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# A Quality Improvement Project: Adopting the Standards of Best Practice in Simulation: Debriefing with PEARLS

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A Quality Improvement Project:

Adopting the Standards of Best Practice in Simulation: Debriefing with PEARLS

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By

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## **Abstract**

### **Background**

There is evidence the best practices of simulation, specifically, the use of debriefing, will assist the new graduate nurse's transition into the profession by increasing their clinical judgment. This quality improvement (QI) project explored the pedagogy of High Fidelity Simulation and Debriefing as a solution for the lag in New Graduate Nurse (NGN) practice readiness. The specific aims of this project were: 1) to teach the NGN residency educators how to implement Standard: Debriefing of the International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practices: Simulation<sup>SM</sup> by focusing on the role of the debriefer; 2) to teach NGN residency educators to use the Promoting Excellence and Reflective Learning in Simulation (PEARLS) (Eppich & Cheng, 2015) methodology of debriefing; and 3) to assess if the Lasater Clinical Judgment Rubric (LCJR) is applicable for measuring NGNs' clinical judgment development.

### **Project Design**

This QI project examined the use of simulation and reflective debriefing on two groups: the residency educators and the NGN. The project employed two, single-comparison group pre/post testing to evaluate: 1) the effect PEARLS on educators' debriefing effectiveness; 2) the use of PEARLS on NGN clinical judgment; 3) the applicability of the LCJR for evaluating the NGN development of clinical judgment. Eight NGN residency educators were taught to use PEARLS as a method to implement the INACSL Standard: Debriefing. The DASH instrument was used to for pre/post teaching comparison of educators' debriefing efficiency and the LCJR was used to compare NGN clinical judgment.

## **Results**

Overall, when compared to baseline scores, the summative DASH scores were higher. Eighty-eight percent of the residency educators advanced in every DASH subscale with two exceptions: two different educators stayed the same on elements five and six, respectively. The LCJR was used to evaluate the NGN's development of clinical judgment at beginning and end of their residency program. One hundred percent ( $n = 6$ ) of the summative LCJR scores were higher than baseline. Of the eleven subscales, 33% of the NGN demonstrated progression on all eleven subscales. Fifty percent demonstrated progression on 10 of the 11 subscales. One hundred percent of the NGNs demonstrated progress on four subscales. A questionnaire using a Likert scale found all residency educators strongly agreed the LCJR was applicable for evaluating NGNs' development of clinical judgment and should be adopted as the standard measurement of NGN readiness for independent practice. Additionally, all strongly agreed the PEARLS method of debriefing should be adopted as the standard measurement of the residency educator's debriefing efficiency.

## **Conclusions & Recommendations:**

The residency educators' effectiveness at reflective debriefing improved when they used the PEARLS method of debriefing. Based on this improvement, it is recommended that they adopt the PEARLS method as the standard method used in their NGN residency program. Additionally, because all educators strongly agreed in the LCJR's applicability for measuring NGN clinical judgment, they should adopt and use it as a determinant for NGN readiness for practice.

**Keywords: Debriefing, Best Practices: Simulation, Nursing Residency, PEARLS**

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## Adopting the Standards of Best Practice: Simulation: Debriefing with PEARLS

### **Problem**

New graduate nurses (NGNs) enter the nursing profession lacking readiness for practice (Del Bueno, 2005). In 2009, the National Council of State Boards of Nursing (NCSBN) recognized a gap between pre-licensure education and actual clinical practice and an ensuing lag causing NGNs lack of practice readiness. The summative effect of these issues is a significant concern affecting the Triple Aim, the nursing profession, and patients (Beyea, Slattery, & Reyn, 2010; McMenam, 2014). The gap and lag are associated with a cascade of problems for patient safety, hospital staff morale, recruitment and orientation costs, and retention of nursing personnel (Del Bueno, 2005; Krozek, 2008; National Council of State Boards of Nursing, 2009). The literature identifies high fidelity simulation with subsequent reflective debriefing as a key component to integrate into new graduate residency programs to address this gap, but few nurse residency educators are skilled in these teaching methodologies (Beyea et al., 2010, Dreifuerst 2010, and Decker et al., 2013).

### **Problem Change**

The purpose of this quality improvement project was to explore the way the educators in the new graduate nurse (NGN) residency program used simulation and debriefing. The project explored the usefulness of high fidelity simulation with subsequent reflective debriefing, the simulation pedagogy, as a solution for the lag affecting the practice readiness of NGN. The project also explored the process and effects of adopting INACSL Standards of Best Practice: Debriefing in a NGN residency program as an effective method to prepare the NGNs to apply critical inquiry and the clinical judgment necessary for independent practice (Decker et al., 2013). Likewise, the NGN residency educators used the project to consider the usefulness and applicability of the LCJR as an instrument to measure NGN's clinical judgment development.



**Background and Literature Review**

New graduate nurses transitioning into a professional role for which they are not adequately prepared, is not a new problem. Del Bueno (2005) reported this observation more than 10 years ago. A thorough review of the literature (Appendix A) revealed a problem of new nurses entering the nursing profession lacking in readiness and clinical judgment and it also provided evidence of a pedagogy to solve it. Currently, NGNs are entering the profession ill prepared at the same time the nursing workforce is aging and retiring, adding to an already present expertise gap (Beyea et al., 2010; Krozek, 2008). NGNs often enter the profession via a new graduate nurse residency program. These residencies need to provide sufficient clinical immersion to adequately prepare the NGNs to assume the complexity of their new role (Krozek, 2008). Participating in a NGN residency program, the NGNs begin to link concepts learned during education to real world application. Yet, even when enrolled in a NGN residency program, limitations may remain. In the actual clinical setting, the NGN's preceptor is required to maintain the patient's safety, but still facilitate the NGN's learning opportunities to practice clinical judgment (Benner, Kyriakidis, & Stannard, 2011). The creation of nurse residencies was intended to better prepare new nurses for independent practice, yet the gap between education and transition to practice remains. Now, high fidelity simulation and reflective debriefing offers pedagogy available to help NGNs transition into their professional roles and solve the problem of the education to practice gap (Beyea et al., 2010; Dieckmann, Gaba, & Rall, 2007; Eppich & Cheng, 2015; Krozek, 2008). Since both high fidelity simulation and reflective debriefing provide a safe place to practice critical thinking and clinical judgment skills, using the International Nursing Association for Clinical Simulation and Learning (INACSL) Best Practices: Simulation: Debriefing may help close the gap between education and the transition to

practice (Decker et al., 2013; Dreifuerst, 2015; Lavoie, Pepin, & Boyer, 2013; Langdorf et al., 2014).

### **Theoretical Model and Project Framework**

The Debriefing for Meaningful Learning (DML) Simulation and Debriefing Model (Dreifuerst, 2010) was utilized to guide this scholarly project (see Appendix B and Appendix C for permission to use figure 2). The model links simulation and facilitated debriefing with guided reflection to potentiate meaningful learning as demonstrated by clinical reasoning (Dreifuerst, 2010). The importance of the simulation pedagogy is the debriefing process which promotes the learner's understanding, supports the transfer of knowledge, skills, and attitudes and, thus leads to safe, quality patient care (Decker et al., 2013). Both the DML and INACSL Standards of Best Practice: Simulation place the facilitated debriefing via guided reflection at the core of the simulation pedagogy's importance. The pedagogy is effective because the guided reflection potentiates the meaningful learning demonstrated by the NGN's clinical reasoning (Dreifuerst, 2010; Decker et al., 2013). In the realistic clinical environment produced by high fidelity simulation, a learner has opportunities to function within a client's story using the nursing process and skills. The DML framed the project and guided the choices of the intervention, teaching tools, method of comparison, and the outcome measurement.

The project also utilized the Kellogg Logic Model (Appendix D) as an organizational framework which provided a detailed visual plan for this project including resources, activities, outputs, short and long-term outcomes, and impact. Twelve of the 16 project outcomes (Appendix D) are described in the next section. The first twelve outcomes occurred during the planning, implementation, and analysis phases in the timeframe. Phase 2 Outcomes 13, 14, 15, and 16 occur outside of the DNP project timeline and will not be presented in this final report.

### **Implementation Process Analysis**

**Setting.** The project took place at the F. Marie Hall *SimLife* Center at Midland College, a state-of-the-art simulation center with a realistic hospital environment, high tech A/V equipment, software and hardware to capture, record, and play back simulation data in comfortable debriefing rooms. Since its inception in 2012, The *SimLife* Center represents a strong cooperative partnership between the community college and county hospital. Midland College and Midland Memorial Hospital (MMH) continue to maintain a memorandum of understanding and share the operating expenses of the center. Key stakeholders included NGNs, the NGN residency educators, hospital administrators, and simulation center staff.

**Target Participants.** There were two groups of interest for this scholarly project: the residency educators ( $n = 8$ ) and the 2016 June-October cohort of NGNs ( $n = 18$ ). The makeup of the eight educators is as follows. Their ages ranged from 24-60. Two were younger than 30; four were between 40-50; and two were between 55-60. Five educators were BSN prepared, two were Masters prepared, and one held a DNP. Although each residency educator was a subject expert, many lacked skills for using the high fidelity simulation and reflective debriefing methodologies. The second group of interest was the June-October NGN cohort enrolled in the nursing residency program at MMH. At time of summative data collection, only six NGNs were available for inclusion. Demographic data collected shows these six NGNs to be mostly female (83%), either 18-23 years old (50%) or 24-29 years (50%); three are ADN and three are BSN; all six have been a nurse for less than six months.

**Environmental Influences.** Examination of the environment indicated the likelihood of a successful QI project. An analysis of strengths, weaknesses, opportunities, and threats conducted in 2015 (see Appendix E), indicated an abundance of strengths and opportunities, a

few weaknesses, and minimal threats. MMH was a dependable stakeholder having been financial contributors to the *SimLife* Center and conducting the NGN residency program with a dedicated budget for staff and three cohorts annually since 2009. Socially, from the top management, the CEO/president and the CNO, to the residency manager and educators, all were committed stakeholders of this QI project because it offered an opportunity to train their residency educators on the best practices of simulation. These same stakeholders were excited by the opportunity of learning, using, and potentially adopting a pedagogy that allows their NGNs to develop clinical judgment from mistakes in a simulated environment. Despite many strengths and opportunities to support the success of this quality improvement project, there were two powerful weaknesses to mitigate: 1) the pedagogy comes with a steep learning curve that causes many to be slow to adopt it and 2) a possibility that the residency educators might not want to change from the way they have always done it.

**Implementation Strategies.**

The implementation phase was estimated to take the four months between April and August and included several tasks. The following section will include details about the training program used to teach the standards of best practices for the debriefing process, the pre and post intervention data collection for the DASH, LCJR, and participant's perceptions of these tools. Finally, the actions for analyzing these data will be included.

*Training Program:*

During the first hour of training, all educators viewed a PowerPoint presentation on the INACSL Standards of Best Practice: Simulation. The second hour focused on debriefing. During the final two hours, all educators were given an introduction and opportunity to practice using the PEARLS and the LCJR. Each participant received a bound copy of the INACSL standards and laminated copies of PEARLS (Appendix F) and LCJR (Appendix G). During the training

program, they practiced using the PEARLS and LCJR in a six-step sequence: 1) all educators watched a pre-recorded high fidelity simulation; 2) all educators paired off for a role-playing exercise to practice using PEARLS method of debriefing; 3) during a 20-minute period, one educator played the role of the debriefer to the other who played the role of the student; 4) each educator used their copy of the PEARLS laminated reference card to debrief their “student” partner for 10 minutes; 5) all NGN educators received training on proper use of the LCJR listening to a podcast from Kathie Lasater and a viewing a video of Katie Adamsom demonstrating use of the LCJR in a recorded high fidelity simulation; and 6) after the podcast and video, all educators practiced using the rubric. Following the training, all educators were asked to complete a course evaluation (Appendix I).

*Pre and post intervention data collection: DASH and LJRC*

The Debriefing Assessment for Simulation in Healthcare (DASH) (Appendix N) is an instrument designed to evaluate debriefing strategies and techniques. Furthermore, the DASH serves as a tool to develop skillful debriefing (Center for Medical Simulation, 2016). According to their website, the Center for Medical Simulation (CMS) reports the DASH is based on extensive literature review and best debriefing practices from a panel of experts (Center for Medical Simulation, 2016). In 2012, Brett-Fleegler et al. reported the DASH has good reliability and preliminary evidence of validity (Brett-Fleegler et al., 2012). The NCSBN used the DASH in the simulation study (Hayden, Smiley, Alexander, Kardong-Edgren & Jefferies, 2014).

Permission to use the DASH instrument in one’s simulation center is granted on the CMS at [harvardmedsim.org](http://harvardmedsim.org). The DASH uses an effectiveness scale ranging from *outstanding* (7) to *detrimental* (1) to track and rate six key elements of debriefing: 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. (Brett-Fleegler et al., 2012). Prior to using the DASH, the project manager (PM) became a certified rater through CMS. The DASH was used in this QI project to measure levels of the residency educator's debriefing effectiveness in April (baseline) and August (summative) with all the NGN residency educators.

