Redesigning Simulation Debriefing Practices of a Pre-licensure Baccalaureate Nursing Program

by

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Dedication

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Abstract

Nursing faculty, through simulation with debriefing, have the opportunity to positively influence new graduate nurses' clinical reasoning (CR). Debriefing following simulation is a time that the student can reflect on the simulated event, deciding what went well, what can be different, what was overseen, their personal performance and other items that are applicable to the scenario. Using a theory-based debriefing model, such as, the Integrated Reflective Debriefing Guide for Promoting Clinical Judgement (IRDG-CJ) is recommended to provide quality, effective simulation and debriefing activities. To ensure simulation and debriefing experiences for nursing students are effective with student growth, it is recommended to use multiple tools, to compliment the theory-based debriefing model. Using the Laster Clinical Judgement Rubric (LCJR) for student assessment, the Atwater Clinical Reasoning Map for Students (ACRMS) for student engagement, and completing debriefing facilitator evaluation with the Debriefing Assessment for Simulation in Healthcare-Rater Version (DASH-RV), the tools were found to be an effective practice for this performance improvement project. The project involved implementing these tools for a rural, moderate nursing program. Using the three tools, faculty participants (N=4) obtained the benchmark set for debriefing evaluation regardless of experience level. Future work is required to note the effectiveness of the ACRMS and CR growth of nursing students.

Key words: Clinical Reasoning; Clinical Judgement; Critical Thinking; Simulation; Debriefing; Integrated Reflective Debriefing Guide for Promoting Clinical Judgement (IRDG-CJ); Lasater Clinical Judgement Rubric (LCJR); Atwater Clinical Reasoning Map for Students (ACRMS); Debriefing Assessment for Simulation in Healthcare- Rater Version (DASH-R).

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Chapter One: Overview of the Problem of Interest

Nurses are professionals who are trusted by their patients to provide competent, safe care. Patients depend on their nurse to care for them physically, emotionally, spiritually, and mentally in varying situations and complexities of health, illness, and medical need.

"The baccalaureate graduate implements safety principles and works with others on the interprofessional healthcare team to create a safe, caring environment for care delivery" (American Association of Colleges of Nurses [AACN], 2008, p. 13). To care for a patient safely, effectively, and holistically, a nurse must have a variety of competencies and skill. Clinical reasoning (CR) is a skill nurses must acquire; this skill is a complex, multifaceted skill, which has been challenging to define in the past. Nurses are needed to problem-solve, react, and evaluate in an environment that is constantly changing and at times unpredictable (Jensen, 2012). CR is a skill that new graduate nurses are found to lack proficiency in (Simmons, 2010) despite the expert consensus that CR is a vital skill for the professional nurse (del Bueno, 2005; Killam Luhanga, & Bakker, 2011). The AACN (2008) supports the use of simulation as part of clinical requirements necessary to earn a baccalaureate nursing degree, recognizing that simulation can assist with building clinical knowledge and skill preparation of the baccalaureate nursing student. The purpose of this chapter is to provide introductory information on the concern for a lack of CR development in the new graduate nurse, the significance to the nursing profession from this deficit, the desire to enhance this skill during nursing school, and the intervention of simulation with debriefing to provide the opportunity of developing this skill.

Background Information

CR has a variety of definitions and is often used along with the like terms: decision-making, problem-solving, critical thinking, and clinical judgement (Hunter & Arthur, 2016).

Although many have superficially defined CR, it is a process that lacks a solid, wide-excepted professional definition (Hunter & Arthur, 2016). CR is the pathway a nurse uses to make a judgement (Ashley & Stamp, 2014). Tanner (2006) labelled CR as an ability "to think like a nurse" specifically the process of noticing, interpreting, responding, and reflecting (p. 209). Conditions a nurse experiences during patient care evolve continuously in complexity and with patient responses, concluding in a difficulty to illustrate a concrete definition of CR. Healthcare needs are different from patient to patient, requiring different pathways of noticing, interpreting, responding, and reflecting.

As part of their professional role, nurses are trained to use a broad foundation of knowledge to form patient-caring skills; this requires the professional nurse to develop a strong ability to critically think, clinically reason, communicate, and assess (AACN, 2008; Jensen, 2012). To meet expectations of patients, patients' families, colleagues, and other members of the interprofessional healthcare team, nurses must be able, when necessitated, to demonstrate CR skill. In the workforce, nurses can develop this skill overtime through patient care experiences. New graduate nurses are expected to provide safe and effective care to their patients despite the lack of experience; they have to develop CR on their own. The development of critical thinking and CR skills of the student nurse can be challenging for various reasons; lack of exposure to atypical patient scenarios and inability to practice clinical skills are examples. Simulation is a valuable resource to provide safe, effective, and reliable learning environments for nursing students (AACN, 2008; Forneris, et al., 2015; Kaddoura, 2010; Theisen & Sandau, 2013). Simulation is a growing field of providing clinical experience to healthcare students and professionals.

Examples of common items learned by nursing students in simulation include: nursing skills, medication administration, therapeutic communication, and delegation of tasks. Students can experience a patient deterioration that can help them practice assessment, communication, and recognition skills. Nursing students can be exposed to simulated events that mimic a potential medical error and discuss processes and rationales for why a mistake occurred. In addition to these common items learned, Tanner (2006) acknowledges a current desire of nurse educators is to use simulation to practice critical thinking and CR skills of nursing students.

Although it is becoming increasingly clear that simulation is an important tool to use for nursing education, simulation without debriefing is not as effective. According to Forneris et al. (2015) there are four critical indicators that should be used for the success of learning: "International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice, high quality simulation, trained and dedicated simulation faculty, and debriefing methods grounded in educational theory" (p. 308). Debriefing is a necessary aspect to enhance critical thinking and CR skills of nursing students through the use of simulation (Kadourra, 2010). Additionally, simulation has the potential to enhance critical reasoning if practiced correctly, and if not can merely allow for skill and assessment practice. Discussion and reflection of the event gives a student the opportunity to grow their CR skills.

In modern nursing education, institutes of higher education have a hybrid curriculum with hospital and theory, compared to in the past, when nursing education occurred only in the hospital. This has caused a difference in the thinking process of the nursing student and the process that is needed as the professional caring for patients (Hunter & Arthur, 2016). Nursing programs must provide innovative opportunities for the student nurse to gain this skill prior to entering their own practice. The time period where a student transitions to a professional nurse

can have a profound impact on their career (Hatler, Staffers, Kelly, Redding, & Carr, 2011). Allowing the graduate nurse to enter the profession without CR skills already developed can be detrimental to the profession, patients, and the nurse (Saintsing, Gibson, & Pennington, 2011).

Significance of Clinical Problem

By 2024, the Bureau of Labor Statistics (2015) predicts that vacant nursing positions will reach up to 1.04 million. This vast shortage of nurses has two main explanations: the aging population with increasing acuity of care; and a large majority of nurses in the same generation whom are retiring or approaching retirement age in the near future (AACN, 2017). Educating more individuals to be professional nurses could solve the nursing shortage. Contributing to the concern, and preventing a solution is the fact that colleges and universities are experiencing a shortage of: faculty, clinical sites, and preceptors for clinical requirements. This shortage caused nursing programs to turn away more than 66,000 applicants in 2016 (AACN, 2017). The problem has a domino effect in the nursing profession. This causes a decrease in nurses, a decrease in available professionals to assist with clinical opportunities at the patient bedside, increase pressure on nursing programs, and potentially an increase number of incompetent new nurses (Hatler et al., 2011; Saintsing et al., 2011).

Zimmerman and House (2016) attributes decreasing clinical experiences as one reason for a practice-gap in nursing. In an integrative literature review of new nursing practice, Hickerson, Taylor, and Terhaar (2016) found three conclusions for the profession: "first, the practice-gap is real; second, the gap is costly; and third, the solution will likely involve on-the-job remediation…" (p.19). The current practice in the transition to the nursing profession is ineffective; new graduates begin their careers without the skill to prevent medical errors with their own CR actions, and the organizations are left to reeducate the new graduate nurse (del

Bueno, 2005; Hunter & Arthur, 2016; Killiam et al., 2011). Experts from the Institute of Medicine (IOM; 2006) and National Priorities Partnership (NPP; 2010) report that nearly 7 million medication errors occur each year (as cited by Zimmerman & House, 2016). The IOM (2006) report findings that illustrate over half of medication errors occur in an inpatient setting (as cited by Zimmerman & House, 2010). Further reporting from Saintsing et al., (2011), give an alarming illustration that 49% to 53% of medication errors are completed by a new nurse. Experts agree that up to 40% of patient falls occur with the care of a new graduate nurse (Hickerson et al., 2016). The stress of potential and actual medical errors in this group of novice nurses can lead to professional dissatisfaction affecting their view of nursing practice personally and professionally.

When employees are dissatisfied in their position, there is a higher chance of the professional leaving that role. Managers are concerned with nursing retention and invest in their new graduate employees. Turnover of new graduate hires in their initial nursing career is a concern in this industry. Hickerson et al., (2016) report from multiple experts, that 60% of new graduate nurses, within their first year, will leave their nursing job. Employing a new nurse for a short time is costly to the nursing department, the organization, and to the vested nursing employees. The cost of replacing one nurse is between $60,000 to $108,000, and for the organization, every 1% increase in nurse turnover will mean up to $300,000 annually to maintain nurse staffing (Jones, 2008; Theisen & Sandau, 2013; Ulrich et al., 2008).

In an attempt to change the current situation in the healthcare, “nursing has been identified as having the potential for making the biggest impact on a transformation of healthcare delivery to a safer, higher quality, and more cost effective system” (AACN, 2008, p.1). Hensel (2014) reports from the Quality and Safety Education for Nurses (QSEN) project

"six competency areas for nurses: (a) quality improvement (QI); (b) safety; (c) patient-centered care; (d) informatics; (e) evidence-based practice (EBP); and (f) teamwork and collaboration" (p. 126). Currently, new graduate nurses lack the CR skill to provide safe patient care in a time of complex and varying patient conditions (del Bueno, 2005; Killam et al., 2011; Zimmerman & House, 2016). A quality concern for patient care stems from the lack of CR ability of a new graduate nurse.

Professors of nursing can attempt to alleviate the burden that a lack of CR in new graduate nurses has on the profession. As professionals, and leaders in nursing, professors of nursing along with nursing administrators should require that new nurses enter the profession with a full set of skills to flourish their careers; giving the new nurse the opportunity to feel successful, professional, and capable of growing their professional nursing practice. From the Project Manager's (PM) observation of one rural nursing program in central, North Carolina (NC), instructors spend countless hours, often times struggling, to coordinate traditional clinical sites with multiple other nursing programs. Difficulty locating experienced, competent nurse preceptors for senior practicum is a difficult task as well. Simulation is encouraged to be utilized by nursing schools to provide clinical practice and experience (AACN, 2008; National League for Nursing [NLN], 2016). Following these recommendations, the nursing professors at the targeted project site use simulation to provide clinical exposure, in addition to the traditional clinical experiences. Opportunity with their simulation practice is noted through observations over the past two academic years (2015-2016, 2016-2017) to improve the debriefing portion by faculty. Although faculty within the targeted site do perform a debriefing session no one faculty is consistent with another, and no standardized debrief and/or student evaluation tools are utilized. There is a range of variability within how debriefing is performed currently. Cultivating

instructors' debriefing can improve the outcomes of the simulation experience for their nursing students.

Question Guiding Inquiry (PICO)

Sackett, Rosenberg, Gray, Haynes, and Richardson (1996) define EBP as using outside information, in conjunction with individual knowledge and experience, to formulate the intervention for best patient outcomes. "It involves tracking down the best external evidence with which to answer our clinical questions" (Sackett et al., 1996, p.72). An approach to the development of a clinical question a professional is seeking information for, and to find outside information ascertain an appropriate intervention for a desirable outcome is the PICO model (Melnyck & Fineout-Overholt, 2015). PICO is an acronym for: "P" meaning population, patient, or problem; "I" is intervention or exposure; "C" is comparison; and "O" meaning outcome (Melnyck & Fineout-Overholt, 2015). The defined clinical question for this project seeks to understand; *"If faculty in a pre-licensure baccalaureate nursing program can (P) utilize tools to standardize both simulation debriefing and evaluation of student clinical reasoning (I) following non-standardized, individual faculty lead simulation events, (C) increase faculty utilization of the Integrated Reflective Debriefing Guide for Promoting Clinical Judgment (IRDG-CJ) and Lasater Clinical Judgement Rubric (LCJR) for simulation session standardization (O_1), and through faculty assessment using the Debriefing Assessment for Simulation in Healthcare-Rater Version (DASH-RV) tool, giving evidence of proficient faculty debriefing skill (O_2)?"*

Description of PICO variables. Each of the PICO elements from the formulated clinical question are discussed in greater detail. Key points are expressed for each element to assist the PM in conducting an appropriate literature review.

Population. The population for the project implementation are faculty of a rural, pre-licensure, baccalaureate nursing program. The targeted project site is located in, central NC. The nursing program employs six full-time nursing professors and accepts a maximum of 20 nursing students each academic year.

Intervention. The model appraised for the standardization of debriefing was the IRDG-CJ tool (see Appendix A). The IRDG-CJ gives nursing faculty a model to practice standardized debriefing activities (AL Sabei & Lasater, 2016). Through using a standardized approach, AL Sabei and Lasater (2016) elude that faculty can obtain skills to assist students in developing their clinical judgement. By using a model to practice debriefing, both faculty and students gain knowledge of their own individual practices.

The tool appraised to allow faculty to evaluate students' CR skill was LCJR (see Appendix B). The LCJR is a tool used to provide common language and assessment between student and faculty to evaluate progression of CR skill throughout a student's academic career (K. Lasater, personal communication, July 20, 2017). From the advisement of Lasater (personal communication, July 20, 2017), using the rubric is best used with multiple exposures, and thus would be used during multiple simulation events for this project.

Comparison. No comparison group was utilized in this project. A comparison of past simulation events that did not offer a formal, standardized debriefing process nor a way of formally evaluating students' CR development was reviewed. This project introduced a new systems process that included standardized simulation debriefing and CR evaluation to project site faculty.

Outcomes. There are two outcomes identified for this project. The first defined project outcome is the increase of faculty utilization of the IRDG-CJ and LCJR to standardize and

enhance the simulation process of a rural, pre-licensure baccalaureate nursing program. Illustration of faculty proficiency of debriefing, using the IRDG-CJ, as evidence by the DASH-RV tool (see Appendix C) is the second, quantifiably measured outcome.

Summary

Agreeing that CR skills are vital to the nursing profession, it is a priority that pre-licensure nursing programs provide educational opportunities that will enhance CR skills of the entry-level nursing professional (Ashcraft et al., 2013). With the peak of the nursing shortage in the near future, the number of new nurses entering the field is growing substantially causing overlapping at clinical sites between nursing schools and difficulty meeting the minimum clinical requirement. Simulation is a methodology that can be used to close the gap of limited clinical experiences. Through simulation, nursing students are exposed to clinical situations without the stress of making an error on a living patient. With this innovative process, new nurses are better educated to enter the field more competent and confident to provide safe care to their patients. While simulation and debriefing are growing in utilization and acceptance for nursing education, the project site adopted these enhancements to its simulation activities to better prepare their nursing graduates for the professional field.

Chapter Two: Review of the Literature

Gathering expert opinions and findings gives support to the implementation of a systems change project. To model evidence-based practice (EBP), it is required to appraise literature for previous knowledge gained through research and discussions of field experts. While beginning this project, it was necessary to review topics of clinical reasoning (CR) skills, simulation, and debriefing within the literature.

CR is often a term that is either associated with or interchangeably used with the terms critical thinking, clinical judgement, and decision-making (Simmons, 2010; Tanner, 2006). Specifically, in the profession of nursing, clinical judgement and reasoning are skills that are used only in the care of patients. Tanner (2006) defines clinical judgment as a conclusion of the patient condition to decide actions, if required, to take but that CR is the process which nurses go through to reach the conclusive clinical judgment. Through an expansive concept analysis of CR, Simmons (2010) defines CR as "a complex cognitive process that uses formal and informal thinking strategies to gather and analyze patient information, evaluate significance of this information and weigh alternative actions" (p. 1155). Historically, new graduate nurses enter the profession with the same expectations as experienced nurses but with a deficiency in their own CR skill (Hatler, Stoffers, Kelly, Redding, & Carr, 2011; Zimmerman & House, 2016).

Simulation is an educational methodology that has been used for over 15 years (Waxman, 2010). Although simulation activities provide a safe arena to practice assessment and interventions, simulation also provides the opportunity to grow CR skills in nursing students (American Association of Colleges of Nursing [AACN], 2008; Jefferies, 2005; Waxman, 2010). This opportunity exists during a simulation event; however, the actual reflection and process of

CR is explained and learned during a successful debriefing session following the actual simulation event (Waxman, 2010).

Evaluating competency of CR is not a simple task for educators (Dreifuerst, 2012; Killiam & Heerschap, 2013). Without formal evaluation of debriefing, educators cannot assess if CR skills have improved or if the debriefing session was sufficient. Several tools, with varying reliability, have been developed in the past for the use of debriefing to help guide educators to deliver a successful debriefing session (Sawyer, Eppich, Brett-Fleegler, Grant, & Cheng, 2016). Delivering a successful debriefing session can assist the learner with developing their CR skill and educators can evaluate the learners' CR skill more accurately (Dreifuerst, 2012). Experts have developed tools to evaluate CR skills of students, to be utilized in varying situations and specialties, during simulation events or with other educational methodologies. This chapter provides a synopsis of literature addressing the use of *Integrated Reflective Debriefing Guide for Promoting Clinical Judgment* (IRDG-CJ; see Appendix A) and the *Lasater Clinical Judgement Rubric* (LCJR; see Appendix B).

Literature Appraisal Methodology

Sampling strategies. A literature review was conducted electronically utilizing the databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), ProQuest for Nursing and Allied Health, and PubMed. The following keywords were used in various combinations: critical thinking, clinical reasoning, nursing, nurses, simulation evaluation tool, Lasater Clinical Judgment Rubric, and medical errors. With the exception of authors agreeing on the monumental, historical, significant contributors to the fields of critical thinking, CR, and simulation; all searches were limited to the past five years, yielding the date range of 2012-2017. The decision to limit the publication date was to remain up-to-date and current with modern

suggestions, ideas, and interventions. All searches were limited to "scholarly journals" to ensure the finding of expert, evidence-based information. One database produced more than average results relating to several other healthcare professionals; in this case the subject setting of "education, nursing" was helpful to filter information directed to the field of nursing. The combined searches, using the various databases and keyword combinations yielded a total of 100 scholarly articles for review.

Appraisal criteria. Simulation is used throughout the healthcare industry, in various levels of nursing practice and with other disciplines of healthcare. The review of literature produced a plethora of resources regarding all healthcare disciplines and specialties. Many articles were excluded from this review of literature to ensure the information reviewed was related to nursing practice at the entry-level. Articles that addressed other healthcare disciplines (i.e. physical therapy, etc.) were excluded from the review. Other exclusions were articles addressing only advanced care practitioners. The topical focus was on the nursing practice as a whole; therefore, articles that were specific to a specialty in nursing (i.e. pediatrics) were excluded. Reviewing articles for an evaluation tool, articles that did not include the LCJR debriefing evaluation tool were excluded to avoid confusion of tools and their effect. Similarly, any articles that addressed a debriefing tool other than the IRDG-CJ were excluded.

Included in the review of literature were articles that addressed CR in nurses, including interchangeable terms, critical thinking and clinical judgement. Articles that addressed simulation used in pre-licensure nursing education were included in the review of literature. Articles found that addressed both tools: the IRDG-CJ and the LCJR were included. The evidence used to support the EBP change of debriefing with simulation for the purpose of CR development is highlighted within an *Evidence Matrix* (see Appendix D).

Literature Review Findings

According to the AACN (2008), clinical experience is necessary and gives the nursing student opportunities to "develop proficiency in performing psychomotor skills; apply professional communication strategies to client and interprofessional interactions; and acquire a professional identity." (p.33) Clinical experiences complete the connection between didactic learning and clinical setting. Students are able to practice classroom knowledge and clinical lab skills learned in the classroom at various clinical sites in an environment that is controlled by an instructor (AACN, 2008).

