OVERVIEW

SIMULATION

The Problem

Human patient simulation is a commonly used learning activity in health care education. Despite attempts at designing simulation scenarios to be "as real as possible," there are still components of the activity that require significant imagination as students must often "pretend" what they see and hear. Often times, this lack of realism leads to less engagement in the simulated environment, which can create a significant gap between simulation and clinical practice.

To solve this problem, **Simulation** storylines using Augmented Reality will add more realism to the simulated environment and thus, allow for enhanced student engagement as they prepare for clinical practice.

The Solution

Simulations have been designed for use in low or high resource simulation settings, focused on providing maximum flexibility for student centered learning. Media augments reality with rich video, pictures, and sounds. Each simulation starts with a video of a live nurse report as would occur during shift-to-shift report, followed by a video introduction to a live simulated patient. This encourages the student to continually focus on safe, patient-centered care during simulation, as advocated by QSEN (2014).

For ease of incorporation into simulation, storyline levels have been aligned with the WTCS Nursing Curriculum and leveled using the following criteria:

- *Level 1*: basic assessment & basic intervention

- *Level 2*: advanced assessment & complex intervention

- *Level 3*: complication identification & treatment

- *Level 4*: crisis & interventions

The student uses the iPad like a bedside computer. The "patient chart" can be viewed by tapping the Menu icon at the top left of the iPad screen and contains:

- Patient Profile
- H&P
- Orders
- MAR
- Vitals
- Progress Notes
- Labs-Diagnostics
- Imaging
- Level Up
- Scanner

Students must then prioritize what to do first, just like in a patient care setting. For example, they may elect to view the patient chart information first, or go into the patient room first and assess the patient.

In the patient room, QR codes will be placed on the mannequin where augmented reality has been included in the scenario. For example, if there is an augmented reality leg wound, then the student taps the "Scanner" tab to scan the QR code placed on the appropriate site for the wound. If there are augmented reality heart sounds, then the student scans the QR code placed on the chest. The student can scan these codes at any time during the simulation to view/listen to the augmented reality.

Simulation scenarios have been designed using "states," so that once a student accomplishes a desired task in the scenario, they will be advised to tap the "Level Up" tab causing new information to appear in the patient chart. Many times this "levelling up" requires the student to "call the provider." These states are described in more detail in the Teaching Plan provided in the User Guides.

Suggested interactive questions are included in the Teaching Plans to maximize student reflection on learning and to guide their clinical reasoning during the scenario. Debriefing guides have also been provided at the end of the scenario based on INASCL (2013) Standards of Best Practice: Debriefing. These guides answer the recent call from the National League of Nursing (NLN Board of Governors, 2015) for "debriefing across the curriculum" to help move students along the continuum from "knowing what" to "knowing how" to "knowing why."

Instructions

1. Review the User Guides for simulation under each storyline and select the appropriate "story" according to the level for your class. The following information is included in each simulation User Guide:
   - Estimated time frame for simulation and debriefing
   - Scenario overview
   - Specific learning objectives for the scenario
   - QR codes to start the Scenario
   - Learning environment, set-up and QR codes to be placed on the mannequin
   - Teaching Plans:
     o Patient overview, learner expected behaviors, technician prompts and suggested facilitator questions for each state
     o Screen shots of patient chart forms are provided for instructor reference during the simulation
     o "Level up" instructions are provided

2. Provide an iPad(s) with the ARIS app installed to one of the student(s) actively participating in the simulation

3. Scan the Scenario start QR code provided in the User Guide to begin the simulation.

4. Continue to follow the instructions provided in the Teaching Plan during the simulation.

5. When the simulation ends, use the suggested debriefing questions based on INASCL (2013) Standards of Best Practice: Standard VI: The Debriefing Process, and NLN-recommended, theory-based debriefing by Dreifuerst (2012).

6. At the end of each simulation, a link is provided for a short survey. Please provide feedback as we continue to develop future simulations.