The LCJR (Appendix G) is an evidence-based clinical judgment rubric that has been used for formative evaluation and feedback of students' clinical thinking and judgment development (Lasater, 2011). The educators used the LCJR to evaluate the NGNs' clinical judgment development. The rubric describes the development of *Noticing*, *Interpreting*, *Responding*, and *Reflecting* through eleven dimensions of clinical indicators. *Effective Noticing* involves: focused observation; recognizing deviations from expected patterns; and information seeking. *Effective Interpreting* includes: prioritizing data; making sense of data. *Effective Responding* involves: calm, confident manner; clear communication; well-planned intervention/flexibility; and being skillful. *Effective Reflecting* contains: evaluation/self-analysis; and commitment to improvement. The rubric uses four levels of development for each dimension: *Beginning*, *Developing*, *Accomplished* and *Exemplary*. The LCJR is useful for measuring development of clinical judgment, opportunity for self-assessment, and facilitating nurse educators' evaluation of clinical thinking (Lasater, 2007).

Prior to using the LCJR, the PM obtained permission to use it (Appendix H). Adamson, Gubrud, Sideras, and Schultz (2012) report extensive reliability and validity for the LCJR from a range of studies. Adamson, Kardon-Edgren, and Willhaus (2013) state the LCJR is based on its measuring student nurses and suggest a possible quality threat when the LCJR is used to measure

NGNs, however, Miraglia and Asselin (2015) have used it to measure clinical judgment in new graduate nurses. Before using the rubric, the PM made sure the residency manager and educators understood and wished to explore its applicability for evaluating NGNs. Upon their confirmation, the NGN residency manager agreed to coordinate the collection of the baseline and summative data. The manager was provided multiple copies of the LCJR with instructions to add the names of the NGN and the rater to the rubrics already labeled baseline or summative. The residency manager collected baseline data in July and summative data in August. At the end of the implementation phase, the PM collected all LCJR completed by the residency educators.

#### *Key stakeholder survey*

The PM met with each residency educator individually to administer the stakeholder survey (see Appendix J) and conduct an interview. Each educator completed the five-question Likert scale. After each educator completed the survey, the PM asked these questions: 1) What is the value of the PEARLS? 2) What other places/ways could you see the PEARLS being useful? 3) How should the DASH be used to evaluate educators for annual competency? 4) Who should use the DASH to evaluate the educators?

#### **Program Outcomes.**

The QI project explored the effects of adopting the INACSL Best Practices: Simulation on the New Graduate Nurse Residency educators and the NGNs with a total of 16 outcomes (Appendix D). Outcomes relating to memorandums of understanding, DASH certification, Institutional Review Board approval (Appendix K), Informed Consent (Appendix Q) were met prior to April, 2016. Because some outcomes are long term outcomes and will not be met in 2017, only specific project outcomes (3, 4, 6, 7, 8, 9, 10, 11, 12, & 13) are included below:

- Outcome 3: By June 2016, 50% of the NGN residency educators will participate in a training program including the INACSL Standards of Best Practices: Simulation, debriefing with PEARLS, and the LCJR.
- Outcome 4: By July, 2016, 50% of the NGN residency educators will be using the PEARLS as the method of debriefing.
- Outcomes 6, 7, & 8: By August 2016, 50% of the NGN residency educators' baseline, formative, and summative debriefing efficiency will be collected and evaluated by the project director using the DASH tool.
- Outcomes 9 & 10: By August 2016, 50% of data for baseline and summative measurements of NGNs' clinical judgment will be collected and evaluated using the LCJR.
- Outcome 11: By August 2016, 75% of the key stakeholders' data about project efficiency and outcomes using one-on-one interviews and a five-item questionnaire will be collected and evaluated.
- Outcomes 12 & 13: By March 2017, the project director will communicate project findings to stakeholders via:
  - a meeting to inform the residency educators of project findings in January 2017
  - a podium presentation for members of the simulation community at International Meeting for Simulation in Healthcare in Orlando, Florida January 30, 2017.
  - a presentation at Boise State University for peers and faculty of the Doctoral Nursing Practice Executive Session in Boise, Idaho March 9 & 10, 2017.
  - a presentation at SimLife Center spring 2017 advisory meeting in Midland, Texas.



The strategies planned for the successful completion of implementation included: 1) confirming the environment was conducive for the success of the project; 2) constructing the project so it utilized evidence of best practices found in the literature; 3) analyzing the environments; 4) continued frequent communication with stakeholders; 5) developing a logic model; 6) securing approval from Midland Memorial Hospital's and Boise State University's Institutional Review Boards to proceed; and 7) recognizing and mitigating any threats to successful implementation. The most important strategies were frequent communication between the project director and the primary stakeholders; adhering to pre-planned time-lines to prevent lengthening project time; and preventing excesses in the operational budget. There were differences, however, in the project's implementation strategies and its actual evolution.

**Project evolution.** There were three areas where the project did not proceed as planned. The number of participants from both groups were less than anticipated, there were changes in schedules, and a loss of recordings occurred.

#### *Participant Numbers*

It was anticipated that 10 nurse educators and 18 NGNs would participate in this project. However, at the time the project commenced only eight educators were available to participate. In an effort to maximize participation of these eight, the PM arranged an informational session to describe the project to the residency educators, the residency manager, and the hospital CNO. At this meeting in December 2015, the CNO and manager assured their commitment to the project. Days later, the residency manager and PM scheduled the training program and the dates to record educators' baseline debriefing for May 2016. As a result of the effort, all eight participated in the training program, baseline, and summative data collections. By November, two of the eight

educators were no longer part of the nursing residency program. The net effect was two less key stakeholders were available for post QI survey.

There were 18 NGNs in the cohort scheduled to report to the simulation center, however, only 10 were available to provide data for the LCJR at baseline and only six were evaluated on the summative collection date. It is unknown why two-thirds of the NGN were unavailable for summative data collection. Perhaps some NGNs were not required by their residency educators to return. Two of the eight educators no longer worked with the residency program. It is possible some of the NGN were actually evaluated, but the PM did not receive the LCJRs.

#### *Changes in schedules*

Originally, the completion of the implementation phase was scheduled for August, however, an unexpected adjustment to the project schedule altered the procedure for projected data collection. The change eliminated the opportunity for formative data collection and postponed the summative data collections of the DASH ratings until late August. This unanticipated schedule change impacted the date of recording the formative debriefing collection to coincide with the PM's vacation. The original plans called for the PM's coordination and recording of the seven debriefing videos, so these changes prompted the need to schedule a simulation technician to record them.

#### *Loss of recording*

However, the simulation technician forgot to hit the record button, so, none of the videos were recorded. This unanticipated consequence eliminated the option to collect formative data and postponed the timing for the summative data collection, thus moving the analyzation phase to early November. The formative data collection, built into the outcomes as a process evaluation, would have allowed the PM to assess the educators' understanding and use of the PEARLS methodology and LCJR.

## Quality Assurance

### **Bias and threats to quality.**

Institutional Review Board (IRB) approval was sought and obtained from Midland Memorial Hospital and Boise State University (see appendices K & L). Midland College provided an organizational letter of understanding (Appendix M) in support of the project. All participants in the QI project received a copy of detailed information about the project and gave written consent to participate (Appendix Q). Participants were informed of their rights to confidentiality and decline participation. To ensure confidentiality, all recordings of debriefing, surveys, DASH and LCJR results were all de-identified and stored in a secure location along with the signed consent forms. Both the DASH and LCJR are reliable and valid tools (Brett-Fleegler et al., 2012; Adamsom et al., 2013), so the PM used both DASH and LCJR as instructed to minimize possible bias.

## Results/Outcomes Analysis

**Techniques for Data Collection and Analysis.** The four sources of data for this project, the DASH (Appendix N), the LCJR (Appendix G), a survey (Appendix J), and collection of demographic data (Appendix O) were presented in previous sections. Each tool, related outcomes, measures, and findings are presented in Table 1 (Appendix P).

### **Outcome Evaluation Analysis.**

An analysis of this project's outcomes was conducted by reviewing the expected outcomes and actual outcomes. Outcomes #1 (obtain MOU), #2 (obtain IRB), and #5 (DASH certification) were successfully completed prior to the implementation phase. The remaining outcomes will be discussed below.

*Outcome #3 Met: Participation of the NGN residency educators in a training program*

One hundred percent ( $n = 8$ ) of the residency educators participated in the four-hour training program which included review of best practices of simulation and debriefing. They had time to practice the PEARLS method of debriefing and LCJR. The majority ( $n = 7$ ) participated in April and 1 participated in June.

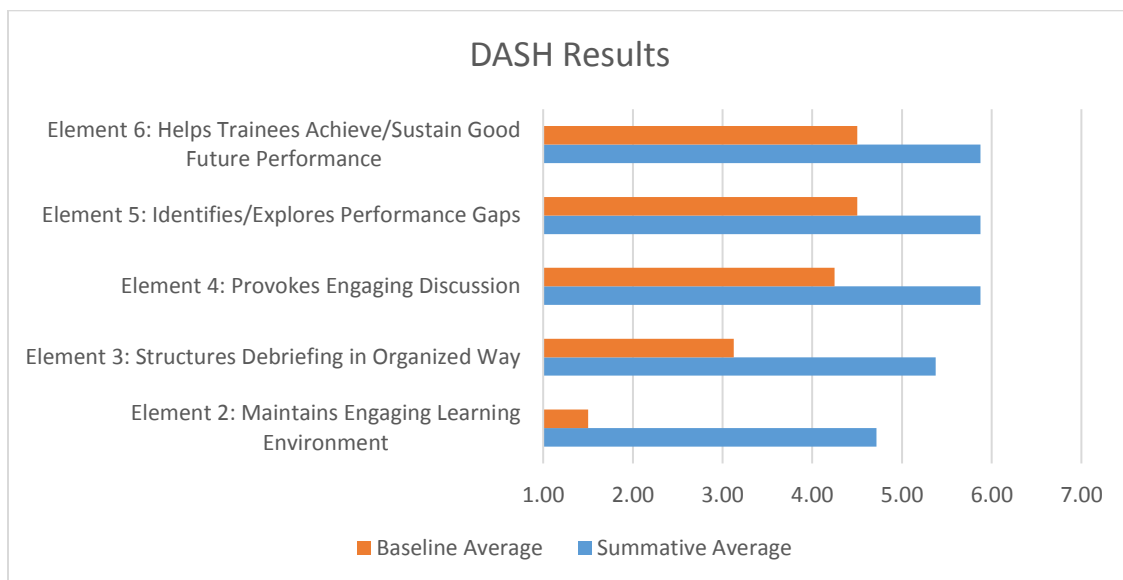
*Outcome # 4 Met: NGN residency educators use of the PEARLS method of debriefing*

One hundred percent of the residency educators ( $n = 8$ ) used the PEARLS method of debriefing, however they used it inconsistently.

*Outcomes # 6, 7, & 8 Met: NGN residency educators' debriefing efficiency*

One hundred percent of the baseline and summative debriefing sessions were recorded and evaluated by the PM using the DASH. Overall, when compared to baseline scores the summative DASH scores are higher for all 5 elements. See table below.

Table 2. *Baseline and Summative DASH Averages*

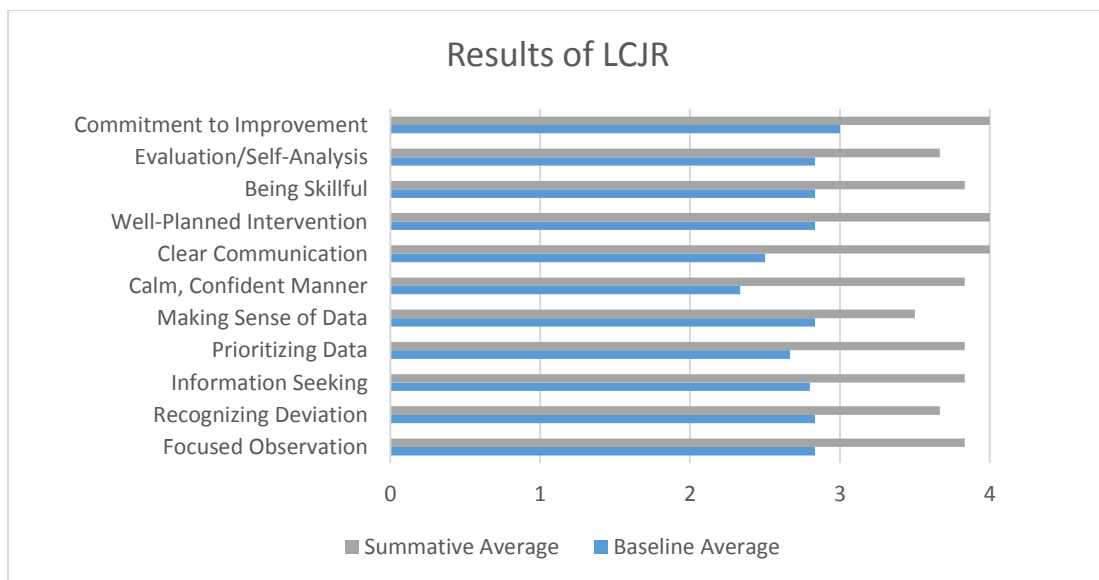


Eighty-eight percent ( $n = 7$ ) of the residency educators advanced in every DASH subscale with two exceptions: one educator stayed the same on element five and another on element six.