As an outsider to their clinical unit's culture, nursing students many times have negative emotions and experiences during a clinical assignment (Killam & Heerschap, 2013). The clinical setting is intimidating for anyone who is not used to being part of patient care or a fast-paced work environment with numerous, mentally stimulating happenings (i.e. call bells). A qualitative descriptive study by (Killam & Heerschap, 2013), found students experienced three categories of challenges to their clinical experience: "(a) internal reactions to external stimuli; (b) barriers experienced within the clinical environment; and (c) ineffective program organization." (p. 686). Examples of the internal reactions to the external stimuli students reported were fear, uncertainty, isolation, and intimidation. Ineffective program organization includes how educators present themselves during clinical (i.e. confidence), large clinical group size, and lack of a concrete evaluation of student performance were found to be barriers of clinical learning. Ineffective program organization, students included the evaluation process, clinical placement, time performing skills, unnecessary paperwork, and a lack of direct development on critical thinking as their concerns (Killam & Heerschap, 2013). Evaluation of clinical performance is a

challenge for faculty in the traditional clinical setting, possibly due to the number of students at the same site (Cato, Lasater, & Peeples, 2009; Killam & Heerschap, 2013).

Simulation. Clinical experience can be enhanced with simulated clinical experiences (AACN, 2008; National League of Nursing [NLN], 2015). Simulation involves using technology to mimic the clinical skill, scenario, and setting that nurses encounter. Simulation can include varying types of technology dependent on the objective of the simulation activity. High-fidelity simulation involves the savviest technology by using life-like manikins that breathe, talk, among other responses (Waxman, 2010). Other methods of simulation can be low-fidelity manikins, skill and task-trainers, computer-based simulators and scenarios (Waxman, 2010). An advantage to simulation is that the scenario can be chosen, created, or altered to fit the desired student outcome (Schlairet & Fenster, 2012; Waxman, 2010). Traditional clinical sites offer a real experience, but that experience is whatever patients are available.

It is important to offer student nurses the opportunity to learn from real clinical situations, with real patients; supplementing clinical time with simulation can support experiences not seen in clinical sites. Simulation is an accepted method to use in nursing education to support clinical learning (Hayden, 2010; Lee & Oh, 2015; Schlairet & Fenster, 2012). Through meta-analysis, Lee and Oh (2015) found simulation to be affective with developing cognitive and psychomotor learning, such as CR and clinical skill. The NLN (2016) supports the use of up to 50% of clinical hours completed through simulation activities. Two rationales for this are: simulation assists with the shortage of clinical sites concern and simulation offers a method for students to learn psychomotor skills and clinical reasoning skill (NLN, 2016). Hayden, Smiley, Alexander, Kardong-Edgren, and Jeffries (2014) studied nursing students (n=666) throughout their education in an attempt to explore differences in learning using varying times of simulation

hours (25% or 50%). Hayden et al., (2014) found that replacing clinical hours with simulation up to 50% of the time is not significantly significant in students' results of two formal assessments, comprehensive nursing knowledge assessments ($p = 0.478$) or NCLEX® pass rates ($p = 0.737$).

Simulation has various positive effects on nursing students' learning. Simulation alone may not prove to grow nursing students' clinical reasoning skills. In a systematic review, (Adib-Hajbaghery & Sharifi, 2017) found studies were inconsistent with findings of using simulation alone for critical thinking development. Following their systematic review, the authors suggest that specific instruments and scenarios for measurement be used during simulation (Adib-Hajbaghery & Sharifi, 2017). By incorporating debriefing into the simulation activity, faculty can evaluate students' clinical reasoning processes formed from the simulation (Hayden et al., 2014). The NLN (2015) tasks nursing faculty to incorporate simulation including debriefing, in their courses, to ensure learning.

Debriefing. Adding debriefing to the simulation activity completes the gap students have between the classroom and clinical practice and can propel the learning experienced during simulation (Dreifuerst, 2009; Rudolph et al., 2016). It is agreed that debriefing can be challenging for instructors because their own knowledge of what debriefing is and the professional standards placed on utilizing debriefing in simulation (Rudolph et al., 2016). Studies have found that not only nursing students experience an increase in thinking, but experienced nurses have positive results from simulation with debriefing activities (Rudolph et al., 2016). In an experimental design study, Shinnick, Woo, Horwich, and Steadman (2011) studied pre-licensure nursing students (n=162) to compare pretest and posttest scores of the control and experimental groups. Results of the pretest between these groups showed no

difference in scores; however, did show a significant decrease in score with the first posttest given after hands-on simulation without debriefing. Following the second posttest, given after debriefing, it was discovered that using debriefing with the experimental group yielded a statistically significant improvement in posttest scores (Shinnick et al., 2011).

Integrated reflective debriefing guide for promoting clinical judgment (IRDG-CJ). A tool used to guide faculty during the debriefing process is the IRDG-CJ (see Appendix A). The IRDG-CJ encompasses the work of Tanner's Clinical Judgement Model, the LCJR (see Appendix B), and Bloom's Taxonomy of Learning (AL Sabei & Lasater, 2016). Tanner's Clinical Judgement Model recognizes four phases of clinical judgement: Noticing, Interpreting, Responding, and Reflecting, the debriefing model separates prompting questions into the phase it relates to. According to Al Sabei and Lasater (2016), using a theoretical foundation as a guide for debriefing that can enrich the clinical judgement of a nursing student. Affective, Cognitive, and Psychomotor domains of learning, as developed by Bloom, is used to develop questions within the model to guide the direction of the debrief (AL Sabei & Lasater, 2016). To use the IRDG-CJ, the educator can align the phase of the Tanner's model with the Bloom domain to facilitate the growth and area of learning that the student experiences.

Educator's role with debriefing. There are many methods for debriefing that can take place for students learning; a debriefing session lead by the instructor is the most used and the method that sews the best outcomes (Dufrene & Young, 2013). The nursing instructor has an impact on the student's growth during their clinical experiences. Chan (2013), following the systematic review of 17 articles discovered specific actions of the educator that affect student development. These actions are their attitude, how they role-model, their guidance and facilitation of the activity, and allowing students to feel comfortable with their own opinions and

difficulties during the activity. Educators should remain open-minded with students and be willing to guide students with their experience (Chan, 2013).

For debriefing to have the desired effect, faculty should be competent and knowledgeable of best practices in debriefing (Forneris et al., 2015). Hayden et al., (2014) conducted a national survey by the National Council of State Boards of Nursing (NCSBN), concluding there are four necessities to foster the intended student outcomes from simulation: utilizing the International Standards of Best Practice standards of best practice; high quality simulation; trained and dedicated staff; and debriefing methods grounded in theory.

Evaluation of faculty debriefing. The gold standard of simulation are born from the International Nursing Association for Clinical Simulation and Learning (INACSL). "The INACSL Standards of Best Practice: Simulation^{SM} were designed to advance the science of simulation, share best practices, and provide evidence-based guidelines for implementation and training." (INACSL, 2015, para. 1). INACSL (2015) has developed several standards to guide educators with the simulation practice to offer a high quality learning event for students. Topics within the INACSL Standards of Best Practice: Simulation^{SM} contain: Simulation Design, Outcomes and Objectives, Facilitation, Debriefing, Participant Evaluation, Professional Integrity, Simulation-Enhanced Interprofessional Education (Sim-IPE), and Simulation Glossary. Continuing to focus more specifically on the debriefing portion of a simulation event, it is vital to discuss the debriefing standard advised by the INACSL Standards of Best Practice: Simulation^{SM}. This standard clearly denotes that, "All simulation-based experiences include a planned debriefing session aimed at improving future performance." (INACSL, 2016, p. S21) Furthermore, INACSL (2016) provide directions to educators given within four conditions:

1. The debrief is facilitated by a person(s) competent in the process of debriefing.

2. The debrief is conducted in an environment that is conducive to learning and supports confidentiality, trust, open communication, self-analysis, feedback, and reflection.
3. The debrief is facilitated by a person(s) who can devote enough concentrated attention during the simulation to effectively debrief the simulation-based experience.
4. The debrief is based on a theoretical framework for debriefing that is structured in a purposeful way. (p. S21-S25)

After reviewing the INACSL Standards of Best Practice: Simulation^{SM} Debriefing, the responsibility lays with the educator to maintain a skill that will enhance learner outcomes. A mediocre debriefing session will leave the student without gains in knowledge, vice versa, a superb session will create a knowledge skill used in their professional nursing career (Rudolph et al., 2016). Evaluating the skill of the debriefer is a way to develop that professional's skill in debriefing and improve the organization's simulation program altogether (Rudolph et al., 2016). The NLN (2015) highlights the need of educators to have an evaluation of the debrief through students, peer, or self-evaluation.

Debriefing assessment for simulation in healthcare. One method of evaluating debriefing skills in faculty is using the *Debriefing Assessment for Simulation in Healthcare – Rater Version* (DASH-RV; see Appendix C). Cheng et al. (2015) explains the DASH-RV has six elements which are rated using a 7-point anchored Likert scale (1, extremely ineffective/detrimental through 7, extremely effective/outstanding). The six elements faculty are evaluated as explained by Cheng et al. (2015, p. 219) are:

1. Establishes an engaging learning environment
2. Maintains an engaging learning environment
3. Structures the debriefing in an organized way

4. Provokes engaging discussion
5. Identifies and explores performance gaps
6. Helps trainees achieve or sustain good performance.

Student outcomes. The purpose of faculty including and providing a quality debriefing session is to aid in the development of CR in the nursing student. Debriefing, when performed correctly has a positive effect on the growth of CR skills in the participant (AL Sabei & Lasater, 2016; Dreifuerst, 2012; Forneris et al., 2015; Tanner, 2006). Evaluation of students' performance throughout simulation and debriefing can illustrate growth of CR or a deficit in CR (Ashcraft et al., 2013; Lasater, 2007). Past efforts to evaluate CR in students used self-assessment, lacking the educators' involvement (Lasater, 2007). Lasater (2007) developed an instrument that instructors can use to make an evaluation of students' CR growth.

Lasater Clinical Judgement Rubric (LCJR). The LCJR (see Appendix B) uses the "Clinical Judgement Model" developed by Tanner (Lasater, 2007, p. 497). This model describes the clinical judgement process as a process involving four phases: noticing, interpreting, responding, and reflecting (Lasater, 2007; Tanner, 2006). The LCJR rates the student in each of the model components using 11 dimensions as: exemplary, accomplished, developing, or beginning. Each of the 11 dimensions and scoring category has a description of the performance observed for the educator to math with the student performance (Lasater, 2007). The LCJR offers another form of evaluation for educators to use to assess simulation and debriefing in nursing education (Ashcraft et al., 2013; Lasater, 2007).

Adamson, Gubrud, Sieras, and Lasater (2011) together summarized the findings of three studies using the LCJR within simulation to evaluate students' performance. Their review of these studies provided the most recent information regarding up-to-date academic article

reporting of the LCJR reliability (Victor-Chmil & Larew, 2013). Review of current research and use of the LCJR found that the content validity is well-documented as assessing the phases of Tanner's Model of Clinical Judgement (Victor-Chmil, & Larew, 2013). Interrater reliability results of the LCJR are favorable; because of the ranges observed, Victor-Chmil and Larew (2013) suggest continued reporting of interrater reliability of future studies. Researchers from three separate studies report interrater reliability findings as, Adamson (2011) finding r =0.889; Gubrud-Howe (2008) found r = 0.92-0.96; and Sideras (2007) found r = 0.57 to 1.0 (as cited by Adamson et al., 2011). Using Cronbach's alpha for construct validity, Jensen (2010) reported an overall 0.95 internal consistency; Tanner's Model of Clinical Judgement individual phase values equal: noticing (0.88), interpreting (0.88), reporting (0.88) and reflecting (0.86) (as cited by Victor-Chmil, & Larew, 2013). Adamson et al., (2011) concludes from the review of several studies using the LCJR, the use of the evaluation tool is recommended, agreeing that the range of reliability be noted.

Discussion

Limitations of literature review. The limitations for this literature review were evident in the vast results given through searching the databases. Many researchers, theorists, healthcare professionals, and educators for many years have explored critical thinking and CR. Limiting the search to only CR assisted to focus the search and project on a term that is specific to healthcare and included vital components of critical thinking and clinical judgement.

Simulation is used throughout the healthcare industry, searching for simulation alone produced thousands of resources to review. Limiting the search to the nursing profession only, and subsequently to entry-level nurses and nonspecialized practice, aided in directing the literature to the needs of this individual project. Assuming that the findings capture entry level

nursing practice as a larger population, the same benefits should be able to be applied to all specialties of nursing practice.

Conclusions from findings. While traditional clinical experience cannot be completely replaced because the proven benefit caring for a living patient provides nursing students, simulation education is a close comparison (AACN, 2008; NLN, 2016). Simulation has many benefits that are added to healthcare education, including nursing. Realizing the aforementioned concerns with clinical placement, nursing shortages, and incivility experienced by students; simulation offers a solution by supplementing clinical hours. Students can practice skill, assessment, and be challenged with patient scenarios that they may not otherwise experience (Dreifuerst, 2009; Hayden, 2010).

Debriefing following the simulation event puts the learners' outcome on a higher level than with simulation alone (Dreifuerst, 2009; Rudolph et al., 2016; Shinnick et al., 2011). Attempting to facilitate a debriefing session, which is valuable to student outcomes; tools can be used to both guide the debriefing session and evaluate post-completion. The IRDG-CJ tool is a device that students and faculty use together to debrief. This standardizes the session and offers continuity with nursing education (AL Sabei & Lasater, 2016). Educators can find debriefing to be an extra, difficult process, and may be unaware of the benefit this can provide students' outcomes. Safeguarding that the nursing educator is providing a fruitful debrief, evaluation of the session can be completed using the DASH-RV tool. This can highlight both effective and ineffective components of the educator's debriefing session, allowing the individual to grow professionally (Cheng et al., 2015).

Potential practice change. Using debriefing with simulation has a positive impact on the future of nursing practice. Following EBPs, the INACSL Standards of Best Practice:

Simulation [SM] instructors can offer a simulation program that enhances student learning and foster a growth in CR skills. Through this review of literature, it is concluded that the evidence for best practice lean toward a simulation program that provides standardized, quality debriefing, as evident by a formal evaluation process. Producing graduate nurses with a deep CR skill can proved safer and higher quality patient care. When nurses begin their career with this skill, managers and preceptors can focus more on their specific orientation than on developing skills missed during nursing school.

Advantages/ disadvantages. Experts agree on the many potential advantages that simulation debriefing offers student outcomes and recommendations include debriefing as an essential component of simulation education success (Cheng et al., 2015; Forneris et al., 2015; INACSL, 2016; NLN, 2015; Shinnick et al., 2011). Debriefing enhances simulation by giving a structured reflection time for students, a time to clarify their understanding, and explore the "what" and "why" things occurred with their patient (Dreifuerst, 2009). Educators can offer an enhanced simulation experience that can grow CR skills in students, making an impact on the future of nursing.

Debriefing is an unclear instructional methodology (Dreifuerst, 2009). Debriefing lacks standardization and leads to confusion among professionals delivering the method (AL Sabei & Lasater, 2016). Nursing educators can choose from a variety of formats to debrief a clinical event either in-person or not. Although this has the benefit of individualizing the format that the faculty prefers, there is no benchmark that can be used to compare with student outcomes (Cheng et al., 2015). These aforementioned reasons are disadvantages to simulation and debriefing in nursing education.

Summary

Dreifuerst (2009) defines debriefing as "the process whereby faculty and students reexamine the clinical encounter, fosters the development of clinical reasoning and judgement skills through reflective learning processes." (p.109). While simulation offers a time for students to practice a variety of skills, debriefing is the moment that CR can truly be enhanced. The IRDG-CJ tool is a device that can standardize debriefing sessions and can aid the educator with a quality program. Guaranteeing that simulation and debriefing are valuable experiences, evaluation of students' and educators' performance can illustrate growth of skill or highlight deficits in need of improvement.

Chapter Three: Theory and Concept Model for Evidence-based Practice

Simulation is an instrumental resource to provide a safe, effective, and reliable learning environment for nursing students. The Constructivist Learning Theory (CLT) was used as the framework of a critical thinking simulation quality improvement project. Constructivism, according to Billings and Halstead (2009) is the development of knowledge through exposure to situations that require students to grow through their reflections. The Evidence-Based Practice (EBP) model developed by Rosswurm and Larabee (1999) was used to steer and organize the steps of the change. The purpose of this chapter is to connect the CLT with the improvement project to enhance clinical reasoning (CR) skills among nursing students and the EBP model used to produce a formalized faculty debriefing process.

Concept Analysis

Critical thinking. Critical thinking is the way individuals possess and use a set of skills; the skills used in critical thinking are: interpretation, analysis, inference, evaluation, and explanation (Facione, 2015). Nurses are the "eyes and ears" at the bedside of their patients. With this responsibility, nurses are usually the first healthcare professional to assess, intervene, evaluate, and impact their patients' outcomes. The American Association of Colleges of Nurses (AACN; 2005) label critical thinking as a "key component" and must be incorporated into nursing education.

Critical thinking, more specifically, as Taylor (2004) explains is the way nurses interpret, sort, and use data collected from patients (as cited by Kaddoura, 2010). The Indiana State Nurses Association (ISNA; 2016) reports that in the nursing profession, critical thinking is mostly noticed when there is a lack of critical thinking in a nursing professional. Nurses whom lack critical thinking abilities are often described as "task-oriented" nurses. Task-oriented nurses

demonstrate a routine style of working, their priority is to complete the "task-at-hand" (ISNA, 2016).

In nursing practice, it is not enough to collect data, nor it is not enough to collect data and interpret it; the act of the skills to collect data, the knowledge to interpret this data, and the ability to intervene and react appropriately for the situation defines critical thinking in nursing practice. Critical thinking, in nursing practice has several steps that must transpire for the nurse to demonstrate critical thinking skills. Critical thinking incudes a process carried out by a self-reflection and internalization of data, analysis, evaluation, and intervention to produce a patient outcome (Adib-Hajbaghery & Sharifi, 2017; Shin, Ma, Park, Sun Ji, & Kim, 2015; Yildrim & Ozkahraman, 2011).

Clinical judgment. Similar to critical thinking, a second term used interchangeably is clinical judgement. Tanner (2006) defines clinical judgement as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (p. 204). Clinical judgement illustrates part of the nursing thought process using critical thinking; judgment from clinical experiences changes with various clinical presentations and changes to accommodate the patient.

Clinical reasoning. Nurses who practice nursing care with critical thinking and clinical judgement are preferred in the profession. Combining the two processes creates a desirable nurse; one who practices with CR. CR is often seen in nurses with more experience and less often in nurses with little experience. This extra knowledge from experience is often referred to as a nurses "sixth sense".

CR encompasses critical thinking and takes the knowledge of critical thinking a step further. Critical thinking is knowledge that does not include patient conceptualization, a level of knowledge seen with clinical reasoning (JuHee, Young, JuYeon, & MinJeong, 2016). This higher level of thinking is illustrated in Figure 2 showing the intrinsic and extrinsic factors that are used for CR. Simmons (2010) explains that inductive and deductive thinking are combined with both analytic and critical thinking skills to form CR. Tanner (2006) defines "CR as processes by which nurses and other clinicians make their judgments, and includes both the deliberate process of generating alternatives, weighing them against the evidence, and choosing the most appropriate, and those patterns that might be characterized as engaged, practical reasoning" (p. 204-205).

Constructivist Learning Theory

Constructivism, according to Billings and Halstead (2009), is the development of knowledge through exposure to situations that require students to grow through their reflections. Developed in the social and psychological fields to explain how individuals learn from, build on, and connecting to basic knowledge, constructivism can be applied to various fields of study, including nursing (Brandon & All, 2010). The nursing profession requires the use of knowledge to care for patients in a manner to meet the patients' needs. The knowledge that nurses have is acquired at different levels during various stages of their professional career. Nurses can successfully care for their patients using critical thinking skills and these skills can be introduced during their initial education in nursing school. As nurses working in the profession are exposed to more clinical experience it is hopeful that critical thinking will reach a higher level and develop into an innate professional reflection, transitioning to clinical reasoning.

Students will build their knowledge by mastering basic items moving to more complex knowledge including critical thinking skills desired in the nursing profession (Rolloff, 2010). Understanding the basic knowledge, when new information is combined with new experiences, students will make connections with the basic skill, combinations of the skills, and the new exposure to increase their knowledge which ultimately changes their thinking process. The CLT explains how simulation activities allow the learner to build on the previous nursing skill knowledge, combine skills, evaluate interventions and make connections of these skills to produce the intended patient outcome. Debriefing following the simulation practice can highlight the connections made and allow the learner to focus on the CR used during the activity as a whole. As Park et al. (2013), explains constructivist learning, is a process for individual students and occurs through collaborative, valued, active learning with a purposeful event. The learner is completing the assigned tasks, and in the end, the debriefing process includes reflection and active dialogue concluding the CR process.

