preparation



From Hirshey Dirksen SJ, Van Wicklin SA, Mashman DL, Neiderer P, Merritt DR. Developing effective drills in preparation for a malignant hyperthermia drill. *AORN J.* 2013;97(3):331-353. Reprinted with permission from AORN, Inc, Denver, CO.

NECESSARY SUPPLIES (for multiple set-ups)

- 36 vials dantrolene sodium, 20 mg
- 100 mL bottles of sterile water for injection
- 6 luer-lock vented dispensing pins
- 6 luer-lock 60 mL syringes

- * **KEY POINTS:**
- 1--Use 60 mL of diluent--STERILE WATER without preservatives only
 - 2--Dilution of 9-12 vials will provide the initial dose (2.5 mg/kg for all patients)
 - 3- Designee will assist in mixing remaining doses

MIXING PROCEDURE (dedicate 2 people to the task if possible)

1. Wipe the rubber access port with an alcohol wipe.
2. Place the vented dispensing pin in the 100 mL vial of sterile water; attach the 60 mL luer-lock syringe.
3. Turn the sterile water vial upside down and withdraw 60 mL sterile water.
4. Remove the metal seal (if present) from the dantrolene sodium and wipe the top with alcohol.
5. Add the 60 mL syringe with sterile water to the dantrolene sodium.
6. Swirl the vial with the syringe attached until crystals are dissolved (fluid should turn to a clear yellow color).
7. Withdraw the contents of the vial (60 mL) into the 60 mL syringe, take it off the luer-lock vented dispensing pin and give to the anesthesia care provider or designee to administer by continuous rapid IV push until MH symptoms subside.

Appendix B

Synthesis Matrix

Source	Purpose	Setting & Method	Key Findings	Limitations	Controversies	Other Similarities or Differences
<p><u>Article 1</u> (Author, Title Year) Fey, M., & Jenkins, L. (2015). Debriefing practices in nursing education programs: Results from a national study. <i>Nursing Education Perspectives</i>, 36(6), 361-366.</p>	Describe debriefing practices in nursing education programs within the United States	Cross-sectional internet based survey was utilized. Post simulated experience debriefing occurred based on Kolb's Experiential Learning Theory.	Debriefing is described as guided reflective discussion which attempts to bridge the gap between experiencing an event and correctly understanding the concept behind a concept.	Specialized skills need to be acquired in order to provide feedback in a simulated environment properly.	Fewer than half (47.7%) of the debriefers had been properly trained on how to debrief a simulated experience.	Debriefing is one of the key components to allocating success and acquisition of knowledge to allow for critical thinking in simulation curriculum-based education.
<p><u>Article 2</u> (Author, Title Year) Kirk, M. (2015). Reviewing education challenges and solutions for health professionals in community care. <i>British Journal of Community Nursing</i>, 20(10), 504-510.</p>	NHS England's <i>Five Year Forward View</i> necessitates the need for change in quality and	Healthcare professionals working within the community, a literature review was conducted.	European state requires a need for health professionals to keep up to date with the rapid advances in	There need to introduce the revalidation process making it mandatory for all nurses and midwives to carry out every	Simulation is not the only methodology discussed to enhance education knowledge of the RN.	Utilization of technology such as simulation is only one of the methods in which education

	safety of care.		medical knowledge and technology.	3 years in order to retain professional registration.		challenges can be addressed.
<p><u>Article 3</u> (Author, Title Year) Ball, K., Doyle, D., & Oocumma, N. (2015). Nursing shortages in the or: Solutions for new models of education. <i>AORN Journal</i>, 101(1), 115-136 http://dx.doi.org/10.1016/j.aorn.2014.03.015</p>	Develop an educational program utilizing simulation to increase new graduate interest, awareness of employment opportunities and increase retention within the OR.	University setting upon which surgical staff was introduced to simulated experience through the establishment of a perioperative curriculum through a partnership between a university and the hospital system.	A variety of teaching methods were used during the course, including lecture, case studies, group presentations, observations, and simulations.	Lack of communication among perioperative areas across the participating hospital campuses.	Although part of the same hospital system, through the establishment of a perioperative curriculum OR educators found unexpected differences in practices and policies.	OR staff and educators found the perioperative skill simulations to have a positive effect by influencing student's in selecting perioperative nursing as a career focus, this increasing the potential for nurse retention.
<p><u>Article 4</u> (Author, Title Year) Campbell, J. (2015). Education and simulation training of pediatric intensive care unit nurses to care for open heart surgery patients. <i>Critical Care Nurse</i>, 35(3), 76-81 doi: http://dx.doi.org/10.4037/ccn2015312</p>	Institute a high-fidelity simulation training program to enhance the training of nurses who care for	The format was utilized to deliver material, address nursing and medical management which was	PICU nurses provided care for all patients. Classroom format was utilized to deliver a didactic	Training through the utilization of the simulation scenario was not mandatory leaving a small n (7) to participate out	The nurses who were trained to care for the post open heart pediatric patient first had to know how to care	Learning does occur within the simulation environment. Participants surveyed agreed that the

	pediatric open heart, surgical patients.	followed by a 4-hour simulation process. Surveys were completed at the end of the simulation.	component followed by a separate simulation evaluation and not done immediately after the classroom discussion.	of 32 PICU core nursing staff.	for the adult ICU patient due to size/census limitations of the pediatric population.	experience did provide an opportunity to learn.
<p><u>Article 5</u> (Author, Title Year) Sittner, B., Aebersold, M., Paige, J., Graham, L., Schram, A., Decker, S., & Lioce, L. (2015). INACSL standards of best practice for simulation: Past, present, and future. <i>Nursing Education Perspectives</i>, 36(5), 294-298 doi: 10.5480/15-1670</p>	Describe the historical evolution of the International Nursing Association for Clinical Simulation and Learning's (INACSL) standards.	Setting encompasses any area where a simulation whether it is low or high fidelity.	INACSL increased the standards of best practice from 11 to 13 in 2015 to allow for improved patient safety.	Of those surveyed, only 36% reported using INACSL policies and procedures regarding adherence to the policies and procedures of INACSL.	Not everyone is able to debrief appropriately and according to INACSL standards due to the limitations of being exposed to the simulated scenario.	The simulated environment needs to find harmony within itself which will have an effect of positively providing a debriefing experience.
<p><u>Article 6</u> (Author, Title Year) Ballangrund, R., Hall-Lord, M., Hedelin, B., & Persenius, M. (2013). Intensive care unit nurses' evaluation of simulation used for team training. <i>British Association of Critical Care Nurses</i>, (19)4, 175-184 doi: 10.1111/nicc.12031</p>	To implement a simulation-based training program.	Intensive care unit (ICU); a study based on a questionnaire evaluation design.	No significant differences were found between the areas of intensive care practice groups with regards to	Barriers to those who participated referred to variables including variables such as 'being videotaped,' unfamiliarity	Further research needs to be developed to focus on a qualitative approach to obtain a "deeper"	Simulation is a technique that may be used "to replace or amplify real experiences with guided experiences.

