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<b>Opinion Name:</b>	Use of Simulation in Approved RN/LPN Programs
<b>Approved Date:</b>	5/15/15
<b>Revised Date:</b>	11/15/19
<b>Within the Scope of Practice for:</b>	RNs, LPNs
<b>Originating Committee:</b>	Education Committee

### ADVISORY OPINION

### EDUCATION USE OF SIMULATION IN APPROVED RN/LPN PROGRAMS

#### DEFINITIONS

For the purposes of this advisory opinion only:

- 1. Augmented Reality** - “A technology that overlays digital computer-generated information on objects or places in the real world for the purpose of enhancing the user experience” (“Augmented Reality”, 2016, pg. 5). Augmented Reality is a “form of virtual reality that includes head-mounted displays, overlays of computer screens, wearable computers, or displays projected onto humans and manikins” (“Augmented Reality”, 2016, pg. 5).
- 2. Debriefing** - A session following a simulation event is a conversational period for reflection and feedback aimed at sustaining or improving future performance (Palaganas, J.C, 2016). The debrief is congruent with the objectives and outcomes of the simulation-based experience (INACSL Standards of Best Practice: Simulation Debriefing, 2016).
- 3. Deliberate Practice** - “A systematically designed activity that has been created specifically to improve an individual’s performance in a given domain” (“Deliberate Practice”, 2016, pg.9).
- 4. Evaluator** - a qualified educator who collects data regarding a learner’s performance and determines the outcome (INACSL Standards of Best Practice: SimulationSM Participant Evaluation, 2016)
- 5. Facilitator** - “An individual that helps to bring about an outcome (such as learning, productivity, or communication) by providing indirect or unobtrusive assistance, guidance, or supervision” (“Facilitator”, 2016, pg.12). The facilitator may engage in one or more of the following activities: operate the manikin, manage the scenario, pre-brief and debrief performers and/or guide learning activities for observers (see Personnel Requirements section).
- 6. Orientation** - Participants are shown how all the equipment in the simulation room operates to include but not limited to (Manikin, IV pumps, Med carts, phones, patient monitors, suction/oxygen walls, camera locations. etc) (Healthy SIM, 2017, pg. 2).

7. **Prebriefing** - An information session held prior to the start of a simulation activity in which instructions or preparatory information is given to or reviewed with participants. The purpose of the prebriefing is to set the stage for a scenario and assist participants in achieving scenario objectives (Brewer, 2011).
8. **Reliability** refers "...to the consistency of scores across replications of a testing procedure...." (AERA, APA, & NCME, 2014, p. 33).
9. **Simulated human** refers to a life-like device (e.g. software driven manikin) or rendering (e.g. 3D computer generated photorealistic image) that accurately mimics human anatomy and physiology.
10. **Simulated participant** is a general term that includes participants trained to portray a variety of roles, e.g., patient, family members, and healthcare professionals (Lewis et al., 2017).
11. **Simulated patient** refers to a person or that portrays a patient in a realistic, but more flexible, manner, e.g., during a formative assessment (Lewis et al., 2017).
12. **Simulation** - "A technique that creates a situation or environment to allow persons to experience a representation of a real healthcare event for the purpose of practice, learning, evaluation, testing, or to gain understanding of systems or human actions as well as training, assessment, research, or systems integration toward patient safety" ("Simulation", 2016, pg. 34). It is also a "Clinical situation replicated in which participants need to use all or some of their assessment, psychomotor, critical thinking or managerial skills in an attempt to mimic essential aspects of a clinical situation with the goal of understanding and managing the situation better when it occurs in actual clinical practice." (NLN-SIRC, 2019). *The Board recognizes that there are broader definitions of simulation, however to meet clinical learning objectives, simulation must realistically mimic the patient care environment.*
13. **Simulation observation** means a structured learning experience based on watching a live or video-recorded simulated performance.
14. **Simulation performance** means active participation in the provision of nursing care in a simulated environment.
15. **Simulation technician** may be trained to operate the equipment, following instructions, but may not have any expertise in conducting a simulation that requires independent, expert knowledge.
16. **Standardized patient** is a more specific term for a person that portrays a patient in a highly standardized and realistic manner. Standardized patients are often used in high stakes assessments (Lewis et al., 2017).
17. **Summative evaluation** means a simulation based exam that is:
  - a. Designed to measure a broad spectrum of nursing competencies,
  - b. Scored using a standardized evaluation tool, and
  - c. The results of the student's one-time performance contribute to the course grade.
18. **Validity** refers to "the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests" (AERA, APA, & NCME, 2014, p. 11). Various sources of evidence, e.g., content, criterion-related, and construct validity, are used to support data validation.
19. **Virtual Reality** means "A computer-generated three-dimensional environment that gives an immersive effect" ("Virtual reality", 2016, pg. 41).

