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Pamela R. Jeffries, PhD, RN, FAAN, ANEF; Kristina Thomas Dreifuerst, PhD, RN, CNE, ANEF; Suzie Kardong-Edgren, PhD, RN, ANEF, CHSE; and Jennifer Hayden, MSN, RN

Nursing programs are seeking guidance from boards of nursing about how much simulation can be substituted for traditional clinical practice. To address this question and to assess educational outcomes when simulation is substituted for clinical time, the National Council of State Boards of Nursing (NCSBN) conducted a study using 10 nursing schools across the United States. This article focuses on the faculty development needed to maintain fidelity in the intervention, implementation, and evaluation processes of initiating simulation programs. Lessons learned from preparing faculty for the NCSBN simulation study are shared and may be applicable to schools seeking to educate faculty in teaching simulation.

Nursing programs are recognizing clinical experiences using simulation as an important component of nursing education. Because of increasing difficulties in obtaining high-quality clinical placement sites, some nursing programs are replacing a portion of the time spent in traditional clinical environments with simulation, and they want to replace more. Thus, programs are making substantial investments in equipment and dedicated laboratory space. However, faculty education for simulation is often underfunded or neglected (Kardong-Edgren, Willhaus, & Hayden, 2012; Waznonis, 2014).

As a result, these programs are seeking guidance from boards of nursing (BONs) about how much clinical time can be spent in clinical experiences using simulation. BONs, however, have valid questions about the apparently widespread and uncritical adoption of simulation. Oermann, Yarbrough, Saewert, Ard, and Charasika (2009) suggest that the "call for evidence in nursing education parallels the emphasis on evidence-based practice in nursing" (p. 64). Additionally, many BONs and schools of nursing are requesting information about best practices in simulation pedagogy and are also asking for guidance to develop faculty in the area of creating and implementing a simulation-based curriculum in their nursing program. Others ask which competencies are being measured by simulation and how they should be measured. BONs have requested data to help guide and support decisions regarding these important issues.

The National Council of State Boards of Nursing (NCSBN) conducted a study using 10 U.S. nursing schools that began in the fall of 2011. The National Simulation Study examined the educational outcomes of nursing knowledge, clinical competency, and students' perception of how well learning needs were met. Prelicensure nursing students at each school were randomized to a control group in which up to 10% of clinical time was replaced by simulation, a group in which 25% of clinical time was replaced by simulation, or a group in which 50% of clinical time was replaced by simulation. Students were followed throughout their nursing program and for up to 6 months after they began practice as new graduate nurses (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014).

Large multisite studies in nursing education are rare (Oermann et al., 2012) as are nursing faculty members experienced in conducting these types of studies. Thus, this large, multisite study required intervention fidelity. Faculty participants needed to be educated in the interventional pedagogy so the simulations would be presented in a consistent manner across the 10 sites. In the year before the study, extensive education following the principles of maintaining fidelity in educational and psychosocial interventions was conducted over three time periods. Faculty members from each participating school were instructedprogram. Fa instructional and reference materials for the study sites, presenting interactive educational sessions with participant demonstration and evaluation, using standardized protocols for facilitating

simulation scenarios, conducting debriefings using Dreifuerst's (2012) Debriefing for Meaningful Learning© (DML), evaluating student clinical performance using the Creighton Clinical Evaluation Instrument (CCEI) , and evaluating debriefing effectiveness using the Debriefing Assessment for Simulation in Healthcare-Rater Version (DASH©-RV) instrument (Simon, Raemer, & Rudolph, 2011). To implement a similar design in a single school or program, similar decisions and protocols would be necessary; however, evaluation measures may need to be refined to address individualized desired program outcome data.

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Results of studies reporting the outcomes of simulation education are favorable, but the literature is limited in its generalizability. There is variability in the way simulations are structured and conducted and variability in the way debriefing is conducted. The use of validated assessment instruments is nascent in the literature. The level of evidence needed by BONs and nurse educators to determine whether simulation can replace some of the time in

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ers; some were donated by experienced simulationists who had used a needed scenario multiple times to ensure its reliability.

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Development and education in simulation pedagogy are integral to translating study results into a successful simulation program. To ensure a quality outcome, the faculty has to be prepared and developed to use this type of experiential pedagogy.

For preparation to participate in the National Simulation Study, all participants came together for three, 2- to 3-day workshops in the 12 months before the fall of 2011, when the research was launched. These face-to-face workshops were designed to teach faculty members how to conduct simulations well, how to debrief learners in a consistent manner that fostered meaningful learning, and how to use the evaluation instruments that would

TABLE 1

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Below are suggestions for what to consider when developing a simulation education program.

