National League for Nursing
and
Laerdal Medical

THINK TANK ON SIMULATION FOR HIGH-STAKES EVALUATION IN NURSING EDUCATION

June 8 & 10, 2010
Indianapolis, IN

REPORT

Prepared by
Theresa M. “Terry” Valiga, EdD, RN, FAAN, ANEF
Duke University School of Nursing
Think Tank Facilitator
BACKGROUND

The Think Tank was held as the first step in a 3-year project undertaken by the National League for Nursing (NLN) and sponsored by Laerdal Medical to study the use of simulation for high-stakes evaluation in nursing education. Through previous projects, sponsored by Laerdal, the NLN has documented the value of using simulation as a teaching method and outlined guidelines for the effective design and implementation of simulation scenarios. Such findings have been supported by other simulation research and projects. However, there is little evidence to support the use of simulation as a method to evaluate students’ clinical performance, particularly in schools of nursing.

This 3-year project is designed to identify significant end-of-program outcomes that are amenable to evaluation through simulation, develop a series of scenarios to use for end-of-program evaluation in pre-licensure RN programs (i.e., associate degree, diploma, and baccalaureate), and test the efficacy of those scenarios. Based on those findings, recommendations will be made to the nursing education community regarding (a) the use of simulation for high-stakes evaluation in nursing education and (b) areas for future research related to this practice. The Think Tank was held to accomplish the following goals that would serve as a foundation for the subsequent project:

- List expected behaviors of graduates of pre-licensure RN programs in nursing that lend themselves to evaluation via simulation scenarios
- Provide rationale for expected behaviors of graduates of pre-licensure RN programs in nursing that are most effectively evaluated by means other than simulation
- Relate these expected behaviors to the outcome competencies formulated by the NLN’s Competencies Workgroup
- Formulate preliminary recommendations related to the use of simulation for high-stakes evaluation in nursing education that reflect discussions undertaken by the NLN’s Presidential Task Force on High Stakes Testing Think Tank
Participants in the Think Tank (see Appendix A) were carefully selected. They included experts in the use of simulation in nursing and medical education, outcomes assessment, and clinical judgment. In preparation for the Think Tank, each participant was asked to prepare brief introductory remarks that would help create a broad context for the group’s work. The insights provided by these experts were as follows:

**S. Barry Issenberg, MD** shared his experiences in using simulation in medical education and noted that in this field, simulations are part of the high-stakes process for getting licensed as a physician. He noted that competency-based simulations (focused primarily on skill performance) have been used for re-certification in Internal Medicine for the past 8 years, but this group is not considering the use of manikins and/or virtual technology, particularly since the latter is expected to be quite costly. All schools of medicine in the U.S. use end-of-year evaluations of clinical skills. At the University of Miami, they use a competency-based exam at the end of years 1 and 2 of the program, where students demonstrate their abilities with standardized patients, on task trainers, through problem-solving cases and team-based exercises, and through peer- and self-evaluations. Upon completion of these experiences, the student meets with a faculty member to review her/his results and map out an individualized learning plan to address any deficiencies noted. At the end of year 3, students rotate through a 12-station Objective Structured Clinical Examination (OSCE) experience; if they do not pass any station, they have 2 weeks to remediate. The key challenge in all of this is faculty consistency in conducting the evaluations and the quality of feedback faculty give to students.

**Pam Jeffries, DNS, RN, FAAN, ANEF** emphasized how critical it is to have standardization when simulation is being used for high-stakes evaluation. This also is essential to establishing best practices regarding the use of simulation as an evaluation method. Also critical to simulation is the debriefing session. She noted that a good deal of research is being done regarding the use of simulation, but many reports of such studies do not describe the simulation itself, so replication is difficult. At present, tools are being developed to evaluate the quality of the debriefing session, as well as qualities needed to develop and use simulations effectively. Dr. Jeffries reported briefly on an NCSBN-funded (National Council of State Boards of Nursing) study she and her colleagues are developing to determine the percentage of clinical time (10%, 25%, or 50%) that can be “replaced” with simulation and still ensure that students are clinically competent (as measured by safety, communication, and other parameters). This study will be conducted at 8-10 associate degree and baccalaureate programs, and Think Tank participants were invited to offer suggestions for the study design, data collection sites, outcome measures, etc.

**Kathie Lasater, EdD, RN, ANEF** discussed her work with simulation and the development of students’ clinical judgment skills. Her rubric reflects Chris Tanner’s clinical judgment model, and it has been used successfully with many students. Although clinical judgment is a complex and difficult concept, clear descriptors of one’s ability to make sound clinical judgments are emerging, and simulation is a valid way to assess those skills. She noted that simulation helps students learn to think like a nurse if the scenarios are realistic and authentic. Simulation is also effective for observing and evaluating students’ clinical judgment in patient situations that are complex and ill-defined.

**Carrie Lenburg, EdD, RN, FAAN, ANEF** affirmed that her extensive work with outcomes evaluation and performance assessment confirms this approach can be used to assess performance in all three domains of learning. Her COPA model outlines eight core competencies that should be integral to all courses and defines evaluation as validation of achievement of competencies. She noted
that it is essential to define clearly the “standards of acceptability” regarding students’ performance (i.e., how good is “good enough?”), and students should be evaluated regarding whether they meet or do not meet the standard. When focusing on performance assessment, the focus shifts from teaching strategies to learning strategies, and evaluation shifts from a potentially punitive experience to an objective, measurable assessment using standardized competency performance examinations.