Constructivist learning theory overall assumes that the learner has an acquired knowledge that they are building upon to gain a new level of knowledge (Walker & Stevenson, 2016). The CLT, according to Brandon and All (2010) has four main assumptions. A base of knowledge is the foundation of the students' learning, using the base knowledge to assimilate and accommodate new information will form new ideas and information, the construction of new knowledge is more productive than the memorization of information, and the last assumption is meaningful learning occurs during the students' reflection to connect their knowledge (Brandon & All, 2010).

Application to practice change. Developing a simulation activity typically begins by thinking of what the student will know after the completion of the simulation event. The student

outcomes are planned before the details of the simulation activity; after knowing what the outcomes are, the specific skills (assessment, interventions, etc.) students need to demonstrate are decided. Various interventions for the students to perform are not planned to try to then arrange problems or a patient diagnosis, the learning activity would not work well in this order.

When using simulation to enhance CR, as in the example above, the expectation that the learner has previous knowledge of the assessment and interventions they need to perform. This part of the simulation activity is valuable and allows for practice and clarification of previously learned skills. The actual goal of the learner's outcome is in the debriefing portion of the simulation activity. This is the opportunity to assist the learner with developing CR skills by acquiring the knowledge to prioritize their interventions and the client's problems. This knowledge is deeper, and at a higher level of thinking than the task-oriented knowledge of performing the interventions.

The CLT is the foundation of how simulation debriefing can connect the steps to solve problems through cognitive thought and clinical skill. This combination is what produces a comparable situation of actual clinical practice and simulation (Forneris et al., 2015). CLT explains how learners apply new knowledge, change behavior and possibly experience a knowledge transfer (Thomas, Menon, Boruff, Rodriguez, & Ahmed, 2014). Thomas et al. (2014) hypothesize that "the contribution of the theory lies in its potential to unveil the individual processes that are involved in the 'construction' and application of knowledge in clinical practice" (p. 18).

Evidence-based Practice Change Theory

According to Rosswurm and Larrabee (1999), EBP will be successfully demonstrated in practice that uses and appreciates new, innovative knowledge and resources. The EBP Change

Model developed by Rosswurm and Larrabee (1999) was created using EBP, research, and change theory to establish six steps to effectively change to an EBP. The six steps of this model are: Assess; Link; Synthesis; Design; Implement and evaluate; and Integrate and maintain.

First step of the Rosswurm and Larrabee (1999) model is to compare internal and external data. A problem is noticed using the internal data collected and what mainstream practices are. Listing interventions that will link the problems with the practice change and desired outcomes is the second step. To acquire evidence for the intended practice change, synthesizing the literature to include the risks and benefits of the change follows the aforementioned steps. The design step includes creating a plan that will define the EBP change, establish outcomes, and project execution. Putting the change into practice occurs during the implementation phase, where defined outcomes are evaluated for project success. The final step is to integrate and maintain, if the process is accepted. The practice change is communicated to all stakeholders, requires participation by all members of the practice area, and monitoring outcomes which will be a continuous process (Rosswurm & Larrabee, 1999).

Application to practice change. Using the Rosswurm and Larrabee (1999) EBP Model, the project manager (PM) was able to follow the steps to complete an EBP change. The specific process using the EBP Model for this project was:

Assess. Following an extended time of observation, it was noted that the simulation practice of the nursing department was unstandardized and not current with EBP. Simulation is practiced in each clinical course of the department at the discretion of each individual professor. Debriefing following simulation is practiced by most of the professors; however, it was noted that there was no formal tool, and sometimes no tool utilized to guide the instructors' facilitation of the debriefing with students.

Link. Noting the assessment of the simulation practice, the connection was made by the PM that not following an EBP of debriefing with simulation can create a separation of outcomes for students from class to class. Not using a standardized debriefing tool can cause the instructor to miss valuable learning opportunities, leaving the student with less experience and knowledge growth. Using a tool that can be followed by each instructor can ensure the practice from class to class is similar and offering an equal amount of learning opportunity during simulation.

Synthesis. The PM was able to identify tools to standardize debriefing practices during an extensive literature appraisal of simulation and debriefing. During the synthesis of the literature, two tools were identified to assist with standardized debriefing practice. *Integrated reflective debriefing guide for promoting clinical judgment* (IRDG-CJ; see Appendix A) was identified to provide a formal tool for students and instructors to use during debriefing activities. During the synthesis of literature, the outcomes of increasing CR emerged and a tool to assess this growth was identified, the *Lasater Clinical Judgement Rubric* (LCJR; see Appendix B).

Design. The PM met with key faculty members including the community lead, the program director, and the Institutional Review Board (IRB) committee member representative for the program. This group became the project team and as the key stakeholders concluded that adding a standardized approach to simulation debriefing and evaluation would produce a change in the simulation program that would reflect EBP. After this conclusion and consensus of the group, the PM located the IRDG-CJ and LCJR to standardize debriefing practice and the *Debriefing Assessment for Simulation in Healthcare* (DASH-RV; Appendix C) to evaluate the debriefing practice of faculty through the synthesis of literature. The PM made a formal request to Dr. Lasater for approval to use the LCJR for the project, which was granted via a formal approval letter (see Appendix E).

Implement and evaluate. Following communication with the project group and IRB approval, the PM prepared to begin the project. Beginning the project with faculty after introduction of the proposed program, the faculty held their own simulation sessions and used the project elements. The PM evaluated the debriefing sessions from this point forward in the project.

Integrate and maintain. Following completion of the process improvement project and using the Rosswurm and Larabee (1999) EBP model, the PM made plans to continue the implemented simulation debriefing program. Discussion with faculty was facilitated by the PM to encourage their continued use of the implemented model and tools. The PM provides occasional feedback and suggestions as the simulation coordinator at the project site. The PM, as the simulation coordinator, practices continued use of the program, modeling the EBP debriefing sessions with other faculty.

Summary

Simulation with debriefing can be a tool that nurse educators use to assist with the development of critical thinking, clinical judgement, and CR skills in nursing students. Simulation is a methodology that has to be planned thoroughly, by the nurse educator, to be effective in producing the desired outcomes. The CLT offers the nurse educator direction for developing learning events that promotes a higher level of knowledge in the appropriate context and development of the nursing student. Adopting the CLT to produce simulation with debriefing directs the educator to build upon the students' existing knowledge with experience from the activities. This can aid with meeting the ultimate desired outcome, a nurse with CR skills. Following the EBP Model guides the PM with the practice change process. The PM used each step of the EMP Model to implement a change at the project site related to debriefing

following simulation that expands student CR focus by faculty. The next chapter outlines the pre-implementation planning of the project design.

Chapter Four: Pre-implementation Planning

Simulation with debriefing can foster nursing students' clinical growth that can prepare them for a successful career as a professional nurse. Recognizing this potential, nursing programs are striving to integrate simulation programs that meet the recommendations of professional organizations such as, International Nursing Association, for Clinical Simulation and Learning (INACSL), National League of Nurses (NLN), American Association of Colleges of Nursing (AACN), among others such as state and national boards of nursing. The Project Manager (PM) has partial responsibility as the project sites simulation lab coordinator; opportunities for improvement in the project site's faculty simulation debriefing practices has been noted. The opportunities that have been observed include: lack of formal debriefing training with facilitators, lack of debriefing model as a guide, lack of tools to provide faculty and student's common ground for development, nor a formal, standardized process for evaluating debriefing efficacy or student growth. Following these observations, the PM utilized the Rosswurm and Larabee (1999) Evidence-based Practice (EBP) Change Model to guide a process improvement project at this site. The purpose of this chapter is to outline a design plan to discuss the project purpose, the process for preparation, and the plans for project implementation and evaluation.

Project Purpose

The purpose of the process improvement project was to standardize simulation practices of faculty at the project site. Specifically, the standardization of the program included the addition of tools supported by literature that the faculty could use to guide debriefing post-simulation events. Debriefing is noted by experts to offer a greater learning potential in the form of clinical reasoning (CR) than simulation alone; offering debriefing that is affective is essential

(AACN, 2008; INASCL, 2016; NLN, 2015). The literature supported tools implemented, which included the *Integrated Reflective Debriefing Guide for Promoting Clinical Judgement* (IRDG-CJ; see Appendix A) and the *Lasater Clinical Judgement Rubric* (LCJR; see Appendix B). Additionally, the PM created, with the adoption of the IRDG-CJ and the LCJR, an instrument that students and instructors could use to document the learned opportunities from both the simulation activity and the debriefing session, the *Atwater Clinical Reasoning Map for Students* (ACRMS; see Appendix F).

Project Management

Organizational readiness for change. Agreement by faculty at the project site was that there was a need to develop the simulation program to meet the standards of the nursing education industry. Faculty of the project site appreciate the opportunity that simulation with debriefing has to foster CR and growth of their students. The simulation lab coordinator role was an additional faculty member added to the nursing program in 2015, purposefully to comply with standards of nursing education. Since the addition of this professional role, the AACN has published additional recommendations that highlight the importance of simulation, a quality simulation program, faculty that are professionals in simulation, and the intent to focus more on this method of delivery in the future of nursing education. The project site has the appropriate facilities to provide such a quality program including simulation labs, manikins, and supplies to make this process realistic.

Inter-professional collaboration. Professionals working together to make the implementation of the project a success included a team of varying nurse specialists. The community lead served as the main contact and mentor for the PM offering advice for practice changes from their expertise. An Institutional Review Board (IRB) consultant assisted the PM

with the steps to apply to the university (project site) IRB to gain approval without major edits to the application. A content expert in simulation practice assisted the PM by reviewing the practice change suggestions, including a review of the IRDG-CJ, LCJR, ACRMS, and DASH-RV. The Program Chair of the site assisted with each of these roles in addition to approval of the practice change and project implementation. This team came together, with the facilitation of the PM at various times throughout the planning weeks to assist with the success of the project.

Risk management assessment. Strategic planning is often not viewed as the role of nurses or nurse educators. According to Gantt (2010), strategic planning can be an arduous process, requiring time that can span over several years. Strategic planning is unsolidified, changing at different points in time. A simple yet important process that can aid in strategic planning is the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (Gantt, 2010). A SWOT analysis was formulated by the PM to plan for the process improvement project.

Strengths. Strengths of the organization revolve around the desire of the program to enhance and utilize a quality simulation process in the future that meets professional standards. The addition of a fulltime simulation lab coordinator is a considerable strength to the project. Support of the program director and their desire to implement EBPs and recommendations of professional organizations in to the simulation program is another strength. The faculty of the organization are flexible and willing to make practice changes based on new, innovative, and evidence-based recommendations. The support of the inter-professional team is a strength to this project and is a direct cause of its success. The major budgetary expenses, such as simulation manikins and bedside healthcare equipment are already available at the organization and any supporting funds for maintenance of these items is available.

Weaknesses. The size of the organization is a weakness. The organization is small, because of the university size the budget is restricted, and few participants are available for observation. To obtain significant results the project will need to continue for a lengthy time period with students over multiple semesters within their academic program. The project site team has a slight inter-professional mix but could be much more diverse with varying professions in addition to various education levels. The project site team includes members from the nursing profession with varying education levels such as master's degree in nursing (MSN) or two types' doctoral degrees: Doctor of Nursing Practice (DNP) and Doctor of Psychology (PhD).

Opportunities. The opportunity lies within the future of simulation as a form of clinical experience. Growing the simulation program into a quality learning event for students can aid in their professional success. Preparing for the future of how clinical education is delivered, the simulation program after standardization and development can be utilized if and when the day comes that this is a major way to offer clinical experience. Inter-professional education (IPE) is on the forefront of healthcare education. This university is growing in applied health sciences, in the future a program's process improvement such as this project can pave the way for the other disciplines when they begin to utilize simulation education at the organizations.

Threats. Threats of this process improvement lay within the faculty's desire and ability to sustain the process improvement. During implementation of the project, the PM was able to ensure utilization of the instruments and completed the evaluation of debriefing. It is a possibility that in the future the faculty decide to not continue with evaluation of their debriefing sessions by the trained rater. Another potential threat according to Melnyk and Fineout-Overholt (2015) "could be identified as participant's anxiety experienced during this simulation project as

the practice change being addressed may usurp commonly held practice beliefs" (as cited by Mizer, 2016, p. 51). Faculty members could decide to revert back to their original form of debriefing without tools of enhancement for convenience. The PM has no authority for requiring the faculty to continue the use of the tools, complete trust of the program director to enforce the use of the standardized tools is felt by the PM.

Organizational approval process. Approval by the organization to agree that implementing the IRDG-CJ and LCJR, with the utilization of the ACRMS was needed to continue with the process change. The program chair of the project site gave the ultimate approval to proceed. To obtain their approval, the PM facilitated a meeting to discuss each project tool, thoroughly going through the plan to use each tool, how faculty would be advised on the process change, and the evaluation of the faculty. Following this meeting, it was agreed that this was a project that would benefit the nursing program and aid in faculty professional development. Therefore, it was agreed that this project was necessary and a value to the organization. The program chair provided a formal approval letter to proceed with the process improvement project (see Appendix G).

Information technology. The information technology needed for this project was minimal. Online webinars were utilized by the PM and faculty to become experts in debriefing. The PM attended a full online training course to acquire the knowledge to formally evaluate debriefing sessions with the *Debriefing Assessment of Simulation in Healthcare –Rater Version* (DASH-RV; see Appendix C). Faculty were encouraged to participate in online webinars to receive formal debriefing education that were given as resources to each faculty member by the PM. The faculty members received extensive information regarding each project tool and the evaluation of the debriefing sessions using computerized presentation via the PM.

Cost Analysis of Materials Needed for Project

The budget for the project included supplies for simulation, pre-purchased scenarios, and the online DASH-RV training. An itemized breakdown of the project budget is shown in Table 1. The project focus is the debriefing aspect; the PM did not want to spend the majority of their time creating scenarios and therefore chose to purchase scenarios. The skill being performed by the nurse is not applicable for the process improvement; however, the process of their decisions and reflections is applicable.

Table 1

Proposed Quality Improvement Budget

Item	Amount	Total	Description
Operational Items:			
Supplies			
Simulation Task Supplies	20 students	$500.00	Enough supplies for 20 students to use for intervention
Office Supplies	2	$20.00	Two packages of printer paper
Activity Planning			
Scenarios	1	$400.00	One textbook of simulation scenarios
Faculty Development			
DASH-RV Training	1	$400.00	One online course for DASH-RV evaluator training

Note. Explanation of proposed budget to implement a standardized simulation program at a rural pre-licensure baccalaureate nursing program.

Plans for Institutional Review Board Approval

Institutional Review Board (IRB) approval was obtained through exemption at the project site (see Appendix H). The process for the initial approval began with the formal IRB

application process and presentation of project to the project sites IRB committee. Following declaration of project exempt and approval by the project site IRB, the approval was submitted to the PMs Academic site for IRB review. The IRB of the Academic site agreed that the project was non-human research and was considered a process improvement project (see Appendix I).

Plan for Project Evaluation

Demographics. The demographics collected from the participants was minimal (see Appendix J). The participants answered simple questions to disclose: age, race, sex, the highest educational degree, and years of simulation experience. The participant's age was reported as a mean with range given. Gender was reported by percent of participants that were male, female, or transgender. Participant's race was reported in percentages (%) as either African-American, Asian, Caucasian, Hispanic, or Other. Highest education of participants was reported as a percentage as either having bachelor's degree (BSN), or master's degree (MSN), or doctoral (DNP or PhD). Years of simulation experience was assessed for each faculty member and was reported as a mean with range given.

Faculty utilization. The first defined outcome was to increase faculty utilization of the IRDG-CJ and the LCJR for simulation session standardization. This standardized approach to debriefing at the project site enables faculty to utilize a consistent process post simulation events. Offering a formal, standardized debriefing process can aid in the CR growth of nursing students (Cheng et al., 2015; Forneris et al., 2015; INACSL, 2016; NLN, 2015; Shinnick, Woo, Horwich, & Steadman, 2011).

Evaluation tool. The PM kept track of all individual simulation activities during the project implementation period (January 8, 2018- May 4, 2018). The PM developed an Excel

spreadsheet to keep track of the simulation and debriefing activities performed by faculty. This spreadsheet was titled the *Faculty Utilization Data Record* (see Appendix K).

Data analysis. Included in the utilization of standardized debriefing approach, the PM tallied the times each faculty member held a simulation activity, performed debriefing, followed the IRDG-CJ, required students to use the ACRMS, and how often the faculty member assessed the students' performance using the LCJR. Percent of utilization was calculated for each aforementioned criterion by using the total number of simulation events as the denominator with varying numerators of debrief sessions held that used and followed the individual implemented items. Calculating the utilization of the standardized debriefing approach in this way allowed the PM to compare the utilization of debriefing with simulation. The expectation of faculty utilization of the IRDG-CJ model was set at 100%. At this project site, the low number of faculty needed to participate and with the support the PM has as the simulation coordinator, it was anticipated and favorable that the utilization would be 100%.

Faculty proficiency. The second defined outcome of the project was intended to assess faculty proficiency in skills using a standardized debriefing model, along with instruments following simulation events. The PM chose the DASH-RV tool to evaluate faculty during each debriefing session. The DASH-RV allows for the assessment of faculty proficiency in facilitating quality debriefing sessions.

Evaluation tool. The DASH-RV tool is a professionally accepted form of evaluation. This evaluation tool has three forms to provide evaluation: a student version, an instructor version, and a rater version. The rater version was chosen for this project. The rater version requires a professional to be trained in debriefing evaluation, which the PM has undergone online through the Center for Medical Simulation (CMS). The DASH-RV rates debriefers

against six elements as a variation of poor, average, or superior. The six elements according to Simon, Raemer, and Rudolph (2010) include:

(1) Establishes an engaging learning environment;

(2) Maintains an engaging learning environment;

(3) Structures debriefing in an organized way;

(4) Provokes engaging discussions;

(5) Identifies and explores performance gaps; and

(6) Helps trainees achieve or sustain good future performance (p. 3).

Each of the elements are scored by the rater on a range of 1-7, detrimental through outstanding. The specific numerical value and descriptions are:

7 - Extremely Effective/Outstanding

6 - Consistently Effective/Very Good

5 - Mostly Effective/Good

4 - Somewhat Effective/Average

3 - Mostly Ineffective/Poor

2 - Consistently Ineffective/Very Poor

1 - Extremely Ineffective/Detrimental (Simon et al., 2010, p.3)

This instrument is a behaviorally anchored tool based from theory and research that can offer self or peer evaluation (Rudolph et al., 2016). The DASH-RV was studied by Brett-Fleegler et al. (2012) for psychometric properties by evaluating the session of two different DASH-RV courses (n=114). The intra-class correlation coefficient (ICC) was used to report the interrater reliability; ICC is the ratio of rater variance to the sum of rater variance and the total variance. The ICC total result was 0.74; individual elements ICC results were: 1=0.60, 2=0.65,

3=0.62, 4=0.68, 5=0.57, and 6=0.63. The difference of ratings from the DASH-RV (poor, average, and superior) were found to be statistically significant at p=0.001 (Brett-Fleegler et al., 2012).

***Data analysis*.** The DASH-RV is a behaviorally-anchored scoring system that uses elements that have specific descriptors to meet for reviewing the effectiveness of a debriefer. Each element has corresponding positive and negative behaviors that are the descriptors for meeting, or not meeting the expectations of the element. The debriefer could illustrate positive or negative descriptors and the trained rater had the ability to score the debriefer based on the observation of these behaviors using the DASH-RV scoring system. The developers of the DASH-RV warn raters that the observation is most effective using the positive/negative descriptors and the mathematic total of the score is not the intended outcome of the evaluation (Simon et al., 2010). The expectation by the PM was that each faculty would be scored at least a 4 (Somewhat Effective/Average) for each of the six elements of the DASH-RV. The recommendation of earning at least a 4 (Somewhat Effective/Average) is practiced by expert users of the DASH-RV process (Simon et al., 2010). Understanding that a debriefer can lack in one element but excel in other elements is critical. Individual elements are assessed for faculty development whereas the totaling of all element scores would not be beneficial to faculty for their improvement in debriefing. Each of the six DASH-RV elements were scored for each participant. From that, the group mean for each of the six elements were calculated and the range reported.