*Outcomes # 9 & 10 Partially met: NGN Clinical Judgement Evaluation.* The LCJR was used to evaluate the NGN’s development of clinical judgment at the beginning and end of their residency program. According to the schedule planned in April, all NGNs were expected to report to the SimLife Center, but only ten did. These ten were given a consent form, oriented to the QI project, and asked to complete a Likert scale and provide demographic data. At the summative data collection point, only six NGNs were evaluated using the LCJR. As both pre & post tests were necessary, only these six NGNs responses were part of the analysis.

Baseline and summative LCJR data was collected for six NGNs. The results 100 % ( $n = 6$ ) of the scores were higher at summative than baseline suggesting development of clinical judgment. While the LCJR indicated the NGNs developed clinical judgment between baseline in early June and summative in late August, it cannot be attributed to use of the PEARLS. Further studies, using control groups, are warranted. See table below.

Table 3. *Baseline and Summative LCJR Averages*



One hundred percent ( $n = 18$ ) of the NGNs strongly agreed or agreed that they thought they were knowledgeable of simulation and debriefing as a learning tools; 100% (67% strongly agreed and 33% agreed) that using simulation and debriefing is an effective tool in the residency program; 100% disagreed or strongly disagreed that simulation and debriefing made them uncomfortable; 100% agreed or strongly agreed that simulation and reflective debriefing is a valuable tool to assess clinical judgment development; 50% of the NGNs disagreed or strongly disagreed that they were tired of simulation while the remaining 50% neither agreed or disagreed.

*Outcome # 11 Met: Evaluation Project Efficiency.* Seventy-five percent ( $n = 6$ ) of the residency educators participated in the post project survey. By November, two of the educators no longer worked in the NGN residency program and were unavailable to be surveyed. The participants were asked to provide feedback on five questions. All six strongly agreed that: 1) the PEARLS methodology of debriefing increased the efficiency of their debriefing; 2) the PEARLS methodology of debriefing should be adopted as the standard curriculum for conducting post simulation debrief for the NGN residency program at MMH; 3) the DASH should be adopted as the standard measure of debriefing efficiency for the MMH NGN residency program; 4) the LCJR is useful for measuring the NGN's clinical judgment; and 5) the LCJR should be adopted as the standard measure of graduate readiness for practice in the NGN residency program.

Additionally, each educator ( $n = 6$ ) was asked to provide perspectives on the following questions: 1) What is the value of the PEARLS? 2) What other places/ways could you see the PEARLS being useful? 3) How should the DASH be used to evaluate educators for annual competency? and 4) Who should use the DASH to evaluate the educators?

See the answers related to each question below.

Question 1: The PEARLS debriefing method is valuable because it keeps participants on the “same page.” It is an “idiot proof,” “simple to use” tool that “keeps you on track” and prevents the debriefer from “winging it.” Using PEARLS method helped one educator realize the learner needs “to talk it [the simulated experience] through.”

Question 2: The PEARLS could be useful:

- as a remediation tool for failures in practice
- for staff on bad days
- for professional development
- in Life; Advanced Cardiac Life Support certification courses; classroom setting; definitely in simulation
- for conversations between NGNs and preceptors or staff and manager
- for Critical Stress Debrief used immediately after or within two weeks of highly stressful event; could be useful to prevent Post Traumatic Stress Disorder

Questions 3 & 4: The DASH should be:

- used by “clinical managers” at “annual check-ins/performance evaluations”
- used for “peer to peer” and “NGN to preceptor” evaluation
- the SimLife Center staff should use the DASH to evaluate the residency educators annually
- Residency Manager should become a certified DASH rater and evaluate the educators annually.

*Outcomes # 12 & 13 Met: Evaluation of communication of findings.* The findings of this QI project were presented to four sets of stakeholders at four events throughout the spring. An explanation concerning these four events is included in the Dissemination to Key Stakeholders section later in the report.

### **Gaps and Unanticipated Consequences**

Gaps between the expected and actual outcomes were discovered throughout the project implementation. The first, related to outcome #4, was residency educators deviated from the planned PEARLS methodology. They forgot to bring their laminated cards with them to the simulation lab. Mitigation was simple. The PM provided extra copies of the PEARLS for their use during debriefing. Another gap occurred with the failed opportunity to collect the formative DASH (Outcome #7). Originally, the plan to collect formative data was to serve as a snapshot evaluation to allow the program director a mid-program assessment of the need for a mini-inservice on the PEARLS. Eventually, the program director gave each residency educator a mini-inservice prior to the summative data collection point. In the end, the loss of the data had little impact. The most significant gap was the loss related to the lack of participants for both populations (Outcomes #9 & #10). Higher numbers were expected ( $n = 18$ ) for the NGNs and ( $n = 10$ ) the residency educators. Actual numbers were lower ( $n = 6$  and  $n = 8$ ), respectively. All the NGNs went through simulations and debriefings in June; ( $n = 10$ ) returned in July, and fewer came back ( $n = 6$ ) in August. Group sizes that small prevented the ability to use statistical tests. Another gap was the extension of the project. The key stakeholders were supposed to be surveyed (outcome #11) by August, 2016 but because of schedule conflicts, the one-on-one post-project interviews were not conducted until November of 2016. Despite these gaps, the QI project was completed.



**Financial Analysis**

A financial analysis of this project was conducted by reviewing the budget and the actual revenue and expenses (Appendices S and T, respectively). Costs were estimated to be \$34,502.00, however, the actual cost of the project was \$29,141.00; a difference of \$5,361.00. It should be noted that this project was not intended to create revenue, but to implement best practices of simulation into MMH's NGN residency program. All funding for this project was in-kind donations from the *SimLife* Center, MMH, and the PM of the QI project.

At the end of the project, the actual costs of education and initial training were less than budgeted due to a lower number of participants, unused travel expenses, and unnecessary education preparation expenses. Similarly, there were additional surpluses in the evaluation/assessments and management/operations as budgeted salaries, benefits, materials, part time technician, and room rental expenses were not as high as estimated for data collection and analysis phase.

The second year expenses drop significantly because all eight of the residency educators were trained in the summer of 2016. Most of the costs for the second year permit for: 1) the expenses of training three new residency educators; 2) one DASH certification webinar for the one residency educator; 3) inflation. The third through fifth year budgets stabilize for years three and four, but climb to \$20,229.00 for year five when the budget covers six educators going to annual conferences. Ongoing expenses for Phase 2 of the project can be seen in Appendix R. Although this QI project ended in surplus, the planned budget could be an estimate for others who wish to conduct similar replications for QI projects of similar size and duration.

## **Discussion and Recommendations**

### **Strategic Plan Congruence and Sustainability**

This scholarly project aligns with Midland Memorial Hospital's culture and strategy to invest in the future of its nursing staff and support a new graduate nursing residency program. Their NGN Residency Program will not incur significant costs implementing the Standards of Best Practice: Simulation based on a review of the financial analysis that revealed in-kind donations covered most of the costs. As mentioned above, the 3-5 year budget covers the majority of sustainability costs: subscriptions to professional journals, fees associated with attending professional conferences, and costs of becoming DASH raters.

### **Implications for Practice**

To date, the lack of a universally-accepted solution to fix the transition-to-practice gap remains across hospital settings. However, the nursing literature indicates some type of on-the-job remediation like a nurse residency or orientation period would ease the transition from classroom to bedside (IOM, 2012; Krozek, 2008; NCSBN, 2016). The simulation and reflective debriefing pedagogy is already being used to replace clinical experiences in pre-licensure education (NCSBN, 2016) and now hospitals implementing the pedagogy into the nursing orientation and residency programs (Hickerson, Taylor, & Terhaar, 2016; Lamers, Janisse, Brown, Butler, & Watson, 2013) are identifying similar benefits such as reductions in the lack of readiness and strengthened clinical judgment development (Dreifuerst, 2010; Eppich & Cheng, 2015; Jefferies, 2012; Lamers et al., 2013; Lasater, 2007; Lavoie et al., 2013; Miraglia & Asselin, 2015; NCSBN, 2016; National League for Nursing Board of Governors, 2015; Simonton, 2014; Waxman, 2010). When NGNs participate in residency programs with simulation and reflective debriefing they have: (1) increased confidence; (2) improvements in the

development of stress management, communication, and reflection skills; (3) increased ability to manage acutely ill patients; (4) quicker implementation of skills learned in the simulation lab to the clinical setting (Hickerson et al., 2016; Stirling, Smith, & Hogg, 2012; Thibault, 2013; Zimmerman & House, 2016). This group of residency educators reported the nearly identical findings shared by Lamers et al. (2013) such as the debriefings were focused and gaps in NGN's readiness for independent practice were clearly identified. Eppich and Cheng (2015) suggest the PEARLS may limit some of the obstacles to effective debriefing such as lack of experience at debriefing or inconsistency.

Miraglia and Asselin (2015) acknowledge the challenges of ensuring nurses develop clinical judgment skills and the importance of using evidenced based tools. These authors go on to report that even though the LCJR has been used by educators in academic settings, there are four potential uses in post-licensure clinical settings. These uses are: 1) a tool to assess clinical judgment in simulation and clinical settings; 2) a framework for reflection; 3) communication/feedback tool; 4) a tool to evaluate competency within post-licensure practice settings (Miraglia & Asselin, 2015). The MMH residency educators found agreement with Miraglia's and Asselin's (2015) views for these potential uses and Lasater's (2011) report that the LCJR provides a metric useful for pre and post comparison of progression from the beginning to end of the nursing residency program. The MMH residency educators so strongly agreed the rubric was useful in measuring the status of the NGNs that they adopted its use as one of the standard measurements of their NGN's readiness for independent practice.

Based on the consistencies between these studies and this SP, recommendations follow. Future research on implementing the INACSL Standards of Best Practice: Simulation in NGN residencies to close the education to practice gap should be explored further. Additionally, future

research should include larger populations and longitudinal studies. Based on the successful outcomes of this QI project it follows that a longitudinal research study collecting data on the value of PEARLS and LCJR through a series of cohorts for comparison is warranted.

### **Policy Implications**

To date, there are no policies directing the use of simulation, but it appears momentum is building. Events creating this momentum include the IOM's *Future of Nursing* (2012) recommendations to implement nurse residencies that help NGNs transition to practice and the simulation community's suggestions that nursing residency programs adopt policies to implement the INACSL Best Practices: Simulation (Decker et al., 2013; Simonton, 2014). Another event contributing to the momentum was the National Council of State Boards of Nursing's (NCSBN's) national, multisite, longitudinal simulation use study in pre-licensure nursing programs. These findings established that up to 50% simulation can be effectively substituted for clinical experiences without detriment for pre-licensure nursing students (Hayden et al., 2014). In addition, Oregon and Florida established Simulation Alliances in order to boost the workforce, advance healthcare education, and foster patient safety (Brunell & Ross, 2016). The timing of these events in the context of the Triple Aim, the value for patient safety, plus the need for nurses in a predicted shortage, may cause policies to be initiated for simulation.

### **Lessons Learned**

While some of the major 'lessons learned' have been presented in sections above, further analysis has helped to identify four additional areas: team work, communication and contingency planning, and change.

#### *Team Work:*

While the project manager was not employed at the facility where this project took place all key stakeholders were committed to the project because it offered the opportunity to learn,

use, and adopt the best practices of simulation. Analysis of team work found there were instances when the residency educators had to prioritize work duties above the QI project requiring the PM to re-schedule project related tasks. There are two ways to improve team work in future projects. First, the PM should build extra time in the project schedule for completing tasks. Secondly, the PM should maintain communication with key stakeholders to mitigate obstacles that cause participants to be over-scheduled or over-extended. Team work is an important component for a successful QI project.

*Communication and Contingency Planning:*

In retrospect, this QI project lacked effective communication. Limited verbal exchanges between project director and a single representative negatively impacted the project. Uncommunicated schedule changes made to residency calendar, unnoticed while PM was away on vacation, lengthened the implementation phase and left no option but to form alternative plans. In the future, handing off communication to another team member or QI assistant would prevent communication breakdown. Another instance of ineffective communication, between the residency educator and a simulation technician, eliminated the opportunity to collect formative data. Closed loop communication about the logistics of data collection could have prevented data loss. When the full time residency manager left for maternity leave, she handed off all work related duties to another person, who was essentially doing the work of two full positions. In retrospect, communication techniques should be frequent, focused, confirmed, and duplicative, more so during busy times, and especially when people are doing the work of two full time positions.