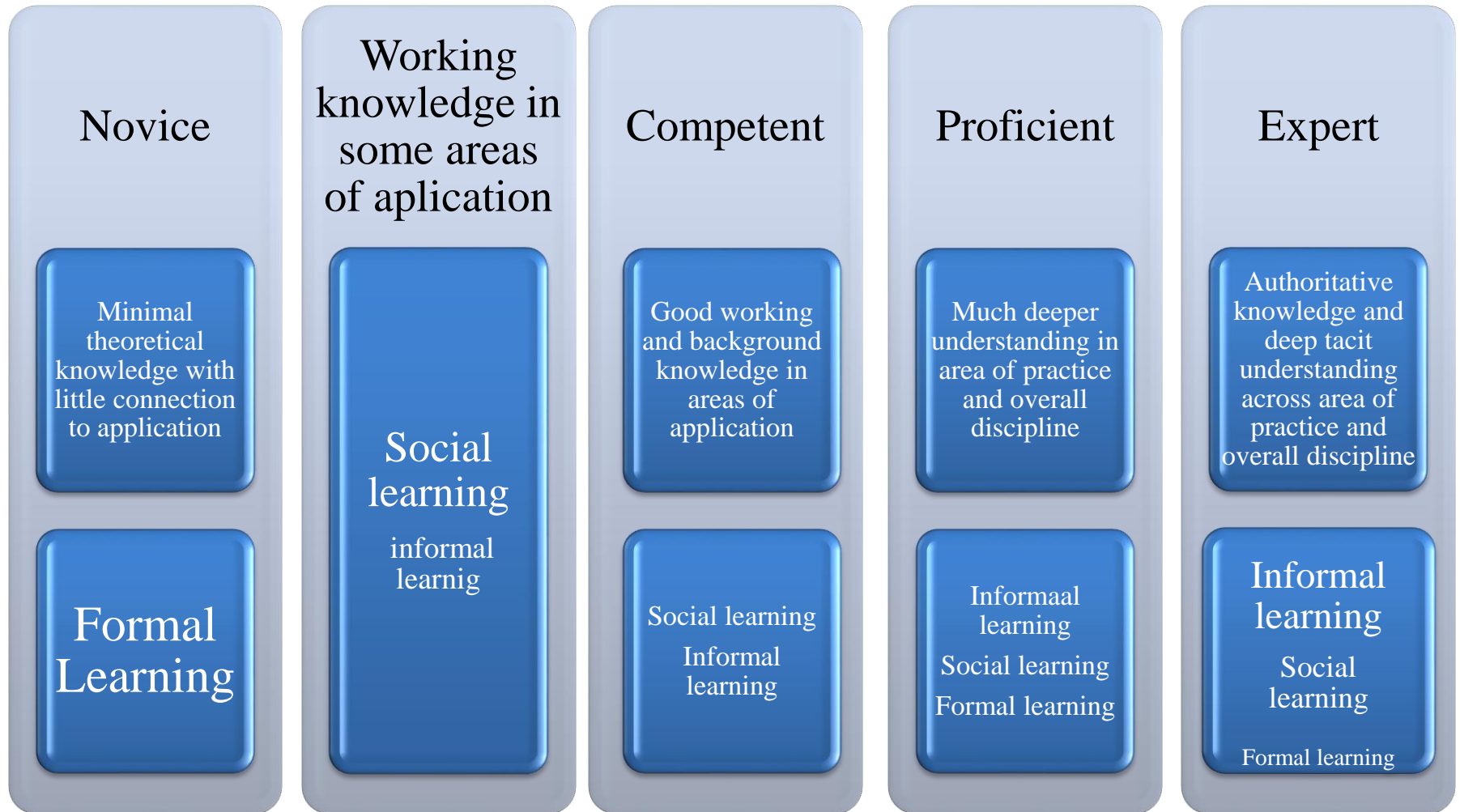
			prior simulation experience.	with the equipment, and stressful environments.	understanding of simulation.	
<p><u>Article 7</u> (Author, Title Year) Gerolemou, L., Fidellage, A., Rose, K., Cooper, S., Venturanza, M., Aqeel, A., Han, Q., Jones, J., Shapiro, J., & Khouli, H. (2014). Simulation-based training for nurses in sterile techniques during central vein catheterization. <i>American Journal of Critical-Care Nurses</i>, 23(1), 40-48 doi: http://dx.doi.org/10.4037/ajcc2014860</p>	To study the effectiveness of simulation and sterile techniques of critical care nurses during central line insertion.	The 12-month observation was conducted to look at the occurrence rate of infection from placement during central vein catherization.	Simulation allows for repetitive and deliberate practice in a realistic and interactive environment which reduces risks to patients.	Retention of assessment was not conducted post study. The simulated experienced did not include training of RNs' to maintain venous catheters after insertion.	The participants involved were not randomized to allow for a control group. Increased competencies of the central catheters being placed by medical staff.	The hospital in which the research focused on had its own dedicated simulation laboratory.
<p><u>Article 8</u> (Author, Title Year) Granger, J., Hebb, T., Lavallee, R., & Murray, M. (2011). Team training simulation in perioperative nursing education. <i>Canadian Operating Room Nursing Journal</i>, 29(2), 7-23</p>	Discuss team training simulation in the competence development of perioperative nursing.	The mock environment of the perioperative setting. The methodology includes utilization of Windsor's hierarchy of surgical skills conceptual framework.	Feedback acquired from team training simulation emphasized its positive impact on learning in the perioperative environment.	The study did not include a multidisciplinary team approach to adequately evaluate the full team approach to simulation education.	No controversies noted	Simulation is defined as a learner-centered teaching method that mimics real world situations to meet specific learning objectives.

<p><u>Article 9</u> (Author, Title Year) Mullen, L., & Byrd, D. (2013). Using simulation training to improve perioperative patient safety. <i>AORN Journal</i>, 97(4), 419-427 http://dx.doi.org/10.1016/j.aorn.2013.02.001</p>	<p>Utilization of simulation to train and improve patient outcomes within the perioperative area.</p>	<p>The perioperative area as well as within the OR. Simulation technique was utilized to develop OR teamwork regarding four identified needs of education within the OR.</p>	<p>The simulation was conducted when both day and night shift nursing members were on duty to catch “all” nurses to participate within the designated simulation.</p>	<p>Simulation focused on perioperative nursing and pre/post-operative nursing who can encounter numerous scenarios offered by the authors.</p>	<p>To facilitate numerous scenarios developed by the perioperative educator, numerous people, including physicians needed to be included.</p>	<p>Simulations safely identify problem what can happen during emergencies and allow staff members to evaluate their performance.</p>
<p><u>Article 10</u> (Author, Title Year) Abe, Y., Kawahara, C., Yamashina, A., & Tsuboi, R. (2013). Repeated scenario simulation to improve competency in critical care: A new approach for nursing education. <i>American Journal of Critical Care</i>, 22(1), 33-40 doi: http://dx.doi.org/10.4037/ajcc2013229</p>	<p>The introduction of simulation within Japan to improve the competency of nurses.</p>	<p>The training program consisted of lectures, cardiovascular procedures, and simulation. The survey was completed at the end of the simulation which used</p>	<p>Through the development of simulated scenarios, it was found that debriefing is considered one of the most important elements in simulation-based education.</p>	<p>Unified curricula for simulation based education are not yet available in Japan.</p>	<p>The timing for debriefing during simulation should be determined as a function of the learning level of individual participants.</p>	<p>Simulation-based education allows for easy verification of learning outcomes in the form of actions.</p>

		the Teamwork Activity Inventory in Nursing Scale (Titans).				
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Appendix C

Theoretical Framework: From Novice to Expert



Model of “From Novice to Expert.” Adapted from “From Novice to Expert: Characteristics of learners as they progress in their roles and suggested learning approaches,” by T. Drewitt, 2016, *Digital Learning Thoughts*. Retrieved from <https://digitalllearningthoughts.blog/2016/02/18/from-novice-to-expert/>

Appendix D

Voluntary Informed Consent Agreement

Project Title: The Application of a Simulation Model Within an Ambulatory Surgical Center:
Developing from Novice to Expert Practitioner

You have been asked to be part of an evaluation utilizing simulation within an ambulatory surgical center. Data will be collected from you to help understand how well the implementation and utilization of simulation through organizational change is working. The information you provide will not be used to evaluate you as an individual.

I would like to ask you to:

1. Complete a pre-test consisting of 10-questions upon which you will not be critiqued based on the number of questions answered correctly prior to the beginning of the simulation.
2. Complete a post-test consisting of 10-questions upon which you will not be critiqued based on the number of questions answered correctly at the conclusion of the simulation.
3. Complete a 4-question questionnaire describing how you felt about the simulated experience
4. Complete a 5-question questionnaire describing how you felt the simulated experience went as well as the implementation of organizational change.

Your participation in the evaluation is **voluntary**. You do not have to answer any questions you do not want to, and you can stop answering questions at any time just by saying you want to “stop.” Your information is **confidential**. Your answers will not be linked to your name and will only be used for this evaluation. There will be no identifiable information associated with either the pre-or posttest, as well as the questionnaire. Please indicate below if you are willing to participate in the evaluation.

Please check one

_____ I agree to fill out the forms
Initials

_____ I do not agree to fill out the forms
Initials

Name of individual participating in survey

Date

Name of individual conducting survey

Date

Appendix E
Proposed Project re Organizational Policy

**Practicum Site
Nursing Simulation Program Policies
and Procedure Guidelines**

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Introduction

The goal of the simulation is to provide a safe learning experience which promotes successful understanding in all aspects of health care.

Simulation instructors and Arizona Vein and Vascular Center administration, herein known as “administration” goal is to help provide staff with an educational and enlightening simulation learning experience. Simulations and case scenarios are designed to help the nurse develop problem-solving and decision-making skills. For enhanced learning, all staff is expected to come to the clinical simulation prepared. The simulation instructor will provide participants with constructive feedback on their performance, while staff self-analyze and use critical thinking during the self-reflection process.

The following guidelines maintain safety while in a simulation scenario along with expected academic outcomes.

Simulation

What is a simulation?

Simulation as “an attempt at replicating reality” (Missouri Southern University, 2015). The clinical simulation environment (CSE) allows staff to participate in life-like situations and scenarios. “Simulation can also be used as a teaching method to help assess a nurse’s skills acquisition. Simulating real-life experiences for [nurses] in a safe environment is conducive to developing critical thinking and clinical reasoning” (Missouri Southern University, 2015). It is the intent of the simulation instructor and administration to provide a safe learning experience for all staff members.

The following policy and guidelines maintain safety when conducting a simulation. It is expected the following guidelines will be adhered to when involved in any simulation activity.

It will be the responsibility of Arizona Vein and Vascular Center Simulation Program Committee to update the contents found herein within the following policy and guidelines on an annual basis or as needed.

Simulation Scenarios

The simulation instructor and administration are here to make the nurse’s simulation experience educational and enlightening while serving in the best interest of the staff member. Simulations and case scenarios are designed to help the nurse develop problem-solving and decision-making skills. The simulation instructor will attempt to include all environmental factors to make the nurse’s learning experience realistic and authentic. For enhanced learning, all nurses are expected to come to the CSE prepared. The simulation instructor will provide participants with feedback and debriefing of their performance, while participants will self-analyze their performance and use critical thinking during the reflection process.

What is debriefing?

The debriefing session involves immediate feedback and a reflective critical thinking analysis and communication tool for participants of the simulation experience. The purpose of the debriefing assessment is to provide an intense post conference and active evaluation process driven by participants with the simulation instructor guiding the discussion. The focus of debriefing is to provide a safe environment in which active learning and critical self-reflection are facilitated.

General Clinical Simulation Guidelines

The following guidelines have been established to maintain safety while using the CSE. It is expected all involved in clinical skills and simulation activities will adhere to these guidelines.

