ASSESSING Continued Competency Through Simulation:
A Call for Stringent Action

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DESCRIBING CONTINUED COMPETENCE AS A CRITICAL CHALLENGE FOR REGULATORY BOARDS, THE NATIONAL COUNCIL OF STATE BOARDS OF NURSING (NCSBN) STATED IN 2005 THAT "it is time to address that challenge" (p. 1). Concerns with continued competency evaluation of health care providers are longstanding. In its 1995 report "Reforming Health Care Workforce Regulation: Policy Considerations for the 21st Century," the Pew Health Professions Commission recommended that states "require each board to develop, implement and evaluate continuing competency requirements to assure the continuing competence of regulated health care professions" (p. 25). In the summary report of the American Nurses Association's (ANA) 1997 Nursing Futures and Regulation Conference, Del Bueno stated that the relevant question was not *should* nursing ensure competence, but how competence is to be measured. In 1999, Lenburg strongly encouraged nursing to confront the issues of continuing professional competency based on the then complex health care delivery system. And in 2001, the Institute of Medicine (IOM) acknowledged the continually expanding knowledge base within health care and stated that "current licensure and scope-of-practice laws offer no assurance of continuing competency" (p. 217). This article discusses aspects of competency evaluation and proposes simulation as a potentially effective strategy.

Competency In 2005, the NCSBN reaffirmed its 1996 definition of competency as "the application of knowledge and the interpersonal, decision-making and psychomotor skills expected for the practice role, within the context of public health" (p. 1). Core competences, as defined by the National League for Nursing (2010), are "discrete and measurable skills" that are the "foundation for clinical performance examination and the validation of practice competence essential for patient safety and quality care" (p. 65).

Continuing competence was recognized by the Competency & Credentialing Institute (CCI) (Byrne & Waters, 2008) as a "dynamic and evolutionary process" that must evolve constantly to meet the demands of society, changes in technology, professional responsibilities, and expanded knowledge and skills (p. 1). This think tank of experts reviewed the literature, explored the concept of continuing competence, and identified themes for nursing to address when developing guidelines for continuing competency that included:

• The continuous evolution of competence
• The impact of educational reform, recognizing multiple education routes and strategies
• The need to develop skills in information literacy, recognizing that knowledge is not static and nurses need to analyze and act on data quickly
• The mandatory recognition of the impact of policy issues
• The recognition that work and learning must occur in multidisciplinary teams and collaboration is essential
• The critical understanding of data management

Experts from the CCI have stressed that "research is needed to find effective ways to measure continuing competence that is objective and fair to providers while leading to better patient care" (Byrne & Waters, 2008, p. 5). Multiple questions continue to be asked (Byrne, 2005; Jordan, Thomas, Evans, & Green, 2008; Whittaker, Winifred, & Smolenski, 2007):
• Who is primarily responsible for measuring continued competency?
• Who should be evaluated and when should this evaluation occur?
• Which core competencies should be included in a continued competency evaluation?
• How should competency be evaluated?
The authors discuss answers to these questions and propose that action steps be formalized while the debate continues.

WHO IS PRIMARILY RESPONSIBLE FOR MEASURING CONTINUED COMPETENCY? Acute care agencies are mandated by the Joint Commission to assess and document competency upon hiring and periodically throughout a nurse's employment (Joint Commission on Accreditation of Healthcare Organizations, 1996). The traditional competency assessment method used by acute care agencies tends to focus on clinical skills, not the science behind the skills (Bradley & Huseman, 2003). Such a method of competency evaluation, according to Allen et al. (2008), yielded a system where nurses "demonstrated every skill step rather than the critical responsibilities of practice and an understanding of the science of nursing practice" (p. 81).

Requests for modification in the traditional approach to competency assessment have been influenced by the complex health care environment, changes in technology, societal demands, and patient safety issues. These multifaceted changes require nurses to apply sub-

ABSTRACT *This article proposes that simulation has potential as a method to validate critical and reflective thinking skills and continued competency of registered nurses. The authors recognize the challenges and benefits for using simulation in assessing competency. Furthermore, the authors stress that the potential use of simulation in competency testing cannot be achieved until educators and researchers acquire the specific knowledge and skills to make informed decisions and recommend policy.*

stantial knowledge while providing quality, time-sensitive patient care (Byrne, 2005; Coile, 2003).