Data management. Data was stored in two avenues by the PM. The primary storage for data was on a one-drive provided by the PMs Academic institution. The one-drive provides a secure form of storage that is accessible only by the PM and faculty coordinator at the academic

institution. The electronic datum that was stored included: returned demographic surveys, excel spreadsheet of survey results, all DASH-RV forms, Faculty Utilization Data Record, and data derived to analyze the psychometric properties of the project. Hardcopies of all surveys, DASH-RV completed forms, and ACRMS were scanned and stored electronically. Hardcopies of all surveys, DASH-RV completed forms, and ACRMS were stored in a locked file cabinet, in the locked office of the PM for a minimum of five years for publication and dissemination activities. At the end of five years the PM will securely destroy all documents by shredding. All digital data will be erased from storage devices.

Summary

Standardizing the delivery of debriefing of a simulation program can enhance the nursing students CR and provide professional development for faculty. The implementation of standardized instruments to aid in the process improvement of the nursing program was the intent of the project with an outcome of developing debriefing sessions that are formally assessed and evaluated for quality. Debriefing is essential to the simulation activity and without a quality debriefing opportunity, CR growth opportunity can be missed (Rudolph et al., 2016). The full implementation of the process improvement project is thoroughly explained in the next chapter.

Chapter Five: Implementation Process

The evidence-based practice (EBP) change implemented for this project was introducing a standardized approach to simulation debriefing. Offering a standardized, proficient debriefing session with simulation activities can encourage both students and faculty to perform at a higher level in their practice; students can increase clinical reasoning (CR) and faculty can increase professional development (Rudolph et al., 2016; Shinnick, Woo, Horwich, & Steadman, 2011). The purpose of this chapter is to describe, step-by-step, how the EBP change was implemented into the simulation lab processes at the targeted project site.

Setting

The simulation redesign project was implemented at a university located in central North Carolina (NC). The campus is located in a rural town outside of Charlotte, NC. The project site is a small, Methodist university. The university has predominantly liberal arts programs but is growing the applied sciences division, including the nursing program.

The nursing division is composed of seven faculty members and one administrative assistant. This nursing program is separated into two categories of students: pre-nursing and upper-division nursing majors. Following an application and acceptance process, the nursing department accepts no more than 20 students for each of the junior and senior academic years. The nursing department is located in the science building on the main campus of the university. The nursing classrooms, simulation and skills labs, and faculty offices are all located on the same floor in the science building. The project was implemented at the nursing department in the science building at the main university campus location; all simulation events were held in the simulation lab and debriefing sessions were held in the nursing skills lab.

Participants

A demographic survey (see Appendix J) was distributed to all faculty of the nursing program on January 12, 2018 to be completed during the faculty information session. The demographic survey was used to gather descriptions of the faculty population at the project site. Faculty implied consent to participate in the project by returning the demographic survey to the PM. The faculty whom returned the survey were compiled by the PM to form a non-randomized, convenience sample for the project.

Recruitment

Recruitment of participants was completed at the project site by the PM. The PM had conversations with each faculty both individually and as a group. Faculty meetings occurred both at the request of the PM and during formal faculty meetings when the program director gave agenda time to the PM. Participation was agreed by the participants and faculty included the PM with their simulation sessions allowing for evaluation of the introduced changes and their debriefing practices. All faculty at the project site where offered inclusion in the project via a participant letter (see Appendix L); however, exclusion occurred if a faculty member did not offer a simulation activity during the project timeframe (January 8, 2018- April 20, 2018).

Implementation Process

Faculty information session. All nursing faculty of the project site were invited to attend a faculty information session presented by the PM on January 12, 2018. The PM distributed to each faculty the *Integrated Reflective Debriefing Guide for Promoting Clinical Judgement* (IRDG-CJ; see Appendix A), the *Lasater Clinical Judgement Rubric* (LCJR; see Appendix B), the *Debriefing Assessment for Simulation in Healthcare Rater Version* (DASH-

RV; see Appendix C), and the *Atwater Clinical Reasoning Map for Students* (ACRMS; see Appendix F). The presentation was shown with projection using Prezi© by the PM.

Problem importance. The PM went over the background of simulation, debriefing, and CR concerns of nursing students. The PM wanted to make clear the importance of good debriefing skills with the goal that faculty would value the importance of the EBP change project. The PM explained the project purpose and proposed outcomes of increasing faculty utilization of the IRDG-CJ and the LCJR for simulation session standardization. Explanation of faculty assessment using the DASH-RV tool, to demonstrate faculty proficiency in their debriefing skills was offered. Explanation of the DASH-RV and confidentiality of each faculty's evaluation was given, ensuring faculty identification would be protected through coding to avoid using identifying characteristics.

Introduction of tools. Faculty were presented each tool using the same Prezi© presentation. Explanation of the IRDG-CJ and discussion was completed first followed by the ACRMS to make the connection between the debriefing model and the student instrument for commonality of debriefing activity and language. The LCJR was presented next and explanation of the purpose and best practice was given to the faculty. The PM was careful to emphasize that while this is a rubric that could also be calculated as evaluation, this was not the intent for this project but that their own individual assessment of their student's CR growth was the intent of introducing the LCJR with the other tools. Last, the PM explained the DASH-RV, offering information both from the tools handbook and the professional webinar attended on November 1, 2017 by the PM.

Simulation debriefing sessions. Simulation sessions are offered in multiple classes during the course of the nursing program, upper division classes. Various faculty teach specific

courses utilizing simulation and debriefing at their discretion. The PM met with each faculty to gather a schedule of their plans for simulation sessions during their courses. Different courses offer varying opportunities when simulation is appropriate for educational delivery.

Care of the adult patient I. Students learn in theory many common medical and surgical nursing practices that will be used during the nursing career. This course requires weekly clinical days throughout the semester, offering many opportunities for simulation activities as supplemental clinical education. Simulation activities were planned at three separate points of the semester (beginning, midterm, & end) totaling six individual sessions lasting four hours each. This course requires two clinical groups, each simulation session is repeated to capture all students. Simulation scenarios were planned using scenarios developed from textbook *Clinical Simulations for Nursing Education - Instructor Volume* by Gasper and Dillon (2012), a book adopted for use by the nursing department prior to the implementation of this project.

Care of the maternal/child. The Mother/Baby course offers many opportunities to supplement clinical with simulation. This course has a weekly, 8-hour clinical requirement in addition to the didactic class. A total of six simulation sessions were planned for Mother/Baby course throughout the semester (beginning, midterm, & end). The course has two clinical groups, which created the need to hold each simulation session twice. Each simulation session lasted four hours. Faculty for the Mother/Baby course used a combination of resources for the development of the simulation sessions including the Gasper and Dillon (2012) textbook and scenarios the faculty developed personally.

Community health. The community course yields less opportunity to supplement clinical time with simulation because of the focus of the course not being on a particular patient. The course does require weekly clinical by students that is separated into two clinical groups.

The faculty for this course planned two simulation sessions, using one simulation scenario. This simulation session was repeated to capture both clinical groups.

Leadership. The leadership course is a non-clinical course and offers less opportunity to plan simulation activities. The faculty for this course planned one simulation session that was repeated to capture the clinical groups used in the other clinical courses. This totaled two simulation sessions for leadership. The simulation session was used simultaneously with the community health simulation, but this instructor was implementing prioritizing and leadership skills into the session. The debriefing session was in addition to the community health session with the focus on leadership within the simulation event.

Faculty debriefing evaluation. The PM met with each faculty member prior to the planned simulation event to discuss the designated simulation scenario and offer assistance with the new debriefing tools. The PM observed the simulation pre-briefing, scenario, and debriefing for each planned event (see Appendix K). During the debriefing session, the PM using the DASH-RV, completed the evaluation of the faculty member facilitating the event. Following the activity, the PM discussed with the faculty the results of the DASH-RV. The PM was careful to highlight the positive indicators for the faculty and explaining any negative indicators for the faculty to be aware of necessary growth. Discussion was encouraged by the PM to receive faculty feedback on each tool introduced to them for this project (IRDG-CJ, LCJR, & ACRMS).

Plan Variation

It was the desire of the PM to hold a faculty information session for all faculty at the same time on January 12, 2018; unfortunately, the majority of faculty members were unavailable to attend this day. The PM was able to reschedule the date of the session to Wednesday, January 17, 2018; however, not all faculty members could attend this day either due to various class

schedules. The PM planned to meet with anyone who couldn't attend the main session individually.

The faculty information session scheduled for January 17, 2018 had to be cancelled because of winter weather and the university was closed. After discussion with the program director, the PM decided that individual sessions for all faculty would be the best method to use. This allowed for flexibility with scheduling and the PM could ensure enough time was spent for each faculty member to understand the project objectives and the instruments being introduced. Sessions were able to be scheduled near their specific simulation event, which was an advantage to using individual sessions.

In the original schedule, the PM and the Community Health and Leadership course faculty included an event as simulation, including this session as part of the project. With further discussion and planning of the Community Health and Leadership event, it was evident that although the use of simulated patients was being used, this event was more relatable to a class activity with minimal discussion and was not close enough to the simulation and debriefing used during the project. The decision to remove this activity from the list of simulation events was made prior to the scheduled event.

The final nursing senior synthesis course lacked a simulation event prior to this process improvement project. Discussion between the PM and the faculty of the nursing synthesis course concluded with the addition of a comprehensive simulation and debriefing event for this course. The PM, along with the direction of the synthesis course faculty, planned the additional simulation event. This event was included in the process improvement project and provided a beneficial simulation addition to the nursing program.

Summary

Offering simulation with debriefing and encouraging CR growth in nursing students can improve the outcomes of new graduate nurses (Rudolph et al., 2016; Shinnick et al., 2011). Faculty of nursing programs can assist with decreasing the existing practice gap regarding poor CR in new graduate nurses (American Association of Colleges of Nursing [AACN], 2008; Zimmerman & House, 2016). By implementing a new simulation program that incorporates EBP in debriefing, faculty of the project site can contribute to the nursing profession's improvement in CR practices. Results were collected following the implementation and evaluation step of the EBP model and are discussed in detail in the following chapter.

Chapter Six: Evaluation of the Practice Change Initiative

Evidence-based practice (EBP) involves assessing practice and making changes to improve outcomes (Melnyk & Fineout-Overholt, 2015). This EBP change project began with assessment through observations of faculty debriefing practices following simulation events. After these observations, faculty agreed, that a necessary change to improve practice would be to standardize the debriefing method within the nursing department. The project manager (PM), through an expansive literature review (see Appendix D), concluded that standardizing the debriefing method would need to include a theory-based debriefing model, and the use of tools to assist in this endeavor. The theory-based model chosen was the *Integrated Reflective Debriefing Guide for Promoting Clinical Judgement* (IRDG-CJ; see Appendix A) and the supplemental tools included the *Lasater Clinical Judgement Rubric* (LCJR; see Appendix B) and the *Atwater Clinical Reasoning Map for Students* (ACRMS; see Appendix F). This chapter is a report of the participant sample used for the project implementation, observations experienced during implementation, and the outcomes reached following the completion of the change project.

Participant Demographics

The inclusion of faculty using simulation and debriefing yielded a convenience sample of four (*N*=4). The range of participants' ages was 27-66 years old ($\underline{x} = 45$). Races of the participants included: Caucasian 75% (*n*=3) and African-American 25% (*n*=1). All participants of the sample were female participants (*N*=4). Three types of degrees were held by the participants; Master's in Science of Nursing (MSN), was held by 50% (*n*=2), Doctorate of Nursing Practice (DNP), was held by 25% (*n*=2), and 25% (*n*=1) of the sample held a Doctor of Philosophy in Nursing (PhD). Simulation experience of the sample ranged from zero to 34 years ($\underline{x} = 11.75$).

Intended Outcomes

Faculty utilization of standardized debriefing tools. The first outcome from the project was to increase faculty utilization of the IRDG-CJ and the LCJR. Faculty observation, prior to the project, identified that faculty of the project site lacked a process to deliver like debriefing sessions following simulation events. The IRDG-CJ was introduced to each faculty holding a simulation event during the spring 2018 semester via a faculty information session presented by the PM.

The PM logged each simulation event, recording the utilization of the IRDG-CJ, the LCJR, and a third tool for students created by the PM, the ACRMS. The utilization of each tool was documented in the Faculty Utilization Data Record (see Appendix K). Faculty adapted well to using the IRDG-CJ and used the debriefing model during nearly all 15 debriefing sessions following its launch. The LCJR and the ACRMS both were used for all students during every simulation and debriefing event. Table 2 illustrates the overall utilization of each tool and the comprehensive utilization of all tools together.

Table 2

Tool Utilization

Tool	Utilization Percent
IRDG-CJ	93.3%
LCJR	100%
ACRMS	100%
Comprehensive Utilization	97.8%

Note. Provides the percent of all tools (IRDG-CJ, ACRMS, and the LCJR) utilized during the project implementation in a total of 15 simulation events held by four faculty.

Enhance faculty debriefing skill. The second outcome desired from the implementation of the standardized debriefing practice was to enhance faculty debriefing skills. Faculty evaluation was performed, by the PM, using the *Debriefing Assessment for Simulation in Healthcare-Rater Version* (DASH-RV; see Appendix C). Table 3 illustrates the scores of each faculty for the individual elements of the DASH-RV tool. A total of 15 simulation events were evaluated during the project implementation period, yielding a minimum individual element score of 4 (Somewhat effective/average) through a maximum element score of 7 (Very effective/outstanding).

The DASH-RV is a behaviorally-anchored evaluation tool that is utilized by formally trained raters (Simon, Raemer, & Rudolph, 2010). Six elements, according to Simon et al. (2010), are separate and overlapping areas of debriefing and should not be viewed as a comprehensive total. For example, a debriefer can perform high in one element and poor in another; this does not conclude that the debriefer performed the entire debriefing session poorly. The PM expectations were that all faculty participating in the project would score at least a 4 (somewhat effective/average) on each of the six individual elements of the DASH-RV. With the previously defined benchmark of ≥ 4 (somewhat effective/average) or higher, the outcome to enhance faculty debriefing proficiency was met.

Table 3

Faculty DASH-RV Element Scores

Simulation Event #	Element 1*	Element 2*	Element 3*	Element 4*	Element 5*	Element 6*
1	6	4	7	6	7	7
2	6	4	7	6	7	7
3	5	4	6	5	6	5
4	5	4	7	6	7	7
5	5	6	7	7	7	7
6	7	7	7	7	7	7
7	6	6	7	7	6	6
8	6	6	7	7	6	6
9	6	5	6	5	4	4
10	6	6	6	5	4	4
11	6	6	6	6	6	6
12	6	5	5	5	4	5
13	5	5	6	6	6	6
14	6	5	4	5	6	6
15	6	6	6	6	6	6
Mean Score =	5.8	5.3	6.3	5.9	5.9	5.9

Note. N=4. Evaluation scores observed, using the DASH-RV tool, during the project implementation time period.

Findings

Faculty utilization. Tools were offered to faculty by the PM to enhance the proficiency of the debriefing skill and standardize the practice among the department. Faculty (*N*=4) readily used the tools, as evidence by, the Faculty Utilization Data Record. An isolated event lead to a decrease in the utilization of the IRDG-CJ, producing the lowest utilization 93.3% (14/15; see Table 2). As observed by the PM, this faculty member used the IRDG-CJ during previous simulation events within the implementation period, appeared to have difficulty without the model in-hand, and in the subsequent debriefings returned to using the IRDG-CJ model.

Faculty proficiency. Faculty were evaluated, by the PM, using the DASH-RV. A total of 15 simulation events were evaluated; all scores are reported in Table 3 by session and element. The PM chose to utilize the DASH-RV after a literature search that yielded a well-accepted, research-based way to assess debriefing quality. The DASH-RV is reported as a reliable, accurate tool, which is used by experts of simulation debriefing (Simon et al., 2010). Using intra-class correlation coefficient (ICC) to report the interrater reliability, a total result of 0.74 is reported; with individual element ICC results as: 1=0.60, 2=0.65, 3=0.62, 4=0.68, 5=0.57, and 6=0.63. The differences in ratings within the DASH-RV tool was found to be statistically significant at p=0.001 (Brett-Fleegler et al., 2012).

Descriptive results of this project, using the DASH-RV, are illustrated in Table 4. No element score fell lower than 4 (somewhat effective/average), and the highest rating of 7 (extremely effective/outstanding) was achieved. Means of the individual elements range from 5.3-6.3; standard deviations (SD) were less than 1.1. This information is useful to verify the positive affect using the IRDG-CJ had on the debriefing practices of the aggregate group.

Table 4

Descriptive Statistics for Faculty Scores

Descriptive Statistics

	*N	Minimum	Maximum	Mean	Std. Deviation
Element 1	15	5.00	7.00	5.8000	.56061
Element 2	15	4.00	7.00	5.2667	.96115
Element 3	15	4.00	7.00	6.2667	.88372
Element 4	15	5.00	7.00	5.9333	.79881
Element 5	15	4.00	7.00	5.9333	1.09978
Element 6	15	4.00	7.00	5.9333	1.03280
Valid N (listwise)	15				

Note. Reporting of the descriptive statistics of the six individual elements evaluated using the DASH-RV. Total simulation events was 15.

Element 1: Establishes an engaging learning environment. The aggregate scores of the faculty (*N*= 4) whom were evaluated by the PM produced a mean value of 5.8 for this element. The minimum score of element #1 equaled 5 (mostly effective/good) and the maximum equaled 7 (extremely effective/outstanding). This outcome was met by the participants, as defined by the PM previously. Figure 1 illustrates the high amount of ratings equal to 6 (consistently effective/very good) and 7 (extremely effective/outstanding) were achieved. Using this information and the low SD results (0.6; see Table 4), the conclusion was that participants have the proficiency to positively establish an engaging learning environment, which is the behavior evaluated in element 1.

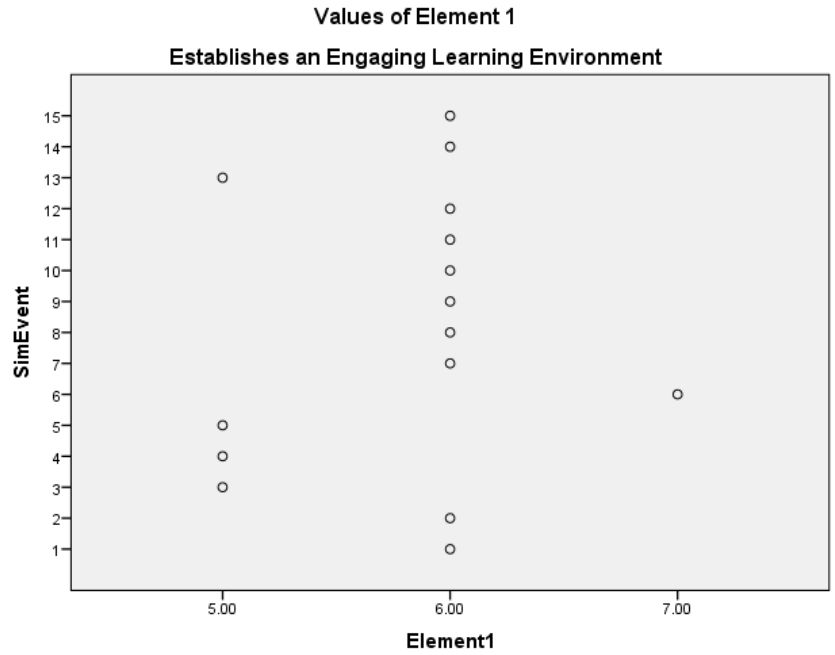

Figure 1. Element 1 scores as a simple scatterplot to illustrate the scores based on 15 debriefing events, establish an engaging learning environment.

Element 2: Maintains an engaging learning environment. A mean value of 5.3 was achieved using the aggregate data of the element #2 evaluation scores. A minimum evaluation score obtained was 4 (somewhat effective/average) and the maximum result was 7 (extremely

effective/outstanding). Element #2 scores resulted in the benchmark being met with the score greater than 4 for the participants evaluated. The PM interprets the data measured for element 2, using Figure 2, that the lowest scores were found in the initial events, and that with more exposure to the process and model, the element ratings improved. Element 2 had the lowest mean (5.3). This solidifies the need to have repeated exposure and a standardized process to maintain an engaged learning environment, the purpose of element 2.