Simulation Conduct/Behavior

- A.** All participants must know and practice within the safety guidelines at all times while participating in a clinical simulation. Failure to adhere to Arizona Vein and Vascular Center CSE guidelines may result in disciplinary action.
 - 1. Disciplinary action is defined as a participant who demonstrates behavior is jeopardizing patient [instructor or other staff] safety, or practices nursing in a grossly negligent or incompetent manner, upon which the participant will be removed from the simulation setting and be subject to administrative review which may include verbal or written disciplinary action.
- B.** This Nursing Clinical Simulation Program Policy and Procedure Guidelines will be made available within the clinical simulation.
 - 1. Staff shall have access to the Nursing Clinical Simulation Program Policy and Procedure Guidelines at all times – location to be determined by the administration. All participants must read and agree to the terms of this policy and procedural guidelines during their first orientation to CSE.
- C.** Unsafe or unprofessional behavior will not be tolerated and should be reported immediately. Any breach of security must be reported immediately.
- D.** Staff should be knowledgeable in the care, handling and proper use of equipment before using it. It will be the duty of either the simulation instructor or administration to orient the staff to the clinical simulation environment every time a clinical simulation is run. Equipment and supplies are to be used safely and for their designed purpose only.
- E.** No liquids near electronic or computer equipment will be allowed.
- F.** When a clinical simulation experience is completed participants are responsible for:
 - 1. Returning beds to the lowest position
 - 2. Placing cleaned tray table at the end or middle of the bed
 - 3. Maintaining neat linens
 - 4. Manikins (if utilized) will be covered with bed linens similar to a real patient, with the linen not touching the ground and tucked inappropriately.
 - 5. All debris will be placed in the appropriate trash receptacle.

Staff Preparation Expectations/Dress Code for Simulation

The staff is to attend clinical simulation wearing appropriate attire per the dress code.

Communication

Participants shall report any physical limitations to the simulation instructor before the scheduled CSE so necessary precautions may be taken. A medical clearance by way of a written physician note stating the staff member is medically cleared for clinical practice must be obtained before the clinical simulation experience.

- b. Any staff member who has a physical injury, illness, surgery, or is pregnant may be allowed to practice, participate, or test in the CSE pending proper documentation as described above is provided. The final decision to participate in the clinical simulation will be made at the discretion of the administration.
- c. All trash must be disposed of at the end of CSE. **All spills must be reported immediately** to the simulation instructor. Spills must be cleaned up and disposed of immediately per organizational guidelines.
- d. Please keep voices at a low level, minimize unnecessary conversation, and avoid disruptions of the learning environment.
- e. No cell phone usage allowed.

Equipment Use

- A. Manikins (if utilized) are to be treated with the same respect as live patients.
- B. ABSOLUTELY NO ink pens, felt-tipped markers, iodine, betadine, or KY jelly should be used near or on the manikins. These items PERMANENTLY stain.
- C. ALL personal electronic devices including but not limited to cell phones, cameras, camera phones, and video recorders are to be turned off during CSE.

Safety Guidelines

Infection Control

- A. All participants and simulation instructor must practice proper hand washing as defined by the Centers for Disease Control (CDC) while conducting the clinical simulation.
- B. All sharps used will be disposed of in the approved sharps container. If a sharps container is full, please inform administration of the simulation instructor.
- C. Accidents and injuries are to be reported immediately to the simulation instructor or administration.
 - i. By the (CDC), all sharps are to be handled safely and disposed of properly in the red sharps container boxes. In the event of a “clean” needle stick, the clinical instructor or administration should be notified immediately so that first aid can be provided. Complications from a “clean” needle stick may include tenderness, minor bleeding, bruising or infection.

- D. Staff shall not sit on the beds, stretchers, or wheelchairs unless identified as role playing patient during CSE.
- E. The wheels of all equipment are to be locked during practice, time of CSE, and after use.

Security

- A. All doors and cabinets to supplies and equipment will remain closed when not in use.
 - i. Any equipment utilized for use within the CSE including the item and amount were taken shall be reported upon completion of the CSE for reordering of supplies.

Clinical Simulation Confidentiality Agreement

Clinical simulation experiences are created as a safe place for staff to explore multiple components of providing realistic patient care through participation. The experiences gained provide an opportunity to transfer knowledge into appropriate and applied patient care based on the nursing process, critical thinking, and team communication while utilizing evidence-based knowledge, skills, and attributes. All participants will be required to sign a confidentiality agreement.

Participants understand and agree to the following:

- A. I will engage in and participate in CSE experiences fully as a professional and treat simulation as a realistic patient care experience.
- B. I will commit to helping, support, and guide my peers by providing a positive and professional environment. I will not use demeaning, mocking, or negative verbal, written or body language, about any participant's actions, thoughts, or behavior before, during or after the scenario.
- C. I will observe the strict patient, peer, and maintain confidentiality about the scenario, team member actions, and debriefing discussion at all times.
- D. The work of clinical simulation experience may occur with the group divided into participants and observers. If I am an observer, I will be expected to observe as a professional and to participate fully during the debriefing session.
- E. Participants observing will not attempt to help or interfere in any way with a clinical simulation experience in progress.
- F. Clinical simulation experiences may be videotaped during an on-going scenario to be utilized during guided debriefing with participants immediately afterward. Recordings of simulation scenarios are electronically stored after the debriefing for no less than 3-years. The obtained media will be utilized for continued learner purposes and will be kept confidential.
 - i. Simulation is an experiential learning experience. Any scenario information is confidential. Any discussion or disclosure of this information is a violation of the policies above.

Simulation Instructor Preparation Prior to Commencement of Simulation Scenario

In accordance with the Arizona State Board of Nursing (AZBN) *Advisory Opinion; Education Use of Simulation in Approved RN/LPN Programs* effective May 5, 2015, the following procedural steps will be utilized by Arizona Vein and Vascular Center to adhere to the AZBN advisory opinion. The following policy is to be utilized at all times when staff within the Practicum Site.

Requirements for Simulation

A. Personnel

The use of simulation requires simulation facilitators who are formally trained in simulation and may require additional personnel to support the intended use of the simulation.

- a. If the simulation is used for teaching/learning (formative use), a minimum ratio of 1 facilitator per 4-5 participants engaging in simulation performance is required.
- b. If the simulation is used as a summative evaluation for an individual staff member, a minimum ratio of 2 evaluators for each staff member being evaluated is recommended.
 - i. Evaluations may be conducted by direct observation or by recorded video.

B. Learning Materials/Scenarios

The use of simulation requires the simulation instructor and administration to adopt processes, templates, and documentation forms for each scenario consistent with The International Association for Clinical Simulation and Learning (INACSL) standards, including, at a minimum:

- a. Incorporation of specific objectives for each simulation scenario which relates to the scenario with clinical objectives meeting at a minimal level which is consistent with course objectives.
- b. Objectives include required cognitive, affective, and psychomotor skills.
 - i. A minimum of 3 behavioral objectives based on course objectives on which the scenario is to be taught are to be utilized.
- c. Required staff/Simulation Instructor preparation for the scenario.
 - i. Simulation instructor is to provide a course outline of how the participant will obtain the required clinical simulation experience in accordance with course objectives.
- d. Simulation instructors are to establish a “storyboard” which includes:
 - i. Report
 - ii. Simulator actions
 - iii. Patient cues
 - iv. Expected participant roles and actions.

- v. Included within the “storyboard,” an assessment of learner needs inclusive of the outcomes above, roles, and actions are to be provided.
- e. Description of set-up, equipment, and simulation instructor notes.
 - i. Included within the course outline, the clinical instructor shall provide:
 - 1. An exemplar description of clinical simulation set-up
 - 2. Equipment needed/utilized, along with copies of notes.
 - ii. All material, inclusive of participant’s self-evaluations, etc. are to be gathered at the conclusion of the clinical simulation and are to be to the administration for review.
- f. Assignment of an active role to all participants in the simulation room – e.g. nurse, family member, certified nursing assistant, etc. is to be utilized.
- g. Utilization of an evidence-based guide to give feedback to participants for each simulation activity.
 - i. Utilization of Plus Delta Debriefing Tool shall be used.
- h. Incorporation and assessment of participant documentation for each scenario shall include but not be limited to:
 - i. Incorporation of situation, background, assessment, and recommendation (SBAR)
 - ii. Progress notes
 - iii. Healthcare orders obtained, etc.
- i. All documentation outlined in subsection “H” are to be submitted with documentation obtained from subsection “E-1” and “E-2.”
- j. Structured debriefing with scenario participants consistent with Standard IV, Criteria 4 (INACSL, 2013, p. S24).
 - i. Utilization of Plus Delta Debriefing Tool.
- k. When a group of participants is observing, structured observational assignments to develop critical thinking and noticing in observers are to be used.
 - i. Utilize observer assessment tool for each participant identified who is assigned a clinical “performer” to observe. At the conclusion of the debriefing, all documentation is to be gathered and included with documentation obtained from subsection “E” and “H.”
- l. Evidence of annual review to ensure that scenarios are consistent with current practice standards.
 - i. The Clinical Simulation Program Committee is to meet on a quarterly basis to review and develop criteria based on evidenced-based practice, advisory opinions provided by the National Council of State Boards of Nursing (NCSBN) and the Arizona State Board of Nursing (AZBN), as well as participant feedback.

Basic Checklist for Simulation

Checklist for readiness of basic, mid, or high-fidelity simulation for program use. Please note: specific simulations may require additional items.