The organizations represented by NCSBN (2005) have a legislative mandate to protect the health, safety, and welfare of the public, and therefore an obligation to ensure continued competency of licensed nurses. Furthermore, the NCSBN emphasized that there is no universally accepted model requiring nurses to remain up to date with current best practices. Both the IOM (2001) and NCSBN indicated that the issue of continued competency assessment has yet to be explored autonomously and exhaustively. These agencies also acknowledge that licensing boards assume responsibility for evaluating continued competency only after a complaint of incompetence is lodged.

The ANA Code of Ethics for Nurses (2001) states that "individual nurses are responsible for assessing their own competence" and are accountable for their personal professional growth (p. 17). However, the authors contend that lifelong maintenance and validation of continued competency are shared obligations of employers, regulatory agencies, professional associations, and individual nurses and should be a mandated professional necessity. Current efforts to validate continued competence have not provided the level of certainty demanded by regulatory agencies and citizen advocacy groups.

WHO SHOULD BE EVALUATED AND WHEN SHOULD THIS EVALUATION OCCUR? Research regarding characteristics of health professionals who are at high risk for failing to demonstrate ongoing clinical competence is limited. The point at which individuals are most likely to make errors in clinical judgment reflecting a lack of competence also requires study. Thomas (2007) identified a demographic profile of registered nurses sanctioned by the Texas State Board of Nursing that included: a) age (the largest cohort ranged in age from 45 to 54); b) number of years licensed as an RN (the largest cohort was licensed between 5 and 10 years); c) number of years the nurse worked for present employer (76 percent had worked in their current agency for 5 years or less); d) working in the acute care setting (69.4 percent); and e) educational level (43.5 percent were graduates of associate degree programs; 30.6 percent were graduates of baccalaureate programs). In a study conducted at one institution, Decker (2007) showed that graduating senior nursing students with English as a second language experienced difficulty demonstrating expected critical and reflective thinking skills when compared to their peers. Further research is needed to establish generalizability.

Philipsen, Lamm, and Reier (2007) stressed that patient advocates and the general public have concerns about the continued competency of nurses and the evaluation of competency when nurses return to practice after having left the profession. These concerns have led to the review and modification of board of nursing policies regarding the evaluation and validation of ongoing professional competencies. The authors contend that additional research is needed.

WHICH CORE COMPETENCIES SHOULD BE INCLUDED IN A CONTINUED COMPETENCY EVALUATION? Experts have worked arduously to answer this question. Del Bueno (1997) identified three dimensions of competence: critical thinking, interpersonal skills, and technical skills. Lenburg (1999) identified eight core practice competencies for evaluation and intervention: assessment and intervention, communication, critical thinking, teaching, human caring relationships, management, leadership, and knowledge integration. In 2003, the IOM iden-

tified five universal competencies to be assessed in health professionals: patient-centered care, quality improvement, interdisciplinary collaboration, evidence-based practice, and informatics. The IOM also recommended that health profession boards move toward the requirement that licensed health professionals periodically demonstrate the ability to deliver patient care as defined by the five competencies.

The Texas Nurses Association (TNA) Task Force on Continued Competence (2008) identified four core competencies to form a framework for nursing practice: a) demonstration of clinical judgment in the provision of holistic care, b) demonstration of organization and management of safe care, c) application of skill in interpersonal relationships with others, and d) demonstration of professional and ethical practice. The Quality and Safety for Nurses (QSEN, n.d.) project identifies patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics as quality and safety competencies.

Synthesizing all these recommendations, the authors propose defining continued competency as the integration of knowledge (evidence-based practice); skills performance (including technical and nontechnical skills such as delegation and prioritization); communication and collaboration (patient, family, intradisciplinary, interprofessional, informatics); critical and reflective thinking (clinical judgment and quality improvement); and values (to include professional and personal attitudes, motivation, and self-confidence). In addition, the authors propose that these core competencies reflect the nurse's ability to incorporate safe, holistic patient-centered care reflecting the patient's culture and preferences.

HOW SHOULD COMPETENCY BE EVALUATED? The members of the National Cancer Nursing Education Project (EdCaN, 2008) reviewed 54 articles published between 2000-2007 related to the assessment of competency in nursing practice. The project identified continuing education, portfolios, examination, peer review, direct observation, self-assessment, interview, and patient outcomes as the common indicators used to assess competencies. No evidence was found to support one indicator as superior to the others, and most articles did not describe the approach used to ensure validity and reliability of assessment tools. The conclusion of this review stated, "The competencies for professional nursing should reflect the multifaceted nature of nursing practice, the broad range of practice settings, and cultural differences" (p. 42).

The TNA Task Force on Continued Competence (2008) also indicated that competency can be documented through identified pathways, such as continuing education, certification, validation by approved organizations, and completion of professional portfolios, but also included simulation. Regardless of the method selected, research is needed to create, validate, or adopt a reliable and valid tool to measure the nursing core competencies that are identified.