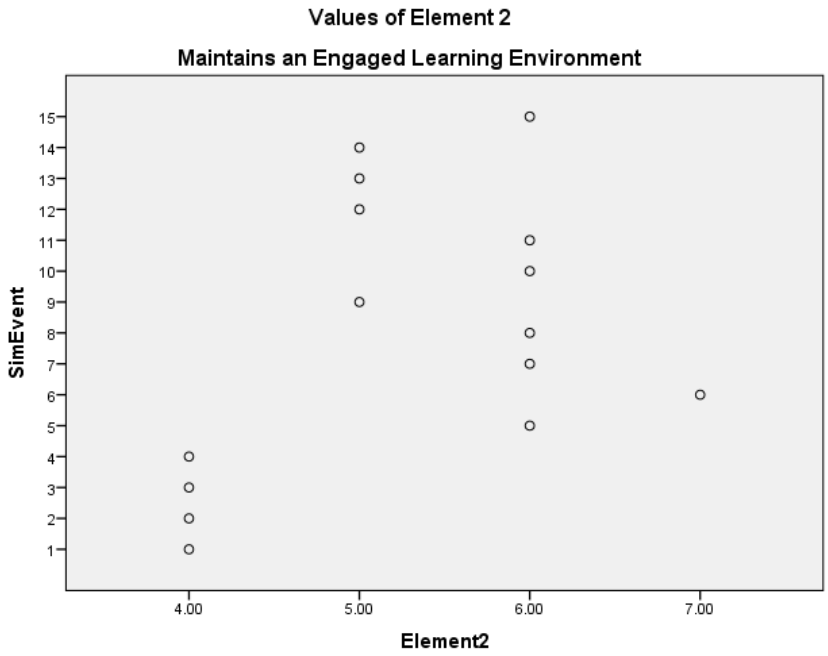

Figure 2. Element 2 scores as a simple scatterplot to illustrate the data based on 15 debriefing events; maintains an engaging learning environment.

Element 3: Structures debriefing in an organized way. The scores of element 3 produce a mean of 6.3, which meets the intended benchmark by the PM. A minimum value of 4 (somewhat effective/average) and a maximum value of 7 (extremely effective/outstanding) was evaluated by the PM. Figure 3 illustrates the scores of element 3; showing positive results with the great majority reaching a 6 (consistently effective/very good) and 7 (extremely effective/outstanding). The SD, as reported in Table 4 equals less than 1, indicating the close

results of the aggregate scores. Element 3 was found to score the highest among the six elements, with one outlier scoring 4 (somewhat effective/average); without this outlier, the mean value would be higher. The PM recognizes that these results are congruent with literature, indicating the importance of using a theory-based debriefing model (International Nursing Association of Clinical Simulation in Learning [INACSL], 2016; National League of Nursing [NLN], 2015), such as IRDG-CJ, to organize the debriefing session.

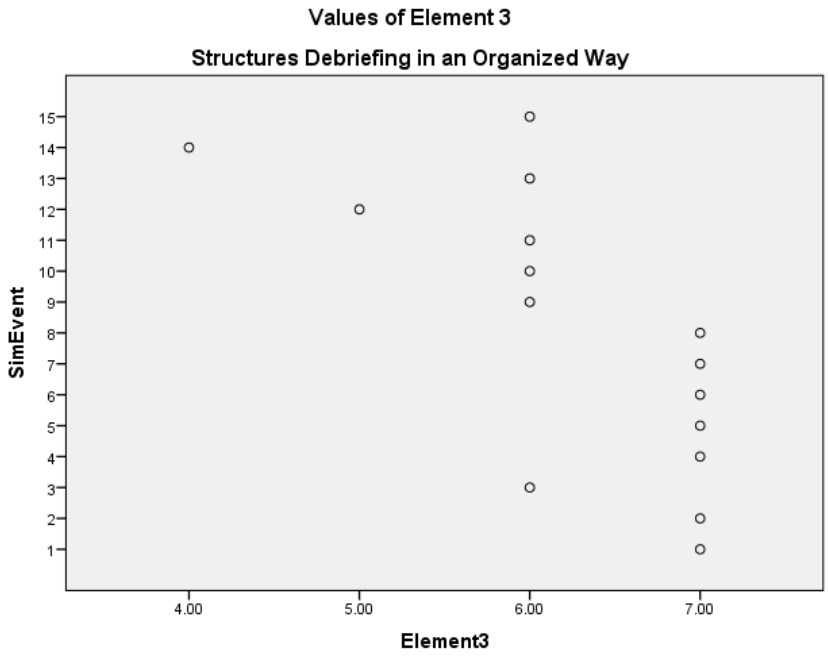

Figure 3. Element 3 scores as a simple scatterplot to illustrate the data based on 15 debriefing events; structures debriefing in an organized way.

Element 4: Provokes engaging discussions. The aggregate scores (N=4) of element 4 calculated a mean value of 5.9. The minimum score was 5 (mostly effective/good) and the maximum was 7 (extremely effective/outstanding). The benchmark was met for element #4. Provoking engaging discussion is the purpose of element 4. The PM concludes that this is a skill that is dependent on other variables. The observation data shows in Figure 4, that the results are evenly spread between scores 5 (mostly effective/good), 6 (consistently effective/very good), and

7 (extremely effective/outstanding). SD for element 4 in Table 4 resulted as 0.8, indicating a more evenly dispersed result than other elements. Variables that contribute to these results could be level of students participating and/or experience of the debriefer.

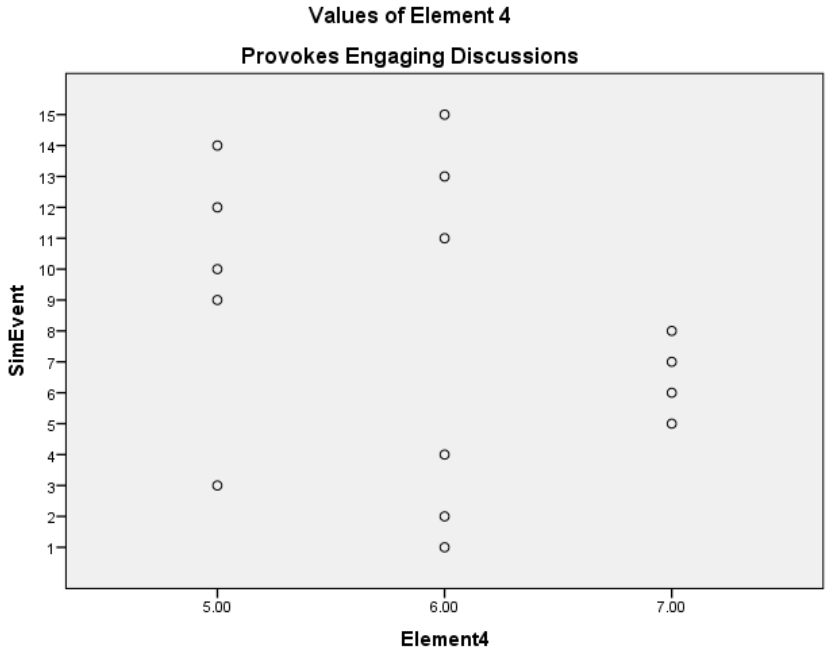

Figure 4. Element 4 scores as a simple scatterplot to illustrate the data based on 15 debriefing events, provokes engaging discussions.

Element 5: Identifies and explores performance gaps. The aggregate scores (N=4) found for element 5 report a mean of 5.9 (SD 1.1). The minimum value was 4 (somewhat effective/good) with a maximum value of 7 (extremely effective/outstanding). Most of the scores, as shown in Figure 5, verify that many of the results were 6 (consistently effective/very good) and 7 (extremely effective/outstanding). Other variables contribute to the effectiveness of this, including experience of the debriefer and their education level of debriefing or the evaluation process.

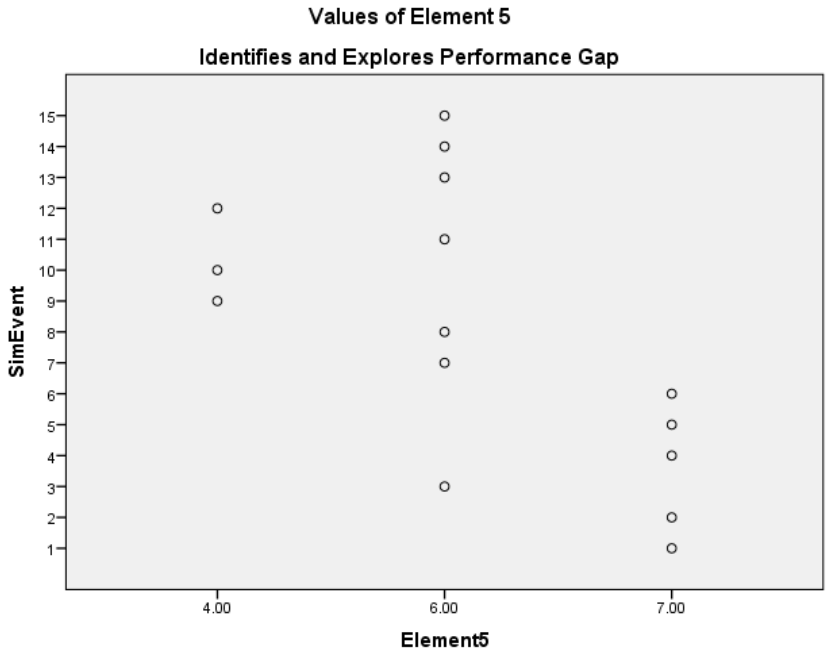

Figure 5. Element 5 scores as a simple scatterplot to illustrate the data based on 15 debriefing events; identifies and explores performance gap.

Element 6: Helps trainees achieve or sustain good future performance. The descriptive results of element 6 are reported in Table 4 indicating a mean value of 5.9 (SD 1). The minimum score was 4 (somewhat effective/good) and the maximum was 7 (extremely effective/outstanding). The scores met the benchmark defined by the PM; however, the PM observed that this element reflects other variables, such as, debriefer education experience, debriefer knowledge of the content, debriefer clinical experience with the clinical aspect, and the debriefers level of debriefing education completion. The scores shown in Figure 6 confirm that it was in isolated events, as outliers that the scores were less than 5 (mostly effective/good).

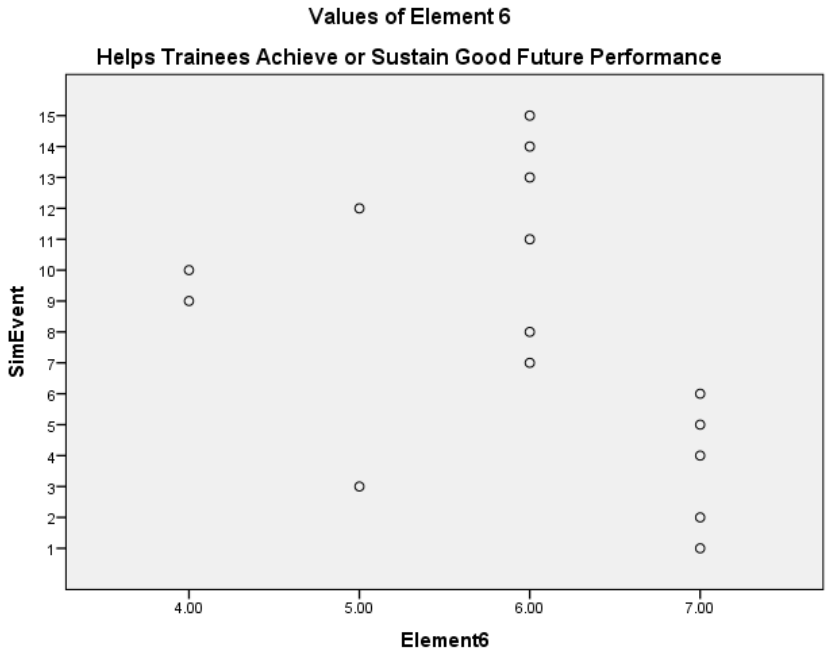

Figure 6. Element 6 scores as a simple scatterplot to illustrate the data based on 15 debriefing events; helps trainees achieve or sustain good future performances.

Aggregate comparisons of elements. The PM chose to use a boxplot diagram to indicate the aggregate results of the DASH-RV tool and all six elements (see Figure 7). According to Moore, McCabe, and Craig (2009) the boxplot diagram illustrates the five number summary, allowing review and comparison of the median, interquartile range, minimum, and maximum results of each element. This information is useful to review, and the PM could determine the elements that have the highest proficiency, the elements with the lowest proficiency, and positive/negative outliers. It is especially useful to assess the outliers because outliers do affect the mean values reported in Table 4. This effect can be negative or positive and should be taken into consideration when addressing aggregate data (Moore et al., 2009).

Using Figure 7, the PM made several conclusions based from the findings of this project. The first conclusion was that outliers are found in elements 1, 3, and 5. Recognizing the outliers was important to the project to realize the direction the mean was skewed, positive or negative,

and highlight this affect. This allowed for the PM to assess what occurred, what variables are present and provide future implications for practice. Next, it can be concluded that elements 2 and 4 had the lowest results. This gives direction for the group to make possible corrections and provides an excellent chance for performance improvement of faculty. The last conclusion made from Figure 7, was that the elements with the highest scores were 3, 5, and 6. The PM and faculty of the project site, could assess these elements for what is their best practice, offer suggestions on continuing this performance, and how to carry this performance over to all elements and all faculty practices.

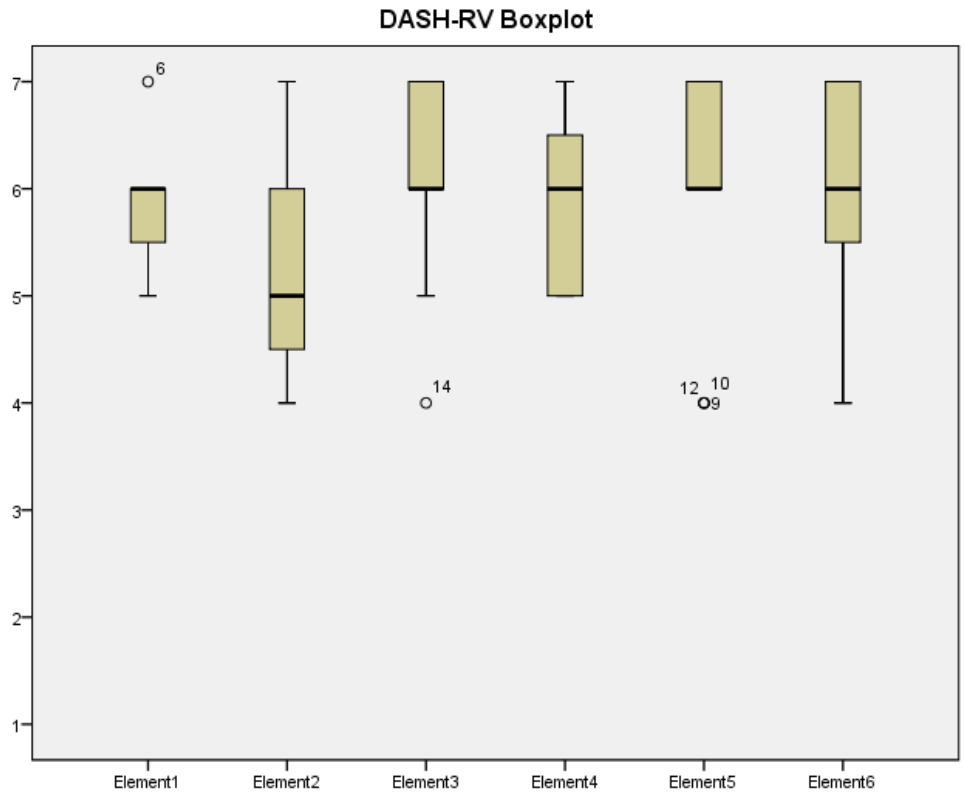

Figure 7. Bloxplot diagram illustrating the aggregate analysis of the DASH-RV 1-6 elements based on all 15 simulation events during project implementation.

Summary

Faculty utilization of the IRDG-CJ, ACRMS, and the LCJR was the first outcome indicated by the PM. This outcome was found to be met be using the Faculty Utilization Data Record, with scores ranging from 93.3%-100%. The second outcome the PM assessed was to enhance staff proficiency in debriefing skills. The data analysis resulted in a conclusion that the benchmark of ≥4 (somewhat effective/good), set by the PM, was met or exceeded in all 15 simulation events. Data analysis of the six individual elements leads to many practice suggestions and future implications for debriefing following simulation.

Chapter Seven: Implications for Nursing Practice

The American Association of Colleges of Nurses (AACN; 2006) recognize eight essentials for Doctorate of Nursing Practice (DNP) students that define the base of what the priorities and higher knowledge used in their profession. The list of benefits the DNP prepared professional offers, as cited from the AACN (2004):

> …development of needed advanced competencies for increasingly complex practice, faculty, and leadership roles; enhanced knowledge to improve nursing practice and patient outcomes; enhanced leadership skills to strengthen practice and health care delivery; better match of program requirements and credits and time with the credential earned; provision of an advanced educational credential for those who require advanced practice knowledge but do not need or want a strong research focus (e.g., practice faculty); enhanced ability to attract individuals to nursing from non-nursing backgrounds; and increased supply of faculty for practice instruction. (2006, p. 5)

Ensuring the DNP professional and project is able to provide these benefits, it is important to address the essentials used during the doctoral studies. Comparing with each of the eight essentials needed for the DNP role, this chapter outlines the relationship between, the practice need identified and the project completed to close the practice gap.

Practice Implications

The DNP prepared individual must be able to positively impact the nursing profession utilizing, and in collaboration, with research and nurse researchers (AACN, 2006). The two terminal degrees collaborate well; the DNP graduate is be able to implement works of the nurse scientist, or PhD prepared nurse. The project manager (PM) began the collaborative process by observing practices of faculty at the project site, identifying a practice need that could impact the

nursing profession at a level of the eight competencies defined by the AACN, and conducting a literature review to locate an evidence-based intervention to implement.

The literature review identified a practice gap of nursing students who lack clinical reasoning (CR) skills during the immediate time period following graduation. Simulation education, using debriefing that is grounded with a theory-based model, was recommended by several field professionals to improve CR skills among nursing students (Dreifuerst, 2009; Hayden, 2010). The literature review included the identification of; a theory-based model, called the *Integrated Reflective Debriefing Guide for Promoting Clinical Judgment* (IRDG-CJ; see Appendix A) that was reported to have a positive influence to the performance of the debriefer and improving students' CR outcome following a simulation activity (Al Sabei & Lasater, 2016). A second research-based tool found during the literature review was the *Lasater Clinical Judgement Rubric* (LCJR; see Appendix B) that captures the growth progression of students' CR following simulation events (Ashcraft et al., 2013; Lasater, 2007). The final part of the project was the creation, by the PM, of the Atwater Clinical Reasoning Map for Students (ACRMS; see Appendix F). The PM saw the opportunity to create a tool for student to use with the faculty following the IRDG-CJ. The ACRMS was adapted from the IRDG-CJ model.

Essential I: Scientific underpinnings for practice. Nursing science, according to the AACN "…has created a significant body of knowledge to guide nursing practice and has expanded the scientific underpinnings of the discipline." (2006, p. 9) Implications for practice to successfully contribute to nursing include the use of science-based theories that will improve the delivery of healthcare and evaluate outcomes, and innovate new methods that use nursing and other disciplines' theories. (AACN, 2006). Facilitators of simulation debriefing sessions should

use a theory-based model, such as the IRDG-CJ, to enhance their skill and guide their educational delivery in a manner that is based from research.

Using the IRDG-CJ allows the nursing faculty to utilize theoretical information to offer quality, reflective debriefing sessions that are known to improve students' growth. Organizing the debriefing session creates a more efficient session for both, learner and educator. Using a developed debriefing model improves the flow of content review of the simulation event and theoretical knowledge that students are meant to review.

The ACRMS, was a newly developed tool by the PM. The ACRMS tool was adapted from the IRDG-CJ, and gave a form for students to follow their facilitator using auditory, visual, and mechanical learning methods. "There are four kinds of learning styles: active and reflective learning; sensing and intuitive learning; visual and verbal learning; and sequential and global learning" (Younas, 2018, p. 15). Further study of the ACRMS can determine how many styles this tool captures and what can be recommended for future use in nursing education.

Essential II: Organization and systems leadership for quality improvement and systems thinking. The focus of this essential is to "ensure accountability for quality of health care and patient safety…" (AACN, 2006, p. 10). Faculty of prelicensure nursing students have the responsibility to educate their students at a level that the future nurse can provide safe, competent care (AACN, 2008). Simulation learning activities must include debriefing that will provide learning opportunities clarifying safe care of patients (Dreifeurst, 2009). Although this information is offered by industry leaders, it is for individual organizations to offer good debriefing session using theory-based approaches and have a way to capture students' improvement (or lack of improvement). Using a tool, such as the LCJR, allows for concrete documentation of student performance during simulation and debriefing events. Comparison of

individual student's LCJR between different simulations, courses, and academic year, gives the faculty an opportunity to assess areas of expertise and areas that need improvement. The LCJR form is an evaluation tool that faculty can utilize to discuss observations and performance with the student, offering the chance for clear communication between faculty and student.

