

First-year students as first responders: Initiating their first code



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Abstract

First-year nursing students may care for patients with deteriorating conditions and should be able to respond appropriately to emergencies. First-year students may not have confidence or skills to initiate a code response within seconds of recognizing an event even though they are required to have certification in basic life support. Faculty of one associate-degree nursing program developed a “Code Week” with a high-fidelity simulation scenario for first-semester students to rehearse initiating a code.

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Nursing students during their first year clinical learning experiences may have assignments of patients with deteriorating conditions and should be able to respond appropriately to emergency situations. Go et al. (2013) estimated that there are 209,000 in-hospital cardiac arrests each year. The latest American Heart Association guidelines require initiation of cardiopulmonary resuscitation (CPR) within 10 seconds of event recognition (Hazinski, 2011). Nursing students who are the first to encounter patients in cardiopulmonary arrest may improve client outcomes if they are able to respond appropriately. High-fidelity simulation can provide a safe learning environment in which students may practice skills and gain confidence in responding to emergency situations before they confront true emergencies with hospitalized patients.

Background

Our southeastern United States associate degree nursing program requires all students to have current basic life support (BLS) certification. However, Leighton and Scholl (2009) observed that nursing programs do not always present curriculum content on code management and found in their literature review that students’ BLS skills and knowledge decline after certification. Because of increased acuity of hospitalized patients, nursing students often care for unstable patients. The first year lead instructor of our program wanted students to be exposed early in our nursing program to content in responding to medical emergencies. She planned a “Code Week” for the end of the first semester so that the students could learn and rehearse what to do during a code situation.

Review of the Literature

A search of the literature from 2009 using the terms *nursing education, simulation, BLS, CPR, first responders, nursing students, code scenario, and cardiac arrest* in

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various combinations resulted in no articles about first-year nursing students participating in simulated code scenarios. A number of authors did find that high-fidelity (using computerized manikins with sophisticated life-like features such as chest rise and fall) simulated code scenarios were related to improving nursing student skills and/or levels of confidence. Leighton and Scholl (2009) studied responses of senior nursing students and found that fear levels of encountering a code decreased and confidence levels in managing a code situation increased after a simulated code scenario experience. Gordon and Buckley (2009) confirmed that medical–surgical nursing graduate students reported an increase in their emergency response skills as an effect of immersive clinical simulation experiences including those of patients in cardiac arrest. As part of an elective acute patient deterioration course, Hart et al. (2014) utilized three high-fidelity simulation scenarios of a patient in cardiac arrest. The authors determined senior Bachelor of Science in Nursing students' confidence and performance levels in recognizing and responding to acute patient deterioration events improved during the course. Roh (2014) concluded that high-fidelity simulation was more effective than medium-fidelity (using computerized manikins with limited physiological responses, such as breath sounds without chest rise and fall) simulation for improving resuscitation self-efficacy scores in second-year nursing students.

Bogossian et al. (2014) provided a different perspective. The authors observed during high-fidelity simulation that final-year nursing students “lacked the knowledge, clinical skills, team work and situation awareness required to competently manage a deteriorating patient either as first response leaders or team members” (p. 694). The authors recommended that nursing students be provided with opportunities to integrate knowledge and rehearse management of deteriorating patients and planned to make such simulation experiences available to all their students.

The Code Scenario

In 2013, I was simulation coordinator and collaborated with nursing faculty to develop a first responder high-fidelity scenario based on the following learning objectives listed in Fig. 1. I created a patient chart, ID wristband, provider orders, and written beginning-of-shift report to enhance the scenario. I also developed a check-off sheet of expected behaviors and a debriefing template for assessing and discussing student performance.

On the first day of Code Week, the lead instructor presented a 90-minute lecture on the role of the student nurse as first responder in a medical emergency. During the following 2 days, student assignments included reviewing BLS guidelines and content. We scheduled clinical groups to participate in a 5-minute simulated code scenario with a Laerdal SimMan manikin followed by a 10- to 15-minute debriefing. Students reported to a waiting area and drew

numbers to randomly determine order of participation. They then waited until called to the simulation laboratory room to participate in the scenario in pairs, except for one group of three.

All students were familiar with the nursing simulation laboratory room and the Laerdal SimMan manikin after participating in four noncode simulation scenarios spaced throughout the first semester prior to Code Week. They had signed confidentiality agreements at the beginning of the semester stating that they would not discuss simulation content with other students. Three nursing instructors were involved in the simulation activity: I operated the equipment, recorded events and times, and facilitated debriefing. Two first-year faculty members were confederates (actors assuming roles in the scenario): one acted as clinical instructor, and the lead instructor acted as a code team member. All students and instructors dressed for simulation in scrub uniforms per nursing program dress code requirements for clinical experiences.

Before starting the scenario, I prebriefed students outside the simulation room with a beginning-of-shift report of a 60-year-old male 2 days post knee replacement surgery who had just returned to his room following physical therapy. Their assigned roles were of student nurses preparing to introduce themselves for the first time and start their initial assessment. The patient chart was available inside the room, including a photo of a 60-year-old male and a *FULL CODE* label on the front of the paper chart notebook. I informed the students of the location of the code cart and that the clinical instructor was available in the hallway outside the patient's room if they needed her.

After answering any prescenario questions, I told the students when to start the scenario, and the students entered the room. When they assessed the manikin patient, they found that he had extremely low pulse and respiration rates on the monitor (the Laerdal SimMan program was set for 0 for these, but the monitor displayed very low, changing numbers such as 6, 8, etc.). Faculty expectations were for the students to check for breathing and carotid pulse, start compressions, call for the clinical instructor in the hallway, and to bring the code cart with the Ambu bag from the hallway into the room and start ventilating the patient. The clinical instructor guided the students in timing compressions and delivering breaths and advised them when to switch duties if the students did not do this themselves. Three minutes after the clinical instructor entered the room, the code team member (waiting around the corner in the hallway out of view of the students) rushed into the room and asked for report. The scenario ended after the students gave an Situation Background Assessment Recommendation report to the code team member while continuing to give compressions and ventilate the manikin.

During the scenario, I stayed behind a screen with a one-way viewing window and completed the check-off sheet items with time of event recognition, time code blue called/instructor summoned, time CPR initiated and whether the

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