Bridget Nettleton, PhD, RN, shared her experiences using high-stakes performance assessment at Excelsior College. She reported the many misunderstandings that exist related to such assessment, namely that it is not valid, it cannot be done, and the “rule-driven” nature of such testing minimizes faculty judgment. The 30-year history of using such assessment at Excelsior shatters all of these myths and has led those faculty to highlight the strengths of such an approach, including the following: teaching is kept separate from evaluation, the student is held responsible for her/his own learning, faculty need extensive guidance to develop their evaluation skills, and it challenges many “sacred cows” that exist in nursing education. She also noted that it is more expensive (than what is typically done in nursing schools) if it is done well. For more than 35 years, graduates of Excelsior have been successful on the NCLEX exam and in their careers.

Marilyn H. Oermann, PhD, RN, FAAN, ANEF summarized research on how, when and by whom students’ clinical performance is evaluated. She noted that much of the research in nursing education is site-specific (thereby not generalizable), has small sample sizes, uses instruments whose validity and reliability often are questionable, and have poor designs. Several studies address the same outcomes, but they often use different tools and, therefore, cannot be synthesized. Bloom’s taxonomy is used extensively to measure outcomes, but questions often are at the recall level. Dr. Oermann also reported on a study the NLN’s ELAC (Evaluation of Learning Advisory Council) completed while she was chair of that group. The 1,600 faculty who responded to the survey about approaches to evaluation documented that most use observation in clinical settings to assess performance, despite the fact that most believe observation is the least reliable method of evaluation.

Linda Wilson, PhD, RN, CPAN, CAPA, BC, CNE reported on the advantages and challenges she and her colleagues have faced when using standardized patients to evaluate students’ abilities to take a patient history, conduct a focused physical assessment, communicate with patients, and provide appropriate patient teaching. As an advantage, she noted that students truly enjoyed and valued the experiences, particularly the feedback they received from the “patients.” Among the challenges were the reality that faculty bias enters into the evaluation despite efforts to minimize it, evaluators must work hard to remain focused on the pre-established performance standards, this approach is costly, and it reduces the amount of time faculty are with students in the clinical setting. One important lesson learned was that students need to be familiar with the simulation setting and have experience working with standardized patients throughout the program, not only at the end, when they are being evaluated. Another important insight that has made using standardized patients successful at Drexel University is that theirs is a culture of risk-taking, and faculty and administration all support innovation and new approaches to teaching, learning, and evaluation.

In addition to these perspectives and experiences brought by the expert Think Tank participants, the group reflected on the larger contexts of higher education, nursing education, and other related issues to enhance their understanding of the “world” in which the project related to using simulation for high-stakes evaluation in nursing education would take place. Insights gained from this reflection are summarized below.
Higher Education and Nursing Education Context

- Funding is a huge issue that effects the number and type of training programs, availability of space and equipment.
- Accountability is a major issue, with employers, legislators, students, funders, parents and accrediting bodies all calling for documentation of program outcomes to justify “what difference the education has made”.
- Use of technology (PDA, iPod Touch, laptops, simulation, Web 2.0 tools) is exploding and placing demands on faculty to “keep up”.
- Online and distance education is growing.
- For-profit educational institutions are increasing.
- Students are increasingly demanding greater flexibility in programs.
- Student populations are increasingly diverse.
- New models of education are emerging.
- Despite the value and increasing use of simulation, it is noted that they lack standardization.
- The need for partnerships is increasingly strong.
- The calls for evidence-based teaching and learning continue to increase.
- Reward systems (especially in higher education) typically do not focus on teaching innovations.
- In nursing, the “gap” between what graduates are able to do and what employers want continues to widen, indicating the need for new kinds of partnerships (Berkow, Virkstis, Stewart, & Conway, 2008).

Assessment/Evaluation of Learning Context

- Traditional methods (i.e., multiple choice questions) continue to be pervasive in the U.S., though this is not the case in other parts of the world … One needs to question why this method continues to be the predominant standard to measure competence.
- Faculty have a desire to change the ways they assess/evaluate students, but they do not know which of the newly-evolving assessment methods are most effective.
- Faculty are “risk averse” and “afraid to let go”.
- Skepticism exists regarding whether simulation or other approaches really “work”.
- Although assessment often is driven by goals or desired outcomes, the methods used are not always effective.
- There is a shift from behavioral objectives to competency outcomes.
- Focus of assessment/evaluation often is on low-level skills rather than on higher-order professional skills such as integrating evidence-based practice, thinking, and synthesis.
- “Skills” often are thought of only as psychomotor in nature, resulting in little attention paid to “skills” like seeking resources, managing information, thinking critically, teaching, care planning, etc.
- Sound measures do exist for a variety of “skills”.
- Acknowledgement that attention must be paid to all three apprenticeships (knowledge, practice, and ethical comportment) is growing.
- Assessment approaches tend to be more summative in nature than formative.
- Time for learning often is “confused” with time for assessment/evaluation.
- Employers want graduates who are competent in a wide variety of “skills” (thinking, priority setting, clinical judgment, and direct care nursing skills).
- Many question whether or not capstone experiences in schools of nursing actually promote the achievement of stated outcomes.
Faculty often resist and resent calls for significant changes in program philosophy, course delivery and objective assessment methods that add to their already-heavy workload.