## **POLICY STATEMENT**

Approved RN and LPN programs may use simulation, along with actual patient care, to meet clinical objectives. Consistent with A.A.C. R4-19-206 (D)(2), simulation may not be used for an entire clinical experience. Programs reducing clinical patient care hours need to carefully evaluate whether the number of patient care hours is sufficient to apply core principles of nursing to each population as required in R4-19-206 (D)(2). If clinical time in a specialty is limited, simulation may only be used to augment patient care hours. In such situations, substitution of any clinical time for simulation may result in both

inadequate simulation and inadequate actual patient care experiences. Programs considering substituting all clinical hours for a given specialty with simulation must request a rule exemption under R4-19-214, Pilot Programs for Innovative Approaches in Nursing Education.

Programs incorporating simulation are expected to adopt the standards of the International Nursing Association for Clinical Simulation and Learning (INACSL, 2016) or the most current version in its entirety. Programs are encouraged to explore the use of additional evidence-based theoretical frameworks and models that support successful achievement of simulation objectives.

Programs who meet the above criteria may substitute simulation, using simulators or standardized patients, for a portion of clinical time if the following requirements are met:

### **GENERAL GUIDELINES**

1. Programs that use simulation in place of actual patient care need to do so using INACSL Standards. Other evidence-based practices may also be incorporated.
2. Simulation scenarios should be integrated within the program's curriculum.
3. All students participating in simulation should have equivalent opportunities to perform in the role of the nurse.
4. Unless conducting institutional review board (IRB) approved research or a Board approved innovative program under R4-19-214, all clinical groups in a particular course should receive equivalent amounts and quality of simulation.
5. Simulation facilitators should be prepared to respond appropriately to the psychological impact of simulation on students.
6. Task trainers and two dimensional virtual clinical programs may be used in conjunction with medium and high-fidelity simulation scenarios depending on the objectives of the simulation.
7. Verbalization in place of performing psychomotor skills that are part of simulation scenario objectives should occur *only* when the limits of current technology prevent actual performance of the skill (for example performing all of the steps needed to simulate intravenous medication administration are easily accomplished using current technology, while obtaining liquid gastric aspirate from a nasogastric tube inserted into a high fidelity simulator may require a facilitator to describe the aspirate and its pH).
8. Simulated scenarios are to include high risk/low frequency healthcare situations
9. Simulation Centers are to evaluate the quality and integrity of the program and based on performance, simulation time and ratios are established

### **ONLY when guidelines are met may the following be applied**

1. Simulation Hours
  - a. Simulation may replace clinical practice time up to 50% per speciality (INACSL, 2016; NCSBN, 2016)
2. Simulation-to-clinical practice ratio up to 1:2
  - a. Structured, rigorous simulation that is 1 hour in length equates to 2 hours in a clinical/healthcare setting (clinical practice)

### **Planned curriculum example:**

1. Once the total number of clinical practice hours are determined (i.e.100 hrs.)
2. Determine the number of simulation hours needed to meet the objectives, consider:
  - a. 50% of clinical practice hours is the maximum simulation hours permitted (i.e. 50 hrs.)
  - b. 1:2 ratio - (i.e. 25 hrs. of simulation are equivalent to 50 hrs. spent in a clinical setting)

$$\begin{array}{rcl}
 (\text{Sim time} \times 2) & + & (\text{Clinical Practice time} \times 1) & = & \text{Total Clinical Practice} \\
 (25 \text{ hrs.} \times 2) & + & (50 \text{ hrs.} \times 1) & = & \text{Total Clinical Practice} \\
 50 \text{ hrs.} & + & 50 \text{ hrs.} & = & 100 \text{ hrs.}
 \end{array}$$

**Recap:** If the total clinical practice time must equal 100 hours, then 25 hours of simulation and 50 hours at a clinical/healthcare setting would meet this criterion.

**\*\*NOTE** - In this example, the simulation time represents 50% of total clinical time, and the simulation to clinical ratio is 1:2\*\*

## BEST PRACTICES FOR SIMULATION

### A. Personnel

The use of simulation requires faculty/simulation facilitators that are formally trained in simulation and may require additional faculty and personnel to support the intended use of the simulation.

1. If simulation is used for teaching/learning (formative use), a minimum of 1 facilitator per 4-5 students engaging in simulation performance is required. If simulation is used as a summative evaluation (see definition) for an individual student, a minimum of 2 evaluators for each student evaluated is recommended (Williams, Klamen, & McGaghie, 2003). Evaluations may be conducted by direct observation or by recorded video. Adequate personnel and resources are needed to set up and break down the simulation.
2. Participating faculty shall complete preparatory activities which include reading the assigned material, reviewing the objectives and being familiar with the evaluation criteria prior to and post participation.
3. If simulation observation is part of the experience, a qualified facilitator is required to guide students with structured active observation and focus on pertinent aspects of the simulation.