*Change:*

Acting as change agents to accomplish collaborative team goals, Doctors of Nursing Practice (DNPs) must understand and apply various change theories (Conrad, 2014) because

change does not occur after a single intervention. The residency educators said they enjoyed the training program and valued the PEARLS and LCJR, but they implemented the pedagogy inconsistently. Although all educators strongly agreed the PEARLS increased the quality of their debriefing skills, some forgot to bring or were reluctant to use their laminated copies because it felt awkward reading from the PEARLS card during debriefing. Some suggestions to promote successful change and goal accomplishments are: 1) *SimLife* Center staff can provide ongoing positive reinforcement and encouragement; 2) *SimLife* Center can provide additional training programs; 3) residency educators can continue to use the PEARLS laminated card or commit it to memory; 4) nurse residency manager can advocate for additional formal training; and 5) residency educators can join professional organizations like INACSL and/or attend international simulation conferences.

In conclusion, although this QI project was successful, there are areas where ‘lessons learned’ could improve future projects. Team work, effective communication, contingency planning and actions to support change will help promote a successful collaborative team meet its goals.

#### **Dissemination to Key Stakeholders and/or Community Organization(s)**

As mentioned earlier, the findings of this QI project were presented to four sets of key stakeholders. To disseminate results locally, the PM presented findings to the hospital NGN residency manager and educators and members of the *SimLife* advisory board. The information was shared regionally at the executive session for faculty and peers at Boise State University Doctor of Nursing Practice program. Additionally, a podium presentation was given to 68 colleagues in the field of simulation at the International Meeting for Simulation in Healthcare (IMSH) in January in Orlando, Florida. Disseminating the findings of this QI project is

important and can contribute to nursing science as even now people are using the simulation pedagogy without knowledge of published standards or useful methodologies for implementation.

### **Conclusion**

This quality improvement project explored the usefulness of the high-fidelity simulation paired with reflective debriefing as a solution for the lag in NGN practice readiness problem. The project also explored the process and effects of adopting one of the INACSL Standards of Best Practices: Simulation: Debriefing within a NGN residency program as an adequate method to prepare the NGN to apply critical inquiry and clinical judgment necessary for independent practice. As the number of participants expected were not realized, the project focus became a pilot program to teach the residency educators: 1) the INACSL Standards of Best Practice: Simulation, specifically Debriefing; 2) the PEARLS methodology for debriefing; and 3) to assess the usefulness of the LCJR at measuring the NGN's clinical judgment development. During the QI project, the MMH nurse educators learned to use the simulation pedagogy that few nurse residency educators are skilled to use (Beyea et al., 2010; Dreifuerst, 2015; Decker et al., 2013). Additional positive outcomes of this project were the NGN residency program has: 1) adopted one of the INACSL Standards of Best Practices: Simulation; 2) adopted the DASH tool as its standardized measurement of debriefing efficiency; and 3) adopted the LCJR as a measurement of NGN readiness for independent practice. That they adopted these tools and standard demonstrates evidence of macro policy adoption at the regional level. While these are positive outcomes for the facility, these outcomes indicate the necessity for further exploration of versatility of the LCJR, the DASH, and PEARLS methodology at other hospital residency programs. Adopting macro ideas as policy, the MMH nurse residency program utilized the

PEARLS methodology to improve debriefing and utilized the DASH for verification of their improvement. Their NGNs then transitioned to practice having used affordable, evidence-based, best practices that promoted satisfaction, confidence, and patient safety (Krozek, 2008; Miraglia & Asselin, 2015; Zimmerman & House, 2016). The findings of this QI project are congruent with the simulation community's literature and belief that when the INACSL Standards of Best Practices: Simulation are used as a training guide or to develop policies and procedures for implementation, sustainability of the simulation pedagogy is increased (Rutherford-Hemming, Lioce, & Durham, 2015).



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**Appendix A  
Synthesis Table**

Level of Evidence and Synthesis of Literature Table			
<p style="text-align: center;"><b>Article Name:</b></p> <p>Outcomes of a Simulation-Based Nurse Residency Program</p> <p style="text-align: center;"><b>Authors:</b></p> <p>Beyea, S. C., Slattery, M. J., &amp; Reyn, L. J.</p> <p style="text-align: center;"><b>Research Question:</b></p> <p>Does extensive use of Human patient simulation assist recent nurse graduates in becoming safe &amp; competent clinicians?</p> <p style="text-align: center;"><b>APA Citation:</b></p> <p>Beyea, S. C., Slattery, M. J., &amp; Reyn, L. J. (2010). Outcomes of a simulation-based nurse residency program. <i>Clinical Simulation in Nursing</i>, 6(5), e169-e175. doi: 10.1016/j.ecns.2010.01.005</p>	<p><b>Level of Evidence:</b></p> <p>II; High</p> <p><b>Study Design:</b></p> <p>Quasi-Experimental</p> <p><b>Description of Sample:</b></p> <p>n=260; 17 cohorts over 3 years</p>	<p><b>Outcome Measures:</b></p> <p>Tested with pilot study first over 1 year.</p> <p><b>Results:</b></p> <p>Nurse residency programs integrating simulation offer a consistent, replicable orientation process and support the ability to evaluate competency development, provide standardized experiences and evaluation, and detect and remediate learning needs</p>	
<p style="text-align: center;"><b>Article Name:</b></p> <p>High-fidelity simulation enhances ACLS training.</p>	<p><b>Level of Evidence:</b></p> <p>II; Good</p>	<p><b>Outcome Measures:</b></p>	

<p><b>Authors:</b> Langdorf, M. I., Strom, S. L., Yang, L., Canales, C., Anderson, C. L., Amin, A., &amp; Lotfipour, S.</p>	<p><b>Study Design:</b> Experimental</p>	<p>Time to cpr and defibrillation. Secondary: total scenario scores, dangerous actions, proportion of students voicing "ventricular fibrillation", 12 lead STEMI interpretation, and care necessary for ROSC</p>
<p><b>Research Question:</b> Does high-fidelity simulation enhance ACLS Training?</p>	<p><b>Description of Sample:</b> 19 pre-graduation medical students</p>	<p><b>Results:</b> after 32 hours of cardiac resuscitation course expanded from traditional (lecture with static manikins) to using HFS. Critical actions CPR/DF were significantly more common after training and done more rapidly. High fidelity simulation is emotionally intense, preferred by students, and arguably enhances</p>
<p><b>APA Citation:</b> Langdorf, M. I., Strom, S. L., Yang, L., Canales, C., Anderson, C. L., Amin, A., &amp; Lotfipour, S. (2014). High-fidelity simulation enhances ACLS training. <i>Teaching and Learning in Medicine, 26</i>(3), 266-273.</p>		

retention.  
 LIMITATIONS: small sample, highly motivated students, each student serving as their own control, ACLS course included simulation and additional didactics so specifically attribute improved performance on simulation component alone.

<p><b>Article Name:</b>                  Debriefing Assessment for Simulation in Healthcare: Development and Psychometric Properties</p>	<p><b>Level of Evidence:</b>                  II; Good</p>	<p><b>Outcome Measures:</b>                  114 participants (nurses, physicians, other health professionals, Masters and PhD educators, community hospital to academic medical centers) Intraclass correlation coefficients for individual elements greater than 0.6; combined elements 0.74; Cronbach alpha 0.89</p>
<p><b>Authors:</b>                  Brett-Fleegler, M., Rudolph, J., Eppich, W., Monuteaux, M., Fleegler, E., Cheng, A., &amp; Simon, R.</p>	<p><b>Study Design:</b>                  Experimental</p>	
<p><b>Research Question:</b>                  Does the DASH have reliability and validity?</p>	<p><b>Description of Sample:</b>                  n=114</p>	<p><b>Results:</b>                  The DASH scores show evidence of good</p>



**APA Citation:**

Brett-Fleegler, M., Rudolph, J., Eppich, W., Monuteaux, M., Fleegler, E., Cheng, A., & Simon, R. (2012). Debriefing assessment for simulation in healthcare: Development and psychometric properties. *Simulation in Healthcare, 7*(5), 288-294.

reliability and preliminary evidence of validity. TheDASH is a 6-element, unweighted, criterion-referenced behaviorally anchored rating scale. Similar to other behavior rating instruments, the DASH is limited in its use to trained users : rater training is a necessary step to its implementation.

**Article Name:**

Simulation-based education improves quality of care during cardiac arrest team responses at an academic teaching hospital.

**Authors:**

Wayne, D. B., Didwania, A., Feinglass, J., Fudala, M. J., Barsuk, J. H., & McGaghie, W. C

**Level of Evidence:**

II; Good

**Study Design:**

Quasi-Experimental; case control; retrospective

**Outcome Measures:**

Medical records of cardiac arrest team responses assessed for residents' adherence to AHA standards in ACLS responses. Simulator trained. Can competence be evaluated independent of outcomes?

**Research Question:**

Will simulator trained medical residents show higher adherence to AHA standards and quality of ACLS compared to traditionally trained residents?

**Description of Sample:**

20/40 randomly selected records that met the selection process

**Results:**

Simulation based training improved quality of ACLS; traditional bedside + clinical teaching should

**APA Citation:**

Wayne, D. B., Didwania, A., Feinglass, J., Fudala, M. J., Barsuk, J. H., & McGaghie, W. C. (2008). Simulation-based education improves quality of care during cardiac arrest team responses at an academic teaching hospital. *Chest*, 133(1), 56-61.

be amplified to include simulation-based training; deliberate practice is a powerful tool to boost competence of physicians and quality of their patient care in actual ACLS; inter-rater reliability is present. Confirms previous studies: decay of skills of ACLS; experience alone is often insufficient to ensure acquisition of basic clinical skills. uses phrase: Simulation training grounded in deliberate practice

<p>A crisis in critical thinking.</p>	<p><b>Article Name:</b></p>	<p><b>Level of Evidence:</b> I; good</p>	<p><b>Outcome Measures:</b> Newly employed nurses (with experience or not) are assessed for ability to accurately identify primary problems or deviations from normal health status; initiate independent and collaborative actions to at least prevent further harm; act within relevant time periods;</p>
<p>Del Bueno, D.</p>	<p><b>Authors:</b></p>	<p><b>Study Design:</b> quasi-experimental</p>	

as support actions with rationale.

<p><b>Research Question:</b> Why can't new registered nurse graduates think like nurses?</p> <p><b>APA Citation:</b> Del Bueno, D. (2005). A crisis in critical thinking. <i>Nursing Education Perspectives</i>, 26(5), 278-282.</p>	<p><b>Description of Sample:</b> combined experienced (20,400) inexperienced (10,988) new nurses</p>	<p><b>Results:</b> the Performance Based Development System (PBDS) is a valid and reliable tool used since 1985. Used for experienced and inexperienced. emphasis in school is lecture not application of knowledge. Knowing doesn't equal making clinical judgments</p>
<p><b>Article Name:</b> Reflective debriefing to promote novice nurses' clinical judgment after high-fidelity clinical simulation: A pilot test</p> <p><b>Authors:</b> Lavoie, P., Pepin, J., &amp; Boyer, L.</p> <p><b>Research Question:</b></p>	<p><b>Level of Evidence:</b> III; low/major flaw</p> <p><b>Study Design:</b> Qualitative; pilot test</p> <p><b>Description of Sample:</b></p>	<p><b>Outcome Measures:</b> participants asked to reflect on what they noticed as important; how they interpreted it' and to which conclusions it led them; then their group response and the way they adjusted to the reactions of the patient and colleagues were addressed (reflection-in-action)</p> <p><b>Results:</b></p>

Does Reflection after simulation improve nurses' clinical judgment in complex situations?

n=5; convenience sample; nurses nearly finished ICU orientation

Pilot test results: reflective debriefing may be a safe and potentially effective way for novice nurses to learn from a clinical experience and enhance clinical judgment. Intervention: 45 mins simulation with HFS followed by 90 mins of reflective debrief. Participants indicated debriefing helped them understand how they reached a decision regarding the patient's situation. Debriefing was perceived as a useful exercise to connect theory and practice.

**APA Citation:**

Lavoie, P., Pepin, J., & Boyer, L. (2013). Reflective debriefing to promote novice nurses' clinical judgment after high-fidelity clinical simulation: A pilot test. *Canadian Association of Critical Care Nurses*, 24(4), 36-41.

**Article Name:**

Clinical judgment development: Using simulation to create an assessment rubric.

**Authors:**

Lasater, K.

