The Continuing Emergence of Simulation in Health Sciences Education
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Session Objectives
• Describe different types of basic to complex simulations
• Give examples of how simulation can be used in teaching, assessment, faculty development, and patient safety initiatives
• Identify at least one type of simulation that you could use to meet a teaching, assessment, faculty development, or patient safety need

We have come a long way in using Simulation
Military Simulation 1914
Medical Simulation 2011

How comfortable are you with simulation as a teaching/learning strategy?
1. Very Comfortable
2. Somewhat
3. Comfortable
4. Skeptical
5. Resistant
6. Not Sure

What group of learners do you typically work with?
1. Students
2. Patients
3. Staff
4. Faculty
5. More than one of the above

Have you developed simulation scenarios for teaching, learning or assessment?
1. Yes, once or twice
2. Yes, frequently
3. No
What medium have you used (seen used) to design simulation scenarios?
1. Role Play
2. Task Trainers
3. Human Patient Simulators
4. Standardized Patients, Families, Faculty, or Learners

What category of simulations have you developed or been involved with?
1. Teaching
2. Assessment
3. Remediation
4. Faculty Development
5. Team Training
6. More than one of the above

Are you conducting research using any form of simulation?
1. Yes
2. No, but I have thought about it
3. No, not really interested in conducting research

Scope of Simulation
- Teaching
- Assessment
- Faculty Development
- Patient Safety

Scope of Applications
- Learners
  - Medical Students
  - Residents and Fellows
  - Faculty and Staff
  - Interprofessional Teams
  - Others – healthcare and non-healthcare
    - Pastoral Care
    - Patient Relations
    - Interviewers
    - Organ Donation Requests
    - Others?
• At the undergraduate and graduate medical education levels, both the AAMC (Whitcomb, 2005) and the ACGME (2005) have produced articles to support the use of simulation and practice in addressing the ACGME core competencies first outlined in 1999 (ACGME, 1999-2007).

• More recently, the American College of Surgeons has recognized the importance of simulation by initiating a program for the Accreditation of Education Institutes (ACS, 2006).

• Effective 7/1/11, Anesthesiology Residency Programs must include required simulation training in which residents participate in at least one simulated clinical experience yearly; programs are encouraged to incorporate surgeons & nurses into the simulation.

• ACGME also believes that a formal debriefing mechanism is an important component of each session in order to ensure that participants receive meaningful competency-based outcomes assessment.

Scope of Applications for Teaching

• Patient Interaction Skills
  • Medical Interviewing and Physical Examination
  • Provider-Patient Relationship/Difficult situations/Home care
  • Professionalism
  • Informed Consent
  • Organ Donation

• Team Performance Skills
  • Leadership skills
  • Functioning as an effective team member

• Clinical Skills
  • Patient Management
  • Critical Thinking and Problem-solving
  • Electronic Medical Record

Scope of Applications

• Assessment
  • Interpersonal and communication Skills *
  • Procedural skills *
  • Professionalism and attitudes *
  • Systems-based practice *
  • Practice-based learning and improvement *
  • Medical knowledge *
  • Patient care *
  • Processes

Scope of Applications

Faculty Development

“To respond appropriately to the coming changes in medicine, we medical educators need to change medical education. We can do this by changing the people who teach medicine—at all levels—and change what they teach, how they teach, and how they do research in medical education. To accomplish this, faculty development must change.”

Scope of Applications

Faculty Development

“One model of care that is already changing is the current physician–patient model. Newer, more patient-centered models of care include a team approach to patient care, which will require physicians to learn how to be effective team members.”

“Technologies like telemedicine and mobile text messaging (e.g. to remind patients to test their blood sugar and report it) demand an entirely different model of care…to accommodate the particular needs of their patient populations.”


Scope of Applications

Patient Safety

There is growing awareness of the need for simulation to enhance skills acquisition and ultimately impact patient outcomes. Some have called it an “ethical imperative”


Scope of Applications

Patient Safety

In an article entitled, Patient Safety and Simulation-based Medical Education, the authors commented that patient safety is a critical issue and needs to be addressed. The authors indicate that medical educators may find that simulation-based education may help address safety and patient care concerns.


Scope of Applications/Patient Safety

• Interaction Skills
• Interdisciplinary team training
• Teamwork/CRM

• Medical Errors
• Technical Skills
• Process Problems

• Electronic Medical Record

• Simulation Research/Outcomes
• IOM published statements on importance of health care quality and patient safety (Kohn, 1999)
• Agency for Healthcare Research and Quality (2006) has been a catalyst by funding projects focused on improving patient safety through simulation research.

Simulation Research Literature


• Use of Simulation-Based Education to Reduce Catheter-Related Bloodstream Infections (Barsuk J et al. Arch Intern Med. 2006;166(15):1420-1423.)

• Use of Simulation-Based Mastery Learning to Improve the Quality of Central Venous Catheter Placement in a Medical Intensive Care Unit (Barsuk J et al. J Hosp Med. 2009;4:397-403.)
Simulation Research Literature

Scope of Applications
- Simulation Conferences
  - International Meeting on Simulation in Healthcare
  - Northwestern University’s Simulation Technology in Medical Education conference
  - METI’s HPSN conference
  - Laerdal SUN Conferences

Simulation Definition
- Standardized patients
  An SP “is a person who has been carefully coached to simulate an actual patient so accurately that the simulation cannot be detected by a skilled clinician,” per Dr. Howard Barrows.
- Simulators: basic to complex
- Case Scenarios
- Other?

Standardized Patients

Basic Skills Training

Basic Skill Simulators
Procedural Skills

- Upper and Lower GI
- Bronchoscopy

Motor Task and Haptics

Advanced Skill Simulators

Laparoscopy

Advanced Skill Simulators

Human Patient Simulator
Physiologic responses to medication administration, ventilation & programmed conditions

Group Instruction

Individual Instruction
Team Performance Skills

Embedded Patients and In-Situ Simulation

Planning a Simulation

- Define objectives
- Define individual learner outcomes
- Choose the best simulation medium (HPS, task trainer, SP, etc)
- Develop materials or case. Be specific in steps and/or details. Develop checklist to assess task completion. If SP, determine role (evaluating &/or feedback), train SP, and develop any appropriate checklists.
- Decide to record or not record
- Determine methods of post-experience feedback and /or de-briefing.

Proposed Sixth Floor Plan

Reception

Control Room
Interior Design: Virtual Critical Care

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