Trends in Simulation: Simulation Integrated Curriculum

TELL ME AND I FORGET, TEACH ME AND I MAY REMEMBER, INVOLVE ME AND I LEARN.”
(BENJAMIN FRANKLIN)

RICHARD D. BALL DHSC, MPH, PAC
DANIEL BEQUILLARD MPAS, PAC

- The accurate and effective application of medical knowledge and skills acquired in the educational process requires the mastery of critical thinking, clinical judgment, clinical skills and the demonstration of clinical competence.

- Simulation requires the integration of problem-solving/critical thinking, communication, and technical skills in an environment designed to simulate the settings of complex medical situations.

- The goal of simulation is to replicate patient care scenarios in a realistic environment for the purposes of feedback and assessment.

- Properly conducted simulation creates an ideal educational environment, because learning activities can be made to be predictable, consistent, standardized, safe and reproducible.

- Simulation does not replace medical education involving real patients, but compliments it. It is best employed to prepare students for real patient contact.
Historically, bedside teaching has been an integral part of medical education, but over the past few years it has been occurring with less frequency. Why?

- Patient resistance
- HIPPA concerns
- The healthcare industry has become more focused on patient safety, quality of care, and patient satisfaction than on providing bedside teaching and education.
- Change in healthcare delivery from inpatient management to more outpatient management of many conditions.
- Shorter hospital stays
- Higher acuity of illnesses
- Resident work hour reforms
- Changes in staff compensation make it increasingly difficult for both trainees and clinical faculty to balance their service obligations with time for education and evaluation
- There is increased competition for access to patients in many clinical training sites because of the number and variety of providers in training

**Simulation in Medical Education**

In medicine, simulation is used so that students can practice on something, not on someone.

In the initial stages of their training students cannot practice on an actual live human, so simulation devices are used to imitate the human body.

Because access to patients is limited more advanced and sophisticated simulation devices are needed to fill the void.
Simulation was integrated into the following courses:

**Didactic Phase: 15 months**

First Quarter: Health Assessment and Physical Examination  
Second Quarter: Clinical Assessment and Management I  
Third Quarter: Clinical Assessment and Management II  
Fourth: Quarter: Clinical Assessment and Management III  
           Emergency Medicine  
Fifth Quarter: Didactic Summative Evaluation

**Clinical Phase: 12 months/Eight 6 week rotations**

Clinical Students: End-of-Rotation Activities  
           Clinical Summative Evaluation

The program also has an Inter-Professional Education component (IPE) that includes students from the Nursing Program and the Doctor of Pharmacy Program
Methods

- High-fidelity clinical scenario simulations were used in all of the core courses to develop the skills and knowledge necessary for clinical practice.
- There were numerous supervised practice sessions during the labs that prepared the students for the graded sessions used to assess their knowledge and skills.
- A rubric was developed by the faculty that effectively assesses the acquisition, retention and application of medical knowledge and clinical skills.
- The rubric can be modified to provide succinct descriptions of various components of the physical examination, history taking, clinical procedures, critical thinking and clinical judgment.
- Faculty members observe, record and evaluate student performance using the grading rubric.
- Using the grading rubric task and scenario performance was evaluated by faculty pre and post simulation training.
- The simulation technology provides a written and video record of the clinical scenario that allows for debriefing and evaluation of student performance.
- A student survey of their simulation experience was included in the course evaluations.
- The faculty also completed a survey on simulation.

Results

The feedback from students and faculty was overwhelmingly positive. Both students and faculty saw improvements in scenario and tasks performance and noted increased confidence and improvement in communication skills.

Discussion and Conclusions

The goal of simulation is to present students with realistic clinical scenarios in an environment that is representative of true patient care settings for the purposes of feedback and assessment. It provides a realistic hands-on experience that reinforces the content of the lectures. It boosts student confidence in clinical encounters and works to enhance the overall learning experience. Simulation complements but does not replace medical education involving real patients in genuine settings. It is best utilized to prepare students for real patient contact and to help develop the skills necessary for clinical practice.