1. Must have items/processes for all simulations which are to occur:
 - a. Specific leveled objectives for each simulation
 - b. Written, planned simulations which allow participant performers to achieve the objectives
 - c. Debriefing space which supports confidentiality during the debriefing process
 - d. Documentation system realistic to the health care environment
 - e. Confidentiality agreements/signed consent
 - f. Sign-in sheet accounting for attendance before the clinical simulation is to begin and signed once again at the conclusion of the simulation. This is to be included and kept with the clinical simulation documentation packet at the conclusion of the exercise.
 - g. Evidence-based structure for debriefing
 - i. Utilization of the Plus Delta Debriefing Tool
 - h. Validation of each simulation
 - i. Participants will conduct an end of simulation evaluation for educators to review case scenario assessment needs
 - i. Validated assessment tool for evaluation of participants performing the simulation
 - i. Evaluations to be included within clinical simulation packet at the end of the simulation.
 - j. Sufficient trained facilitators for group size
 - i. A simulation “instructor” will be designated for the nursing staff to be trained as a “super user” who will be knowledgeable in conducting a simulation. This person shall work with the administration and other chosen staff to educate them on proper utilization of clinical simulation.

References

- Arizona State Board of Nursing. (2015). *Advisory opinion: Education use of simulation in approved RN/LPN programs*. Retrieved from <https://www.azbn.gov/media/2053/ao-use-of-simulation-in-pre-licensure-programs.pdf>
- Eppich, W., Cheng, A. (2015). Promoting excellence and reflective learning in simulation (PEARLS). *Simulation in Healthcare*. 10, 106-115.
- Hayden, J., Smiley, R., Alenander, M., Kardong-Edgrn., & Jeffries, P. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation*. 5(2), S1 – S64.
- Missouri Southern State University. (2015). *Policy & procedures manual, simulation center for interdisciplinary clinical education*. Retrieved from <http://www.mssu.edu/academics/health-sciences/simulation-center/pdfs/LAB%20POLICY%20%20PROCEDURE%20MANUAL.pdf>
- Pivec, C. (2011). Debriefing after simulation: Guidelines for faculty and students. Master of Arts in Nursing Theses, paper 14.
- University of Rochester Medical Center (2011). *Debriefing Tool University of Rochester Medical Center*. Retrieved from http://www.albany.edu/sph/cphce/neo_public/debriefing_tool_ground_rules.pdf

CONFIDENTIALITY AGREEMENT FOR CLINICAL SIMULATION LAB

As a participant in the Clinical Simulation Experience, I understand the significance of confidentiality on information concerning simulated patients and fellow staff. I will uphold the requirements of the Health Insurance Portability and Accountability Act (HIPAA) and any other federal or state laws regarding confidentiality. I agree to report any violations of confidentiality that I become aware of to either the simulation instructor or administration.

I agree to adhere to the following guidelines:

- All patient information is confidential and any inappropriate viewing, discussion, or disclosure of this information is a violation of Arizona Vein and Vascular Center policy.
- This information is privileged and confidential regardless of format: electronic, written, overheard or observed.
- The simulation lab is a learning environment. All scenarios, regardless of their outcome, should be treated in a professional manner. The participant(s) running the scenario should have everyone's respect and attention. Situations simulated in the lab are to be used as a learning tool and not to be used for the humiliation of fellow peers.
- If appropriate, the simulation manikins are to be used with respect and be treated as if they were live patients.

If I fail to comply, I may be dismissed and may be subject to disciplinary action set forth by administration

Publicity Waiver and Release Disclosure: You grant Arizona Vein and Vascular Center and its affiliated companies, and each of their respective agents, licenses, designees, successors and assigns (collectively, "Nobilis"), the absolute, royalty-free, irrevocable, worldwide, right and permission, with respect to any testimonial (written or oral), photographs, film, video or other images, or sound recordings taken of you by Arizona Vein and Vascular Center: (a) to use, re-use, publish, re-publish, copy, modify, display and create derivative works in the same in whole or in part, individually or in conjunction with other photographs, images, recordings or testimonials in any medium (including, without limitation, in print and on the internet) and for any other commercial purpose; (b) to use your name in connection therewith if the Center so chooses; and (c) to copyright the same in the name of the Center, or any other name that Arizona Vein and Vascular Center may choose.

You understand that you will receive no compensation for the permitted use of any testimonial (written or oral), photographs, film, video or other images, or sound recordings taken of you by Arizona Vein and Vascular Center or to your name. You release and discharge the Center, its successors, assignees and any designee (including any agency, client, broadcaster, periodical or other publication) from any and all claims and demands arising out of or in connection with the use of such photographs, film, video or other images, sound recordings, or testimonial, including but not limited to, any claims for defamation, invasion of privacy, right of publicity, emotional distress or any similar right. You hereby waive any and all rights you may have in and to such photographs, film, video, or other images, sound recordings, or testimonial and assign all such rights you may have to the ambulatory surgery center.

By signing this form, I agree to the above terms and have reviewed the Publicity Waiver and Release Disclosure.

Signature: _____

Date: _____

CLINICAL SIMULATION LAB COURSE OUTLINE

<u>BEHAVIORAL OBJECTIVES</u>	<u>COURSE OUTLINE</u>	<u>TIME</u>	<u>INSTRUCTORS</u>	<u>METHOD</u>	<u>EVALUATION</u>
<p>At the completion of this simulation the participant will be able to:</p> <ol style="list-style-type: none"> 1. Designs an individual plan of care for the nursing management of a postoperative patient experiencing malignant hyperthermia crisis. 2. Prioritizes the implementation and approach to the nursing care of the patient experiencing malignant hyperthermia crisis. 	<ol style="list-style-type: none"> I. How will the course of the simulation scenario go? II. Discuss each step (if needed provide attachment as supportive data) <p style="text-align: center;">See attached scenario</p>	<p>1-hour preparation work completed before clinical simulation</p> <p>3 hours conducting attached clinical scenario</p> <p>30 minutes - debriefing</p> <p>30-minute lunch</p> <p>2.5 hours rerunning attached clinical scenario</p> <p>45 minute – debriefing</p> <p>Total = 8 hours (minus 30 minutes for lunch)</p>		<ol style="list-style-type: none"> 1. Hands-on clinical experience 2. Staff audience participation 3. Debriefing 	<ul style="list-style-type: none"> • Evaluations will be conducted during the clinical simulation on each participant within the clinical experience. • Participants will be offered evaluations at the conclusion of the clinical simulation to provide feedback on simulation improvements and validity of clinical simulations being conducted.

<p>3. Evaluates the patient's response to interventions based on malignant hyperthermia crisis protocol and modify nursing care as appropriate.</p>					<ul style="list-style-type: none">• Through active group participation, the simulation experience will allow the ASC nurse to facilitate questions while actively learning.
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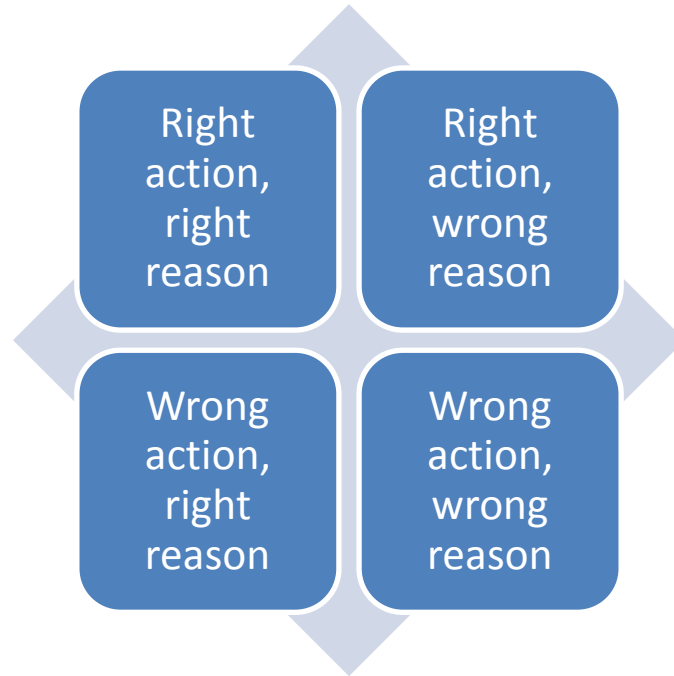
PLUS DELTA DEBRIEFING TOOL

PLUS DELTA Debriefing Tool	
PLUS This went well, do again <i>What went well?</i>	DELTA This did not go well, change <i>What could be better?</i>

Adapted from: Center for Ob/Gyn Simulation (URMC) and Center for Simulation, Advanced Education & Innovation (Philadelphia), 2011.

PEARLS DEBRIEFING TOOL

(Promoting Excellence & Reflective Learning in Simulation)



1. START Debriefing HERE...” How did it go?”
2. Don’t Assume. Ask about the reasoning for right and incorrect actions.

EXPLORE PERFORMANCE GAPS

EXPRESS YOUR POINT OF VIEW

APPRECIATION

I liked that... I thought it was fascinating that... I noticed... I heard you say...

APPRECIATION OR CONCERN

I was thinking... That makes me think that... I had the impression that...
It seemed to me that... I noticed that... I saw that... I heard you say...

CONCERN

I was wishing that... I felt uncomfortable because... I was worried /concerned...
I was troubled by... I heard you say... I saw that...

ASK ABOUT THE PARTICIPANTS/OTHER PERSPECTIVES

PEARLS DEBRIEFING TOOL Cont.

How do you all see it?
I wonder what your thoughts were at the time.
What were you thinking when...?
What was going through your mind?
What were your priorities at the time?
Help me understand how you decided to...
How would the patient view...?
What would the legal consequences be...?
How would this affect the patient outcome...?