**Use of Simulation Context**

- Simulations offer the potential for objective collection of data regarding student actions, decisions related to patient care, patient outcomes, etc.
- A wide range of ability regarding the design and use of simulation is evident among faculty, whether they be new to the role or quite experienced in it.
- A wide range of simulation tools (from low- to high-fidelity and low- to high-technology) are being used in nursing programs, which increases the need for faculty development programs.
- Simulations often are mis-used (e.g., scheduling a 7-hour simulation, interrupting a simulation to “teach” the students instead of letting them experience consequences of their mistakes, using high-fidelity simulators for lower-level skills [such as IM injections]).
- Faculty development related to the design and use of simulation is limited or non-existent in many schools.
- Simulation is acknowledged to be more student-centered than teacher-centered, which is consistent with calls for change in education.
- At present, simulation is used more for teaching than for assessment/evaluation.
- Failure to distinguish learning time from evaluation time when simulations are used diminishes both effective learning and objective assessment of competence.
- Scenarios continue to be developed primarily for acute care situations, but they are increasingly “situated” in home or long-term care facilities, as well.
- Lack of clarity regarding outcomes of simulation and how to measure them is widespread.
- Research related to simulation, especially in the area of debriefing, is increasing.
- The need to explore effective use of simulation in all program types has become a national concern for nursing and other health professions.
- Simulation offers an opportunity to experience interprofessional collaboration and communication.
- Simulators and simulation labs are costly … one positive outcome of this is that it drives the need for research to document when and how simulation is used most effectively.
- Equipment is constantly upgraded, which increases cost and training needs.
- Faculty and students express a growing need to increase realism in simulators and in simulations (e.g., use of electronic health record); in other words, simulation must be more than the mere use of manikins.

One final element of the “context” related to the work that has been completed recently by the NLN’s Competencies Work Group. Terry Valiga, who has been involved in the development of the competencies, shared the work of that group with Think Tank participants and briefly reviewed the summary all had received in advance of today’s meeting (see Appendix B). She described the “history” of this work and noted that the goal was to articulate outcomes across program types (from practical nurse through practice doctorate and research doctorate). After extensive literature reviews and much discussion, this Work Group identified four major outcome areas, all of which focus on preparing the graduate for nursing practice. Those four outcome areas are as follows: human flourishing, nursing judgment, professional identity, and spirit of inquiry. Think Tank participants were in agreement that the outcomes we identify to pursue through the NLN/Laerdal project should be congruent with and reflective of these NLN competencies (as much as possible).
The group then brainstormed about principles or assumptions that were important as we proceeded with our work and as the subsequent project was implemented. Among the principles/assumptions expressed were the following:

- High-stakes evaluation can be done at the end of any learning period
- The clinical environment cannot be controlled. Unforeseen events can contaminate planned student evaluations with patients unless standardized criteria and procedures are implemented
- Our focus is on end-of-program evaluation because we are assuming that there is great commonality at that point among various program types
- It is critical that students have experience with simulation and with simulation-based assessment throughout the program, and not only at the end, particularly if it will be used for high-stakes end-of-program evaluation
- Simulation is not the only tool/method to evaluate program outcomes and while that may be our focus now, we must remember that we can consider also incorporating other methods (as schools of medicine do)
- Simulation experiences can occur through manikin-based scenarios, standardized patients, task trainers, and/or hybrids of any or all of these approaches
- Valid evaluation of outcomes requires multiple assessment methods, some of which may include simulation
- This project is designed to help answer the question, “What evidence will help faculty in schools of nursing know that their students have achieved the stated outcomes?”

OUTCOME COMPETENCIES

With this foundation established, Think Tank participants then reviewed the program outcomes of various associate degree and baccalaureate programs that had been retrieved from school websites. This informed their brainstorming about the various competency areas that are relevant in nursing education and helped them identify the following:

- Assessment and intervention
- Communication
- Critical thinking
- Teaching
- Human caring relations … Patient-centeredness and co-worker relationships
- Knowledge integration
- Management
- Leadership
- Culturally competent care
- Quality and safety
- Evidence-based practice … Research
- Spirit of inquiry
- Ethical comportment
- Professional identity formation
- Systems thinking/approach … Context/environment
- Teamwork … Collaboration
- Nursing judgment
- Information management
- Use of technology
Once this list was generated, each participant was asked to identify the 5 most significant outcome areas. As a result of that exercise, four areas emerged as deserving of most attention, four other areas received “votes” from more than one Think Tank member, and 13 received only one or no “votes.” There was agreement that one of those receiving the highest number of “votes” – Communication – should not stand alone as an area of evaluation but should be integral to all simulations; thus, an outcome that received the next highest number of “votes” was identified as one of the outcome areas believed to be of greatest significance, and those for which end-of-program, high-stakes simulation scenarios should be developed. Those four outcome areas were as follows:

- Assessment and Intervention
- Nursing Judgment
- Quality and Safety
- Teamwork and Collaboration

**RECOMMENDATIONS FOR SIMULATIONS**

While only four of the 21 competencies identified through the brief brainstorming exercise appear on the “final” list used for development during this session, there was strong agreement that all scenarios developed should also include other competency areas. One area (e.g. nursing judgment) may be the primary focus of a scenario, but other areas should be deliberately integrated into the scenario as well. The rationale behind this thinking was that if the stimulations were designed to evaluate student performance at the end of the program, they should reflect the kind of integration of knowledge, skills and values one expects as students are graduating. Thus, the template that follows was offered as simulations are developed, noting clearly that this is preliminary thinking and not intended to be “prescriptive” in any way.

<table>
<thead>
<tr>
<th>OUTCOME</th>
<th>SIMULATION #1</th>
<th>SIMULATION #2</th>
<th>SIMULATION #3</th>
<th>SIMULATION #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment &amp; Intervention</td>
<td>PRIMARY</td>
<td>***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Judgment</td>
<td>***</td>
<td>PRIMARY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality &amp; Safety</td>
<td>***</td>
<td>***</td>
<td>PRIMARY</td>
<td>***</td>
</tr>
<tr>
<td>Teamwork &amp; Collaboration</td>
<td>***</td>
<td>***</td>
<td>PRIMARY</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Knowledge Integration</td>
<td>***</td>
<td>***</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Patient Teaching</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Culturally Competent Care</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Caring Relations</td>
<td>***</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Spirit of Inquiry</td>
<td>***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PRIMARY** = Primary focus of the scenario … *** = Additional foci of the scenario
Think Tank participants then worked in small groups to expand on each of the four major outcomes for which high-stakes simulations should be developed as examples. For each of these outcome areas, the significant competencies to be addressed were identified, related competencies were noted, and suggestions for scenarios that might “spotlight” the primary outcome were suggested. The suggestions from each group are included as Appendix C.

It was also recommended that each simulation reflect the following essential simulation design features:

- Learning objectives (3-5 in number)
- Fidelity
- Problem-solving component
- Student support (e.g., cues or efforts to keep the simulation moving forward)
- Debriefing

Barry Issenberg shared criteria for evaluation that are used in medical education, and the group thought there was merit in considering these as high-stakes evaluation simulations are developed during the 3-year project. Those criteria include the following:

- Scoring … Formulate a checklist and establish whether students will be evaluated on the process (which is more appropriate for beginners), the outcome (which is more appropriate for those who are more expert), or both
- Standards/Benchmarks … Establish the critical elements for each competency
- Construct Validity … Provide evidence that the content is essential, the internal structures (e.g., rating scales, inter-rater reliability) are sound, response processes (i.e., consistent conditions at each evaluation point) are consistent, relationships to other variables are clear (e.g., are more experienced students expected to do better?), and the consequence (e.g., impact on practice, assurances to the public, etc.) are significant ones

**RECOMMENDATIONS**

As a result of the thoughtful deliberations in which Think Tank participants engaged, the following recommendations are made to the NLN, Laerdal Medical, and the team that will be leading the forthcoming 3-year project related to the use of simulation for high-stakes evaluation in nursing education:

- Establish the critical elements for each competency area and consider using the “X of Y” rule (i.e., 5 of 7 critical elements must be met at 100% accuracy in order to pass)
- Ensure that the scenarios developed consider significant studies and recommendations from current nursing education bodies (e.g., Carnegie study findings/recommendations, AACN “essentials,” QSEN guidelines, IOM reports, NLNAC standards, NLN *Hallmarks of Excellence*, etc.)
- Design comprehensive programs to prepare evaluators/examiners (perhaps following some of the processes currently used by Excelsior College) and establish inter-rater reliability (perhaps by using videos of a clear “pass,” a clear “fail,” and a “borderline” performance)
- Develop scenarios that reflect common health problems, those that new graduates will see often (e.g., CHF) rather than those that are less frequently seen in practice (e.g., Guillain-Barre Syndrome)
- Use the template (above) as a guide to ensure that all significant program outcomes are incorporated in end-of-program, high-stakes evaluation … recognizing that some will be of greater and some of lesser significance in any given simulation
Schools chosen for field testing must ensure that learning precedes evaluation and that students have had several experiences with simulations and simulation-based assessment, preferably throughout the program.

Clarify the assumptions/beliefs that underlie the use of simulation for high-stakes evaluation in nursing education (e.g., that multiple methods of evaluation should be used).

Involve key stakeholders in the process to affirm that what project team members value as evaluation criteria are, indeed, seen as valuable to them.

Pilot test all simulations before using them.

Explore the use of tools to measure outcomes that have already been found to be valid and reliable.

Ensure that the work of the project team is congruent with the NLN Competencies Work Group documents as much as possible.

Continue to add to the reference list generated by Think Tank members (see Appendix D).