**Level of Evidence:**

III; low/major flaw

**Study Design:**

"exploratory study originated & pilot tested a rubric: describe clinical judgment development"

**Outcome Measures:**

Describe students' responses to simulated scenarios in Tanner's Clinical Judgment Model; Develop a rubric describes level of performance in clinical

<p style="text-align: center;"><b>Research Question:</b></p> <p>Can a rubric serve as means to describe concepts of clinical judgment during a high-fidelity simulation to students, preceptors, and faculty?</p> <p style="text-align: center;"><b>APA Citation:</b></p> <p>Lasater, K. (2007). Clinical judgment development: Using simulation to create an assessment rubric. <i>Journal of Nursing Education</i>, 46,(11), 496-503.</p>	<p><b>Description of Sample:</b></p> <p>n=24</p>	<p>judgment; Pilot test the rubric;</p> <p><b>Results:</b></p> <p>Suggests to use "What priorities drive your responses" instead of "How did this scenario go for you?" The rubric is useful &amp; valuable for critical care, long term care, &amp; community health. *I value the article because it's well read through "the simulation world" It includes "the Lasater Tool" The highest value of HFS identified by students: forces them to think about what patients needed, using the data, &amp; expanding their options for possible responses. In traditional clinical practicum setting, gaps in understanding might go unnoticed for longer time or never noticed at all.</p>
<p style="text-align: center;"><b>Article Name:</b></p>	<p style="text-align: center;"><b>Level of Evidence:</b></p>	<p style="text-align: center;"><b>Outcome Measures:</b></p>

Promoting Excellence and Reflective Learning in Simulation (PEARLS): Development and Rationale for a Blended Approach to Healthcare Simulation Debriefing

not a study: a pre-empiric study article

**Study Design:**

To describe an integrated conceptual framework for blended approach to debriefing called PEARLS; provides rationale for scripted debriefing; introduces PEARLS framework; integrates 3 common educational strategies used during debriefing: 1) learner self assessment 2) facilitated focused discussion 3) providing information in form of directive feedback/or teaching

**Results:**

the PEARLS framework and debriefing script fill a need for many health care educators learning to facilitate debriefings in simulation based education. PEARLS debriefing framework/script developed over a 3 yr period via multistep process involving a

**Authors:**

Eppich, W. & Cheng, A.

**Description of Sample:**

**Research Question:**

**APA Citation:**

Eppich, W. & Cheng, A. (2015). Promoting excellence and reflective learning in simulation (PEARLS): Development and rationale for a blended approach to health care simulation debriefing. *Clinical Simulation in Nursing*, 10(2), 106-115.

comprehensive ROL, integration into debriefing faculty development experience, and pilot testing with iterative revisions. **ULTIMATE GOAL of Debriefing:** Learners reflect and make sense of their simulation experience and generate meaningful learning that translates to clinical practice.



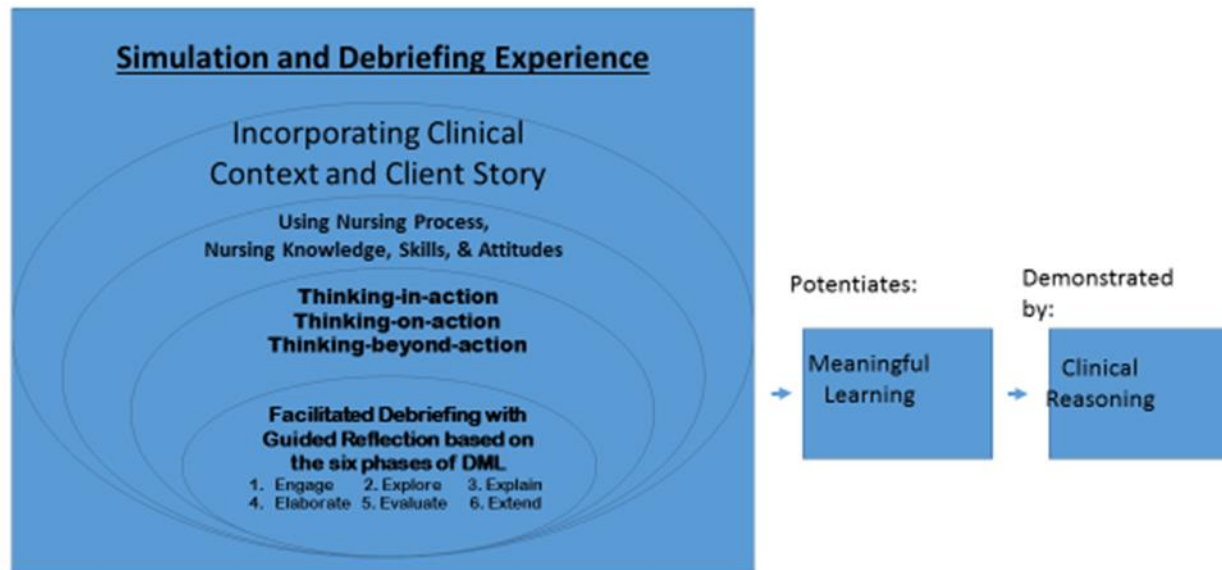


## Appendix B

### Theoretical Model Diagram


Theoretical Model the Debriefing for Meaningful Learning (DML) Simulation and Debriefing Model (Dreifuerst, 2010).

# The DML Simulation and Debriefing Model



## Appendix C

### Copyright Permission from Dr. Dreifuerst


Lea Keesee <leakeesee@u.boisestate.edu>

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**Hi! Can you answer a few questions for a DNP student from Boise State?**  
3 messages

---

**Lea Keesee** <leakeesee@u.boisestate.edu>  
To: ktdreif@iu.edu

Sun, Jul 19, 2015 at 1:51 PM

Hello Dr. Dreifuerst!

My name is Lea Keesee and I'm a first year DNP student at Boise State. In my DNP project, I'm planning an intervention to help the nurse residency program at our local hospital begin to use the best practices of simulation specifically the debriefing component. I've found your dissertation online and WOW has it been a helpful read! Congratulations on your work and accomplishments!

I would like to ask a few questions:  
I'd love to use the Simulation and Debriefing Experience (figure 2) as a theoretical framework, may I?  
If the answer is yes, thank you! Can you clarify what the "based on E-6" means?  
So that I cite the work correctly, will I cite you as the sole source?  
Any words of advice?  
Sincerely,  
Lea Keesee

---

**Dreifuerst, Kristina Thomas** <ktdreif@iu.edu>  
To: Lea Keesee <leakeesee@u.boisestate.edu>

Mon, Jul 20, 2015 at 12:24 PM

You can cite figure 2—here is the correct citation:

Dreifuerst, K.T. (2010). Debriefing for meaningful learning: Fostering development of clinical reasoning through simulation. (Order No. 3617512, Indiana University). ProQuest Dissertations and Theses, 212. Retrieved from <http://search.proquest.com/docview/1527174151?accountid=7398>. (1527174151).

Regarding E-6—check this article for an explanation:

Dreifuerst, K. T. (2015). Getting Started With Debriefing for Meaningful Learning. *Clinical Simulation in Nursing*, 11(5), 268-275. doi: 10.1016/j.ecns.2015.01.005

~Kris

Kristina Thomas Dreifuerst PhD, RN, CNE, ANEF | Assistant Professor  
Fellow, Center for Research in Nursing Education 2014-2017  
Indiana University School of Nursing  
1111 Middle Drive NU W435

**Appendix D  
Logic Model**

Resources/Inputs	Activities	Outputs	Objectives	Outcomes: Short term	Outcomes: Long term	Impact
<b>Includes the human, financial, organizational, and community resources a program has available to direct toward the work.</b>	Includes the processes, tools, events, technology, and actions that are intended to bring changes or results.	Direct products of program activities and may include types, levels and targets of services to be delivered by the program.	Efforts or actions that are intended to attain or accomplish. These begin with an action verb.	Specific changes in program. SMART.  Attainable in 1-3 years.	Specific changes in program. SMART.  Attainable in 4-6 years.	Fundamental intended or unintended change occurring as a result of program activities in 7-10 years.
<b>Human Resources: Project director Midland Memorial Hospital CNO Residency Manager &amp; Educational Coordinators Midland College Dean</b>	<p>Become an agenda item on Residency Program monthly meetings.</p> <p>Gather contact information from educational coordinators: name, cell number, office number, email, &amp; preference</p> <p>Provide project overview to project participants: purpose, objectives, outcomes, role clarification</p>	<p>Standing meeting schedule established</p> <p>Project participants identified and provided with project purpose, objectives, outcomes, and roles.</p> <p>Contingency plans formed for each conflict/barrier</p>	<p>Communicate project intent to administration by securing stakeholders.</p> <p>Communicate plan/process to educational coordinators</p> <p>Predict and manage project conflicts/barriers</p>	<u>Outcome 1:</u> By January 2016, Memorandum of understanding is written and approved by the project director, the CNO, and the Manager of the New Graduate Nurse Residency Program, to work on graduate project to strengthen the NGNRP through May 2017.	<u>Outcome 14:</u> By 2018, the NGNRP writes and adopts a teaching plan of Standard VI: The Debriefing Process of the Standards of Best Practices: Simulation using the DASH instrument as the standard measure of debriefing efficiency.	The hospital's NGNRP implements Standard VI of the Best Practices: Simulation: the Debriefing Process.

	Identify and plan for scheduling conflicts; resistance; barriers;  Write the MOU	MOU is written	Obtain approval of MOU			
<b>Human Resources:</b> <b>Project director</b> <b>Residency Educational Coordinators</b> <b>New Graduate Nurses in Residency Program</b> <b>BSU DNP faculty, faculty advisor, committee</b> <b>Midland Memorial Hospital IRB</b> <b>BSU IRB</b>	Establish inclusion/exclusion criteria for participants All educational coordinators to be included Nurses (graduated from A.D.N., B.S.N., second degree) L.V.N. are excluded	Participant inclusion/exclusion criteria established Complete IRB application	Define participant inclusion/exclusion criteria Coordinate and explain data collection techniques to project participants  IRB approval	<u>Outcome 2:</u> By June 2016, Project manager has the IRB approval from Midland Memorial Hospital & Boise State University.	(no long term goal)	Project will maintain respectful to human participants.
<b>Human Resources:</b> <b>Key Stakeholders:</b> • <b>Midland Memorial Hospital: Residency Manager and CNO</b> • <b>Project Participants: New Graduate Nursing Residency educational coordinators &amp; new graduate nurses</b> • <b>Midland College: Administration; Staff of SimLife Center</b> <b>Financial Resources:</b> <b>Cost of copies</b> <b>Technology Resources:</b> <b>The F. Marie Hall</b> <b>SimLife Center</b> <b>Educational Resources:</b>	Create course: • Standards of Best Practices: Simulation, specifically Debriefing • Debriefing with Promoting Excellence and Reflective Learning in Simulation (PEARLS) • How to use the Lasater Clinical Judgment Rubric • Schedule courses • Reserve room • Prepare/coordinate teaching tools	Curriculum developed for course.  Take Homes: Copy of the Standards of Best Practices: Simulation. Laminated reference card/tool to use when debriefing	Create a Reflective Debriefing training program for new nurse residency educational coordinators	<u>Outcome 3:</u> By June 2016, 50% of the NGNRP educational coordinators participate in an educational course.  <u>Outcome 4:</u> By July 2016, 50% of the NGNRP educational coordinators will be using the PEARLS as the method for debriefing.	(no long term goal)	<u>Outcome 15:</u> By June 2017, the NGNRP educational coordinators adopt the PEARLS as the standard curriculum for conducting the post simulation debrief.

<p><b>International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: Simulation: the Debriefing Process. Promoting Excellence and Reflective Learning in Simulation (PEARLS)</b></p>						
<p><b>Human Resources: Project director Residency Educational Coordinators</b></p> <p><b>Financial Resources: Webinar &amp; Certification registration fees; copies of instruments Portable data storage (jump drives)</b></p>	<p>PD becomes certified Rater of DASH instrument Copies the correct number of instruments. Develops spreadsheet to collect data. Coordinates &amp; schedules the educational coordinators' baseline debrief is recorded. BEFORE the courses are taught. Records three debriefings for each educational coordinator. Assigns a code for each educational coordinator. Labels each debrief by the code and baseline, formative, summative.</p>	<p>Certified user of valid and reliable instrument</p> <p>Prepared to collect data</p> <p>Data is collected correctly adhering to ethical/human subjects' protection</p>	<p>Collect and evaluate data for baseline, formative, and summative measurements of educational coordinators' debriefing efficiency according to the DASH instrument.</p>	<p><u>Outcome 5:</u> By May 2016, project director is a certified user of the DASH instrument.</p> <p><u>Outcome 6:</u> By June 2016, baseline statistics of educational coordinators' debriefing efficiency is compiled and evaluated by the project director using the DASH instrument.</p> <p><u>Outcome 7:</u> By July 2016, formative statistics of educational coordinators' debriefing efficiency is compiled and evaluated by the project director using the DASH instrument.</p>	<p><u>Outcome 16:</u> By May 2018, NGNRP will have an educational coordinator certified to use the DASH instrument</p>	<p>A valid and reliable instrument to rate the efficiency of the debriefer.</p>