CLOSING PERFORMANCE GAPS

CLARIFYING THINKING & LEARNING NEEDS

So, what I am hearing you say is that... (Insert participant's performance gap) was related to ...
(participant thinking)

If I understand you correctly, you are saying that (performance gap) was due to... (Insert participant thinking here)

EXPLORE PARTICIPANT THINKING & CLOSE THE PERFORMANCE GAP

POSITIVE

Identify and reinforce existing frame through discussion...
Teach to highlight positive performance

NEGATIVE

Identify and explore new thinking through discussion
Teach to close performance gap when learning need is clear

HELPING LEARNER GENERALIZE

What strategies do you see going forward that would be helpful here?
How will this impact your performance next time?
How would you manage the situation differently next time?
What will you be thinking the next time you encounter a situation like this?

Adopted from: Epoch, W. Cheng, A. (2015). Promoting excellence and reflective learning in simulation (PEARLS). *Simulation in Healthcare*. 10, 106-115.

OBSERVER ASSESSMENT TOOL

Practicum Site (Peer) Observation Form

The form must be completed by the observer and turned into complete simulation experience.

Name: _____

Date: _____

Domain objectives for learning	Yes	No	Comments
Objectives			
Were all the roles assigned? If so, how were the roles assigned?			
Did all assigned staff participate in the simulation? If so, how?			
Situation Monitoring			
Did the learner monitor the patient throughout the simulation? If so, how?			
Did learner(s) make an effort to monitor vitals throughout the simulation? If so, how?			
Did the learner(s) monitor the patient's response to therapy throughout the simulation? If so, how?			
Did the learner(s) assess and respond to a patient's concern in a timely manner (less than 15 minutes)? If so, how?			
Domain objectives for learning	Yes	No	Comments

Communication		
Did the team communicate to each other during the activity? If so, how effective was the communication?		
Was an SBAR used to call the healthcare provider?		
Was an SBAR utilized to give handoff report from staff nurse to another staff nurse?		
Did the participants work as a team? If so, how?		
Advocacy/Support		
Did any learner advocate for patient concerns/safety? If so, how?		
Was the patient informed of available resources and provided collaborative support such as social worker? If so, who was utilized?		
Was there any interdisciplinary collaboration in patient care? If so, who?		
Participant observer		
How would have you reacted if you were the primary nurse?		
What would you do differently base on your observations of the role you were assigned to evaluate?		

PARTICIPANT EVALUATION OF SIMULATION

Malignant Hyperthermia Crisis
Conducted: March 30, 2017

Topic	Was this simulation valuable to you?	Did content extend your knowledge of the topic?	Was the simulation clear and understandable?	Were equipment, audiovisuals, or handouts easy to follow?
	Scoring: 1 = not at all and 5 = extremely			
<u>Orientation to clinical simulation</u>	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
<u>Clinical Simulation of the malignant hyperthermia patient</u>	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
<u>Preparation of work prior to conducting clinical simulation</u>	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
<u>Debriefing</u>	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Please list below potential improvements you would like conducted within the clinical simulation experience:

Simulation Instructor Signature _____ Date _____

Malignant Hyperthermia Crisis
Title of Scenario

EVALUATION OF STAFF LEARNER

Name: _____

Date: _____

Semester X Objectives	0 Does not meet expectations	1 Sometimes meets expectations	2 Regularly meets expectations	
Professional Provider of Care				Comments/Examples.....
Apply the basic principles of the nursing process to plan care for patients across the lifespan				
Apply critical thinking skills when planning and delivering patient care for patients across the lifespan				
Apply knowledge of nursing care across the lifespan that promotes patient safety with decreased prompting and supervision				
Use evidence-based nursing to plan and provide patient care				
Apply basic patient teaching and learning concepts from developmental				

and cultural perspectives				
Apply patient advocacy while providing care across the lifespan				
Demonstrate the use of therapeutic communications techniques in patient care across the lifespan				
Demonstrate caring behaviors in the performance of basic nursing skills				
Professional Manager of Care				
Discuss the fundamental principles of accountability and delegation of nursing care to others while supervising their work				
0. Implement methods of ensuring quality of patient care				
1. Prioritize the delivery of patient care across the lifespan in the				

acute care setting				
2. Professional Member within the Discipline				
3. Implement standards and scope of practice in the delivery of patient care				
4. Apply legal and ethical principles in the delivery of patient care across the lifespan				
5. Demonstrate professional behaviors nursing practice across the lifespan				

Appendix F

Pre-and Post-Test Evaluation Form

Project Title: The Application of a Simulation Model Within an Ambulatory Surgical Center:
Developing from Novice to Expert Practitioner

1. What is malignant hyperthermia?
 - A. Sudden unexpected death of a healthy individual undergoing general anesthesia
 - B. Sudden unexpected death of a healthy individual undergoing local anesthesia
 - C. Sudden unexpected death of an unhealthy individual undergoing general anesthesia
 - D. Sudden unexpected death of an unhealthy individual undergoing local anesthesia

2. Survivors of malignant hyperthermia may experience: (Select all that apply)
 - A. Brain damage
 - B. Contractures
 - C. Inability to regulate temperature
 - D. Death

3. General signs of malignant hyperthermia crisis include: (Select all that apply)
 - A. Increased heart rate
 - B. Increased body metabolism
 - C. Muscle rigidity
 - D. Decreased respiratory rate

4. Complications of malignant hyperthermia crisis include: (Select all that apply)
 - A. Cardiac arrest
 - B. Brain damage
 - C. Internal bleeding
 - D. Failure of other body systems

5. The treatment for malignant hyperthermia crisis is:
 - A. Versed
 - B. Dantrolene sodium
 - C. Benadryl
 - D. Warm isotonic saline

6. A patient with hypothyroidism who experiences trauma, emergency surgery, or a severe infection is at risk for developing which of the following conditions?
 - A. Hepatitis B
 - B. Malignant hyperthermia
 - C. Myxedema coma
 - D. Thyroid storm

7. You are performing a routine preoperative interview on a 49-year-old man who is scheduled for arthroscopic knee surgery. What would be risks associated with malignant hyperthermia in this patient? (Select all that apply)
- A. Any unexplained fever or muscle rigidity occurring from anesthesia
 - B. A personal history of malignant hyperthermia
 - C. Prior complications during a previous surgery
 - D. Intolerance to caffeine

8. In which order do these signs most frequently occur in malignant hyperthermia?
- A. Increased heart rate
 - B. Increased end-tidal CO₂
 - C. Muscle rigidity
 - D. Hyperthermia
 - E. Tachypnea
 - F. Cyanosis or mottled skin

Please place order of signs here: _____, _____, _____, _____, _____, _____

9. What are the possible causative agents causing malignant hyperthermia in this case?
- A. Midazolam
 - B. Fentanyl
 - C. Propofol
 - D. Vecuronium bromide
 - E. Nitrous oxide
 - F. Isoflurane
10. What would be immediate measures to take when a patient displays signs of malignant hyperthermia? (Select all that apply)
- A. The circulating nursing initiates MH protocol and calls for additional nursing backup.
 - B. Additional nursing backup includes one to prepare dantrolene, one to prepare other medications, and one to provide cooling.
 - C. Prepare dantrolene
 - D. The surgeon continues the procedure as soon as the patient has been stabilized.
 - E. The anesthesiologist hyperventilates the patient.

Appendix G

Evaluation of Organizational Objectives

Evaluation of Organizational Change Objectives

Project Title: The Application of a Simulation Model Within an Ambulatory Surgical Center: Developing from Novice to Expert Practitioner

Participants in the organizational change regarding the development of policy and procedure through the utilization of simulation concerning malignant hyperthermia crisis must have the opportunity to evaluate the project in order to ensure the project has been met through implementation of organizational change.

- Ratings are
- 1 = Strongly disagree (Goals are not met or are ineffective)
 - 2 = Disagree (Is acceptable but could be improved)
 - 3 = Neutral (Do not wish to answer)
 - 4 = Agree (Is useful and meets the goals of the organizational change)
 - 5 = Strongly agree (Is useful and exceeds expectations of goals of the organizational change)

Organizational Change Objectives Regarding Implementation of Simulation Within an Ambulatory Center	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Were the project objectives clear and realistic?	5	4	3	2	1
Did you learn what you expected to learn?	5	4	3	2	1
Was the material presented at an appropriate rate?	5	4	3	2	1
Were the instructional techniques appropriate?	5	4	3	2	1
Were you allowed to actively participate to your expectations?	5	4	3	2	1
Did the content as well as pre-test challenge you?	5	4	3	2	1

Are there any changes to the project you would recommend?