NEXT STEPS

The NLN will disseminate the work of this Think Tank and subsequent work on the project widely. From the article by Kardong-Edgren et al (In press), we know that some nurse educators are opposed to using simulation for evaluation, so the project team will look for opportunities to hear their concerns and clarify the goals of the project. It will be emphasized that (a) the purpose of the 3-year project is to lay the groundwork for possible future use of high-stakes testing using simulation, and (b) it is expected that more questions than answers will be generated by the end of the 3-year project. Emphasis will be placed on the fact that high-stakes testing with simulation cannot occur unless and until students have multiple experiences in simulation throughout their curriculum so that they are comfortable functioning in that environment. Additionally, some of the additional work that will need to be done related to evaluation policies and procedures (e.g., determining the grading process and what to do should students who fail one or more parts of the examination … Should a student be allowed to repeat parts or all of the simulation? If so, how many times, when and with whom?) will be delineated, as issues such as these are critical and must be resolved prior to widespread implementation of high-stakes evaluation using simulation.

The next steps in the 3-year project involve creating two teams: one to develop the simulations, the other to create the research plan and select/develop/modify evaluation tools. Once those teams complete their work, pilot testing to refine the scenarios and obtain inter-rater reliability on tools will take place.

Field testing will begin after needed changes and modifications are made in the simulations and evaluation instruments. This will occur in at least 8 schools of nursing across the country … schools that are geographically diverse and represent different types of RN pre-licensure programs.

Finally, the 3-year project will be limited to the use of medium- and high-fidelity simulators in the scenarios that are developed. While Think Tank members believed that standardized patients are an excellent way to evaluate specific behaviors like communication and assessment, the group realized that they currently are not used as extensively as simulators in schools of nursing across the United States because of the cost and the time required to train standardized patients. Addressing this issue is beyond the scope of the 3-year project.
APPENDIX A

THINK TANK MEMBERS, FACILITATOR, AND STAFF

S. Barry Issenberg, MD
Assistant Director, Michael S Gordon Center for Research in Medical Education
Assistant Dean for Research in Medical Education and Professor of Medicine
University of Miami
Miami, FL
Bissenbe@med.miami.edu

As Director of Research and Technology, Dr. Issenberg serves as Project Director for the development and evaluation of the new Harvey, the Cardiopulmonary Patient Simulator and the UMedic Multimedia Curriculum. He also leads the research activities of a national consortium of clinicians and medical educators from 14 medical centers. The consortium has designed, implemented and published the results of several multi-center studies that have shown the effectiveness of simulation technology to teach and assess clinical skills. Dr. Issenberg also serves on several national and international committees related to medical education and healthcare simulation.

Pamela R. Jeffries, DNS, RN, FAAN, ANEF
Professor, Department of Health Systems and Outcomes
Associate Dean for Academic Affairs
Johns Hopkins University School of Nursing
Baltimore, MD
Pjeffri2@son.jhmi.edu

Dr. Jeffries is nationally and internationally known for her research and work in developing simulations and online teaching and learning and for her expertise in experiential learning, innovative teaching strategies, new pedagogies, and the delivery of content using technology in nursing education. Dr. Jeffries served as the Project Director for a national simulation study funded by the National League for Nursing and Laerdal Medical. She was named to the same role for a second NLN and Laerdal grant to facilitate the development of web-based courses for faculty development in simulation and a national simulation innovation resource center. She has previously been awarded several grants to support her research and is the recipient of several teaching awards, including the NLN’s Lucile Petry Leone Award.

Kathie Lasater, EdD, RN, ANEF
Associate Professor
Oregon Health & Science University School of Nursing
Portland, OR
lasaterk@ohsu.edu

Dr. Lasater teaches prelicensure and nursing education graduate students, serving in 2007-08 as the Interim Statewide Director for Simulation Learning at OHSU’s School of Nursing. She has been active in the Oregon Consortium for Nursing Education (OCNE), an innovative, statewide curriculum involving community colleges and OHSU, since 2003. Dr. Lasater’s research focuses on the development of students’ clinical thinking. Using an evidence-based process, she created a clinical judgment rubric, based on the Tanner Model
of Clinical Judgment. She is currently co-PI in a 5-site study funded by the NLN, examining the impact of a nurse exemplar on clinical judgment in simulation and the development of a digital toolkit for replication of simulation scenarios across sites.

**Carrie B. Lenburg, EdD, RN, FAAN, ANEF**  
President  
Creative Learning & Assessment Systems  
Roan Mountain, TN  
Clenburg21@gmail.com

Dr. Lenburg coordinated the development, implementation and evaluation of the ground-breaking NY Regents External Degree Nursing Program (Excelsior College) based on self-directed learning and assessment of competence, and created the national network of Regional Performance Assessment Centers and intensive training programs for several hundred clinical examiners. Her Competency Outcomes and Performance Assessment (COPA) Model is based on three decades of work with faculties throughout the USA and abroad. This model provides a structured framework designed to organize learning and performance evaluation focused on outcomes and the core competencies required in practice. Dr. Lenburg has received many honors and awards and is a Living Legend of the American Academy of Nursing.

