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: SimulationSM, 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.

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, Levert-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.

<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Evidence</th>
<th>Resources</th>
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</thead>
<tbody>
<tr>
<td>There is commitment on the part of the school for the simulation program.</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Program has appropriate facilities for conducting simulation</td>
<td>A description of the physical space for conducting simulations including the lab, storage/staging areas and a place for debriefing.</td>
<td>See Scenario Resources Document</td>
</tr>
<tr>
<td>Program has the educational and technological resources and equipment to meet the intended objectives</td>
<td>Program has a plan that describes the simulation resources and equipment that will be used to achieve the objectives.</td>
<td></td>
</tr>
<tr>
<td>Lead faculty and sim lab personnel are qualified to conduct simulation</td>
<td>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</td>
<td>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</td>
</tr>
<tr>
<td>Faculty are prepared to lead simulations</td>
<td>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.</td>
<td>See NCSBN Simulation Faculty Preparation Checklist</td>
</tr>
<tr>
<td>Program has an understanding of policies and processes that are a part of the simulation experience.</td>
<td></td>
<td>Socratic Method of Debriefing, See NCSBN Program Preparation Checklist, INASCL Standards</td>
</tr>
</tbody>
</table>
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 evidence 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 faculty members are prepared by following the INACSL Standards of Best Practice: Simulation.
- The program collects and retains evaluation data regarding student outcomes when simulation is substituted for clinical experience, employment of simulation by capable faculty with meaningful debriefing may offer a better alternative.
- 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 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 program has established a method of sharing student performance with clinical faculty.
- The faculty members are prepared to use facilitation methods congruent with simulation objectives/expected outcomes.
- The program collects and retains evaluation data regarding the effectiveness of the facilitator.
- 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.

References and Resources


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

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

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

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


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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