NCSBN Simulation Guidelines for Prelicensure Nursing Programs

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The National Council of State Boards of Nursing (NCSBN) published the results of the largest, most comprehensive study to date concerning the use of simulation as a substitute for traditional clinical experience. Results of the study, which were published in 2014, demonstrated that high-quality simulation experiences could be substituted for up to 50% of traditional clinical hours across the prelicensure nursing curriculum. An expert panel convened by NCSBN evaluated the data gathered through this study, examined previous research and the International Nursing Association for Clinical Simulation and Learning *Standards of Best Practice: Simulation*[SM], and used their collective knowledge to develop national simulation guidelines for prelicensure nursing programs. This article presents those guidelines, evidence to support the use of simulation, and information for faculty and program directors on preparation and planning for using simulation successfully in their nursing programs.

In 2014, the National Council of State Boards of Nursing (NCSBN) released the results of a landmark study, The National Simulation Study, which provided data that up to 50% simulation could be substituted for traditional clinical practice across the prelicensure nursing curriculum (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). The study was rigorously conducted under optimal conditions for student learning. Following the release of the study results, concern emerged that nursing programs might begin to substitute simulation for traditional clinical experience without the appropriate environment, administrative support, or faculty preparation. To assist boards of nursing (BONs) in assessing whether a nursing education program is ready to adopt simulation into its curriculum and substitute it for traditional clinical experience, and to direct nursing programs on the appropriate method for establishing and using simulation in the undergraduate curriculum, an expert panel was convened by NCSBN.

This expert panel, consisting of representatives from the International Nursing Association for Clinical Simulation and Learning (INACSL), American Association for Colleges of Nursing (AACN), National League for Nursing (NLN), Society for Simulation in Healthcare (SSH), BONs, and NCSBN, developed national guidelines for use of simulation in the undergraduate nursing curriculum. The guidelines are based on data from the NCSBN National Simulation Study (2014), studies outlined in the following review of the literature, the INACSL *Standards of Best Practice: Simulation*[SM], and other pertinent resources and were validated by internal and external peer review. The guidelines are presented here (see Table 1) by the panel of experts who developed the guidelines and authored this article. This article also presents evidence to support the use of simulation as well as information for faculty and program directors on preparation and planning for using simulation successfully in their nursing programs.

The Evidence

A relatively large number of nursing studies have been conducted analyzing the outcomes of simulation in prelicensure nursing education, but limitations in sample size, a lack of randomization, and absence of a control group limit them in their application towards building the science and providing sufficient evidence upon which to base policy. There are, however, a number of systematic and integrative reviews that provide meaningful data for supporting simulation as a learning pedagogy.

Foronda, Liu, and Bauman (2013) conducted a relatively robust integrative review, including 101 studies. In their synthesis of findings, they identified five major themes: confidence/self-efficacy, satisfaction, anxiety/stress, skills/knowledge, and interdisciplinary experiences. In the category of skills/knowledge, they included 29 studies, reporting that the preponderance of the findings support simulation as an effective means for teaching knowledge and skills. For example, one research study cited in this review (Sportsman, Schumacker, & Hamilton, 2011) was a longitudinal, descriptive investigation of 895 students that found that students were able to learn unique skills and knowledge in simulation that are normally learned in clinical experiences.

Lapkin, Levett-Jones, Bellchambers, and Fernandez (2010) conducted a systematic review of eight studies that met their

TABLE 1

Simulation Guidelines

Scope and Purpose

The following guidelines are meant to help: 1) boards of nursing (BONs) in evaluating the readiness of prelicensure nursing programs in using simulation as a substitute for traditional clinical experience; 2) nursing education programs in the establishment of evidence-based simulation programs for the undergraduate nursing curriculum.

Definitions

Simulation: A technique, not a technology, to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner (Gaba, 2004).

Traditional Clinical Experience: Practice in an inpatient, ambulatory care, or community setting where the student provides care to patients under the guidance of an instructor or preceptor.