**M. Bridget Nettleton, PhD, RN**  
Dean  
Excelsior College School of Nursing  
Albany, NY  
bnettlet@excelsior.edu

Dr. Nettleton has been providing academic leadership to the nursing degree programs and administrative and managerial direction for the nursing school since 2001. Dr. Nettleton received a Doctor of Philosophy, Educational Administration and Policy Studies at the University of Albany. She received a M.S.N. from Russell Sage College. Dr. Nettleton has made numerous presentations at schools and conferences throughout the United States and abroad. Dr. Nettleton’s unpublished dissertation is titled “A Study of Variables Influencing the Accuracy and Consistency of Scoring a Clinical Performance in Nursing Examination”.

**Marilyn H. Oermann, PhD, RN, FAAN, ANEF**  
Professor and Chair of Adult and Geriatric Health  
University of North Carolina School of Nursing,  
Chapel Hill, NC  
moermann@email.unc.edu

Dr. Oermann has written extensively on clinical teaching and evaluation in nursing, and she lectures widely on nursing education topics. She is the author/co-author of 13 nursing education books, more than 160 articles in nursing and healthcare journals, and other publications. Dr. Oermann's current books are *Evaluation and Testing in Nursing Education (3rd ed.)*, *Clinical Teaching Strategies in Nursing (3rd ed.),* and *Writing for Publication in Nursing (2nd ed.)*. She is the editor of the Journal of Nursing Care Quality and past editor of the Annual Review of Nursing Education; she edited 6 volumes of that series. In 2009, she received the NLN Award for Excellence in Nursing Education Research.
Mary Anne Rizzolo, EdD, RN, FAAN  
Consultant  
Scotch Plains, NJ  
mrizzolo@nln.org, Rizzolo@yahoo.com

Dr. Rizzolo recently retired from the NLN, but continues to manage several simulation projects funded by Laerdal Medical, and the Health Information Technology Scholars grant from the Division of Nursing (DHHS, HRSA). Dr. Rizzolo’s interest has always focused on exploring new technologies, determining how they can serve to educate and inform nurses, then operationalizing the delivery of those products in a cost effective manner. She developed award winning multimedia programs and AJN Online, one of the first websites in the world to offer continuing education, journal articles, forum discussions, and other educational and networking opportunities. She has delivered over 150 national and international presentations on technology related topics and nursing education.

Theresa M. (Terry) Valiga, EdD, RN, ANEF, FAAN  
Professor and Director, Institute for Educational Excellence  
Duke University School of Nursing  
Durham, NC  
Terry.valiga@duke.edu

Dr. Terry Valiga is a widely-published acknowledged leader in nursing education and a recognized expert in the area of leadership. She has authored/co-authored several books on nursing education and is co-author of a book (now in its third edition) on the complex phenomenon of leadership. Dr. Valiga was the NLN’s Chief Program Officer from 1999 to 2008 and directed the development of the current excellence initiatives. She has received several prestigious awards for excellence in nursing education, presented at national and international conference, consulted with nursing faculty groups in and outside the US, and conducted several education-focused research projects.

Linda Wilson, PhD, RN, CPAN, CAPA, BC, CNE  
Assistant Dean for Special Projects, Simulation and CNE Accreditation  
Drexel University, College of Nursing and Health Professions  
Philadelphia, PA  
lbw25@drexel.edu

Dr. Wilson completed the National Library of Medicine/Marine Biological Laboratory, Biomedical Informatics Fellowship and the Harvard University-MIT, Institute for Medical Simulation, Comprehensive Workshop and Graduate Workshop in Medical Simulation. Dr. Wilson is the Project Director for SimTeam: The Joint Education of Health Professionals and Assistive Personnel Students in a Simulated Environment and Faculty Development: Integrating Technology into Nursing Education and Practice, Pennsylvania/District of Columbia Nursing Education Technology Collaborative.
APPENDIX B

OUTCOMES DEFINED BY N.L.N. COMPETENCIES WORK GROUP

Outcomes for Graduates of Practical/Vocational, Associate Degree/Diploma, Baccalaureate, Master’s, Practice Doctorate and Research Doctorate Programs in Nursing

Developed by the National League for Nursing

DRAFT … 05/17/10 … SELECTED SECTIONS ONLY

DO NOT DUPLICATE OR DISTRIBUTE
Program Outcome: Human Flourishing

Human flourishing is the maximization of the nature of the human person seen as the good for this person. The process of achieving human flourishing is a life-long existential journey of hopes, regrets, losses, illness, unrelenting suffering and achievement with the goal of self-actualization and self-fulfillment, which continues to evolve and develop until the moment of death. Human flourishing encompasses the uniqueness, dignity, diversity, freedom, happiness and holistic well being of the individual. The nurse helps the individual in efforts to self-promote, reclaim or develop new pathways toward human flourishing.