Simulation Scenario Development and Implementation

- Use a simulation framework with a theoretical basis.
- Create or purchase simulation scenarios that correlate with course concepts and behaviors.
- Use a standardized simulation template when developing simulations for consistency across courses and nursing programs.
- Adopt a theoretically based debriefing approach/structure for training and implementation.
- Consider integrating major concepts in the simulation scenarios that cut across courses.

Simulation Training/Skills Development

- Use simulation experts to conduct the initial core training to ensure quality and best practices.
- Set aside dedicated time for training/skills development; a 3- to 4-day workshop is ideal.
  - This gives faculty the opportunity to learn new roles, practices, and strategies when integrating simulations into the curriculum.
  - Educate all faculty (both clinical and simulation) on the evaluation tools that may be used in your simulation-based curriculum.
- Set education/training agenda outlining set competencies needed for the faculty, such as debriefing.

Selection of Faculty or Individuals to Conduct the Simulations in Your Nursing Program

- Strongly encourage the development of a simulation team who are trained and enthusiastic about implementing simulations.
- Designate a simulation coordinator/manager of the simulation team to ensure preparedness and communication with the simulation team, and to provide feedback to course faculty where simulations are integrated.
- Develop a simulation learning community. For example, create an online platform and hold meetings with the simulation team members, including key faculty course coordinators, multimedia specialists, and simulation technologists, to facilitate communication and best practices, and to incorporate new innovations and processes.

Simulation Integration Into a Program

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to select or design simulation experiences to fit the particular curricular needs of the students and use a standardized debriefing method and outcome evaluation instruments to assess outcomes. In the National Simulation Study, simulation team members were responsible for modeling DML as a debriefing method, teaching the clinical faculty to use the CCEI student performance evaluation instrument (Hayden, Keegan, Kardong-Edgren, & Smiley, 2014), and periodically conducting peer evaluation of each team member's debriefing effectiveness with the DASH-RV instrument. (Details of the study instrumentation are included in Hayden, Keegan, et al., 2014). Study teams were provided with workload credit for simulation time and faculty development at their institutions. The effectiveness of this strategy suggests it provided a strong foundation for simulation and should be considered by programs developing a robust simulation program.

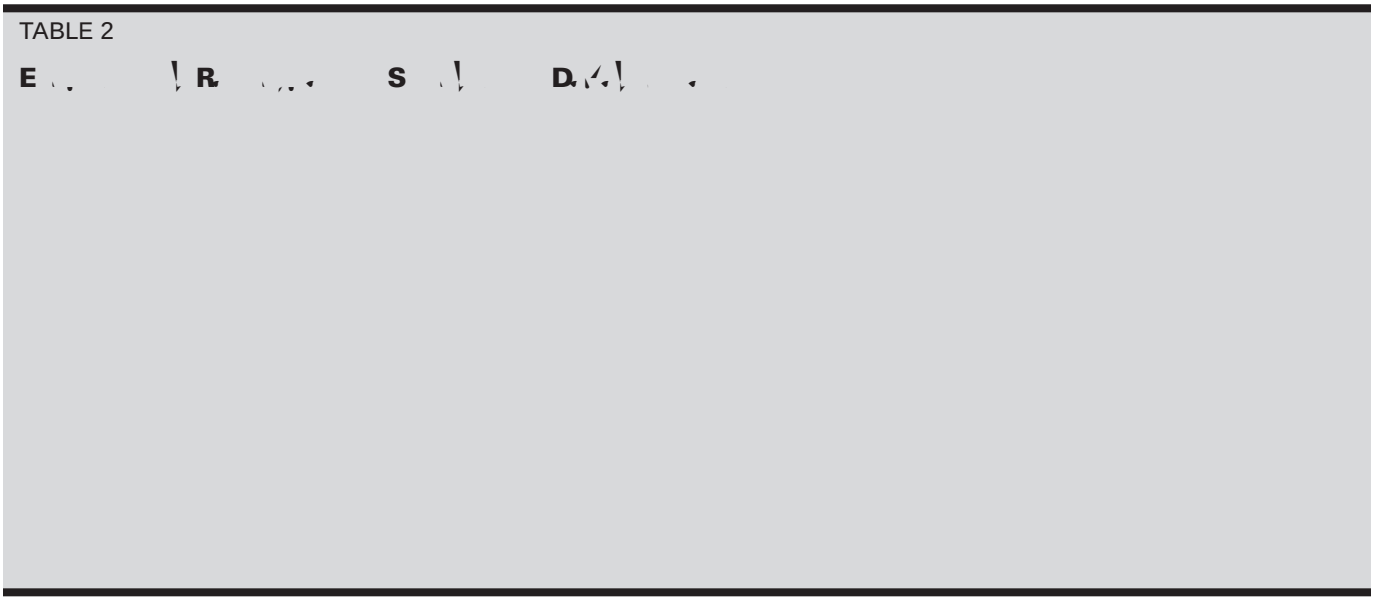
Faculty may want to consider designating an SC to lead the school's simulation-based team, as was done in the National Simulation Study. The study team SC was responsible for ensuring the integrity of the overall study and day-to-day management at the site. A simulation program SC would be responsible for ensuring the simulation-based curriculum at the program level. Preparation is required for the simulation team selected and used at the school program level just as was required for the national study.