Guidelines	Evidence	Resources
There is commitment on the part of the school for the simulation program.	• Letter of support from administrators stating the program has their backing and will be given the resources to sustain the program on a long-term basis. • Budgetary plan for sustainability and ongoing faculty training is in place • Written short–term and long term objectives for integrating simulation into the undergraduate curriculum and evaluating the simulation program.	
Program has appropriate facilities for conducting simulation	• A description of the physical space for conducting simulations including the lab, storage/staging areas and a place for debriefing.	
Program has the educational and technological resources and equipment to meet the intended objectives	• Program has a plan that describes the simulation resources and equipment that will be used to achieve the objectives.	• See Scenario Resources Document
Lead faculty and sim lab personnel are qualified to conduct simulation	• Submission of CVs and evidence of qualifications such as: simulation conferences attended, coursework on simulation instruction, certification in simulation instruction, training by a consultant or targeted work with an experienced mentor	• SIRC Courses • Simulation Preparation Programs • Webinars and presentations based on *INASCL Standards of Best Practice: Simulation* • CHSE Certification • Three-Step Program at Boise State • Textbooks: Jeffries (2007) *Simulations in Nursing Education: From Conceptualization to Evaluation;* Jeffries (2013) *Clinical Simulations: Advanced Concepts, Trends, and Possibilities;* and Palaganas, J.C., Maxworthy, J.C., Epps, C. A., Mancini, M.E. (2015). *Defining Excellence in Simulation Programs*
Faculty are prepared to lead simulations		• See NCSBN Simulation Faculty Preparation Checklist
Program has an understanding of policies and processes that are a part of the simulation experience.	• Policies describing the following, include, but are not limited to: method of debriefing; plan for orienting faculty; qualifications of faculty and sim lab personnel; plan for training new faculty; evaluation methods.	• Socratic Method of Debriefing • See NCSBN Program Preparation Checklist • INASCL Standards

inclusion criteria. They found that simulation improved the critical thinking, performance of skills, and knowledge of the subject matter and increased clinical reasoning in certain areas.

Two integrative reviews of undergraduate programs' use of simulation focused on patient safety. Berndt (2014) reviewed 17 studies, including three systematic reviews. Their findings support the use of simulation as an educational intervention to teach patient safety in nursing, particularly when other clinical experiences are not available. Fisher and King (2013) conducted an integrative review related to patient safety by examining 18 studies preparing students, through simulation, to respond to deteriorating patients. They found that confidence, clinical judgment, knowledge, and competence generally increased.

The largest and most comprehensive study to date examining student outcomes when simulation was substituted for up to and including 50% simulation was NCSBN's rigorously conducted National Simulation Study (Hayden et al., 2014). Ten nursing programs from across the country (five bachelor's and five associate-degree) provide evidence that when clinical experiences are substituted with up to 50% simulation, there were no significant differences between the groups with 10% or less of simulation (control), 25% simulation, or 50% simulation with regard to knowledge acquisition and clinical performance. These results were found during all the clinical courses in the nursing program as well as in the first 6 months in practice. This robust study provides confidence that substituting up to 50% simulation for prelicensure clinical experiences promotes outcomes similar to traditional clinical experiences, as long as faculty are adequately trained, committed, and in sufficient numbers; when there is a dedicated simulation lab with appropriate resources; when the vignettes are realistically and appropriately designed; and when debriefing is based on a theoretical model. In conclusion, the results of NCSBN's National Simulation Study, along with integrative or systematic reviews in prelicensure nursing, support the premise simulation has outcomes similar to clinical experiences and under the right circumstances can be used to substitute for clinical experiences.

Preparation of Faculty and Programs

Simulation is a pedagogy that may be integrated across the prelicensure registered nurse and licensed practical nurse curricula; however, nursing education programs are advised to begin slowly and steadily increase the amount of simulation as they acquire expertise in this pedagogy.