<table>
<thead>
<tr>
<th>PRACTICAL/VOCATIONAL</th>
<th>ASSOCIATE DEGREE/DIPLOMA</th>
<th>BACCALAUREATE</th>
<th>MASTER'S</th>
<th>PRACTICE DOCTORATE</th>
<th>RESEARCH DOCTORATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote the human dignity, integrity, self-determination, and personal growth of patients, one’s self, and members of the health care team.</td>
<td>Advocate for patients and families in ways that promote their self-determination, integrity, and ongoing growth as human beings.</td>
<td>Incorporate aspects of human flourishing to assist patients, families and communities to continually progress toward fulfillment of human capacities.</td>
<td>Function as a leader and change agent in one’s specialty area of practice to create systems that promote human flourishing.</td>
<td>Systematically synthesize evidence from nursing and other disciplines and translate this knowledge to promote human flourishing within the organizational culture.</td>
<td>Design and implement research that promotes human flourishing of the nurse, nursing profession, patients, families, communities, populations and systems.</td>
</tr>
</tbody>
</table>
Program Outcome: Nursing Judgment

Nursing judgment includes a variety of processes that nurses use to make decisions about clinical care, development and application of research, broader dissemination to the community, and management and resource allocations. Processes include critical thinking, clinical judgment and integration of best evidence into practice. Critical thinking refers to an analytic process that uses logic and reasoning based on nurses’ skills, tools and evidence; clinical judgment refers to a process including noticing, interpreting, responding and reflecting situated within and emerging from the nurse’s knowledge and perspective (Tanner, 2006); and integration of best evidence ensures that clinical decisions are to the extent possible informed by current research (Craig & Smith, 2007).

<table>
<thead>
<tr>
<th>PRACTICAL/VOCATIONAL</th>
<th>ASSOCIATE DEGREE/DIPLOMA</th>
<th>BACCALAUREATE</th>
<th>MASTER'S</th>
<th>PRACTICE DOCTORATE</th>
<th>RESEARCH DOCTORATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide rationale for judgments used in the provision of safe, quality care that promote the health of patients within a family context.</td>
<td>Make judgments in practice, substantiated with evidence, that integrate nursing science in the provision of safe, quality care and promote the health of patients within a family and community context.</td>
<td>Make judgments in practice, substantiated with evidence, that synthesize nursing science and knowledge from other disciplines in the provision of safe, quality care and promote the health of patients, families and communities.</td>
<td>Make judgments in one’s specialty area of practice that reflect a scholarly critique of current evidence from nursing and other disciplines and the capacity to identify gaps in knowledge and formulate researchable questions.</td>
<td>Systematically synthesize evidence from nursing and other disciplines and translate this knowledge to enhance nursing practice and the ability of nurses to make judgments in practice.</td>
<td>Provide leadership in the design and implementation of research that expands the evidence underlying nursing practice and serves to strengthen the ability of nurses to make judgments.</td>
</tr>
</tbody>
</table>
**Program Outcome: Professional Identity**

Self-reflection and actualization are critical elements for the development of the person as a nurse. Professional identity is the realization that the nurse holds certain core values and perspectives integral to the art and science of nursing, and in particular, relative to the role of self as a nurse. As the nurse evolves, core values become self-evident, and provide the fundamental, yet profound essentials for the profession. Professional identity is further advanced by the knowledge and evidence generated and re-evaluated in practice and nursing demeanor that reflects competence, leadership, and ethical comportment.

The nurse embraces the core values in every aspect of practice and continually seeks to improve patient outcomes and promote the ideals of the nursing profession. Professional identity is evident in the lived experience of the nurse, in his/her ways of “being”, “knowing” and “doing”.

<table>
<thead>
<tr>
<th>PRACTICAL/VOCATIONAL</th>
<th>ASSOCIATE DEGREE/DIPLOMA</th>
<th>BACCALAUREATE</th>
<th>MASTER’S</th>
<th>PRACTICE DOCTORATE</th>
<th>RESEARCH DOCTORATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess how one’s personal strengths and values affect one’s identity as a nurse and one’s contributions as a member of the health care team.</td>
<td>Implement one’s role as a nurse in ways that reflect integrity, responsibility, ethical practices, and an evolving identity as a nurse committed to evidence-based practice, caring, advocacy and safe quality care for diverse patients within a family and community context.</td>
<td>Express one’s identity as a nurse through actions that reflect integrity and a commitment to evidence-based practice, caring, advocacy, safe.quality care for diverse patients/families/communities, and a willingness to provide leadership that serves to improve care.</td>
<td>Implement one’s advanced practice role in ways that foster best practices, promote the personal and professional growth of self and others, demonstrate leadership, reflect a spirit of inquiry, promote positive change in people and systems, and advance the profession.</td>
<td>Practice in a way that identifies oneself as a scholar who translates findings from research to design and implement changes in nursing practice and health policy that will best serve a diverse population and a diverse nursing workforce.</td>
<td>Implement one’s role as a research scholar whose identity integrates a spirit of inquiry, a commitment to the systematic investigation of nursing-related problems, the dissemination of research findings, and a sense of responsibility to shape a preferred future for our profession.</td>
</tr>
</tbody>
</table>
Program Outcome: Spirit of Inquiry

The Spirit of Inquiry is the persistent sense of curiosity about one's practice and about the profession. It includes various methods of discovery, raising significant questions, challenging traditional and existing practices, a sense of wonderment, and a yen to uncover creative approaches. The Spirit of Inquiry in nursing engenders innovative thinking and extends possibilities for discovering novel solutions in ambiguous, uncertain, and unpredictable situations.

This outcome reflects the values of excellence and integrity and the integrating concepts of knowledge and science, personal and professional development, quality and safety, and context and environment.