				<p><b>Outcome 8:</b> By August 2016, summative statistics of educational coordinators' debriefing efficiency is compiled and evaluated by the project director using the DASH instrument.</p>		
<p><b>Human Resources:</b>  <b>Project director</b>  <b>Residency Educational Coordinators</b></p> <p><b>Financial Resources:</b>  <b>Copies of instruments</b>  <b>Portable data storage (jump drives)</b></p> <p><b>Technology Resources:</b>  <b>Excel resources/SPSS from BSU Albertson's library</b></p>	<p>Copies the correct number of LCJR copies instruments. (two per each nurse in the residency program)</p> <p>Develops spreadsheet to collect data.</p> <p>Coordinates, schedules, and records 1 baseline and 1 summative debriefing for each new graduate nurse.</p> <p>Assigns a code for each nurse.</p> <p>Labels each debrief by the code and baseline/summative.</p> <p>Records two debriefings for each</p> <p>Collects the paper copy of the LCJR from the educational coordinator</p>	<p>Prepared to collect data</p> <p>Data is collected correctly adhering to ethical/human subjects' protection</p>	<p>Collect and evaluate data for baseline and summative measurements of new graduate nurses clinical judgment using the Lasater Clinical Judgment Rubric</p> <p>Uses data management to analyze data using paired t test</p>	<p><b>Outcome 9:</b> By June 2016, baseline statistics of new graduates' clinical judgement is compiled and evaluated by the project director using the LCJR.</p> <p><b>Outcome 10:</b> By August 2016, summative statistics of new graduates' clinical judgement is compiled and evaluated by the project director using the LCJR project.</p>	<p><b>Outcome 17:</b> By 2018, the NGNRP writes and adopts a teaching plan for adoption of the LCJR as the standard measure of graduate readiness for practice.</p>	
<p><b>Human Resources:</b>  <b>Project Director,</b>  <b>Residency Manager &amp; Educational Coordinators</b>  <b>BSU DNP faculty advisor, mentor, peers</b></p>	<p>Develop interview questions/survey</p> <p>Pilot test interview questions</p> <p>Print survey forms</p> <p>Schedule Interviews</p> <p>Conduct interviews</p>	<p>Evaluation instrument: Survey</p>	<p>Collect feedback from key stakeholders</p> <p>Analyze using descriptive analysis</p>	<p><b>Outcome 11:</b> By August 2016, 75% of the key stakeholders' data about project efficiency and outcomes using one-on-one interviews</p>		

<p><b>Financial Resources:</b>  <b>Copies of instruments</b>  <b>Resources:</b>  <b>Excel resources/SPSS</b>  <b>from BSU Albertson’s</b>  <b>library</b></p>	<p>Collect feedback          Analyze with          qualitative statistics.</p>			<p>and a five-item          questionnaire will be          collected and          evaluated</p>		
<p><b>Human Resources:</b>  <b>Project Director</b>  <b>BSU project committee,</b>  <b>faculty, faculty advisor</b>  <b>Midland College:</b>  <b>Administration;</b>  <b>Members and guests of</b>  <b>the F. Marie Hall</b>  <b>SimLife Center advisory</b>  <b>board</b></p>	<p>Construct a written          report of the work          completed and          appraisal of the DNP          role</p> <p>Prepare presentation          for delivery to <i>SimLife</i>          Staff</p> <p>Prepare manuscript for          publication as advised          and according to          guidelines for          publication</p>	<p>Written findings to          stakeholders          Written          report/executive          summary complete          Professional          presentation prepared          &amp; delivered</p> <p>Manuscript prepared          and submitted</p>	<p>Communicate findings          to stake holders</p>	<p><u>Outcome 12:</u> By          March 2017, project          manager will report          the findings of the          project to Boise State          University DNP          program.</p> <p><u>Outcome 13:</u> By          April 2017, project          manager will report          the findings to the F.          Marie Hall <i>SimLife</i>          Center Advisory          Board.</p>		

**Appendix E**  
**Strengths, Weaknesses, Opportunities, & Threats Table**  
**High Fidelity Simulation (HFS) and Reflective Debrief (RD): Closing the Education to Practice Gap**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• New Graduate Nurse (NGN) Residency in place with three cohorts each year.</li> <li>• Simulation Center resources available: state of the art simulation center personnel, manikins, equipment, and supplies</li> <li>• Two certified healthcare simulation educators on staff at simulation center</li> <li>• Hospital resources available: Residency Educators and NGN residents.</li> <li>• Support from upper and mid-level mgmt.: Chief Operating Officer, Full Time NGN Residency Manager, and at least one Subject Matter Expert support use of simulation.</li> <li>• A DNP student on staff who will be finished in Fall of 15 supports simulation pedagogy and wants to be the full time simulations nurse for the hospital with an office in our simulation center.</li> <li>• Three continuing education courses have are included in the WECM course catalogue.</li> </ul>	<ul style="list-style-type: none"> <li>• Steep learning curve for implementing best practices of HFS and RD</li> <li>• Many of the Residency Educators are slow to adopt the pedagogy because they are accomplished teachers with years of practice doing it as lecture. “Emphasis in school is lecture, not application of knowledge. Knowing doesn’t equal making clinical decisions.”</li> <li>• Negative opinion of the pedagogy because of the way it was used in their education. They may be tired of simulation, threatened by it, or would rather be in the excitement of the actual hospital setting.</li> </ul>



<ul style="list-style-type: none"> <li>• Learners participating in HFS/RD like the experience.</li> <li>• Higher quality nursing staff will increase retention of nurses.</li> </ul>	
<p><b>Opportunities</b></p>	<p><b>Threats</b></p>
<ul style="list-style-type: none"> <li>• MMH Residency Educators will need training on the best practices of (HFS) and (RD) The Standards of Simulation according to INACSL</li> <li>• HFS is a pedagogy where a nurse can make a mistake and learn from that mistake without untoward patient outcomes.</li> <li>• The highest value of HFS and RD as identified by students: it forces them to think, use the data, apply nursing judgment.</li> <li>• In traditional clinical practicum setting, gaps in understanding may go unnoticed for longer time or never noticed at all.</li> <li>• NGN Residency programs integrating HFS &amp; RD offer consistent, replicable orientation process and support the ability to evaluate competency development, provide standardized experiences and evaluation, and detect and remediate learning needs</li> <li>• Contributing to a larger body of evidence</li> </ul>	<ul style="list-style-type: none"> <li>• Some Residency Educators won't value the HFS and RD.</li> <li>• Residency Educators may not want to change from the "it the way we've always done it"</li> <li>• Undermining the project. Agreeing to "try it" without really trying it.</li> <li>• Will the hospital want to do "In Situ" HFS instead of doing it at the simulation center?</li> <li>• Lack of time. Staff educators may value HFS &amp; RD, but not have the time to learn.</li> <li>• The project leader is not employed at MMH and can only use influence.</li> <li>• Staff stagnation/resistance to change</li> </ul>

<ul style="list-style-type: none"><li>• Learning and using the best practices of HFS &amp; RD will reduce staff stagnation and increase morale and motivation.</li><li>• A residency using best practices of HFS &amp; RD will be a recruitment tool for a higher quality nurse graduate</li></ul>	
--	--

**Appendix F**  
**PEARLS Adapted from Eppich & Cheng (2015).**

Set the Scene:

"I'll spend about \_\_ minutes debriefing the case with you. I'll be interested in hearing how you are feeling now that the case is over; second, I'd like someone to describe what the case was about to make sure we're all on the same page. Then, we'll explore the aspects of the case that worked well for you and those you would manage differently and why. I'll be keen to hear what was going through your mind at various points. We'll end by summarizing some take home points and how to apply them in your clinical practice."

**REACTION PHASE:**

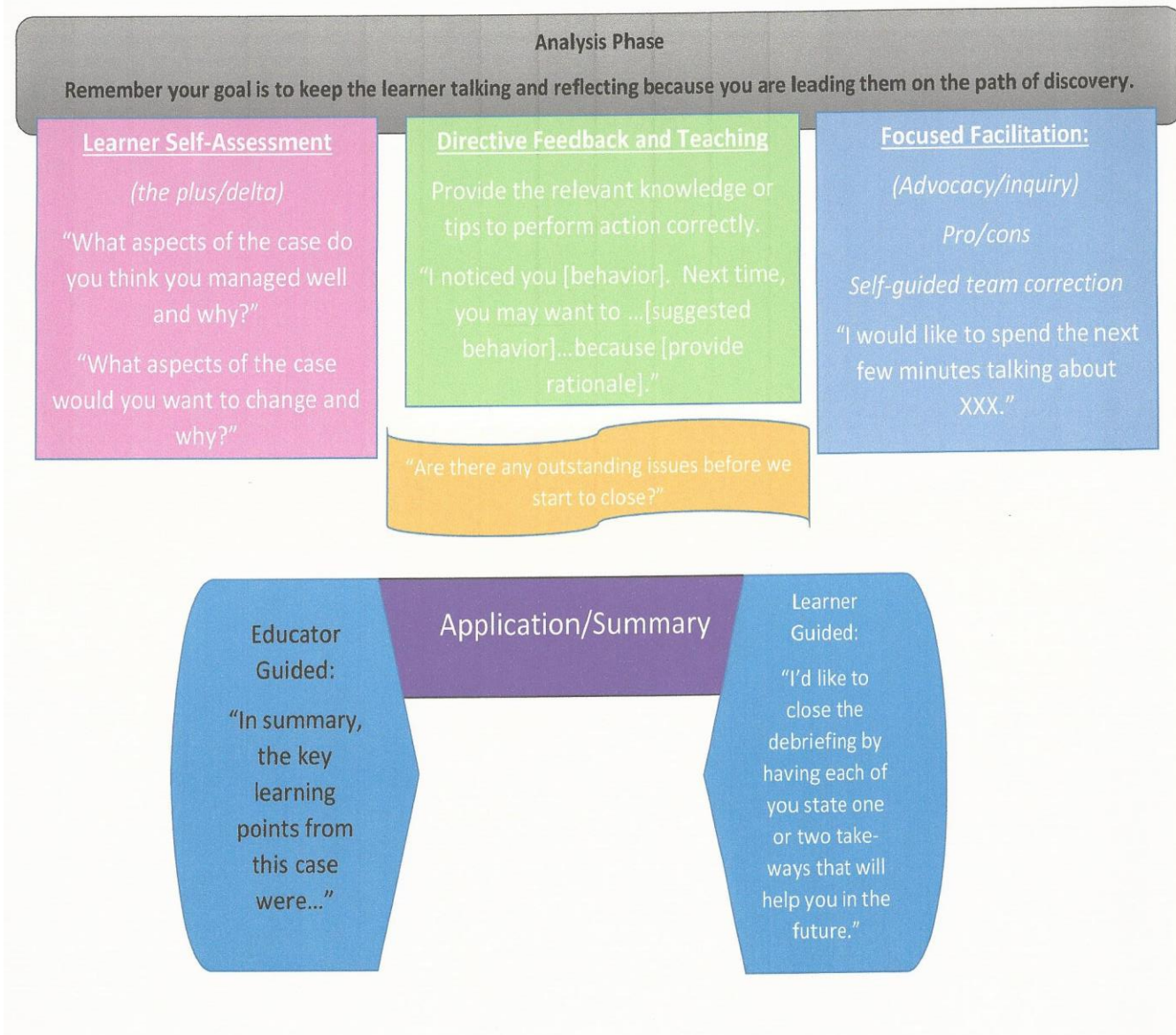
How are you feeling?  
Other Reactions? How are the rest of you feeling?

**Description Phase:**

"Can someone summarize the case from a medical point of view so that we are all on the same page?"  
"From your perspective, what were the main issues you had to deal with?"