### B. Physical Resources and Policies

The use of simulation requires physical resources and policies that preserve the confidentiality of the student and security of the simulation scenario including all video materials. Minimum requirements include:

1. Simulation suite with observation/operator space.
2. Equipment of a fidelity identical or nearly identical to that commonly used in clinical settings.
3. Audio and video recording and playback capabilities that allow learners and faculty to review performance.
4. If students are observing the performance simultaneously, a separate room with remote video access to the simulation,
5. Informed consent, confidentiality agreements and behavioral expectations for students, observers and facilitators.
6. If students are allowed access to videos, proper measures should be taken to ensure confidentiality of case material and appropriate viewing of videos including simulated participants (when needed).

### C. Learning Materials/Scenarios

The use of simulation requires that faculty adopt processes (i.e. templates, algorithms) and documentation forms for each scenario consistent with INACSL standards, including:

1. Incorporation of specific objectives for each simulation scenario that relate to the course and clinical objectives and are of a level consistent with course expectations.
2. Objectives include the required cognitive, affective and psychomotor skills.

3. Student/faculty preparation for the scenario.
  4. Storyboard that includes report, simulator actions, deliberate practice, patient cues, expected student roles and actions.
  5. Description of set-up, equipment, pictograms and faculty notes.
  6. Evidence of validation of each scenario in its entirety prior to use.
  7. Assignment of an active role to all students in the simulation room—e.g. nurse, family member, assistive personnel etc. Rotation of roles throughout simulation should occur.
  8. Utilization of an evidence-based guide to provide feedback to students for each simulation activity.
  9. Incorporation and assessment of student documentation for each scenario
  10. Structured debriefing with scenario participants consistent with Standard IV, Criteria 4 (INACSL, 2013, p. S24 or most current version).
  11. When a group of students is observing, structured observational assignments to develop critical thinking and noticing are needed.
  12. Evidence of annual review to ensure that scenarios are consistent with current practice standards.
- D. Programs shall evaluate and revise simulation experiences as part of their Systematic Evaluation Plan (SEP).

## TRAINING REQUIREMENTS FOR FACILITATORS

**Guideline Statement:** Facilitating simulation scenarios requires skill in diagnosing learning needs and managing optimal group processes to validate evidence-driven, safe patient care. Facilitators should have formal education and competency assessment specific to their roles (Jeffries et al., 2015). To meet this criteria, training of facilitators shall:

- A. Be based on a curriculum incorporating best practices in simulation.
- B. Include coaching and evaluation with an experienced mentor.
- C. Include initial and ongoing education that supports these criteria:
  - a. Specific skills and knowledge in simulation pedagogy.
  - b. Facilitating simulations appropriate to the level of learning, experience, and competency of the participants.
  - c. Preparatory activities and a prebriefing to prepare participants for the simulation-based experience.
  - d. Delivery of cues (predetermined and/or unplanned) aimed to assist participants in achieving expected outcomes.
  - e. Facilitation of debriefing “...after the simulation-based experience...to support participants in achieving expected [learning] outcomes” (INACSL, 2016, p. S17).
- D. Facilitators serving as Evaluators should be qualified educators.

## BASIC CHECKLIST FOR SIMULATION

Checklist for readiness for high-fidelity simulation for program use to replace clinical experiences. Specific simulations may require additional items.

1. Must have items/processes for all simulations:
  - ✓ Specific leveled objectives linked to desired outcomes for each simulation
  - ✓ Written, planned simulations that allow student performers to achieve the objectives
  - ✓ Manikins, standardized patients or other resources with fidelity consistent with the simulation objectives
  - ✓ Audio and video recording and playback equipment in working order
  - ✓ Dedicated simulation room

- ✓ Debriefing space that supports confidentiality
  - ✓ Documentation system realistic to the health care environment
  - ✓ Confidentiality agreements and signed consent
  - ✓ Evidence-based structure for debriefing
  - ✓ Validation of each simulation
  - ✓ Validated assessment tool for evaluation of students performing the simulation
  - ✓ Sufficient trained facilitators for group size
  - ✓ Supplies and equipment similar to those used in clinical settings as required by the simulation
2. Depending on the objectives of the simulation, these common items may be needed:
    - ✓ Intravenous and Enteral delivery devices that are realistic and comparable to those used in health care settings
    - ✓ Medication dispensing system
    - ✓ Furnishings to provide an environment realistic to the setting of the simulation
    - ✓ Durable medical equipment to support the simulation
    - ✓ Disposable supplies—gloves, alcohol wipes, simulated medications, medication supplies, etc.
    - ✓ Patient monitoring system
    - ✓ Hand hygiene/infection control systems
    - ✓ Infectious waste and sharps disposal containers
    - ✓ Safe patient handling equipment
  3. For student observers the following are needed:
    - ✓ Separate room with streamed video
    - ✓ Structured assignments for each student
    - ✓ Trained facilitator presence at all times

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