Yes

No

If so explain:

Appendix H

Quotes Regarding Purchasing of Simulation Equipment



Laerdal
helping save lives

Laerdal Medical Corporation
167 Myers Corners Road
Wappingers Falls, NY 12590
Fax Order To: (800)227-1143
Phone Order To: 877-Laerdal
Tax ID: 13-2587752

TERRITORY MANAGER
Andrea Sinay
(800) 648-1851x2330
andrea.sinay@laerdal.com

INSIDE SALES REPRESENTATIVE **SALES SUPPORT SPECIALIST**
Barron Williams Tara LePino
(888) 297-7772x4448 (845) 297-7770x2231
barron.williams@laerdal.com tara.lepino@laerdal.com

DATE : Friday, September 9, 2016

ATTN: Mr. Nicholas Green
Simulation

QUOTE NUMBER : 1-3TZIC6
CUSTOMER NUMBER : 1-Hzl1u
EXPIRATION DATE : 11/30/2016

SHIP TO:

QTY	PRODUCT	DESCRIPTION	LIST PRICE	UNIT PRICE	EXTENDED PRICE
1	212-02001	SimMan 3G (US) Manikin and accessories Includes SimMan 3G Manikin, LLEAP License, Drug Recognition Kit, USB Headset/Microphone, SpO2 Probe, Keyboard and Mouse, Consumables, Clothing, Soft Sided Carry Case, 1 Year Manufacturer's Warranty.	\$71,530.00	\$71,530.00	\$71,530.00
1	400-10201	Laptop LLEAP Instructor - Patient Monitor (Touchscreen)	\$2,000.00	\$2,000.00	\$2,000.00
1	400-29301	All-In-One Panel PC (US) Instructor - Patient Monitor	\$3,155.00	\$3,155.00	\$3,155.00
1	212-VPLUSP2	SimMan 3G VP P yr 2 Includes Installation, Extended Warranty through Year 2, Preventative Maintenance On-Site and Loaner.	\$15,205.00	\$15,205.00	\$15,205.00
1	212-LL51200	Intro to SimMan 3G Course LLEAP, 2 Conse 2 consecutive day educational session with a Laerdal Educational Representative at the customer site for up to 8 people.	\$4,540.00	\$4,540.00	\$4,540.00
1	377-02050	SimMom ADM Compatible SimMom Manikin, Birthing Baby with placenta, 4 Uteri Modules (Cervix, Amniotic Bag, Post-Partum Hemorrhage Module and Inverted Uterus), Set of Consumables, Blood Pressure Cuff, Quick Set up guide, including LLEAP License	\$26,320.00	\$26,320.00	\$26,320.00
1	400-10201	Laptop LLEAP Instructor - Patient Monitor (Touchscreen)	\$2,000.00	\$2,000.00	\$2,000.00
1	400-29301	All-In-One Panel PC (US) Instructor - Patient Monitor	\$3,155.00	\$3,155.00	\$3,155.00
1	377-LL51200	Intro SimMom LLEAP 2DC 2 Consecutive Days 2 consecutive day educational session with a Laerdal Educational Representative at the customer site for up to 8 people.	\$4,540.00	\$4,540.00	\$4,540.00
1	377-VPLUSP2	SimMom VPlus Plat 2 yr Americas Includes Installation, Extended Warranty through Year 2, Preventative Maintenance On-Site and Loaner Program.	\$9,710.00	\$9,710.00	\$9,710.00
1	226-05050	SimNewB Simulator Manikin Only Includes SimNewB Patient Simulator, BP Cuff, Consumables, Clothing, 1 Year Manufacturer's Warranty.	\$14,590.00	\$14,590.00	\$14,590.00
1	400-10201	Laptop LLEAP Instructor - Patient Monitor (Touchscreen)	\$2,000.00	\$2,000.00	\$2,000.00
1	400-29301	All-In-One Panel PC (US) Instructor - Patient Monitor	\$3,155.00	\$3,155.00	\$3,155.00
1	225-VPLUSPA2	SimNewB Ad VP P yr 2 Includes Installation, Extended Warranty through Year 2, Preventative Maintenance On-Site and Loaner.	\$7,220.00	\$7,220.00	\$7,220.00

QTY	PRODUCT	DESCRIPTION	LIST PRICE	UNIT PRICE	EXTENDED PRICE
1	232-05050	SimJunior Simulator Manikin Only Includes SimJunior Manikin, Blood Pressure Cuff, Consumables, Clothing, Carry Case, 1 Year Manufacturer's Warranty.	\$14,590.00	\$14,590.00	\$14,590.00
1	400-10201	Laptop LLEAP Instructor - Patient Monitor (Touchscreen)	\$2,000.00	\$2,000.00	\$2,000.00
1	400-29301	All-In-One Panel PC (US) Instructor - Patient Monitor	\$3,155.00	\$3,155.00	\$3,155.00
1	233-VPLUSP3	SimJunior Advanced ValuePlus Platinum 3 Includes Installation, Extended Warranty through Year 3, Preventative Maintenance On-Site and Loaner Program.	\$10,610.00	\$10,610.00	\$10,610.00
1	325-05050	Nursing Anne (SimPad Capable)	\$5,045.00	\$5,045.00	\$5,045.00
1	204-30001	SimPad PLUS System (US) Includes SimPad PLUS Remote Ctrl, SimPad PLUS Link Box, AC Adapter, Battery, Headset & Microphone, Wrist Strap, Manikin Strap, Ethernet Cable, Protective Sleeve, and USB Cable. 204-50150 LLEAP for SimPad PLUS software license required for operation.	\$1,500.00	\$1,500.00	\$1,500.00
1	204-50150	LLEAP for SimPad PLUS Includes: License Key providing access to Manual Mode, Automatic Mode, and Log Viewer Application.	\$2,500.00	\$2,500.00	\$2,500.00
1	400-09201	Tablet-PC Instructor - Patient Monitor	\$2,210.00	\$2,210.00	\$2,210.00
1	300-05050	Nursing Kelly (SimPad Capable)	\$4,970.00	\$4,970.00	\$4,970.00
1	204-30001	SimPad PLUS System (US) Includes SimPad PLUS Remote Ctrl, SimPad PLUS Link Box, AC Adapter, Battery, Headset & Microphone, Wrist Strap, Manikin Strap, Ethernet Cable, Protective Sleeve, and USB Cable. 204-50150 LLEAP for SimPad PLUS software license required for operation.	\$1,500.00	\$1,500.00	\$1,500.00
1	204-50150	LLEAP for SimPad PLUS Includes: License Key providing access to Manual Mode, Automatic Mode, and Log Viewer Application.	\$2,500.00	\$2,500.00	\$2,500.00
1	400-09201	Tablet-PC Instructor - Patient Monitor	\$2,210.00	\$2,210.00	\$2,210.00
1	350-05050	Nursing Kid (SimPad Capable) Includes Manikin, Airway Lubricant, Simulated Blood, Hospital Gown, Carry Case and DFU.	\$2,810.00	\$2,810.00	\$2,810.00
1	204-30001	SimPad PLUS System (US) Includes SimPad PLUS Remote Ctrl, SimPad PLUS Link Box, AC Adapter, Battery, Headset & Microphone, Wrist Strap, Manikin Strap, Ethernet Cable, Protective Sleeve, and USB Cable. 204-50150 LLEAP for SimPad PLUS software license required for operation.	\$1,500.00	\$1,500.00	\$1,500.00
1	204-50150	LLEAP for SimPad PLUS Includes: License Key providing access to Manual Mode, Automatic Mode, and Log Viewer Application.	\$2,500.00	\$2,500.00	\$2,500.00
1	400-09201	Tablet-PC Instructor - Patient Monitor	\$2,210.00	\$2,210.00	\$2,210.00
1	365-05050	Nursing Baby (SimPad Capable)	\$2,750.00	\$2,750.00	\$2,750.00
1	204-30001	SimPad PLUS System (US) Includes SimPad PLUS Remote Ctrl, SimPad PLUS Link Box, AC Adapter, Battery, Headset & Microphone, Wrist Strap, Manikin Strap, Ethernet Cable, Protective Sleeve, and USB Cable. 204-50150 LLEAP for SimPad PLUS software license required for operation.	\$1,500.00	\$1,500.00	\$1,500.00
1	204-50150	LLEAP for SimPad PLUS Includes: License Key providing access to Manual Mode, Automatic Mode, and Log Viewer Application.	\$2,500.00	\$2,500.00	\$2,500.00
1	400-09201	Tablet-PC Instructor - Patient Monitor	\$2,210.00	\$2,210.00	\$2,210.00
3	270-00001	Male Mult-Venous IV Training Arm Kit	\$687.00	\$687.00	\$2,061.00
1	200-EDSP100	Introduction to Nursing and MegaCode Using SimPad Platform 1 Day 1 day educational session with a Laerdal Educational Representative at the customer site for up to 8 people.	\$2,375.00	\$2,375.00	\$2,375.00
1	400-LL51150	Trans to LLEAP Sims 1D All Sims except SimMom 1 day educational session with a Laerdal Educational Representative at the customer site for up to 8 people.	\$2,375.00	\$2,375.00	\$2,375.00

ITEM TOTAL:	\$246,701.00
ESTIMATED TAX:	\$10,697.92
SHIPPING & HANDLING:	\$908.16
TOTAL:	\$258,307.08

There are various payment options; please see bottom of your quote for further clarification.
 Appropriate Sales Tax will be added to invoice – Pricing and Availability are subject to change
 Shipping/Handling costs will be added to invoice

Terms:

- . Net 30 Days for approved open accounts; CIA; Credit Cards accepted. Financing options now available – sample leasing payment terms follow. For additional information, ask your Inside Sales Representative listed above.
 - Lease term 24 months: \$10,279.21*
 - Lease term 36 months: \$6,852.81*
 - Lease term 48 months: \$5,139.60*
- *Quoted payments do not include Interest, Taxes, Maintenance, or Insurance. Quotes are subject to credit approval and may change without notice.
- . One(1) year warranty on manufactured products and 90 day warranty on refurbished products
- . Two(2) year parts replacement warranty with technical assistance by phone on all Hill-Rom refurbished products
- . Delivery of product to a specific location within your building, if requested is at an additional charge and not included in this quote
- . Quotes that included training. Training must be booked and performed 1 year from installation. The training obligation expires one year from install
- . Shipping charges subject to change in the event Inside or Lift Gate Delivery is needed

Appendix I

Mock Affiliation Agreement

[INSERT COMPANY NAME HERE]

EMPLOYEE SIMULATION TEACHING AFFILIATION AGREEMENT

This Employee Simulation Teaching Affiliation Agreement (“Agreement”) is entered into and effective as of [INSERT DATE HERE] (“EFFECTIVE DATE”), by and between [INSERT ASSOCIATED HOSPITAL HERE] (“HOSPITAL”), a wholly owned subordinate economic entity of [INSERT ASSOCIATED HOSPITAL HERE IF LARGER ENTITY] and [INSERT NAME OF ASC HERE] (“ACUTE EDUCATIONAL INSTITUTION”). The purpose of this Agreement is to develop and implement clinical medical education opportunities for employees of [INSERT NAME HERE], (referred to herein collectively as “ASC employees” and individually as “ASC Employee” currently employed at [INSERT NAME HERE], specifically in the area of the list in EXHIBIT A. In this Agreement, AMBULATORY SURGICAL CENTER and [ASSOCIATED HOSPITAL] may be collectively referred to as “Parties.”