Essential III: Clinical scholarship and analytical methods for evidence-based practice (EBP). The collaborative relationship the DNP professional has, includes using existing research, found through literature searches, quality improvement projects, and other avenues, requires the DNP to be able to evaluate and disseminate EBP (AACN, 2006). The main goal of clinical scholarship by a DNP graduate, as explained by the AACN (2006) is to "…generate evidence through their practice to guide improvements in practice and outcomes of care." (p. 12). Best practice, for new nursing graduates, is to begin their career with the ability to clinically reason. Faculty can use assessments of students' abilities during simulation and debriefing events. Using a concrete tool, such as the LCJR, gives examples to students of their performance. This type of assessment allows for standardization of practices for the faculty to work on a common ground from student to student, ensuring justice for the class.

The AACN (2006), under the third essential, names a goal to "Design, direct, and evaluate quality improvement methodologies to promote safe, timely, effective, efficient, equitable, and patient-centered care." (p. 12). The ACRMS has the potential to train students to think of all aspects of patient care and how they can improve and change their nursing practice. More research should be conducted to test the tool's reliability and validity. Following testing, and ensuing a positive finding, the ACRMS tool can be promoted to assist the student with their own CR development.

A third objective of the scholarship essential is to "…develop practice guidelines and improve practice and the practice environment." (AACN, 2006, p. 12). Faculty of nursing programs have the opportunity to influence the future performance of nurses. This gives nursing faculty a high responsibility to maintain an affective teaching practice. Using the IRDG-CJ aids nursing faculty, to deliver a simulation and debriefing event that is organized, comprehensive, logical, and affective to the students they teach. Students and faculty alike, can become acclimated to the IRDG-CJ, being able to predict the session and are taught different patient scenarios using the same comprehensive process. The Constructivist Learning Theory (CLT) applies to this recommendation; according to Walker and Stevenson (2016), the learning is completed by repetitive exposure, building on the previous lessons. By using the CLT, nursing faculty are educating their nursing students to use clinical reasoning, and possibly the nursing process, with each patient scenario they encounter, changing in levels and content throughout the curriculum. The PM believes the connection between the IRDG-CJ and the well-known, nursing process, is made when a student uses the ACRMS. This is a connection that needs to be further assessed.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare. Support for improved outcomes and patient care in academic and healthcare settings through the use of information systems and technology, sets the DNP graduate apart from other nursing professionals. Using simulation technology, in a way that incorporates the high-level thinking required to improve CR skills in nursing students, can be accomplished when delivered with a theory-based debriefing session. Using a model, similar to the IRDG-CJ, gives the nursing faculty a foundation to improve their own practice. Simulation technology is recognized by Hayden, Smiley, Alexander, Kardong-Edgren, and

Jeffries (2014) as a sufficient supplement for nursing students to real patient care clinical. This technology is influential in the development of nurses who are entering the profession. Professionals should recognize the benefits simulation education offers but must be knowledgeable simulation EBP and realize the technology only takes the students' learning so far; to reach the desired higher-level thinking it takes to learn CR, debriefing delivery is required.

Essential V: Healthcare policy for advocacy in healthcare. According to the Institute of Medicine (IOM; 2001), the DNP professional can be influential with the health care policies; affecting areas such as, safety, practice regulations, quality, among other important components of nursing practice (as cited by AACN, 2006). Health policy occurs at various levels from institutional to international, the DNP professional as opportunities to influence at any level (AACN, 2006). Debriefing practices of nursing faculty is one practice that, at the institutional level, can be impacted by DNP professionals and other nursing faculty. Policy that enforces the recommendations to provide debriefing following simulation activities and debrief using a theory-based model will all for continued performance improvement with nursing faculty's use of simulation to promote CR of their nursing students. Enforcing such policies can possibly contribute to an improvement in medical errors made by new graduate nursing students. New graduate nurses contribute to nearly half of all medication errors, reported by Zimmerman and House (2016), and more than a third of patient fall events (Hickerson, Taylor, & Terhaar (2016). The IOM (2003) suggest using simulation debriefing to highlight these types of errors and giving the nursing student the opportunity to discuss and reflect on the situation during debriefing, can teach them ways to avoid making real medical mistakes (as cited by Molloy, 2017).

Possible policy changes at the state and national level can influence simulation and nursing education; improving the medical error occurrences. The state boards of nursing can

have specific requirement for simulation and debriefing practices, as opposed to only recommendations. Recommendations can lead to various interpretations justified by explanations. A specific policy can give a state the opportunity to enforce best practices in schools of nursing and simulation education.

At the national level, the main accrediting bodies of nursing programs, the National League of Nursing (NLN) and the AACN, can also have detailed policies regarding the use of simulation debriefing models. The two main accrediting bodies for baccalaureate nursing schools are the NLN and the AACN. A comparison of the simulation and debriefing recommendations show the vast differences between their recommendations, Table 5 notes a summation of the agencies recommendations. It is not necessary for all accrediting bodies to agree 100%, but when issues to CR and patient safety are affected, the interventions that create the best outcomes should be required. These differences can contribute to how nurses are perceived by their counterparts, as professional or not. If current nurse leaders want nurses to be viewed as professionals, nursing faculty should provide interventions that will ensure their professional performance the day they begin practice. Using simulation and debriefing can improve nurses' performance and should be a main focus of accrediting bodies. It is the recommendation that policy agreement between the main nursing accrediting bodies be that simulation with theory-based debriefing be used to enhance nursing students' preparation.

Table 5

Comparison of Accrediting Bodies and the Simulation Recommendations

	National League of Nursing (NLN)	American Association of Colleges of Nursing (AACN)
Debriefing Definition:	Yes. Offers extensive definition and rationale for its effectiveness.	No
Offer examples of debriefing models:	Yes. Offers four theory-based debriefing models as examples. Does not list IRDG-CJ as an example.	No
Promote debriefing evaluation	Yes. Promotes the need to evaluate debriefing performance and offers examples of tested evaluation strategies, such as the DASH-RV.	No
Offer recommendations for professionals:	Yes: ● Deans, Directors, Chairs of Nursing Programs ● Nursing Faculty ● NLN members	No
Resources website for simulation and/or debriefing	Yes: Simulation Innovation Resource Center (SIRC) http://sirc.nln.org/	No
Scholarship opportunity for Simulation and/or Debriefing	Yes. Offered through the NLN, Chamberlain College of Nursing Center for the Advancement of the Science of Nursing Education and the NLN Foundation for Nursing Education.	No

Note. Comparison of the simulation and debriefing content of the AACN and NLN websites.

This comparison illustrates the difference between resources available for nursing simulation.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes. The DNP graduate must recognize the importance that interprofessional teams have on patient outcomes and safe care. The sixth essential, tasks the DNP professional to contribute to the healthcare industry working alongside and leading both intraprofessionally and interprofessionally (AACN, 2008). Nurses have the benefit of working with many healthcare professionals, collaborating with other disciplines can impact patient care and outcomes.

The DNP professional, both in academia and practice settings, can utilize simulation education with debriefing to practice patient scenarios with the full interprofessional team. The AACN (2008) is clear to state, "…effective interprofessional teams function in a highly collaborative fashion and are fluid depending upon the patients' needs, leadership of high performance teams changes." (p. 15). The benefits that simulation and debriefing provide to nursing students and their clinical practice can extend to all healthcare disciplines and allow for interprofessional skills to be simulated, improving practices of the team's patient care. It is the recommendation that practices used by nursing faculty be shared and expertise be offered to other disciplines in healthcare. The DNP graduate should take the lead in collaborating with other disciplines to share and retrieve simulation education practices that improve outcomes. Interprofessional Education (IPE) has been shown to improve patient outcomes, preventing errors, and other negative effects that poor teamwork can create. Using simulation to deliver IPE can offer several advantages to various healthcare professionals including: communication skills, collaboration, and confidence in many patient scenarios, emergency or not (Welsch, Hoch, Poston, Parodi, & Akpinar-Elci, 2018).

Essential VII: Clinical prevention and population health for improving the nation's health. The DNP graduate has the ability to improve various conditions of populations;

including, disease prevention, health promotion, environmental and occupational conditions (AACN, 2006). It is the recommendation that nursing faculty use simulation and theory-based debriefing to promote this responsibility in nurses and practice specific population-based scenarios to provide opportunity to learn more about the role of nurses within the population. According to the AACN (2006), "…these national calls for action and with the longstanding focus on health promotion and disease prevention in nursing curricula and roles, the DNP graduate has a foundation…" (p. 15). Stanley and Rojas (2014) use simulation to replicate a nursing home visit and concluded that using simulation with debriefing for a public health nursing role is beneficial to highlight environmental patient content and helps to reduce the burden of finding public health clinical sites. The addition of simulation to population health courses is minimal compared to other clinical courses (Stanley & Rojas, 2014). DNP professionals can initiate the use and study of simulation and theory-based debriefing for population health courses; hopefully, verifying the effectiveness this methodology has on this focus.

Essential VIII: Advanced nursing practice. The final DNP essential calls for nurses of this preparation to "understand patient care consequences of decisions." (AACN, 2006, p. 16). Several of this essential's objectives are relevant to the topics of simulation, theory-based debriefing, and clinical reasoning. The objectives that specifically apply to the recommendations concluded from this project relate to practicing patient care to improve outcomes, educating on the complexity of healthcare and patient care, education for new professionals that is collaborative, and using nursing knowledge to improve patient outcomes (AACN, 2006).

It is the recommendation, that the nursing profession use debriefing education to prepare future nurses for the complex healthcare system and patient care needs they will face in their

profession. DNP professionals should recognize the benefit this type of education has for students and new nurses. We should have the practice as experience nurse leaders, to mentor those entering the profession and help avoid negative encounters, such as medication errors. The NLN (2015), has a "call to action" for nurse educators. This call is to use debriefing throughout the curriculum of various nursing students and that debriefing is a way we can change education to better prepare students (NLN, 2015).

It is vital to the nursing profession to evaluate nursing students' practices as they enter the profession. We must verify that simulation and theory-based debriefing does contribute positively to the reduction of medical errors and improved practice preparation of new graduate nurses. According to Waznonis (2014), debriefing practices are not practice with evidence-based techniques, but through educators own experiences, from article suggestions, and information from professional conferences.

Future Work

To advance simulation education and the use of theory-based debriefing, it is necessary to disseminate the findings and recommendations of this and future projects. Presentations are possible at local, state, national, and international levels. Within each of these levels, presentations can be in the form of a poster and a podium presentation at meetings and professional conferences. A proposed dissemination plan includes professional presentations at both nursing and simulation conferences, with the knowledge that and depending on the content of conferences, presentations at the desired conference may not be applicable. In addition to presentation, it is important to publish the project in various professional journals.

Succeeding the creation and the pilot of the ACRMS, the student tool adapted from the IRDG-CJ, it is important to continue with formal psychometric testing. Psychometric testing

will provide for the reliability and validity of the tool. Without this research, it is not accurate to say the benefit or strength of the tools use for student growth. It is the plan of the PM, to continue using the ACRMS, along with the IRGD-CJ and gather enough tools to perform quality psychometric testing. After potential legitimate statistical analysis, the PM plans to publish the ACRMS for others to use.

Summary

It is the need of the nursing profession, to have DNP professionals educated and experienced to lead complex processes and changes in academia and healthcare (AACN, 2006). Healthcare is more complex, requiring nursing students to be better prepared to handle complex situations. Simulation education is a method that nursing educators can use to help prepare nursing students for these complex situations when they transition from student to nurse. Although simulation is valuable, for the student to close the practice gap of what they did not know prior to the event, simulation is not as affective without debriefing. It is the recommendation that professionals at local, state, and national professional organizations require and provide resources for theory-based debriefing with simulation education. This project used several tools that supported the use of effective theory-based debriefing. A complete summary of all the DNP project parts is made, to provide closure of this project, in the next chapter.

Chapter Eight: Final Conclusions

Hindsight of the completed performance improvement project has led to many conclusions for future nursing practice. These conclusions were related to the problem of a nursing education and practice gap, an increased rate of medical errors made by new graduate nurses, and nursing leaders claiming new nurses lack the clinical reasoning (CR) skill, suggested solution of using a comprehensive approach for nursing simulation education, and the recommendations for future practice. Reflection of practice has been a theme of this project and is an important part for its completion. This final chapter denotes a complete reflection and summation of this evidence-based practice (EBP) change project regarding a simulation debriefing process redesign.

Clinical Problem

It has been determined, that new graduated nurses have a "practice-gap" because the way nursing education has evolved from hospital-based training programs to classroom, theory-taught, higher education programs (Hunter & Arthur, 2016). Nursing students lack the ability to clinically reason in actual patient scenarios that differ from theory, and this can set up the nurse for the inability to think or to CR to correct action for the situation (del Bueno, 2005; Hunter & Arthur, 2016; Killiam, Luhanga, & Bakker, 2011). Nursing students spend the majority of their time in a classroom and in reality, receive a limited number of clinical hours that include caring for patients.

New graduate nurses have a higher chance of making medical errors; particularly medication errors and having a patient fall under their care. This is costly both financially to organizations and emotionally to new nurses. Many new nurses who experience a patient error will decide to leave the profession. Hickerson, Taylor, and Terhaar (2016) report that an

alarming 60% of new graduate nurses leave their first job. Healthcare organizations lose money both with onboarding new nurses who leave too fast and having to replace nurses who leave the profession (Jones, 2008; Theisen & Sandau, 2013; Ulrich et al., 2008). Already in a deficit, the shortage of nurses is expected to continue to grow (American Association of Colleges of Nursing [AACN], 2017). This shortage can prove to be detrimental to society and the care of all patients.

Literature Evidence

Nurse leaders and managers desire to hire nurses who are prepared for patient situations that are not typical. Nurses who have CR skills are the ideal nurse to hire because they demonstrate decisions that produce the best patient outcome. An education method that is used to better prepare nursing students for handling atypical patient scenarios is simulation education. Simulation is an educational method that allows students to safely practice patient care and make decisions that they learn in theory, bringing information into practice (Dreifuerst, 2009; Hayden, 2010).

Simulation alone is more of a skills practice and will not offer much growth for students to make corrections in thinking. CR and the practice-gap can be rectified when the faculty and students debrief; reflecting on the scenario, the actions, any corrections, and evaluations of the results (Dreifuerst, 2009; Rudolph et al., 2016). Debriefing is where the student actually gains CR skills. A theory-based model, the *Integrated Reflective Debriefing Guide for Promoting Clinical Judgment* (IRDG-CJ; see Appendix A) as used in this project, offers a valuable resource for faculty to perform effective debriefing sessions. Debriefing produces even better learning outcomes when performed with the direction of a theory-based model (Dreifuerst, 2009; Rudolph et al., 2016; Shinnick, Woo, Horwich, & Steadman, 2011).

Evaluation of both faculty debriefing performance and students' clinical performance are necessary to ensure growth from the intervention. The *Laster Clinical Judgement Rubric* (LCJR; see Appendix B), was located from the literature search that was shown to help faculty evaluate student performance during the simulation and debrief (Adamson, Gubrud, Sieras, & Lasater, 2011). The *Debriefing Assessment for Simulation in Healthcare- Rater Version* (DASH-RV; see Appendix C), is an evaluation instrument which is reliable in evaluating the performance of faculty, or the individual facilitating the debriefing session (Cheng et al., 2015). Therefore, the DASH-RV is a tool that is capable of showing professional development and was selected to evaluate the faculty participants of this project.

During the literature review, the project manager (PM) noted that there seemed to be a lack of student connection to the standardized debriefing approach. The PM collected tools for faculty use (IRDG-CJ; LCJR); however, did not locate a tool for the student to follow the process. The PM decided this was an instrumental part to the debriefing package and created the *Atwater Clinical Reasoning Map for Students* (ACRMS; see Appendix F). The ACRMS was adapted from the theory-based IRDG-CJ model.

Change Theories and Models

The Constructivist Learning Theory (CLT) was the theory selected to be the foundation for this project. The CLT describes the way in which students use previous knowledge from theoretical instruction and experience, to build a deeper understanding and thinking (Brandon & All, 2010). The CLT theory is a theory that can be applied to various disciplines, including the nursing profession (Rolloff, 2010). Constructivism can be defined as the learning made after repeated exposure to situations that require reflective thought (Billings & Halstead, 2009). Simulation with debriefing specifically provides the opportunity for exposure to previous learning, skill practice, and reflective discussion of performance.

The Rosswurm and Larabee (1999) EBP Model, guided the steps of the project. This model defines each step used for a performance improvement project. The steps of this model includes: Assess; Link; Synthesis; Design; Implement and evaluate; and Integrate and maintain. All steps of the model were successfully completed during the project, with the exception of the final step, "integrate and maintain", which will be a long-term ongoing process at the project site.

Project Management

The PM began planning for the performance improvement project by completing a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis to provide clarity of the project site's availability and its challenges. The main findings of this SWOT analysis was that the department has the desire to enhance the simulation program it offers their nursing students; however, the department was small making big changes more difficult.

Following PM observations, a literature review of the identified problem was conducted. Faculty communication regarding project idea and evidence-based solutions were made. Approval of the project was granted by the program director (see Appendix G). The PM initiated the design phase by making plans for information technology, budget items (see Table 1; Chapter 4), data evaluation, data analysis, and data management. Faculty evaluation was determined by two outcomes: faculty utilization and faculty proficiency. Faculty tool utilization was stored on the Faculty Utilization Record (see Appendix K); and faculty proficiency was evaluated using the DASH-RV.

Institutional Review Board (IRB) applications were completed for the project site and East Carolina University. It was the desire of the PM to have the project found to be Exempt, considering the objective of the project was for performance improvement, not new research.

Both organizations concurred that the project was IRB Exempt and approved the project to move forward (see Appendices H & I).

Project Implementation

The project began with observations, by the PM, that there was neither no debriefing model used by individual faculty of the project site when conducting simulation exercises, or various models used that were not standardized. The PM met with faculty of the project site to discuss these observations and to suggest the performance improvement project to standardize the debriefing practice of the department. Faculty all agreed this was a needed process.

Faculty who had a planned simulation event were given a demographic survey (see Appendix J) to complete and by completing, agreed to participate. Faculty were oriented to the project and educated on the tools adopted through individual faculty information sessions, presented by the PM. Faculty gave the PM a schedule of each simulation event. The PM attended each event, using the DASH-RV to evaluate the faculty debriefing sessions.

Findings

Project findings yielded positive results for the faculty (N=4) who participated. The IRDG-CJ model was utilized in 14 of 15 simulation events (93.3%); the LCJR and the ACRMS were used in 100% of debriefing events. The faculty member who did not use the IRDG-CJ the one time verbally expressed, to the PM, the desire to have had it after beginning without it, thinking they used it enough they could proceed without the tool. Following that isolated event, that particular faculty returned to using the IRDG-CJ.

Faculty proficiency was evaluated using the DASH-RV, setting a benchmark score of 4 (effective/mostly good). All faculty (N=4), for all 15 simulation events, received 4 or higher on

the evaluation tool. Faculty experience ranged from zero to 15 years, the PM is able to suggest that using the IRDG-CJ allows for the capability to facilitate a successful debriefing session.

Practice Implications

Following the completion of this performance improvement project, the PM's conclusions were congruent with the expert recommendations from appraised literature to use theory-based debriefing with simulation education. Specific recommendations arose during and after the completion of the project. These recommendations are:

1. Use a theory-based debriefing model to enhance the facilitator's practice.
2. Use reliable tools to monitor and assess student growth; specifically with CR.
3. Organizations should adopt a standardized process for simulation and debriefing programs.
4. Professional nursing organizations and education accrediting bodies should provide resources for and expect quality debriefing practices of nursing programs.

Although several other recommendations were discovered during the performance improvement project. These four main recommendations appear to the PM to be the priority items for nursing educators to focus their attention on in the near future.

Final Conclusions

When nursing students lack the preparation in CR during patient care, the possibility of making a devastating medical error becomes reality. Nursing educators have the potential to reverse the alarming statistics that show the higher amount of medical errors made by new graduate nurses. Knowing that using simulation education is a valid methodology, educators must realize that debriefing is where student growth produces CR skills. Simulation education should not be viewed alone, but should be considered a package with many parts. The complete

package includes: simulation, theory-based debriefing, student involvement with debriefing model, student evaluation of performance, and debriefing facilitator evaluation. Using these recommendations, the simulation and debriefing educator can experience that this package is effective; student and faculty growth will be experienced.