Evaluation of core competencies, according to Bargagliotti, Luttrell, and Lenburg (1999), should include "those actions or responsibilities deemed to be critical for practice and quality care, rather than the steps in doing them" (p. 2). Other experts recommend that the evaluation tool used during a competency evaluation reflect a global rating of performance. A global rating would allow the evaluator to use personal judgment and to evaluate the "performance as a whole" (Weller et al., 2003, p. 46). According to Bond and Spillane (2002), a global rating would rely on subjective judgments about atti-

tudes, skills, and knowledge exhibited during a simulated patient care experience.

Given the need for a reliable and valid instrument as an evaluation of competence, the authors agree with Wendt and Alexander (2007) that the results from the 2006 NCSBN RN-post-entry-level practice analysis could be used as one method to identify a core set of RN activities and develop core RN competencies regardless of practice setting, specialty area, and years of experience.

Researchers, primarily in anesthesiology, have endeavored to demonstrate the validity and reliability of evaluation tools used during simulated experiences with advanced patient simulators (APS). For example, research conducted by Devitt et al. (1997) demonstrated interrater reliability (kappa > 0.75) when evaluators received training on the rating system and the scenario content. Devitt, Kurrek, Cohen, and Cleave-Hogg (2001) showed that a simulation-based evaluation using APS could discriminate between medical students and anesthesiologists from various practice categories, demonstrating construct validity.

Holcomb et al. (2002) developed a tool to evaluate performance in the treatment of trauma patients. Comprised of scores and timed tasks, the tool uses videotaped reviews to measure the performance of a multidisciplinary team. Data analysis indicated that the tool is valid for providing a quantitative evaluation of a team's performance.

Researchers are exploring the use of simulation to validate procedure specific competencies. For example, Duncan, Morgenthaler, Ryu, and Daniels (2009) investigated the teaching and assessment of thoracenteses insertion using simulation and ultrasound; others have investigated central venous catheter insertion (Evans et al., 2010; Huang et al., 2009). Results from these studies indicate that programs that included simulation, ultrasound guidance, competency testing, and performance feedback improved in-hospital performance and decreased risk to patients. Although data are beginning to demonstrate the advantage of different modalities of simulation in competency assessment, additional research is needed to address predictive validity (Scalese, Obeso, & Issenberg, 2008). Does the practitioner's performance on a give assessment predict the individual's performance in the patient care setting?

Boulet and Murray (2010) provide an overview of how anesthesiology uses simulation to measure skills and competencies and stress specific actions needed to provide meaningful scores: a) define the purpose of the test; b) identify the knowledge and skill(s) to be assessed; c) develop the appropriate scenario; d) select and validate scoring metrics; e) assess the reliability of test scores; and f) provide evidence to support inferences. According to Boulet and Murray, when theses key actions are taken, psychometrically sound evaluations can be implemented that will elevate practice standards and improve patient safety.

Simulation as an Adjunct to Competency Validation Simulation formats, including standardized patients (SPs), anatomical models, advanced patient simulators (APS), and virtual reality, provide effective means of systematically validating competencies in a controlled environment (Schroeder et al., 2007). The Accreditation Council for Graduate Medical Education (ACGME) (2011) and the American Board of Medical Specialties (ABMS) recognized simulation as a viable and desirable option for determining competency and developed a toolbox of assessment methods. According to

the ACGME and ABMS (2000), content validity was identified when scenarios were authentic and subjected to peer review; the simulated experience was designed by experts; and evaluations were conducted by professionals trained to use predefined reliable scoring criteria.