In consideration of the mutual covenants, conditions and undertakings herein set forth, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Development of Clinical Program. The parties agree to work cooperatively in the development and implementation of an educational teaching program at [ASSOCIATED HOSPITAL].
2. Obligation of Ambulatory Surgical Center. In furtherance of the purposes and mutual benefits described herein, Ambulatory Surgical Center shall:
 - (a) Maintain primary responsibility for the development and oversight of the Simulation Records which shall be under the direction of the Director of Nursing (or equivalent position) of the Ambulatory Surgical Center (the “Director of Nursing”) or such other person as the Director of Nursing may designate.
 - (b) Work in consultation and cooperation with [ASSOCIATED HOSPITAL] in the development and implementation for the Simulation Scenarios and the administration of this Agreement.
 - (c) Select staff with the necessary qualifications and training to participate successfully in the Simulation Program and assign such Staff to [ASSOCIATED HOSPITAL].
 - (d) Provide [ASSOCIATED HOSPITAL] with a list of Staff participating in the Simulation Program and the dates of the Staff’s participation.
 - (e) Designate a staff member to act as liaison between Ambulatory Surgical Center and [ASSOCIATED HOSPITAL] on matters relating to the Simulation Program.
 - (f) Inform Staff of all rules, policies, regulations, and confidentiality requirements of the Simulation Program and ensure the Staff’s compliance therewith, and advise Staff that no Staff shall be considered an employee of [ASSOCIATED HOSPITAL] for purposes of compensation,

employment benefits or for any other purpose in connection with and Staff's participation in the Simulation Program.

- (g) Retain primary responsibility for the education, guidance, and evaluation of Staff.
 - (h) Secure and maintain adequate insurance, as more particularly described in Article 5 hereof, providing coverage for Staff and Ambulatory Surgical Center participating in the Simulation Program.
 - (i) Require that each Staff's immunizations are current and up-to-date and include without limitation, influenza vaccination, Tap, MMR, or titers for Measles, Mumps, and Rubella, Varicella, Hepatitis B, and Tuberculosis Skin Test or chest x-ray and Tuberculosis Questionnaire, and provide [ASSOCIATED HOSPITAL] with documentation thereof prior to such Staff's participation in the Simulation Program. Upon request, [ASSOCIATED HOSPITAL] shall
 - (j) at Ambulatory Surgical Center's or Staff's sole expense, arrange for any Staff to undergo such immunizations and Tuberculosis Skin Test or Chest x-ray, and to fill out the Tuberculosis Questionnaire.
 - (k) Cause each Staff to undergo a drug screening and provide [ASSOCIATED HOSPITAL] with documentation thereof prior to each Staff's participation in the Simulation Program. Such drug screening shall comply with [ASSOCIATED HOSPITAL] policy standards and requirements. Upon request [ASSOCIATED HOSPITAL] shall, at Ambulatory Surgical Center's or Staff's sole expense, arrange for and Staff to undergo a drug screening. No Staff with a positive result on the drug test shall be eligible to participate in the Simulation Program.
 - (l) Cause each Staff to undergo a comprehensive criminal background check and provide [ASSOCIATED HOSPITAL] with documentation thereof prior to each Staff's participation in the Simulation Program. Such background check shall comply with [ASSOCIATED HOSPITAL] policy and Public Law 101-630 standards and requirements. Without limiting the foregoing, the background check shall include an Office of Inspector General ("OIG") and General Services Administration search, as well as applicable county, state and/or federal searches. Upon request [ASSOCIATED HOSPITAL] shall, at Ambulatory Surgical Center's or Staff's sole expense, arrange for any Staff to undergo a comprehensive criminal background check. No Staff on the OIG's List of Excluded Individuals/Entities or otherwise excluded from participating in Medicare, Medicaid, or any other federally funded or state funded healthcare program shall be eligible to participate in the Simulation Program if the background search reveals a matter which, in [ASSOCIATED HOSPITAL] sole discretion, would preclude his or her participation in the clinical program.
3. Obligations of [ASSOCIATED HOSPITAL]. In furtherance of the purposes and mutual benefits described herein, [ASSOCIATED HOSPITAL] shall:
- (a) Work in consultation and cooperation with the Ambulatory Surgical Center and the Director of Nursing in the development and implementation of the Simulation Program and the administration of this Agreement.
 - (b) Provide timely and constructive feedback to Staff participating in the Simulation Program.

- (c) Ensure that the [ASSOCIATED HOSPITAL] Simulation Staff submit a written evaluation of each Staff's performance during the Simulation Program to Ambulatory Surgical Center at the time of completion of each Staff's simulated experience.
 - (d) Ensure that [ASSOCIATED HOSPITAL] and all Simulation Teaching Staff are at all times during the term hereof properly licensed, accredited, and credentialed by all applicable governing authorities.
 - (e) Have the right to dismiss any Staff from the Simulation Program for cause, including, but not limited to, staff endangerment or failure to comply with any material provision hereof. [ASSOCIATED HOSPITAL] shall first consult with Ambulatory Surgical Center before dismissing any Staff for cause.
 - (f) Ensure that all Staff abide by the obligations of [ASSOCIATED HOSPITAL] set forth in this Article 3.
4. Liability. [ASSOCIATED HOSPITAL] and Ambulatory Surgical Center shall be liable only for their own acts or omissions, and those of their respective authorized employees, officers, and agents while engaged in the performance of the obligations under this Agreement, and neither [ASSOCIATED HOSPITAL] nor Ambulatory Surgical Center shall have any liability whatsoever for any act or omission of the other party hereto, its employees, officers, or agents.
 5. Insurance. [ASSOCIATED HOSPITAL] and Ambulatory Surgical Center shall each secure and maintain their own comprehensive general liability insurance, and where appropriate, professional liability insurance, and worker's compensation insurance, or other properly reserved self-insurance, in such form and amounts as shall be reasonably necessary for the performance of the obligations hereunder. Upon request, Ambulatory Surgical Center shall provide to [ASSOCIATED HOSPITAL] certificates of proof of the insurance coverage required herein. The Parties agree that the [ASSOCIATED HOSPITAL] coverage under the Federal Tort Claims Act ("FTCA"), while performing services, functions or participating in activities or programs under a self-determination contract with [ASSOCIATED HOSPITAL]. FTCA coverage is more fully described in federal regulations (25 C.F.R. section 900). Nothing in this Agreement shall be constructed as a waiver of any rights or defense otherwise applicable under the FTCA.
 6. Privacy Requirements. Each party shall comply with all privacy rules and policies adopted by [ASSOCIATED HOSPITAL] from time to time. Each party shall also comply with all other requirements of the Health Insurance Portability and Accountability Act ("HIPAA"), its related regulations and standards, and all applicable federal and state privacy and confidentiality laws.
 7. Relationship of Parties. Nothing contained in this Agreement shall create or be constructed as creating a partnership, joint venture, or employment relationship between Ambulatory Surgical Center and [ASSOCIATED HOSPITAL]. Neither Ambulatory Surgical Center nor [ASSOCIATED HOSPITAL] shall be liable, except as otherwise expressed in this Agreement, for any obligations or liabilities incurred by the other.
 8. Term. The term of this Agreement shall be for a period of one (1) year effective XXXXXXX to XXXXXXX.

- 9. Termination. This agreement may be terminated (a) by mutual consent, (b) by either party provided that at least three (3) months prior written notice is given by the terminating party to the other, or (c) upon the material breach of either party hereto; provided, however, that the breaching party shall have thirty (30) days to cure any material breach after receipt of notice of such breach from the non-breaching party.
- 10. Modification. No waiver, modification or change of any of the provisions of this Agreement shall be valid unless in writing and signed by the parties against whom such claimed waiver, modification or change is sought to be enforced.
- 11. Notices. Any notice of other communication required under this Agreement shall be in writing and shall be delivered via United States registered or certified mail, return receipt requested, to the respective addresses given below, or to such other address as either party shall designate in writing.

In the case of [ASSOCIATED HOSPITAL]

In the case of Ambulatory Surgical

Center

- 12. Equal Opportunity. Neither party shall discriminate against any Staff, employee, applicant for employment, or receipt of services on the basis of race, sexual orientation, religion, color, sex, age, veteran’s status, disability, or national origin.
- 13. Execution by Counterpart. The Agreement may be executed separately or independently in any number of counterparts, each of which together shall be deemed to have been executed simultaneously and for all purposes to be one agreement.
- 14. Jurisdiction and Governing Law. All disputes arising out of or relating to the matters addressed herein shall be resolved within the exclusive jurisdiction of Maricopa County Courts, and shall be construed and enforced in accordance with the laws of Maricopa County. The Parties’ execution of this Agreement is consent to such jurisdiction and governing law.
- 15. Hospital Contract; Official Capacity. The Parties acknowledge that this Agreement is a contract by and on behalf of Ambulatory Surgical Center, rather than by or on behalf of its officers, directors, employees, representatives, or agents. Execution and performance under this Agreement is undertaken in the official capacity of Ambulatory Surgical Center’s officers, directors, employees, representatives, or agents, and not in their individual capacities.