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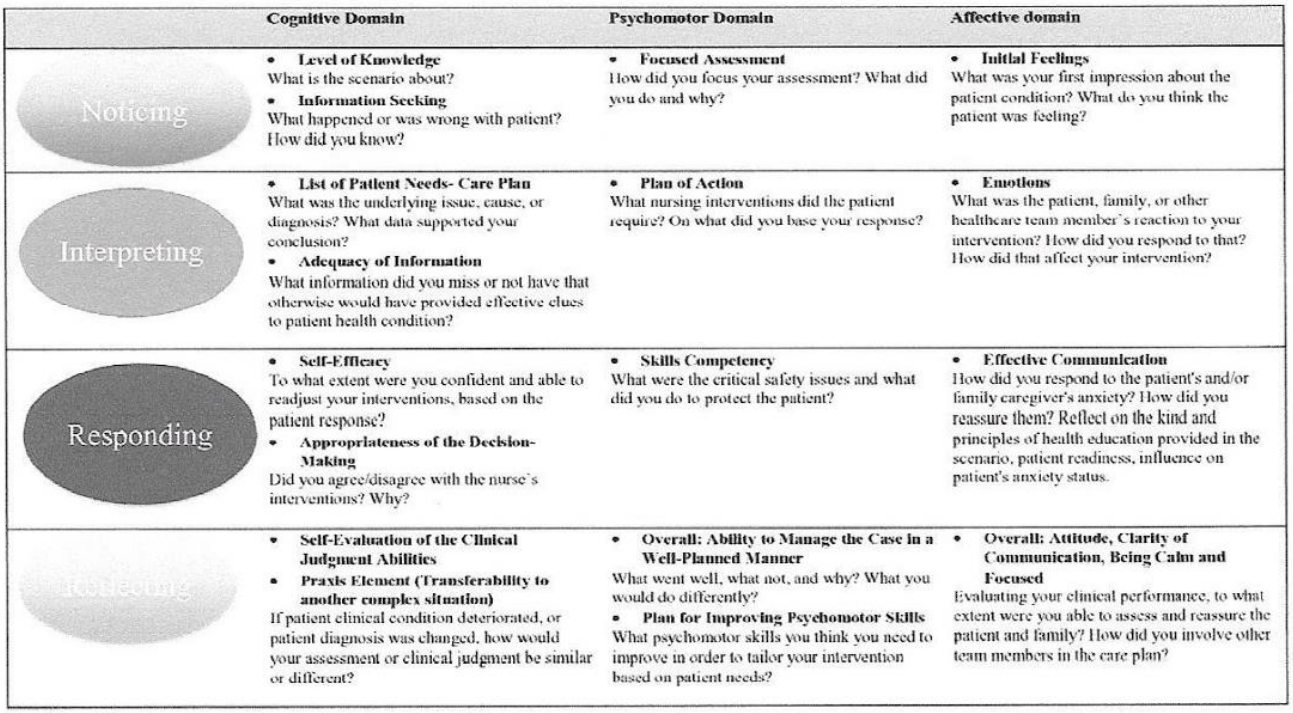
Appendix A

Integrated Reflective Debriefing Guide for Promoting Clinical Judgment (IRDG-CJ)



	Cognitive Domain	Psychomotor Domain	Affective domain
Noticing	• **Level of Knowledge** What is the scenario about? • **Information Seeking** What happened or was wrong with patient? How did you know?	• **Focused Assessment** How did you focus your assessment? What did you do and why?	• **Initial Feelings** What was your first impression about the patient condition? What do you think the patient was feeling?
Interpreting	• **List of Patient Needs- Care Plan** What was the underlying issue, cause, or diagnosis? What data supported your conclusion? • **Adequacy of Information** What information did you miss or not have that otherwise would have provided effective clues to patient health condition?	• **Plan of Action** What nursing interventions did the patient require? On what did you base your response?	• **Emotions** What was the patient, family, or other healthcare team member's reaction to your intervention? How did you respond to that? How did that affect your intervention?
Responding	• **Self-Efficacy** To what extent were you confident and able to readjust your interventions, based on the patient response? • **Appropriateness of the Decision-Making** Did you agree/disagree with the nurse's interventions? Why?	• **Skills Competency** What were the critical safety issues and what did you do to protect the patient?	• **Effective Communication** How did you respond to the patient's and/or family caregiver's anxiety? How did you reassure them? Reflect on the kind and principles of health education provided in the scenario, patient readiness, influence on patient's anxiety status.
Reflecting	• **Self-Evaluation of the Clinical Judgment Abilities** • **Praxis Element (Transferability to another complex situation)** If patient clinical condition deteriorated, or patient diagnosis was changed, how would your assessment or clinical judgment be similar or different?	• **Overall: Ability to Manage the Case in a Well-Planned Manner** What went well, what not, and why? What you would do differently? • **Plan for Improving Psychomotor Skills** What psychomotor skills you think you need to improve in order to tailor your intervention based on patient needs?	• **Overall: Attitude, Clarity of Communication, Being Calm and Focused** Evaluating your clinical performance, to what extent were you able to assess and reassure the patient and family? How did you involve other team members in the care plan?

Note. Application of Tanner's Model of Clinical Judgment, Lasater Clinical Judgment Rubric, and Bloom's Taxonomy of Learning to create a structured reflective debriefing guide for promotion of clinical judgment.

Fig. 1. Integrated reflective debriefing guide for promoting clinical judgment (IRDG-CJ). *Note.* Application of Tanner's Model of Clinical Judgment, Lasater Clinical Judgment Rubric, and Bloom's Taxonomy of Learning to create a structured reflective debriefing guide for promotion of clinical judgment.

Note. The Integrated Reflective Debriefing Guide for Promoting Clinical Judgement (IRDG-CJ) adapted to enhance debriefing practices of faculty at the project site. "Simulation debriefing for clinical judgment development: A concept analysis" by S.D. Al Sabei and K. Lasater, 2016, *Nurse Education Today, 45*, p.45.

Appendix B

Lasater Clinical Judgement Rubric

LASATER CLINICAL JUDGMENT RUBRIC
Responding and Reflecting

Effective RESPONDING involves:	Exemplary	Accomplished	Developing	Beginning
Calm, Confident Manner	Assumes responsibility: delegates team assignments, assess the client and reassures them and their families	Generally displays leadership and confidence, and is able to control/calm most situations; may show stress in particularly difficult or complex situations	Is tentative in the leader's role; reassures clients/families in routine and relatively simple situations, but becomes stressed and disorganized easily	Except in simple and routine situations, is stressed and disorganized, lacks control, making clients and families anxious/less able to cooperate
Clear Communication	Communicates effectively; explains interventions; calms/reassures clients and families; directs and involves team members, explaining and giving directions; checks for understanding	Generally communicates well; explains carefully to clients, gives clear directions to team; could be more effective in establishing rapport	Shows some communication ability (e.g., giving directions); communication with clients/families/team members is only partly successful; displays caring but not competence	Has difficulty communicating; explanations are confusing, directions are unclear or contradictory, and clients/families are made confused/anxious, not reassured
Well-Planned Intervention/Flexibility	Interventions are tailored for the individual client; monitors client progress closely and is able to adjust treatment as indicated by the client response	Develops interventions based on relevant patient data; monitors progress regularly but does not expect to have to change treatments	Develops interventions based on the most obvious data; monitors progress, but is unable to make adjustments based on the patient response	Focuses on developing a single intervention addressing a likely solution, but it may be vague, confusing, and/or incomplete; some monitoring may occur
Being Skillful	Shows mastery of necessary nursing skills	Displays proficiency in the use of most nursing skills; could improve speed or accuracy	Is hesitant or ineffective in utilizing nursing skills	Is unable to select and/or perform the nursing skills
Effective REFLECTING involves:	**Exemplary**	**Accomplished**	**Developing**	**Beginning**
Evaluation/Self-Analysis	Independently evaluates/ analyzes personal clinical performance, noting decision points, elaborating alternatives and accurately evaluating choices against alternatives	Evaluates/analyzes personal clinical performance with minimal prompting, primarily major events/decisions; key decision points are identified and alternatives are considered	Even when prompted, briefly verbalizes the most obvious evaluations; has difficulty imagining alternative choices; is self-protective in evaluating personal choices	Even prompted evaluations are brief, cursory, and not used to improve performance; justifies personal decisions/choices without evaluating them
Commitment to Improvement	Demonstrates commitment to ongoing improvement: reflects on and critically evaluates nursing experiences; accurately identifies strengths/weaknesses and develops specific plans to eliminate weaknesses	Demonstrates a desire to improve nursing performance: reflects on and evaluates experiences; identifies strengths/weaknesses; could be more systematic in evaluating weaknesses	Demonstrates awareness of the need for ongoing improvement and makes some effort to learn from experience and improve performance but tends to state the obvious, and needs external evaluation	Appears uninterested in improving performance or unable to do so; rarely reflects; is uncritical of him/herself, or overly critical (given level of development); is unable to see flaws or need for improvement

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LASATER CLINICAL JUDGMENT RUBRIC
Noticing and Interpreting

Effective NOTICING involves:	Exemplary	Accomplished	Developing	Beginning
Focused Observation	Focuses observation appropriately; regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information	Regularly observes/monitors a variety of data, including both subjective and objective; most useful information is noticed, may miss the most subtle signs	Attempts to monitor a variety of subjective and objective data, but is overwhelmed by the array of data; focuses on the most obvious data, missing some important information	Confused by the clinical situation and the amount/type of data; observation is not organized and important data is missed, and/or assessment errors are made
Recognizing Deviations from Expected Patterns	Recognizes subtle patterns and deviations from expected patterns in data and uses these to guide the assessment	Recognizes most obvious patterns and deviations in data and uses these to continually assess	Identifies obvious patterns and deviations, missing some important information; unsure how to continue the assessment	Focuses on one thing at a time and misses most patterns/deviations from expectations; misses opportunities to refine the assessment
Information Seeking	Assertively seeks information to plan intervention: carefully collects useful subjective data from observing the client and from interacting with the client and family	Actively seeks subjective information about the client's situation from the client and family to support planning interventions; occasionally does not pursue important leads	Makes limited efforts to seek additional information from the client/family; often seems not to know what information to seek and/or pursues unrelated information	Is ineffective in seeking information; relies mostly on objective data; has difficulty interacting with the client and family and fails to collect important subjective data
Effective INTERPRETING involves:	**Exemplary**	**Accomplished**	**Developing**	**Beginning**
Prioritizing Data	Focuses on the most relevant and important data useful for explaining the client's condition	Generally focuses on the most important data and seeks further relevant information, but also may try to attend to less pertinent data	Makes an effort to prioritize data and focus on the most important, but also attends to less relevant/useful data	Has difficulty focusing and appears not to know which data are most important to the diagnosis; attempts to attend to all available data
Making Sense of Data	Even when facing complex, conflicting or confusing data, is able to (1) note and make sense of patterns in the client's data, (2) compare these with known patterns (from the nursing knowledge base, research, personal experience, and intuition), and (3) develop plans for interventions that can be justified in terms of their likelihood of success	In most situations, interprets the client's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or complicated cases where it is appropriate to seek the guidance of a specialist or more experienced nurse	In simple or common/familiar situations, is able to compare the client's data patterns with those known and to develop/explain intervention plans; has difficulty, however, with even moderately difficult data/situations that are within the expectations for students, inappropriately requires advice or assistance	Even in simple of familiar/common situations has difficulty interpreting or making sense of data; has trouble distinguishing among competing explanations and appropriate interventions, requiring assistance both in diagnosing the problem and in developing an intervention

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Note. Permission for use given by K. Lasater, personal communication, July 17, 2017 (see Appendix E).

Appendix C

Debriefing Assessment for Simulation in Healthcare

CENTER FOR MEDICAL SIMULATION

Debriefing Assessment for Simulation in Healthcare (DASH)© Score Sheet

Directions: Rate the quality of the debriefing using the following effectiveness scale on six Elements. Element 1 allows you to rate the introduction to the simulation course and will not be rated if you do not observe the introduction. The Elements encompass Dimensions and Behaviors pertinent to the debriefing as defined in the DASH Rater's Handbook. Within each Element, the debriefing may range from outstanding to detrimental. Please note that the overall Element score is *not* derived by averaging scores for individual Dimensions or Behaviors. Think holistically and not arithmetically as you consider the cumulative impact of the Dimensions, which may not bear equal weight. You, the rater, weight dimensions as you see fit based on **your holistic view of the Element**. If a Dimension is impossible to assess (e.g., how well an upset participant is handled during a debriefing if no one got upset), skip it and don't let that influence your evaluation.

Rating Scale

Rating	1	2	3	4	5	6	7
Descriptor	**Extremely Ineffective / Detrimental**	Consistently Ineffective / Very Poor	Mostly Ineffective / Poor	Somewhat Effective / Average	Mostly Effective / Good	Consistently Effective / Very Good	**Extremely Effective / Outstanding**

Element 1 assesses the introduction at the beginning of a simulation-based exercise.
(This element should be skipped if the rater did not observe the introduction to the course.)

Element 1 **Establishes an engaging learning environment.**	**Element 1 Rating:**

- Clarifies course objectives, environment, confidentiality, roles, and expectations.
- Establishes a "fiction contract" with participants.
- Attends to logistical details.
- Conveys a commitment to respecting learners and understanding their perspective.

Elements 2 through 6 assess a debriefing.

Element 2 **Maintains an engaging learning environment.**	**Element 2 Rating:**

- Clarifies debriefing objectives, roles, and expectations.
- Helps participants engage in a limited-realism context.
- Conveys respect for learners and concern for their psychological safety.

Element 3 **Structures the debriefing in an organized way.**	**Element 3 Rating:**

- Encourages trainees to express their reactions and, if needed, orients them to what happened in the simulation, near the beginning.
- Guides analysis of the trainees' performance during the middle of the session.
- Collaborates with participants to summarize learning from the session near the end.

Element 4 **Provokes engaging discussion.**	**Element 4 Rating:**

- Uses concrete examples and outcomes as the basis for inquiry and discussion.
- Reveals own reasoning and judgments.
- Facilitates discussion through verbal and non-verbal techniques.
- Uses video, replay, and review devices (if available).
- Recognizes and manages the upset participant.

Element 5 **Identifies and explores performance gaps.**	**Element 5 Rating:**

- Provides feedback on performance.
- Explores the source of the performance gap.

Element 6 **Helps trainees achieve or sustain good future performance.**	**Element 6 Rating:**

- Helps close the performance gap through discussion and teaching.
- Demonstrates firm grasp of the subject.
- Meets the important objectives of the session.

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Note. Permission for use is open source. "Debriefing Assessment for Simulation in Healthcare (DASH)© – Rater Version," by R. Simon, D.B. Raemer, and J.W. Rudolph, 2011. Center for Medical Simulation, Boston, Massachusetts.

Appendix D

Evidence Matrix

Article (APA Citation)	Level of Evidence (I to VII)	Data/Evidence Findings	Conclusion	Use of Evidence in EBP Project Plan
Adamson, K.A., Gubrud, P., Sideras, S., & Lasater, K. (2012). Assessing the reliability, validity, and use of the Lasater clinical judgment rubric: Three approaches. *Journal of Nursing Education, 51*(2), 66-73. doi:http://dx.doi.org.jproxy.lib.ecu.edu/10.3928/01484834-20111130-03	**II**	Review of studies using LCJR since its introduction in 2007. Interrater reliability ranges 0.57-1.0. Breakdown of various validities and studies that report the results that correlate to the validity.	Interrater reliability has been figured for several studies since 2007. Wide ranges of results, mostly favorable make experts confident in the use yet cautious to continue tracking the reliability in future studies.	Use of the LCJR is supported by current studies. Aware that figuring interrater reliability will add to the current research.
Adib-Hajbaghery, M., & Sharifi, N. (2017). Effect of simulation training on the development of nurses and nursing students' critical thinking: A systematic literature review. *Nurse Education Today, 50*, 17-24. doi:S0260-6917(16)30307-0 [pii]	**I**	N=16. 8/16 articles found positive effect on critical thinking; 8/16 for inconsistent results.	Possible lack of consistent instruments and scenarios for simulation can possibly yield the inconsistent results of the effect simulation has on critical thinking.	The need to use instruments for standardizing simulation activities is desired. The focus of this article is clear to state the exclusion of clinical reasoning and does not view them as interchangeable phrases.

Ashcraft, A. S., Opton, L., Bridges, R. A., Caballero, S., Veesart, A., & Weaver, C. (2013). Simulation evaluation using a modified Lasater clinical judgment rubric. *Nursing Education Perspectives, 34*(2), 122-126. Retrieved from http://search.proquest.com.jproxy.lib.ecu.edu/docview/1350295199?accountid=10639	**V**	Phase 1 N=86 Formative and summative evaluations completed with statistical significance (p=0.000), Cronbach's alpha =0.825, 0.91 Phase 2 N= 102 Formative and summative evaluations found statistical significance (p=0.000), Cronbach alpha's = 0.915, 0.927.	Using the LCJR in place of a checklist is more holistic and provides a greater illustration of clinical reason, as compared to a checklist of competence.	Use of LCJR enhances nursing faculty simulation/debriefing practice and is a tool to evaluate outcomes.
Chan, Z. C. Y. (2013). A systematic review of critical thinking in nursing education. *Nurse Education Today, 33*(3), 236-240. doi:10.1016/j.nedt.2013.01.007	**V**	N=17. Discovered four themes following review of literature. The student, the educators, the education system, and the atmosphere/environment.	Critical thinking learning can be situational and dependent on several factors. Educators should be aware of the conditions and be flexible to offer the best format for the moment.	The impact that educators themselves make on the students growth. Educators should be aware of what they bring to the environment either positive or negative.
Cheng, A., Grant, V., Dieckmann, P., Arora, S., Robinson, T., & Eppich, W. (2015). Faculty development for simulation programs: Five issues for the future of debriefing training. *Simulation in Healthcare: Journal of the Society for Simulation in Healthcare, 10*(4), 217-222. doi:10.1097/SIH.0000000000000090 [doi]	**VII**	Comparison of two tools used to evaluate debriefing sessions, DASH and OSAD. Discussion of faculty development and 5 issues of debriefing. Purposed model t develop debriefing in education.	Detail information of the DASH evaluation tool and comparison of its use in practice. Expert discussion of observations with debriefing practice in the profession. Recommendations for professionals who use debriefing.	DASH information for lit review explanation. Highlight concerns experienced with debriefing practices that faculty can experience, increasing the necessity of evaluation for professional growth.

Dreifuerst, K. T. (2012). Using debriefing for meaningful learning to foster development of clinical reasoning in simulation. *Journal of Nursing Education, 51*(6), 326-333. doi:http://dx.doi.org.jproxy.lib.ecu.edu/10.3928/01484834-20120409-02	**II**	N=238. Intervention group received DML debriefing, control group (customary debriefing). Significance found ($p<0.05$) for higher posttest clinical reasoning scores in the intervention group. DASH-SV scores found to be significant in the intervention group ($p=0.001$) for higher scores except item #1.	Both the DML and DASH tool used to evaluate debriefing. DML for student evaluation and DASH for debriefing evaluation. Statistical significance found in DML both from a student clinical reasoning score and the DASH evaluation.	Debriefing can be evaluated for effectiveness and success of facilitator. DASH is a tool that can be used to evaluate the session. Connection between debriefing and clinical reasoning growth.
Dufrene, C., & Young, A. (2014). Successful debriefing - best methods to achieve positive learning outcomes: A literature review. *Nurse Education Today, 34*(3), 372-376. doi:10.1016/j.nedt.2013.06.026 [doi]	**I**	Studies found comparing types of debriefing strategies. Findings indicate that faculty lead debriefing is the most comment type but is not the only type. A lack of evidence to demonstrate the outcomes among different approaches.	Studies agree as a whole that debriefing has a positive impact on learner outcomes, despite the type of debriefing used.	Debriefing as an evidence-based practice that increases outcomes over simulation alone. Limitations are the lack of sufficient research for debriefing compared to the plethora of research for simulation.
Forneris, S. G., Neal, D. O., Jones, T., Kuehn, M. B., Meyer, H. M., Blazovich, L. M., Holland, A. E., & Smerillo, M. (2015). Enhancing clinical reasoning through simulation debriefing: A multisite study. *Nursing Education Perspectives, 36*(5), 304-310. doi:10.5480/15-1672	**II**	N=153. 78 randomly assigned to intervention group (DML debriefing), 75 assigned to control group (usual debriefing). Pretest/posttest used to compare results. Significance ($p=.09$) found for higher posttest scores in the intervention group.	DML debriefing can yield greater posttest results and improve student understanding of simulation/ clinical content.	Debriefing is affective in improving clinical reasoning scores.