<table>
<thead>
<tr>
<th>PRACTICAL/VOCATIONAL</th>
<th>ASSOCIATE DEGREE/DIPLOMA</th>
<th>BACCALAUREATE</th>
<th>MASTER'S</th>
<th>PRACTICE DOCTORATE</th>
<th>RESEARCH DOCTORATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question the basis for nursing actions, considering research, evidence, tradition and patient preferences.</td>
<td>Examine the evidence that underlies clinical nursing practice to challenge the status quo, question underlying assumptions and offer new insights to improve the quality of care for patient/families and communities.</td>
<td>Act as an evolving scholar who contributes to the development of the science of nursing practice by identifying questions in need of study, critiquing published research and using available evidence as the foundation for nursing practice to propose creative, innovative or evidence-based solutions to clinical practice problems.</td>
<td>Contribute to the science of nursing in one’s specialty area of practice by analyzing the underlying disparities in knowledge/evidence, formulating research questions and systematically evaluating the impact on quality when evidence-based solutions to nursing problems are implemented.</td>
<td>Generate practice-based knowledge and its application/translation/dissemination by systematically studying the lived practice of nurses and conducting integrative reviews of extant research to formulate evidence-based proposals enhancing nursing practice, nursing education or the delivery of nursing services.</td>
<td>Engage in the science of discovery by designing and implementing research studies and disseminating findings to improve nursing practice, nursing education or the delivery of nursing service.</td>
</tr>
</tbody>
</table>
APPENDIX C

SUGGESTIONS FROM THINK TANK GROUPS REGARDING SIMULATIONS RELATED TO EACH OF THE FOUR MOST SIGNIFICANT PROGRAM OUTCOMES

TEAMWORK/COLLABORATION

Concepts to be Addressed

- Communicate across disciplines
- Respectful in communications
- Advocate for the patient
- Delegate
- Know own role/identify and those of other team members
- Include the patient/family as part of the team … patient-centered care
- Be able to “state your case” (SBAR)
- TeamSTEPPS concepts
- Manage team conflicts as needed

Related Outcomes

- Assessment & Intervention
- Clinical Judgment
- Culturally-competent Care

Possible Foci for Scenarios

- Deteriorating patient
- End-of-life situation
- Team conflict
- Handoffs
- Informed consent
- Long term care case conference

QUALITY AND SAFETY

Concepts and Related Outcomes to be addressed

- Patient-centered care
- Teamwork/collaboration
- Quality improvement
- Information technology
- Evidence-based practice
- Safety
  - Assessment/Intervention
  - Communication
o Critical thinking
o Human caring relationships
o Management
o Teaching
o Leadership
o Knowledge integration
o Professional identity

Possible Foci for Scenarios (all of which could be situated in an acute care, urgent care, or ambulatory care setting)

- Falls
- Needle stick
- Patient transfer (handoff)
- Medication interaction
- Wound care
- Restraints

CLINICAL JUDGMENT

Concepts to be Addressed

- Focused observation/assessment … identify the “real” problem
- Sort critical information from “nice to know” information
- Set priorities
- Attend to multiple priorities/tasks
- Respect the patient’s values/choices
- Evidence for assessment & intervention
- Make sense of all the subjective, objective, and evidence-based data
- Use resources appropriately
- Understand the role/scope of practice of all involved in care

Related Outcomes

- Patient-centered care
- Systems thinking
- Professional identity formation (self awareness [biases])
- Management/delegation

Possible Foci for Scenarios

- Patient with multiple system failure
- Patient in the home with complex care needs
- Ethical case (e.g., “non-adherence” of patient vs. patient autonomy)
- Inappropriate direction from another discipline
Other

- Consider asking students to provide a written rationale for their actions
- A well-designed debriefing is critical … one that will “push” students to reflect critically on their actions
- Consider how to handle a situation where the thinking process seems valid but the action is inappropriate and/or the patient outcome is bad
- Distinguish this clearly from Assessment & Intervention

ASSESSMENT & INTERVENTION

Concepts and Related Outcomes to be addressed

- Accurate & focused data collection & analysis
- Prioritization of assessment & interventions
  - Critical thinking
  - Knowledge integration
  - Nursing judgment
  - Communication … team, patient/family, referrals
  - Culturally-competent care
  - Management of patient
  - Delegation
- Handoff (SBAR)
- Medication administration & other skills (refer to checklist of skills in JONA article)
  - Safety
- Documentation
  - Information management
- Use of protocols
  - Evidence-based practice
- Family/Patient interaction
  - Caring
  - Ethics

Possible Foci for Scenarios

- Chest pain
- Shortness of breath
- Multiple patients
- Neurological problem
- Patient with multiple problems
- Deteriorating patient
- Patient with serious chief complaint
- Informed consent issue

Other

- Assessment and intervention skills may be tested best through stations and/or standardized patients
- Assessment and intervention skills need to be distinguished clearly from Nursing Judgment
APPENDIX D

REFERENCES


Dillard, N., Sideras, S., Ryan, M., Carlton, K.H., Lasater, K., & Siktberg, L. (2009). A collaborative project to apply and evaluate the Clinical Judgment Model through simulation. *Nursing Education Perspectives, 30*(2), 99-104.