- 16. Assignment. Ambulatory Surgical Center shall not assign this Agreement or assign any of its rights hereunder without the [ASSOCIATED HOSPITAL] prior written consent. [ASSOCIATED HOSPITAL] may assign this Agreement to any [ASSOCIATED HOSPITAL] division or entity.
- 17. Entire Agreement. This Agreement, including any documents expressly incorporated herein, contains the entire agreement of the Parties with respect to its subject matter, and as of the Effective Date, supersedes all previous and contemporaneous agreements and understandings, inducements or conditions, expressed or implied, oral or written, between the parties with respect to the subject matter hereof.

IN WITNESS, WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives effective as of the day and year first written above.

AMBULATORY SURGICAL CENTER

[ASSOCIATED HOSPITAL]

By: _____

By:

Name: _____

Name:

Title: _____

Title:

Date: _____

Date:

BUSINESS ASSOCIATE AGREEMENT

This Business Associates Agreement (“Agreement”) is entered into by and between [ASSOCIATED HOSPITAL], with reserved rights of sovereignty (“covered entity”) and Ambulatory Surgical Center (“business associate”) under the terms and conditions set forth herein:

Definitions

Catch-all definition:

The following terms used in this Agreement shall have the same meaning as those terms in the HIPAA Rules: Breach, Data Aggregation, Designated Record Set, Disclosure, Health Care Operations, Individual, Minimum Necessary, Notice of Privacy Practices, Protected Health Information, Required by Law, Secretary, Security Incident, Subcontractor, Unsecured Protected Health Information, and Use.

Specific definitions:

- (a) Business Associate. “Business Associate” shall generally have the same meaning as the term “business associate” at 45 CFR 160.103, and in reference to the party in this agreement, shall mean the individual or entity identified above.
- (b) Covered Entity. “Covered Entity” shall generally have the same meaning as the term “covered entity” at 45 CFR 160.103, and in reference to the party to this agreement, shall mean [ASSOCIATED HOSPITAL]
- (c) HIPAA Rules. “HIPAA Rules” shall mean the Privacy, Security, Breach Notification, and Enforcement Rules at 45 CFR Part 160 and Part 164.

Obligations and Activities of Business Associate

Business Associate agrees to:

- (a) Not use or disclose protected health information other than as permitted or required by the Agreement or as required by law;
- (b) Use appropriate safeguards, and comply with Subpart C of 45 CFR Part 164 with respect to electronic protected health information, to prevent use or disclosure of protected health information other than as provided for by the Agreement;
- (c) Report to covered entity any use or disclosure of protected health information not provided for by the Agreement as soon as it becomes aware, including breaches of unsecured protected health information as required at 45 CFR 164.410, and any security incident of which it becomes aware;
- (d) In accordance with 45 CFR 164.502(e)(1)(ii) and 164.308(b)(2), if applicable, ensure that any subcontractors that create, receive, maintain, or transmit protected health information on behalf of the business associate agree to the same restrictions, conditions, and requirements that apply to the business associate with respect to such information.
- (e) Make available protected health information in a designated record set to the covered entity or designee as necessary to satisfy covered entity’s obligations under 45 CFR 164.524;

- (f) Make any amendment(s) to protected health information in a designated record set as directed or agreed to by the covered entity pursuant to 45 CFR 164.526, or take other measures as necessary to satisfy covered entity's obligations under 45 CFR 164.526;
- (g) Maintain and make available the information required to provide an accounting of disclosures to the covered entity or designee as necessary to satisfy covered entity's obligations under 45 CFR 164.528;
- (h) To the extent, the business associate is to carry out one or more of covered entity's obligation(s) under Subpart E of 45 CFR Part 164, comply with the requirements of Subpart E that apply to the covered entity in the performance of such obligation(s); and
- (i) Make its internal practices, books, and records available to the Secretary for purposes of determining compliance with the HIPAA Rules.

Permitted Uses and Disclosures by Business Associate

Business associate may only use or disclose protected health information for the following purpose: To employees of business associate, or other individuals contractually bound to the protection of PHI as provided herein, on a need to know basis for the performance of duties under the Simulation Program Affiliation Agreement.

[In addition to other permissible purposes, the business associate is authorized to use protected health information to de-identify the information in accordance with 45 CFR 164.514(a)-(c)]

- (a) Business associate may use or disclose protected health information by law.
- (b) Business associate agrees to make uses and disclosures and requests for protected health information consistent with covered entity's minimum necessary policies and procedures.
- (c) Business associate may not use or disclose protected health information in a manner that would violate Subpart E of 45 CFR Part 164 of done by covered entity.

Provisions for Covered Entity to Inform Business Associate of Privacy Practices and Restrictions

- (a) Covered entity shall notify business associate of any limitation(s) in the notice of privacy practices of covered entity under 45 CFR 164.520, to the extent that such limitation may affect business associate's use or disclosure of protected health information.
- (b) Covered entity shall notify business associate of any changes in, or revocation of, the permission by an individual to use or disclose his or her protected health information, to the extent that such changes may affect business associate's use or disclosure of protected health information.
- (c) Covered entity shall notify business associate of any restriction on the use or disclosure of protected health information that covered entity has agreed to or is required to abide by under 45

CFR 164.522, to the extent that such restriction may affect business associate's use or disclosure of protected health information.

Term and Termination

- (a) Term. The term of this Agreement shall be effective as of the date of its execution, and shall remain in full force and effect until the date the Agreement is mutually terminated, or the date that covered entity terminates the Agreement for cause as authorized in paragraph (b) of this Section, whichever is sooner,
- (b) Termination for Cause. Business associate authorizes termination of this Agreement by covered entity, if covered entity determines business associate has violated a material term for the Agreement and business associate has not cured the breach or ended the violation within the time specified by covered entity.
- (c) Obligations of Business Associate Upon Termination.
1. Except as provided in 2 below, upon termination of this Agreement for any reason, business associate shall return to covered entity or, if agreed to by covered entity, destroy all protected health information received from covered entity, or created, maintained, or received by business associate on behalf of covered entity, that the business associate still maintains in any form. Business associate shall retain no copies of the protected health information.
 2. Notwithstanding the foregoing, upon termination of the Agreement for any reason, business associate, with respect to protected health information received from covered entity, or created, maintained, or received by business associate on behalf of covered entity, shall retain only that protected health information which is necessary for business associate to carry out its legal responsibilities;
 3. If business associate retains any information, business Associate shall continue to use appropriate safeguards and comply with Subpart C of 45 CFR Part 164 with respect to electronic protected health information to prevent use or disclosure of the protected health information, other than as provided for in this Section, for as long as business associate retains the protected health information;
 4. Business associate shall not use or disclose the protected health information retained by business associate other than for the purposes for which such protected health information was retained and subject to the same conditions set out above under "Permitted Uses and Disclosures by Business Associate" which applied prior to termination; and
 5. Business associate shall return to covered entity or, if agreed to by covered entity, destroy the protected health information retained by business associate when it is no longer needed by business associate to carry out its legal responsibilities.
- (d) Survival. The obligations of business associate under this Section shall survive the termination of this Agreement.

Miscellaneous

- (a) Regulatory References. A reference in this Agreement to a section in the HIPAA Rules means the section as in effect or as amended.
- (b) Amendment. The Parties agree to take such action as is necessary to amend this Agreement from time to time as is necessary for compliance with the requirements of the HIPAA Rules and any other applicable law.
- (c) Sovereign Immunity. Nothing herein shall be construed as a waiver of sovereign immunity of the covered entity not otherwise required by law, or a waiver of Community jurisdiction over the protection of health information of members of the [ASSOCIATED HOSPITAL]

AMBULATORY SURGICAL CENTER

BUSINESS ASSOCIATE

Signature

Signature

Print Name

Print Name

Title

Title

Date

Date

Ambulatory Surgery Center

CONTRACT REVIEW FORM

CONTRACT TYPE:

- | | |
|--|---------------------------------------|
| <input type="checkbox"/> STUDENT AFFILIATION AGREEMENT AGREEMENT | <input type="checkbox"/> PURCHASE |
| <input type="checkbox"/> PURCHASED REFERRED CARE SERVICES | <input type="checkbox"/> PROFESSIONAL |
| <input type="checkbox"/> PROVIDER NETWORK/INSURER | <input type="checkbox"/> CONSTRUCTION |
| <input type="checkbox"/> OTHER: Business Associate Agreement (BAA) TERMINATION | <input type="checkbox"/> CONTRACT |

DATE RECEIVED: XXXXX
CONTRACTOR / VENDOR NAME: XXXXX
REQUESTING DEPARTMENT: XXXXX
CONTRACT TERM: 1 year
EFFECTIVE DATE: XXXXX
RENEWAL PROVISION: N/A

Contract Issues/Concerns Identified: N/A

Contract Issues/Concerns Resolutions: N/A

Payment Arrangement/Fee Schedule: XXXXX

Justifications: The purpose of this Agreement is to develop and implement Clinical medical education opportunities for staff specifically in the areas listed in Exhibit A.

Reviewed by Contract Director

Signature

Date

Print Name

Reviewed by Department Head

Signature Date Print Name

Reviewed by Division Chief

Signature Date Print Name

Reviewed by CFO

Signature Date Print Name

Reviewed by CEO

Signature Date Print Name