**Analysis Phase: Signal the transition to the analysis of the case and frame the discussion**

**"Now that we are clear about what happened, let's talk more about the case.**  
**I think there were aspects you managed effectively and others that seemed more challenging.**  
**I would like to explore each of these with you."**



**Appendix G**  
**Lasater Clinical Judgement Rubric (LCJR) (Lasater, 2007)**

Lasater Clinical Judgment Rubric				
Dimension	Exemplary	Accomplished	Developing	Beginning
<b>Effective noticing involves:</b>				
Focused observation	Focuses observation appropriately; regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information	Regularly observes and 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 and kind of data; observation is not organized and important data are 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 and deviations from expectations; misses opportunities to refine the assessment
Information seeking	Assertively seeks information to plan intervention: carefully collects useful subjective data from observing and interacting with the patient and family	Actively seeks subjective information about the patient's situation from the patient and family to support planning interventions; occasionally does not pursue important leads	Makes limited efforts to seek additional information from the patient and 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 patient and family and fails to collect important subjective data
<b>Effective interpreting involves:</b>				
Prioritizing data	Focuses on the most relevant and important data useful for explaining the patient'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 or 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 (a) note and make sense of patterns in the patient's data, (b) compare these with known patterns (from the nursing knowledge base, research, personal experience, and intuition), and (c) develop plans for interventions that can be justified in terms of their likelihood of success	In most situations, interprets the patient's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or in complicated cases where it is appropriate to seek the guidance of a specialist or a more experienced nurse	In simple, common, or familiar situations, is able to compare the patient's data patterns with those known and to develop or explain intervention plans; has difficulty, however, with even moderately difficult data or situations that are within the expectations of students; inappropriately requires advice or assistance	Even in simple, common, or familiar 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 developing an intervention
<b>Effective responding involves:</b>				
Calm, confident manner	Assumes responsibility; delegates team assignments; assesses patients and reassures them and their families	Generally displays leadership and confidence and is able to control or calm most situations; may show stress in particularly difficult or complex situations	Is tentative in the leader role; reassures patients and 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, makes patients and families anxious or less able to cooperate

**Lasater Clinical Judgment Rubric**

<b>Dimension</b>	<b>Exemplary</b>	<b>Accomplished</b>	<b>Developing</b>	<b>Beginning</b>
Clear communication	Communicates effectively; explains interventions; calms and reassures patients and families; directs and involves team members, explaining and giving directions; checks for understanding	Generally communicates well; explains carefully to patients; gives clear directions to team; could be more effective in establishing rapport	Shows some communication ability (e.g., giving directions); communication with patients, families, and team members is only partly successful; displays caring but not competence	Has difficulty communicating; explanations are confusing; directions are unclear or contradictory; patients and families are made confused or anxious and are not reassured
Well-planned intervention/flexibility	Interventions are tailored for the individual patient; monitors patient progress closely and is able to adjust treatment as indicated by patient response	Develops interventions on the basis of relevant patient data; monitors progress regularly but does not expect to have to change treatments	Develops interventions on the basis of the most obvious data; monitors progress but is unable to make adjustments as indicated by the patient's 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 using nursing skills	Is unable to select and/or perform nursing skills
<b>Effective reflecting involves:</b>				
Evaluation/self-analysis	Independently evaluates and analyzes personal clinical performance, noting decision points, elaborating alternatives, and accurately evaluating choices against alternatives	Evaluates and analyzes personal clinical performance with minimal prompting, primarily about major events or 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 and choices without evaluating them
Commitment to improvement	Demonstrates commitment to ongoing improvement; reflects on and critically evaluates nursing experiences; accurately identifies strengths and weaknesses and develops specific plans to eliminate weaknesses	Demonstrates a desire to improve nursing performance; reflects on and evaluates experiences; identifies strengths and 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 is unable to do so; rarely reflects; is uncritical of himself or herself or overly critical (given level of development); is unable to see flaws or need for improvement

© 2005, Kathie Lasater, EdD, RN. Developed from Tanner's (2006) Clinical Judgment Model.

## Appendix H

### Permission to Use LCJR

I don't think I ever I asked for your permission to use your rubric. May I use it in this manner in the summer of 2016?  
Sincerely,  
Lea Keesee  
[Quoted text hidden]

---

Kathie Lasater <lasaterk@ohsu.edu> Wed, Dec 2, 2015 at 11:11 PM  
To: Lea Keesee <leakeesee@u.boisestate.edu>

Hi Lea,

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.

By the way, one of our recent studies with nurses in practice is soon to be published (this month, in fact). Here is the reference:

**Lasater, K., Nielsen, A., Stock, M., & Ostrogorsky, T.** (in press). Evaluating clinical judgment of newly hired staff nurses. *Journal of Continuing Education in Nursing*.

In addition, there's a recent publication by Miraglia & Asselin that you might find interesting as well.

Please let me know if I can be of help.

Kathie Lasater, EdD, RN, ANEF, FAAN  
Professor  
ORHSU School of Nursing, SN-4S  
3455 SW Veterans' Hospital Rd.  
Portland, OR 97239  
(503)494-8325

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## Appendix I

### Training Program Course Evaluation

<b>TRAINING QUALITY</b>	
The overall quality of the training I received was high.	Choose an item.
This training will be beneficial to me in the performance of my job.	Choose an item.
<b>COURSE PRESENTATION</b>	
The method of delivery for this course was appropriate for this course.	Choose an item.
The mixture of lecture, discussion, participation, and practice was an appropriate mixture for this course.	Choose an item.
The topics were presented in logical order.	Choose an item.
The use of the podcast is appropriate during the course.	Choose an item.
The use of the video explanation of the Lazarat Clinical Judgment Rubric was appropriate.	Choose an item.
<b>COURSE OBJECTIVES</b>	
The course covered the material I expected.	Choose an item.
The time required to complete the course was appropriate.	Choose an item.
<b>MATERIALS</b>	
The course materials are appropriate for use as references for later use (the bound copy of Standards of Best Practices; Simulation, the PEARLS laminated card, the LCJR laminated card).	Choose an item.
<b>ADDITIONAL QUESTIONS</b>	
The greatest strengths of the course are [Response]	
The course could be improved by [Response]	
Comments [Response]	

DEBRIEFING
2



### Appendix J Likert Scale and Open-Ended Question Survey

Debriefing with PEARLS					
Please rate how strongly you agree or disagree with each of the following statements by placing a checkmark in the appropriate circle.	Strongly Agree	Somewhat Agree	Neutral or No Opinion	Somewhat Disagree	Strongly Disagree
1. The PEARLS methodology of debriefing increased the efficiency of the educational coordinators' debriefing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The PEARLS methodology of debriefing should be adopted as the standard curriculum for conducting post simulation debrief for the new graduate nurse residency program at MMH.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The DASH instrument should be adopted as the standard measure of debriefing efficiency for the MMH new graduate nurse residency program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. The LCJR is useful for measuring the new graduate nurse's clinical judgement.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. The LCJR should be adopted as the standard measure of graduate readiness for practice in the new graduate nurse residency program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What is the value of PEARLS?

What other places/ways could you see the PEARLS being used?

How should the DASH instrument be used to evaluate educators for annual competency?

Who should use DASH to evaluate the educators?

## Appendix K

### IRB Approval from Midland Memorial Hospital

Midland Memorial Hospital, Midland, TX  
Institutional Review Board  
IRB00004050 Exp: May 09, 2016  
TWA00007049 Exp: May 09, 2018

Lea Keesee, MSN, RN  
Director of the F. Marie Hall SimLife Center, Midland College  
5813 Highland Blvd  
Midland, TX, 79707



Best news for healthcare

RE: *Using PEARLS Debriefing in the New Graduate Nurse Residency Program*

December 3, 2015

Dear Ms. Keesee:

The Midland Memorial Hospital Institutional Review Board has reviewed and approved your application with a full board review.

- Your primary contact for MMH Institutional Review Board:
  - Sherron Meeks, MPAL, BSN, RN-BC, CNSRN  
IRB Manager, Midland Memorial Hospital  
400 Rosalind Redfern Grover Parkway  
Midland, TX, 79701  
432.221.4873

Your approval expires on **December 3, 2016** before which you must have submitted an application for continuing review or study closure report.

The Midland Memorial Hospital Institutional Review Board commends your work with this valuable project and continues to anticipate seeing your results.

Thank you,

Sherron Meeks, MPAL, BSN, RN  
Institutional Review Board Manager  
Midland Memorial Hospital, Midland, TX

### Appendix L Letter of Authorization



#### Institutional Review Board (IRB) Authorization Agreement

Institution or Organization Providing IRB Review:	
A Midland Memorial Hospital Institutional Review Board	
IRB Registration #: IRB00004050	
Federal Wide Assurance #: FWA00007049	
Institution Relying on the Designated IRB:	
B Boise State University Institutional Review Board	
IRB Registration #: IRB00009924	
Federal Wide Assurance #: FWA00000097	

The individuals signing below agree/acknowledge that Boise State University may rely on the designated IRB for review and continuing oversight of its human subjects research for the specific project described below:

Title of research project: Using PEARLS Debriefing in the New Graduate Nurse Residency Program  
 Expiration Date: December 3, 2016  
 IRB Approval Number:  
 Name of Principal Investigator: Lea Keese, MSN, RN

The review performed by the designated IRB will meet the human subject protection requirements of B's OHRP-approved FWA. The IRB at A will follow written procedures for reporting its findings and actions to appropriate officials at B. B remains responsible for ensuring compliance with the IRB's determinations and with the Terms of its OHRP-approved FWA. This document must be kept on file by both parties and provided to OHRP upon request.

Signature of Signatory Official (A)

Print Full Name: Sheron Marks	
Title: IRB Manager	
Signature: <i>Sheron Marks</i>	Date: 02/15/16

Signature of Signatory Official (B)

Print Full Name: Julie Wagner	
Title: Director Research Compliance	
Signature: <i>Julie Wagner</i>	Date: 3/9/2016

## Appendix M

## Letter of Acknowledgment from Midland College



## Midland College

December 4, 2015

Mrs. Lea Keesee  
5813 Highland Blvd.  
Midland, Texas, 79707

Dear Lea:

This is to notify you that as a Boise State University Graduate Student in the DNP program, you have my permission to conduct your research at the Midland College F. Marie Hall SimLife Center for your study, "Debriefing with PEARLS."

I understand that you will recruit employees of Midland Memorial Hospital's New Graduate Nurse Residency Program. Your goal is to implement a quality improvement plan introducing one of the standards of best practices of simulation, specifically reflective debriefing, into the nurse residency curriculum. Your on-site research activities will require the use of the SimLife Center's simulation resources, namely the manikins, recording equipment, and simulation and debriefing rooms beginning in early May and ending in August of 2016. We have agreed that your project will not cause interference with normal work flow. Lea, I fully support the project and wish you the best in your pursuit of your educational goal.

If there are any questions from you, your university, or the IRB, please do not hesitate to contact me.

Sincerely yours,

Carmen Edwards, MSN, RN  
Dean Health Sciences

3600 N. Garfield • Midland, Texas 79705-6399 • (432) 685-4500 • [www.midland.edu](http://www.midland.edu)

MIDLAND COLLEGE IS AN EQUAL OPPORTUNITY EMPLOYER/EDUCATOR.  
Midland College is accredited by the Commission on Colleges of the South, 1200 South 11th Street, Suite 2000, Fort Worth, TX 76102-1000. Accreditation expires 2016. Contact the Commission on Colleges at 1600 Science Center, Fort Worth, TX 76102-1000 or call 817-275-1990 for more information. The official name of Midland College.

**Appendix N**  
**DASH Debriefing Assessment for Simulation in Healthcare**



Debriefing Assessment for Simulation in Healthcare (DASH)<sup>®</sup> 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	<b>Extremely Ineffective / Detrimental</b>	Consistently Ineffective / Very Poor	Mostly Ineffective / Poor	Somewhat Effective / Average	Mostly Effective / Good	Consistently Effective / Very Good	<b>Extremely Effective / Outstanding</b>

**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.)**

<b>Element 1</b> <b>Establishes an engaging learning environment.</b>	<b>Element 1 Rating:</b>
--	--------------------------

- 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.**

<b>Element 2</b> <b>Maintains an engaging learning environment.</b>	<b>Element 2 Rating:</b>
--	--------------------------

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

<b>Element 3</b> <b>Structures the debriefing in an organized way.</b>	<b>Element 3 Rating:</b>
---	--------------------------

- 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.

<b>Element 4</b> <b>Provokes engaging discussion.</b>	<b>Element 4 Rating:</b>
--	--------------------------

- 
- 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.

### Appendix O Demographic Collection Tool

  
BOISE STATE UNIVERSITY

Thank you for printing legibly!

Name: \_\_\_\_\_

My role in the Midland Memorial Hospital Nurse Residency Program is a  
 Nurse Educator  New Graduate Nurse

Gender:  Female  Male

Age:  
 18-23     24-29     30-34     35-39     40-44  
 45-49     50-54     55-59     60-64

Level of Education:  
 Associate Degree Nursing  
 Bachelor's Degree Nursing  
 Accelerated or Second Degree  
 Master's Degree Nursing  
 Doctoral Degree Nursing Please specify Doctoral Degree \_\_\_\_\_

Length of time as a registered nurse:  
 0-6 months     7-11 months  
 1 year     2 years  
 3-5 years     6-8 years  
 9-12 years  
If more than 12 years, thank you for specifying how many: \_\_\_\_\_

Did you participate in the Midland Memorial Hospital Nursing Internship Program?  
 Yes     No