Hayden, J. K., Smiley, R. A., Alexander, M., Kardong-Edgren, S., & Jeffries, P. R. (2014). Supplement: 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), C1-S64	**II**	N=666 Control group given 25% clinical hours replaced with simulation Experimental group 50%. No statistical difference (p=0.688) of clinical performance at end. Follow-up survey at 6 weeks, 3mos, and 6 mos found no difference in performance. (p=0.706, 0.511, 0.527)	Using simulation in place of clinical hours is acceptable and produces the same clinical outcomes as traditional clinical hours. Faculty can use up to 50% of simulation for clinical hours.	The findings of this article have been accepted by National Council of State Boards of Nursing (NCSBON) and National League of Nursing (NLN). Recommendations have followed the study for faculty and schools of nursing to include simulation up to 50% of clinical time. This study is a strong evidence-based research study. Large sample size of 666. Thorough forms of evaluation utilizing 6 different forms of evaluation including the weekly, end of semester, end of program, and the NCLEX exam. Follow-up well studied with 3 separate surveys post-graduation for nursing students and managers at employment. Limitations of the study include, nonrandomization of universities, groups were not blinded therefore creating bias, students responsible for end of program survey distribution and manager survey delivery.

Hickerson, K. A., Taylor, L. A., & Terhaar, M. F. (2016). The preparation-practice gap: An integrative literature review. *The Journal of Continuing Education in Nursing, 47*(1), 17-23. doi:http://dx.doi.org.jproxy.lib.ecu.edu/10.3928/00220124-20151230-06	**V**	N=50 Review of literature	Preparation – practice gap has three themes: the practice gap exists, it is costly, and closing the gap will rely on undergraduate education.	The task that prelicensure programs have effect the nursing profession postgraduation. Limitations include a lack of level 1 and 2 articles.
Killam, L. A., Luhanga, F., & Bakker, D. (2011). Characteristics of unsafe undergraduate nursing students in clinical practice: An integrative literature review. *Journal of Nursing Education, 50*(8), 437-446. doi:http://dx.doi.org.jproxy.lib.ecu.edu/10.3928/01484834-20110517-05	**V**	N=11. Found three themes in nursing students in clinical practice: ineffective interpersonal interactions, knowledge and skill incompetence, unprofessional image.	Traditional clinical experiences have a risk with unsafe student behavior	The importance of finding innovative, safe methods to teach clinical.
Killam, L. A., & Heerschap, C. (2013). *Challenges to student learning in the clinical setting: A qualitative descriptive study* doi:http://dx.doi.org/10.1016/j.nedt.2012.10.008	**VI**	N=5, n=6. Two clinical groups, junior group, senior group. Asked to describe clinical safety and environments. Three themes found: internal reactions to external limitations, barriers experienced within the clinical environment, ineffective program organization.	Traditional clinical experiences can harvest negative experiences, barriers, and environments from the students' perspective.	Further need to explore innovative clinical experience. Traditional clinical could be ineffective in the opinions of students. Small sample size is a limitation. Different geographic region (Canada)

Lasater, K. (2007). Clinical judgment development: Using simulation to create an assessment rubric. *The Journal of Nursing Education, 46*(11), 496.	**VI**	Qualitative-Quantitative-Qualitative exploratory study. N=26. No statistical significance found from small sample size. 5 themes emerged-strengths and limitations of simulation, paradoxical nature of simulation, desire for more feedback, students' connection with others, and improving facilitation recommendations.	LCJR is a tool that aids in communication of performance and illustrates trends in simulation/ clinical practice. Students and faculty understand the language and is clear to use to reach goals.	LCJR is beneficial to faculty and students as an evaluation tool and communication tool of objectives. Can monitor student's progress clearly.
Lee, J., & Oh, P. (2015). Effects of the use of high-fidelity human simulation in nursing education: A meta-analysis. *Journal of Nursing Education, 54*(9), 501-507. doi:http://dx.doi.org.jproxy.lib.ecu.edu/10.3928/01484834-20150814-04	**I**	26 controlled trials using 2,031 nursing students. Cohen's effect size used to report data. Findings reveal that simulation yields an effect size of -0.97 for problem-solving, -0.67 for critical thinking, -2.15 for clinical judgment. Clinical competence was -0.81. Limitations are the low number of RCT, most studies have non-equivocal groups.	Simulation has a strong effect on problem-solving, critical thinking, clinical judgement, and clinical competence throughout the world.	Simulation can be used to enhance psychomotor learning of nursing students.
Rudolph, J. W., Palaganas, J., Fey, M. K., Morse, C. J., Onello, R., Dreifuerst, K. T., & Simon, R. (2016). A DASH to the top: Educator debriefing standards as a path to practice readiness for nursing students. *Clinical Simulation in Nursing, 12*(9), 412-417. Doi:10.1016/j.ecns.2016.05.003	**VII**	Experts in simulation and debriefing explain the DASH evaluation process. Debrief competence importance explained using evidence-based practice.	DASH is a recommended tool to evaluate faculty and/or the debriefing portion of simulation. Competence in debriefing has barriers and needs to improve.	DASH is a professionally accepted tool to use for faculty evaluation in debriefing. Evaluation of faculty can lead to professional and organizational development.

Shinnick, M. A., Woo, M., Horwich, T. B., & Steadman, R. (2011). *Debriefing: The most important component in simulation? d*oi:http://dx.doi.org.jproxy.lib.ecu.edu/10.1016/j.ecns.2010.11.005	**III**	N=162, pretest posttest experimental group comparing the control group simulation and debriefing together followed by a posttest and an experimental group using simulation-posttest followed by debriefing posttest. Posttest scores increase significantly in control group (p=<.001). Also found was the test scores in experimental group following simulation alone were significantly lower (p=<.001).	Using debriefing with simulation improves students understand of the clinical scenario and enhances learning. Surprisingly, simulation alone can create confusion for students; causing lower test scores	The importance of debriefing included with simulation.
Victor-Chmil, J., & Larew, C. (2013). Psychometric properties of the Lasater clinical judgment rubric. *International Journal of Nursing Education Scholarship, 10*, 10.1515/ijnes-2012-0030. doi:10.1515/ijnes-2012-0030 [doi]	**II**	Review of studies using LCJR since its introduction in 2007. Interrater reliability ranges 0.57-1.0. Breakdown of various validities and studies that report the results that correlate to the validity.	Interrater reliability has been figured for several studies since 2007. Wide ranges of results, mostly favorable make experts confident in the use yet cautious to continue tracking the reliability in future studies.	Use of the LCJR is supported by current studies. Aware that figure interrater reliability will add to the current research.

Note. The evidence matrix is a table that illustrates the major sources used from the literature review. The information in the table provides the level of evidence, the summary of the article, and the information that was used for this paper from each source.

Appendix E

Lasater Letter of Approval

Hi Alison,

Thank you for your interest in the Lasater Clinical Judgment Rubric (LCJR). You have my permission to use the tool for your project. I ask that you (1) cite it correctly, and (2) send me a paragraph or two to let me know a bit about your project when you've completed it, including how you used the LCJR. In this way, I can help guide others who may wish to use it. Please let me know if it would be helpful to have an electronic copy.

You should also be aware that the LCJR describes four aspects of the Tanner Model of Clinical Judgment—Noticing, Interpreting, Responding, and Reflecting—and as such, does not measure clinical judgment because clinical judgment involves much of what the individual student/nurse brings to the unique patient situation (see Tanner, 2006 article). We know there are many other factors that impact clinical judgment in the moment, many of which are impacted by the context of care and the needs of the particular patient.

The LCJR was designed as an instrument to describe the trajectory of students' clinical judgment development over the length of their program. The purposes were to offer a common language between students, faculty, and preceptors in order to talk about students' thinking and to serve as a help for offering formative guidance and feedback (See Lasater, 2007; Lasater, 2011). For measurement purposes, the rubric appears to be most useful with multiple opportunities for clinical judgment vs. one point/patient in time.

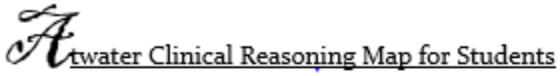
Please let me know if I can be of further help—best wishes with your project,

Kathie

Kathie Lasater, EdD, RN, ANEF, FAAN
Professor
OHSU School of Nursing
3455 SW Veterans' Hospital Rd., 4-S
Portland, OR 97239

Appendix F

Atwater Clinical Reasoning Map for Students



Directions: Use the information you have from your patient scenario, assessment, simulation session, and discussion. Complete the map beginning with "Notice", move to the "Interpret", then "Respond" and last "Reflect". Complete each row in order left to right.

Legend: The nursing process is completed within the map.

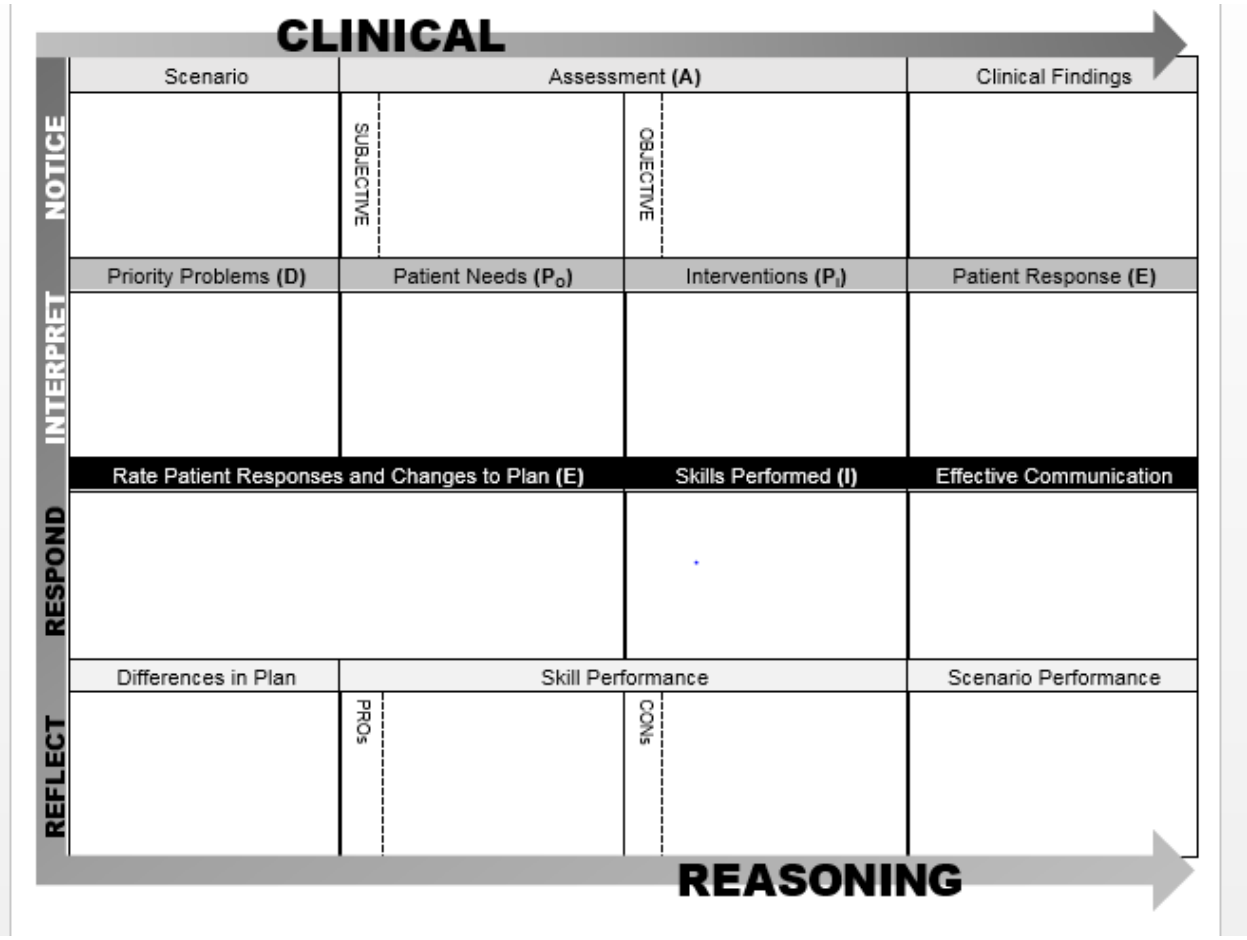
(A) Assessment

(D) Nursing Diagnosis

(P) Planning for outcomes and interventions

(I) Implementation

(E) Evaluation



Note. Atwater Clinical Reasoning Map for Students (ACRMS) was created by the Project Manager (PM) to connect the faculty use of the Integrated Reflective Debriefing Guide for Promoting Clinical Judgement (IRDG-CJ) and the student's participation as a way to follow each other with common language during the debriefing session.

Appendix G

Program Director Letter of Approval

[redacted]

June 27, 2017

To Whom It May Concern,

We at [redacted] have reviewed Alison Atwater's DNP Project title "Simulation Program System Redesign of a Prelicensure Baccalaureate Nursing Program". Ms. Atwater has organizational support and approval to conduct her project within our institution. We understand that for Ms. Atwater to achieve completion of the DNP program, dissemination of the project will be required by the University which will include a public presentation related to the project and a manuscript submission will be encouraged.

Our organization has deemed this project as a quality improvement initiative which requires institutional IRB review to ensure it is not formal research.

Thank you,

Dianne Daniels

Dianne Daniels, PhD, RN, CNE
Chair, Associate Professor
Department of Nursing

[redacted]

Appendix H

Project Site Institutional Review Board (IRB) Approval Letter

[redacted]

7 October 2017

Dr. Valerie Rakes
Ms. Alison Atwater

[redacted]

Dear Dr. Rakes and Ms. Atwater,

I am writing to confirm the receipt of your Institutional Review Board (IRB) exempt Category 1 application to conduct a research study involving human subjects entitled ***"Simulation Program System Redesign of a Prelicensure Baccalaureate Nursing Program."*** The IRB case number assigned to your application is **IRB Case 1718-006**.

Thank you. After careful review of your proposal, your application was approved on October 6, 2017. Your application has been approved through October 6, 2018 and can be renewed by submission of a renewal application prior to this date.

The approval period for this research through the [redacted] IRB will be one calendar year from the date it was initially approved. Any significant adjustments (e.g., addition of study procedures or personnel) to the research proposal should be submitted to the IRB for approval.

Should you need additional guidance or support from the IRB, please contact me directly. You can reach me via e-mail at [redacted] or by telephone at 919-238-2424.

Please accept our sincere warm wishes for much success in your interesting research.

Sincerely,

David Hollar, Ph.D.
Chair, Institutional Review Board
Associate Professor, Division of Applied Health Sciences

CC: IRB file
Dr. Tracy Espy, Provost

[redacted]

Appendix I

East Carolina University Institutional Review Board (IRB) Approval Letter

ECU
EAST CAROLINA UNIVERSITY
Office of Research Integrity and Compliance (ORIC)
University & Medical Center Institutional Review Board (UMCIRB)
Brody Medical Sciences Building, 4N-70• 600 Moye Boulevard • Greenville, NC 27834
Office 252-744-2914 • Fax 252-744-2284 • www.ecu.edu/irb

TO: Alison Atwater, ECU College of Nursing, DNP Program

FROM: Office for Research Integrity & Compliance (ORIC)

DATE: November 9, 2017

RE: Doctor of Nursing Practice (DNP) Project

TITLE: Simulation Program System Redesign of a Prelicensure Baccalaureate Nursing Program

This activity has undergone review on 11/9/17 by the ORIC. A Doctor of Nursing Practice candidate is planning a project at Pfeiffer University Department of Nursing in Misenheimer, NC to enhance standardized simulation debriefing by providing tools to the Nursing faculty and training on their use. Ms. Atwater will be the project manager and will observe these debriefings to evaluate their use by the faculty. The Pfeiffer University IRB determined the project met the Exempt status criteria at 45CFR46.101(b), category #1. The ORIC agrees with this determination and will rely on the Pfeiffer University IRB for this research study.

Contact the office if there are any changes to the activity that may require additional review.

Relevant Definitions for Human Subject Research:

- *Research* means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities
- *Human subject* means a living individual about whom an investigator (whether professional or student) conducting research obtains:
  (1) Data through intervention or interaction with the individual, or
  (2) Identifiable private information.

The UMCIRB applies 45 CFR 46, Subparts A-D, to all research reviewed by the UMCIRB regardless of the funding source. 21 CFR 50 and 21 CFR 56 are applied to all research studies under the Food and Drug Administration regulation. The UMCIRB follows applicable International Conference on Harmonisation Good Clinical Practice guidelines.

Appendix J

Demographic Participant Survey

College of Nursing
Health Sciences Building | East Carolina University | Greenville, NC 27858-4353
252-744-6433 office

Demographic Participant Survey

Select the appropriate item that accurately describes you.

1. Age: _____years
2. Race: ☐African-American ☐Asian ☐Caucasian ☐Hispanic ☐Other
3. Sex: ☐Male ☐Female ☐Transgender
4. Highest nursing degree: ☐BSN ☐MSN ☐DNP ☐PhD
5. Years of simulation experience: _____years

Appendix K

Faculty Utilization Data Record

Faculty Utilization Data Record

Date of Simulation:	1/30/2018	1/30/2018	2/5/2018	2/6/2018	3/12/2018	3/13/2018	4/9/2018	4/10/2018	4/16/2018	4/16/2018	4/18/2018	4/19/2018	4/19/2018	4/20/2018	4/20/2018	Tool Utilization
Simulation #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Tool Used by Faculty (1=yes, 0=no)																
IRDG-CJ:	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	93.3333
LCJR:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
ACRMS:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	100
Total Comprehensive Utilization:																97.7778

Key:
IRDG-CJ= Integrative Reflective Debriefing for Promoting Clinical Judgement

LCJR= Lasater Clinical Judgement Rubric

ACRMS= Atwater Clinical Reasoning Map for Students

Tool utilization = the total amount of times the individual named tool was used by faculty during the individual simulation debriefing session

Total comprehensive utilization= the percent that all three instruments were used during the simulation debriefing sessions

Appendix L

Participant Cover Letter

College of Nursing
Health Sciences Building | East Carolina University | Greenville, NC 27858-4353
252-744-6433 office

Dear Faculty,

As a candidate for Doctor of Nursing Practice, I developed with the assistance of a planning team composed of current faculty and myself, an evidence-based change project for the department of nursing *"Redesigning Simulation Debriefing Practices of a Prelicensure Baccalaureate Nursing Program"*. This is a process improvement project that will impact, the format for debriefing following simulation events. Following a standardized debriefing program will create a way for faculty development with simualtion practices in the future. This project will be implemented spring 2018, approximately January 8th through May 7th.

A faculty information session is planned to explain the details of the change project. During this session, you will be given tools that will be added to standardize debriefing for each faculty member of the nursing department. The tools that will be introduced include: Integrated Reflective Debriefing Guide for Promoting Clinical Judgement (IRDG-CJ), Lastater Clinical Judgement Rubric (LCJR), and the Atwater Clinical Reasoning Map for Students (ACRMS). As a faculty member, your utilization of the tools will be collected as data for an outcome to increase utilization of the standardized debriefing approach.

The second outcome of the project will be to evaluate each debriefing session using the Debriefing Assessment for Simulation in Healthcare-Rater Version (DASH-RV). With your permission, I will observe each debriefing session to evaluate the session for positive and negative indicators highlighted by the DASH-RV. All evaluations will be confidential and will not include any identifying information. This evaluation tool will be explained in more detail during the faculty information session.

As faculty of the nursing department, I am requesting your participation with this process inprovement project by participating in the faculty information session, utilizing the introduced tools, and allowing me to observe and evaluate each debriefing session you hold during this timeframe. Opportunity to discuss questions or concerns will be made for you during the faculty information session. My email address is alison.atwater@pfeiffer.edu if you need to contact me before the faculty information session.

Project Manager:

Alison Atwater, MSN, RN
Doctorate of Nursing Practice Student
East Carolina University

Faculty Coordinator:

Brad Sherrod, DNP, RN
East Carolina University
sherrodb16@ecu.edu