Multiple training sessions for SCs focused on selecting and facilitating simulations and coordinating the study site, including scheduling students for simulation time according to the protocol and randomization schedule, preparing the simulation laboratory and equipment for each scheduled simulation day, facilitating simulations, and ensuring data were collected and submitted according to the data collection schedule. Preparing the team, engaging in collaborative work with everyone involved with the simulations, and leading the evaluation and assessment of the outcomes were critical functions of the SCs; SCs should likewise oversee the overall simulation process and/or faculty effectiveness in delivering simulations across the courses for best outcomes in nursing programs. Faculty developed for the simulation team can serve as resources just as the study team served as a resource for students and other faculty and staff members involved in the study at each site.

Other topics in the faculty development workshops for the study centered on the curriculum development for four semesters, the institutional review board process, the data safety monitoring process at NCSBN, expectations for on-site clinical faculty members, integration of simulations across the curriculum in the seven core clinical courses, and scheduling of the 25% or 50% simulations in parallel with the traditional clinical time allotted for the clinical courses. In nursing programs, the workshops or development time with faculty should include key topics needed to ensure the success of a simulation-based curriculum, such as identifying student outcome measures and emphasizing key curriculum concepts, including the Quality and Safety Education for Nurses competencies and specific communication rubrics. In addition to presenting the information, participants need an opportunity to practice the skills they are learning and have feedback.

Throughout the educational workshops and training sessions, simulation team members were developing their own learn-

TABLE 2



continuing with the study. This ongoing monitoring would also be helpful in simulation programs.

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Just as the study team members were instructed on how to prepare the course clinical faculty to evaluate student clinical performance, the simulation team and clinical faculty need to be educated on appropriate use of the evaluation tools within the course. One instrument available and used in the study to measure clinical competency in both the simulation and the clinical environment is the CCEI (Hayden, Keegan, et al., 2014). The CCEI was chosen for its ease of adaptability to any clinical setting and program. This one-page instrument is scored with a 1 or a 0 for each element based on the quality and safety in nursing standards. Study team members and SCs were taught to use the CCEI so they could train clinical faculty members using lecture and discussion, including examples and definitions of terms on the instrument intended to promote inter-rater reliability. The clinical outcomes for each course at each school served as the benchmarks for each item on the instrument.

To benchmark the CCEI successfully for each course, SCs held a meeting at the beginning of each semester with all course clinical faculty members involved in the study. These clinical faculty members, lead teachers, and study faculty members clearly defined the expected course clinical outcomes and the expected student behaviors for scoring a 1 on each element of the CCEI by the end of the semester. Standardized and validated training videos of two students in a blood administration scenario performing at various stages of proficiency were made available to all clinical faculty members to practice scoring the CCEI.

Clinical faculty members accompanied their students to the simulation centers for all study simulation activities. They observed and scored students in simulation and debriefing who were serving in the roles of nurse 1 or nurse 2, using the CCEI. Clinical faculty members also scored all students individually, using the CCEI for their work during the traditional clinical time each week.

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Overall, the faculty development and education were important components of the research design in the National Simulation Study to ensure standardized implementation, intervention, and assessment fidelity at the different sites. These elements are also important considerations when developing and implementing a simulation-based curriculum in nursing programs. All faculty members involved in implementing the simulation study took part in the simulation education and training and demonstrated competencies for implementing simulations and conducting debriefings before being allowed to be part of the simulation team. Fidelity in this study was necessary to ensure consistent outcomes from the use of simulation within the curriculum just as fidelity is important when implementing a simulation curriculum in a nursing program.

Many challenges are associated with requiring faculty members to learn simulation pedagogy. Ensuring they know how to implement clinical simulations across different courses and how to debrief using best practices may be difficult to operationalize, but is critical for a successful outcome. (See Table 2 for faculty development resources.) Therefore, BONs' policies determining the amount of clinical time that can be replaced by simulation will need to include similar parameters and quality initiatives that are attainable by faculty members and schools that wish to adopt these practices. Clearly, ensuring that faculty members who use simulation receive education and skills in simulation pedagogy and debriefing is essential for successful student outcomes.