**Appendix P**

Table 1: *Techniques for Data Collection, Outcomes, Measures, and Findings*

Tool	Outcome	Measures	Findings
Demographics Course Evaluation	<u>Outcome 3:</u> By June 2016, 50% of the NGN residency educators will participate in a training program including the INACSL Standards of Best Practices: Simulation; debriefing with PEARLS; and the LCJR.	Counted participants Report of Likert evaluation findings	<u>Outcome 3:</u> Met 89% participated in April
PEARLS	<u>Outcome 4:</u> By July 2016, 50% of the NGN residency educators will be using the PEARLS as the method for debriefing.	Counted participants	<u>Outcome 4:</u> Met 100% using the PEARLS method for debriefing.
DASH	<u>Outcome 6, 7, &amp; 8:</u> By August 2016, 50% of the NGN residency educators’ baseline and summative debriefing efficiency will be collected and evaluated by the project director using the DASH	Counted participants Descriptive statistics: Mean, Median, and Standard Deviation	<u>Outcome 6, 7, &amp; 8:</u> Met 100% formative and summative DASH completed for all educators.
LCJR	<u>Outcome 9 &amp; 10:</u> By August 2016, 50% of data for baseline and summative measurements of NGNs’ clinical judgement will be collected and evaluated using the LCJR	Counted participants Descriptive statistics: Mean, Median,	<u>Outcome 9 &amp; 10:</u> Not Met 33%  Formative and summative

		and Standard Deviation	LCJR completed for n=6 NGNs
One-on-one survey with five Likert scale and five open-ended questions	<p><u>Outcome 11:</u> By August 2016, 75% of the key stakeholders' data about project efficiency and outcomes via questionnaire will be collected and evaluated.</p> <p>At project's end, the residency educators and manager were asked open-ended questions:</p> <ol style="list-style-type: none"> <li>1) did the PEARLS methodology increase the efficiency of the educational coordinators' debriefing;</li> <li>2) should the NGNRP adopt the standard for conducting post simulation debrief;</li> <li>3) should the DASH be adopted as the standard measurement of debriefing efficiency;</li> <li>4) is the LCJR useful for measuring NGN's clinical judgment;</li> <li>5) should it be adopted as the standard measurement of graduate readiness for practice?</li> </ol>	Count: Report of Likert evaluation findings	<u>Outcome 11:</u> Met: 75% of the key stakeholders completed the survey.
Minutes of meetings	<p><u>Outcome 12 &amp; 13:</u> By March 2017, the project director will communicate project findings to stakeholders via:</p> <ul style="list-style-type: none"> <li>• a meeting at the hospital in January 2017</li> <li>• a podium presentation at International Meeting for Simulation in Healthcare in Orlando, FL January 30th.</li> <li>• a presentation at Boise State University for peers and faculty of the Doctoral Nursing Practice Executive Session in Boise, ID March 9 &amp; 10</li> <li>• a presentation at SimLife Center spring 2017 advisory meeting in Midland TX</li> </ul>		<p><u>Outcome 12 &amp; 13:</u> 75% MET</p> <p>NGN Residency January</p> <p>IMSH podium presentation January</p> <p>BSU DNP March</p>

## Appendix Q Informed Consent



**BOISE STATE UNIVERSITY**

**MMH IRB Approved**  
 DEC 03 2015  
 IRB # 2016-09

**INFORMED CONSENT**

**Study Title:** Debriefing with PEARLS  
**Principal Investigator:** Lea Keesee  
**Sponsor:** none

**Co-Investigator:** Dr. Teresa Serratt

This consent form will give you the information you will need to understand why this research study is being done and why you are being invited to participate. It will also describe what you will need to do to participate as well as any known risks, inconveniences, or discomforts that you may have while participating. We encourage you to ask questions at any time. If you decide to participate, you will be asked to sign this form and it will be a record of your agreement to participate. You will be given a copy of this form to keep.

> **PURPOSE AND BACKGROUND**  
 You are invited to participate in a research study to learn more about the use of simulation and reflective debriefing in a residency program. The information gathered will be used to better understand the impact of a reflective debriefing on new graduate nurses' transition into their professional role. You are being asked to participate because you are an educational coordinator in Midland Memorial Hospital's New Graduate Nurse Residency Program (NGNRP).

> **PROCEDURES**  
 If you agree to be in the study, you will be asked to

- Participate in one four hour course with the topic being Standards of Best Practices: Simulation Debriefing with PEARLS. The course will include lecture, lab activities, and practice using evaluation instruments on subjects in prerecorded videos specifically for this purpose.
- Be video recorded during two of your debriefing events.
- Participate in one interview at the end of the study. Each interview will last approximately 90 minutes. During the interview, you will be asked to complete a five question Likert scale and then answer five questions verbally about your beliefs on the effectiveness of reflective debriefing with PEARLS, the DASH as a standard measure of debriefing efficiency, and the LCJR usefulness of measuring the NGN's clinical judgment. The interview will be video-recorded and the researcher may take notes as well.

> **PROCEDURES**  
 We will invite all educational coordinators and the director of the NGNRP to participate in the four hour course, video-record two of their debriefings, and ask them to complete the Likert and verbal surveys. The discussion topics include will include your reactions to the usefulness of debriefing with PEARLS, the effectiveness of the DASH and LCRJ as instruments for measuring debriefing and NGN clinical judgment. A member of the research team will conduct the Likert

Approved IRB Protocol Number: XXX-XX XXX (after your application is approved, insert the approval number here) Page 1 of 2



scale and the verbal interview. To protect the privacy of all, all surveys will be conducted individually and results coded with unique numbers.

> **RISKS**

Some of the questions asked may make you uncomfortable or upset. You are always free to decline to answer any question or to stop your participation at any time.

> **BENEFITS**

There will be no direct benefit to you from participating in this study. However, the information that you provide may help shape policies of future new graduate nurse residency program cohorts.

> **EXTENT OF CONFIDENTIALITY**

Reasonable efforts will be made to keep the personal information in your research record private and confidential. Any identifiable information obtained in connection with this study will remain confidential and will be disclosed only with your permission or as required by law. The members of the research team and the Boise State University Office of Research Compliance (ORC) may access the data. The ORC monitors research studies to protect the rights and welfare of research participants.

Your name will not be used in any written reports or publications which result from this research. Data will be kept for three years (per federal regulations) after the study is complete and then destroyed.

The video-recordings of the debriefings will be saved on the primary investigator's (PI) password protected computer. After the videos are successfully transferred to the PI's computer, they will be deleted from the server where they were originally saved. In the event an educational coordinator request personal positive criticism of his/her DA5H score, sensitivity and privacy will be provided. The educational coordinators can talk openly about their experiences in the project, but the PI will remain silent. There is little to no chance the video recordings will be leaked. These will be stored on the PI's computer and will not be shared with anyone else.

> **PAYMENT/COMPENSATION**

You will receive no compensation for participation.

> **PARTICIPATION IS VOLUNTARY**

You do not have to be in this study if you do not want to. You may also refuse to answer any questions you do not want to answer. If you volunteer to be in this study, you may withdraw from it at any time without consequences of any kind or loss of benefits to which you are otherwise entitled.

> **QUESTIONS**

If you have any questions or concerns about your participation in this study, you should first contact the principal investigator at [lkeese@midland.edu](mailto:lkeese@midland.edu) or (432) 634-2580.

If you have questions about your rights as a research participant, you may contact the Boise State University Institutional Review Board (IRB), which is concerned with the protection of volunteers in research projects. You may reach the board office between 8:00 AM and 5:00 PM, Monday through Friday, by calling (208) 426-5401 or by writing: Institutional Review Board, Office of Research Compliance, Boise State University, 1910 University Dr., Boise, ID 83725-1138.

**DOCUMENTATION OF CONSENT**

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement and possible risks have been explained to my satisfaction. I understand I can withdraw at any time. I have received a copy of this form.

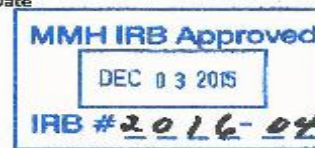
\_\_\_\_\_  
Printed Name of Study Participant

\_\_\_\_\_  
Signature of Study Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Person Obtaining Consent

\_\_\_\_\_  
Date



Approved IRB Protocol Number: XXX-XX-XXX (after your application is approved, insert the approval number here)

**Appendix R**  
**Outcome Evaluation Table**

Outcome	Outcome Instrument Data	Analysis Goal	Analytic Technique
<p><b>By June 2016, 50% of the NGRNP educational coordinators participate in four-hour training session.</b></p>	<p>Registration Surveys to gather self-report demographics of each group: educational coordinators &amp; NGN</p>	<p>Description of participants: Who is the group?</p>	<p>Descriptive Statistics: Mean, Median, and Standard Deviation, Use a Frequency Distribution Table</p>
<p><b>By August 2016, baseline and summative statistics of educational coordinators' debriefing efficiency is compiled and evaluated by the PM using the DASH instrument.</b></p>	<p>DASH LCJR</p>	<p>Is there a difference in the quality of debriefing with PEARLS as measured by the DASH as compared to the usual and customary debriefing?</p> <p>Does debriefing with PEARLS positively influence the development of NGN's clinical judgment as compared to the usual and customary debriefing?</p> <p>Is NGN Clinical Judgment associated with age, gender, amount of simulation, PEARLS debriefing, program of pre-licensure nursing, educational coordinators DASH score?</p>	<p>Descriptive Statistics: Mean, Median, and Standard Deviation, Use a Frequency Distribution Table</p>
<p><b>By August 2016, baseline and summative statistics of new graduates' clinical judgement is compiled and evaluated by the PM using the LCJR.</b></p>	<p>LCJR</p>	<p>Is there a difference between the changes in the LCJR scores between baseline and summative and rater's perception of quality debrief and use of PEARLS?</p> <p>Is there a correlation between the changes in the LCJR scores and rater's perception of quality debrief and use of PEARLS?</p>	<p>LCJR and DASH results: Descriptive Statistics: Mean, Median, and Standard Deviation, Use a Frequency Distribution Table</p>

<p><b>By August 2016, project leader will collect feedback from the educational coordinators about the project.</b></p>	<p>5 item Likert plus open-ended question survey</p>	<p>What differences did the PEARLS methodology have on the debriefing?</p> <p>Should the PEARLS method of debriefing be adopted as the standard curriculum for conducting post simulation debrief? Why/why not?</p> <p>Should the DASH instrument be adopted as the standard measure of debriefing efficiency for the NGNRP? Why/why not?</p> <p>How useful is the LCJR for measuring NGN’s clinical judgment?</p> <p>Should the LCJR be adopted as the standard measure of graduate readiness for practice? Why/why not?</p>	<p>Descriptive Statistics: Mean, Median, and Standard Deviation, Use a Frequency Distribution Table</p>
---	--	---	---

**Appendix S**  
**1-5 Year Operational Budget**

Debriefing with PEARLS		Budget	Budget	Budget	Budget	Budget	Rationale
Revenues	<i>Total</i>	Year 1	Year 2	Year 3	Year 4	Year 5	
<i>In Kind</i>	<i>Total</i>	<b>34,502.00</b>	<b>11,439.00</b>	<b>13,101.00</b>	<b>13,845.00</b>	<b>20,229.00</b>	
<b>Expenses</b>							
Advisory Board (every year)		368.00	368.00	375.00	422.00	434.00	Inflation of 3%
Education Initial Training (1st year)		3706.00					
Train-the-trainer Program (2nd year)			540.00	540.00	540.00	540.00	3 new educators on staff
			225.00	225.00	225.00	225.00	4 hr course 1 hr prep
			375.00	375.00	375.00	375.00	DASH Certification course
			158.00	158.00	158.00	158.00	Time to take certification
			30.00	30.00	30.00	30.00	Educational materials
			600.00	600.00	600.00	600.00	Classroom Rental
Evaluation Assessment Salaries (1st & 2nd year)		3730.00	1930.00	2108.00	2172.00	2237.00	Inflation of 3% (predicted on total)
			3841.00				Unnecessary to perform continuous evaluatory assessments after 2 <sup>nd</sup> year. Unnecessary to continue to pay for project management. NGNRP adopts use of PEARLS to debrief and use of DASH instrument as measurement.
Management & Operations Salary (1st & 2nd year)		26282.00					1; 1; 1; 2 subscriptions
Professional journal subscriptions			300.00	318.00	327.00	674.00	
INACSL/SSIH 300.00/subsription							
Professional Conferences			2500.00	5150.00	5462.00	8442.00	1; 2; 2; 3 attendees



DEBRIEFING WITH PEARLS

80

INACSL (2500.00/attendee)			2500.00	5150.00	5462.00	8442.00	1; 2; 2; 3 attendees
SSIH (2500.00/attendee)							
Other Personnel (1st year)	416.00						
<b>Total</b>	<b>34,502.00</b>	<b>11,439.00</b>	<b>13,101.00</b>	<b>13,845.00</b>	<b>20,229.00</b>		
<b>Operating Income</b>	<b>0.00</b>	<b>-0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Appendix T  
Expense Report**

<b>Statement of Operations: Debriefing with PEARLS Year One</b>	
<b>Budget</b>	
Advisory Board (Administrative, supplies, support, room rental)	368.00
Education Initial Training (salaries: NGN Residency Educators, PM, Clerk) (Cost of training: DASH webinar, materials, class room rental, travel expenses) (CNE preparation & fees)	3,706.00
Evaluation/Assessment (pre/post DASH data collection, computer & expenses, salary for PM)	3,730.00
Management & Operations Salaries (PM, personnel, room rental)	26,698.00
<b>Total</b>	<b>\$34,502.00</b>
<b>Actual Expenses</b>	
Advisory Board (Administrative, supplies, support, room rental all in-kind donation from F. Marie Hall SimLife Center partner members) Cost of meals only	150.00
Education Initial Training (salaries: NGN Residency Educators, PM, Clerk) (Cost of training: DASH webinar, materials, class room rental, travel expenses) No CNE.	3,122.50
Evaluation/Assessment Salaries (the debriefing recordings were predicted to be 1 hour, but actually ½ hour)	2,550.00
Management & Operations Salary	23,264.00
<b>Total</b>	<b>\$29,086.50</b>
<b>Operating Income (In-kind Donation from MMH, SimLife Center, DNP student)</b>	<b>\$29,086.50</b>