To meet the challenges facing nursing, the authors propose building on these endeavors, using advanced patient simulators and/or standardized patients, among other viable means, to evaluate continued competency. Simulation is defined as an artificially created situation designed to resemble an actual event that requires the practitioner to make critical decisions while demonstrating discipline-specific competencies (IOM, 2001; Rauen, 2001). Jeffries (2005) described simulation as an educational process where learning experiences are simulated to imitate the working environment. The learner is required to integrate skills (both technical and nontechnical) into a patient care scenario and thus demonstrate clinical judgment.
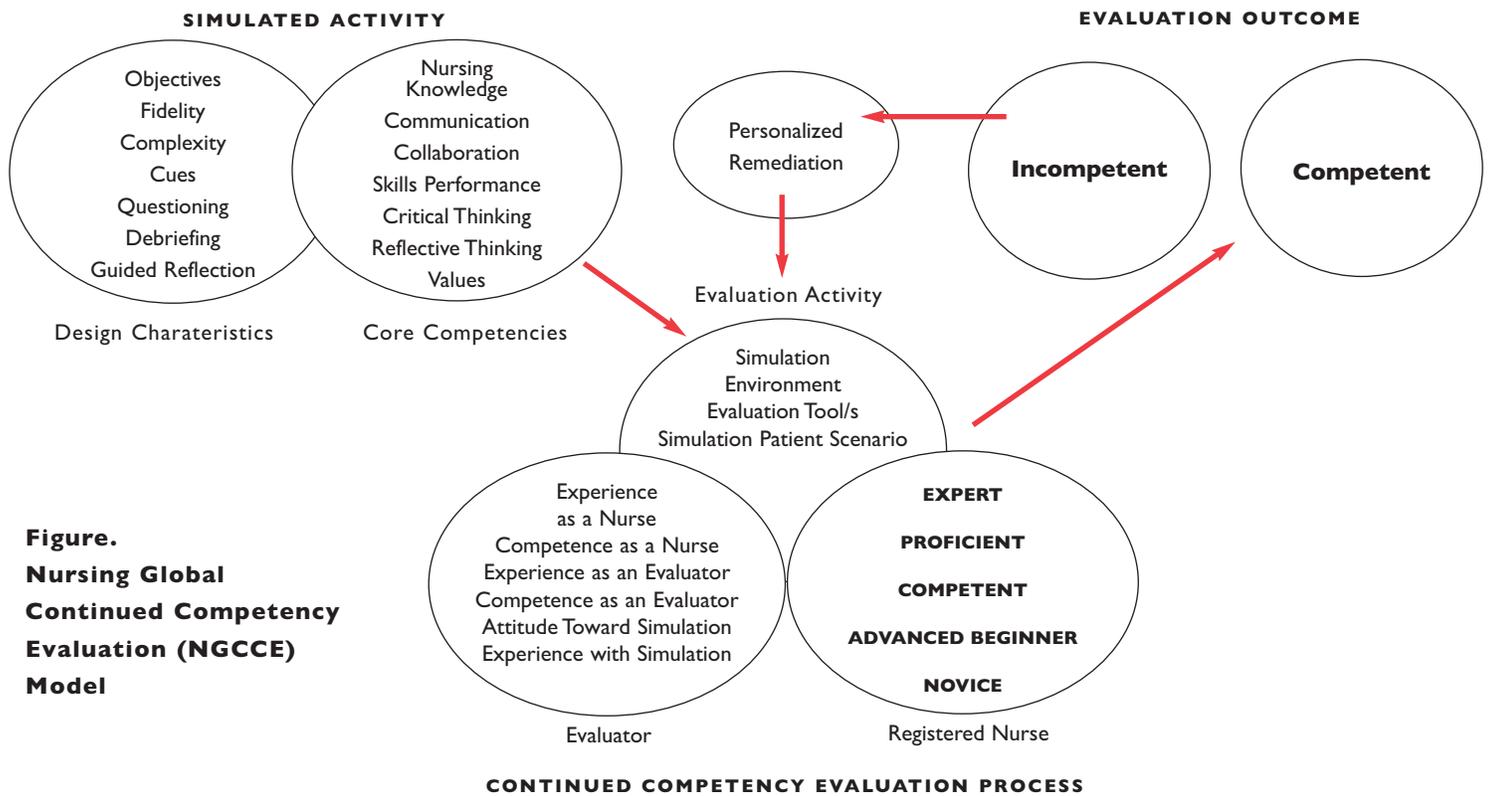
Jeffries' simulation model (2005, 2007) provides a foundation that can be modified to provide a model for evaluating continued competency in nursing. The simulated experience is viewed as an intervention with specific design characteristics to support the outcomes of learning, skills performance, learner satisfaction, critical thinking, and self-confidence. The essential design features identified by Jeffries are objectives, fidelity, complexity, cues, and debriefing.

Philosophically and historically, nursing has supported the Benner (1984) model of novice to expert when referring to practice competency. According to Benner, competence is typified by the nurse who has been on the job in the same or similar situations for two to three years. Benner described the competent nurse as one who is able to establish a plan based on conscious, abstract, and analytical contemplation of a problem, achieving efficiency and organization. The competent nurse is further described as having a feeling of mastery, the ability to cope with and manage the many contingencies of clinical nursing.