Questions have arisen regarding the number of clinical hours a program should require when substituting simulation for clinical hours. All programs participating in the National Simulation Study required at least 600 hours of clinical experience in the prelicensure curriculum. No evidence is available regarding the outcomes of substituting traditional clinical experience with simulation when the program has less than 600

hours; however, experts agree that the quality of the experience, not the number of hours, is crucial. If students would be placed in clinical settings with inadequate opportunity for hands-on experience, employment of simulation by capable faculty with meaningful debriefing may offer a better alternative.

BONs and nursing programs should also consider the following criteria when determining the amount of simulation that can substitute for traditional clinical hours: overall number of clinical hours required, student pass rates, availability of clinical sites, turnover of faculty and program directors, student complaints, and retention rates.

In addition, in preparation for using simulation, faculty and programs should use the following checklists:

Faculty Preparation Checklist

☐ The simulation program is based on educational theories associated with simulation, such as experiential learning theory.

☐ The faculty members are prepared by following the INACSL *Standards of Best Practice: Simulation.*

☐ A tool for evaluating simulation-based learning experiences has been designed based on the INASCL *Standards of Best Practice: Simulation* evaluation methods.

☐ The program curriculum sets clear objectives and expected outcomes for each simulation-based experience, which are communicated to students prior to each simulation activity.

☐ The faculty members are prepared to create a learning environment that encourages active learning, repetitive practice, and reflection and to provide appropriate support throughout each activity.

☐ The faculty members are prepared to use facilitation methods congruent with simulation objectives/expected outcomes.

☐ The program utilizes a standardized method of debriefing observed simulation using a Socratic methodology.

☐ A rubric has been developed to evaluate the students' acquisition of KSAs (knowledge, skills, and attitudes) throughout the program.

☐ The program has established a method of sharing student performance with clinical faculty.

☐ The program collects and retains evaluation data regarding the effectiveness of the facilitator.

☐ The program collects and retains evaluation data regarding the effectiveness of the simulation experience.

☐ The program provides a means for faculty members to participate in simulation-related professional development, such as webinars, conferences, journals, clubs, readings, and certifications such as certified health care simulation educator (CHSE), and participation in NLN Sim Leaders/Sigma Theta Tau International (STTI) Nurse Faculty Leadership Academy (NFLA) with a focus on simulation.

Program Preparation Checklist

□ The school has created a framework that provides adequate resources (fiscal, human, and material) to support the simulation.

□ Policies and procedures are in place to ensure quality-consistent simulation experiences for the students.

□ The simulation program has an adequate number of dedicated trained simulation faculty members to support the learners in simulation-based experiences.

□ The program has job descriptions for simulation faculty members/facilitators.

□ The program has a plan for orienting simulation faculty members to their roles.

□ The program uses a needs assessment to determine what scenarios to use.

□ The simulation program provides subject-matter expertise for each scenario debriefing.

□ The program and faculty members incorporate the INACSL *Standards of Best Practice: Simulation.*

□ The program has appropriate designated physical space for education, storage, and debriefing.

□ The faculty members have a process for identifying what equipment or relevant technologies are needed for meeting program objectives.

□ The program has adequate equipment and supplies to create a realistic patient care environment.

□ The faculty use evaluative feedback for quality improvement of the simulation program.

□ The administration has a long-range plan for anticipated use of simulation in the forthcoming years.

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Massachusetts Nursing Initiative: www.mass.edu/currentinit/Nursing/Sim/ScenarioDetail.asp?s=7

Montgomery College—Maryland: http://cms.montgomerycollege.edu/nursingsims/

National League for Nursing (NLN): www.nln.org/professional-development-programs/teaching-resources/aging/unfolding-cases

Quality and Safety Education for Nurses(QSEN): http://qsen.org/teaching-strategies/strategy-search/advanced-search-results/?strat_type=Simulation%20Exercises

Simulation Innovation Resource Center (SIRC): http://sirc.nln.org/mod/page/view.php?id=842

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University of South Dakota: www.usd.edu/health-sciences/nursing/simulation-scenarios

University of Washington: http://collaborate.uw.edu/educators-toolkit/stroke.html-0

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