The authors believe that to evaluate a competent professional nurse, a more aesthetic approach is appropriate while incorporating the tenets of the novice-to-expert continuum. The Nursing Global Continued Competency Evaluation model (NGCCE model) is proposed by the authors for measuring continued competency. (See Figure.) This model focuses on the evaluator, the registered nurse, and the evaluative process. The evaluation is a summative process that utilizes simulation (via APS and/or SP) to elicit the demonstration of specific core competencies.

The design characteristics depicted in the NGCCE model are objectives, fidelity, complexity, cues, questioning, and debriefing and/or guided reflection, strategically integrated into the evaluative process. Objectives correspond to expected core competencies with an overlay specific to the practitioner's domain of practice. Fidelity and complexity are addressed through the development or selection of authentic case scenarios. The use of authentic case scenarios, according to Dowd and Davidhizar (1999), allows material to be presented in a natural fashion (p. 46). Fidelity, according to Henneman and Cunningham (2005), can be enhanced through the use of authentic props, supplies, and equipment.

The simulated experience for continued competency assessment would replicate a real-life situation. Case scenarios would be programmed or scripted to respond in real time to various treatment and pharmacological modalities in a technologically appropriate environment. The use of technology would provide objective measurement of knowledge, technical skill level, and critical thinking abilities of the practitioner (Maran & Galvin, 2003; Weller, 2004).

SIMULATED ACTIVITY

EVALUATION OUTCOME

Objectives
Fidelity
Complexity
Cues
Questioning
Debriefing
Guided Reflection

Design Charateristics

Nursing
Knowledge
Communication
Collaboration
Skills Performance
Critical Thinking
Reflective Thinking
Values

Core Competencies

Personalized
Remediation

Evaluation Activity

Incompetent

Competent

Simulation
Environment
Evaluation Tool/s
Simulation Patient Scenario

Experience
as a Nurse
Competence as a Nurse
Experience as an Evaluator
Competence as an Evaluator
Attitude Toward Simulation
Experience with Simulation

Evaluator

EXPERT

PROFICIENT

COMPETENT

ADVANCED BEGINNER

NOVICE

Registered Nurse

**Figure.
Nursing Global
Continued Competency
Evaluation (NGCCE)
Model**

CONTINUED COMPETENCY EVALUATION PROCESS

The design of the scenario would require the nurse to demonstrate critical and reflective thinking through evaluation, communication, interdisciplinary collaboration, and skills performance. Salas and Burke (2002) stressed that cues need to be realistic, free flowing, and provide standardization; hence, cueing and questioning would be planned and strategically embedded into the simulated experience. Cueing and questioning could be provided by: a) nurse-to-nurse report, b) physician's orders, c) a trained actor playing the role of family member, d) verbal and physiologic prompts provided by a simulator, e) communication with a trained actor playing the role of a physician or pharmacist. Critical thinking skills could be critiqued through the nurse's response to specific cueing and questioning. For example, level of critical thinking would be reflected by: a) the practitioner's ability to prioritize, b) the number of cues provided, and c) the time required for a decisive action to be implemented.

The integration of reflection into an experience promotes knowledge attainment (Kuiper & Pesut, 2004) and assists in the application of theory to the clinical setting while promoting development of reasoning skills (clinical judgment) (Murphy, 2004). Research conducted by Conway (1998) demonstrated that patient care varied according to the reflective abilities of the nurse. In Conway's study, nurses demonstrating minimal reflective abilities provided only nonspecific illness-oriented patient care, whereas nurses demonstrating reflective skills implemented individualized and holistic patient care.

A Call for Change Boulet and Swanson (2004) and Wong (2004) identified the challenges and benefits of using simulation in competency validation. Challenges include the cost and time commitments of the endeavor; the development of scoring methods; the appropriate selection of simulated experiences; the fact that simulation is unable to completely capture reality; and the need to validate if proficiencies demonstrated in the simulated environment are, in fact, present in the patient care setting.

A number of benefits of integrating simulation have been identified. Communication skills and teamwork can be evaluated. The practitioner's critical thinking in managing a patient care scenario can be critiqued. And the simulation excercise can be videotaped, allowing multiple evaluators the opportunity to analyze the practitioner's proficiency.

Recognizing the challenges and benefits of using APS and/or SPs in conjunction with the proposed NGCCE model to measure continued competency, the authors ask that nursing address the call for change put forth by the CCI and IOM. The authors propose that simulation has the potential to be used as a method to validate critical and reflective thinking skills and continued competency of the registered nurse. However, the potential use of simulation in competency testing will not be achieved until educators and researchers acquire the knowledge and skills needed to use this evaluation strategy effectively and the evidence it provides to make informed decisions and recommend policy (Decker, Sportsman, Puetz, & Billings, 2008). NLN

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