Operationalizing Successful Simulation Programs

Definitions

Simulation:
- “… as a strategy – not a technology – to mirror, anticipate, or amplify real situations with guided experiences in a fully interactive way.”

Simulator:
- “…replicates a task environment with sufficient realism to serve a desired purpose”

Why Simulation?

- High-risk industries (Aviation, military, space)

Simulation in Education

- Provides more experiential learning opportunity than Powerpoint lectures
- Increased use of learning technology
- Learner directed, not faculty directed
- Meets needs of adult learners and multiple learning styles
- More emphasis on outcome-based than process-based education
- More evidence-based education strategies and curriculum

Experiential Learning Theory

- John Dewey
- David Kolb
- Malcolm Knowles
- Dreyfus Model of Skill Acquisition
- Patricia Benner
  - Novice to Expert
  - Caring
Simulation in Healthcare

- Clinical Simulation allows for training that might be too costly, risky, or hazardous in the clinical setting. Avoid “practicing on patients”
- IOM reports
  - Focus on patient safety and quality of care
  - Competence of healthcare providers
  - Healthcare education reform
  - Focus on Interprofessional training

Fidelity

The physical, contextual, and emotional realism that allows persons to experience a simulation as if they were operating in an actual healthcare activity.

Emotional
Contextual
Physical

Driving Forces

Institute of Medicine
Accreditation Bodies
Innovative Teaching Methods

Significance to Nursing

- Allows students to practice in a safe, controlled environment
- Removes fear of harming an actual patient
- Ok to make mistakes
- Rigorous methods of competence evaluation

Simulation vs Clinical Experiences

- Can be customized for individualized learning
- Less subjectivity
- Is more accurate reflective learning especially
- Is student-centered learning
- Allows independent critical-thinking and decision-making, and delegation
- Allows immediate feedback
- Offers opportunity to practice rare and critical events
- Can be designed and manipulated
- Allows calibration and update
- Offers opportunities to make and learn from mistakes
- Is safe and respectful for patients
- Allows deliberative practice
- Also uses the concept of experiential learning

Rationale

- To ensure patient safety
- To promote better preparation of new nurses
- To support innovative teaching strategies
- To overcome faculty and preceptor shortages and lack of clinical sites
Simulation Cases

- Should be driven by the educational goal/objective
- Should match the level of the student
- The higher the realism, the more effective it is in engaging the student
- Should be based on a real patient encounter
- Should be evidence-based
- Summative or Formative

National Council of State Boards of Nursing supports

“...the inclusion of innovative teaching strategies that complement clinical experiences for entry into practice competency.”

— NCSBN position paper on clinical education, 2005

NCSBN National Simulation Study

RCT – Sample of 666 pre-licensure students
  - Control group – no more than 10% of clinical hours in simulation
  - 25% Group – Students had 25% of clinical hours replaced by simulation
  - 50% Group - Students had 50% of clinical hours replaced by simulation

Results
  - No statistically significant differences in clinical competency, comprehensive nursing knowledge, and in NCLEX pass rates among the three study groups
  - The study cohort was also followed for the first 6 months of clinical practice with no differences in overall clinical competency and readiness for practice. (Hayden et al., 2014)

Need for Innovative Teaching/Learning Methods

- Complicated technology in healthcare
- Complex environment
- High acuity patients
- Nursing faculty shortage
- Decreased length of stay
- Decrease in clinical sites
  - Competing for clinical sites
  - Lack of ability to perform skills in clinical sites (pass meds, start IVs,

Types of Simulation

- Screen-based/PC-based simulation
- Virtual patients
- Partial task trainers
- Mannequin/Human patient simulator
  - Low fidelity
  - Medium fidelity
  - High fidelity
  - Standardized patients

Human Patient Simulator

Human Patient Simulator™ (HPS) was dubbed by METI in the late 1980's.
Hybrid Simulators

- Human Patient Simulators (HPS)
- Task trainers
- Virtual Reality
- Standardized Patients

Standardized Patients

- Standardized Patients provide opportunities to learn and practice human compassion, empathetic communication skills, and receive feedback from the patient on how to fine-tune bedside acumen and connection with the patient.

"Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.” - Confucius, 450 BC

Program Planning

Develop and Focus on Infrastructure

- Funding
  - Grants
  - Tuition/Lab Fees
- Curricular Integration
- Staffing
  - Program Director
  - Dedicated Faculty
  - Support Staff
- Resources
  - Equipment
  - Simulation Lab Space
- Students

Curriculum Integration

- Review Program, Mission and Competencies
- Identify Course Objectives
- Develop Case
- Hire or Buy?

Curricular Integration

- Why
  - Program Mission and Aims
  - Engages in Reflective Practice
- What
  - Evaluate Teaching Methods: learn by doing
  - Experiential Learning Strategies
  - Competency outcomes – Knowledge, Skills, Attitudes
  - Focus on communication, patient safety, Error prevention
  - Compliments other teaching methods and Clinical practice experiences
- When
  - Meet objectives of course and clinical experiences
- How
  - Administrative/Stakeholder Support
- Who
  - Faculty/Student Buy-in
- Where
  - Dedicated Space/Classroom
Curriculum

Ensures consistency
- Reduces training variability and increases standardization

Convenience
- Guarantees experience for every student
- Evaluate all students in lab
- Can be reproduced
- Occurs on schedule

Evaluate case specific skills
- Communication & interpersonal skills
- H&P techniques
- Emergency situations
- Direct comparison of competence
- Objective checklists
- Defined scoring

Staffing

Program Director
- Oversee program
- Coordinators
  - APN, RN
- Clinical Faculty
  - Case development
  - Run Scenarios
- Support Staff
  - Simulation Specialist
  - Administrative Assistant
  - Standardized Patients

Program Director

- Oversee all aspects of program
  - Develop policies and procedures
  - Work with Directors of programs to integrate into curriculum
  - Keep financial records, budgets, costs, outsourcing
  - Train faculty
  - Prepare students
  - Case development
  - Student Evaluations and Competencies
  - Standardized Patient recruitment, hiring, training
  - Legal and Ethical Issues

Clinical Faculty

- Formal Simulation Faculty Development
- Determine objective of encounter
- Case Development
- Utilize Case Blueprints
- Base on real patients
- Base on curriculum taught
- Summative or Formative Use
- Evaluation of Student Performance – Grades
- Feedback Sessions
- Debrief case

Resources/Equipment

Funding
- Grant funding
- Local contributions
- Foundations
- Revenue generating

Equipment
- Simulators, Task Trainers, Virtual programs
- Hardware: Laptops, PCs, iPads
- Equipment for rooms: gurneys, hospital beds, exam tables, wheelchairs, headwalls
- Hospital Consumables, linens
- Data Management Systems, A/V

Preparing Students

- Orientation to program
- Fees/Tuition
- Consent to be video-taped
- Confidentiality – Honor Code
- Computer programs
- Debriefing Cases
- Evaluation
- Remediation
Debriefing Students

Provides safe environment and opportunity for students to recognize and release emotions felt during simulation - reflective practice, visual learning, and self-assessment. This is where all the learning takes place!

Faculty facilitating discussion
- Open-ended questions and reflective responses
- Student responses guide discussion
- Insure new learning is processed correctly
- Link to didactic lecture and real world situations
- Reinforce objectives of case and emphasize teaching points
- End on positive note – take home points – what was done right
- Mistakes are part of learning process
- Focus on performance and not performer

Goal is to assist student in looking at the overall experience – What they did, what they learned, and what they need to work on.

Testing Day

Simulation Lab Spaces

- Keep all programs in mind, RN, NP, CNS etc
  - Acute care, primary care, home health environments
  - Sinks, cabinetry, debrief rooms, classroom space, skills practice
- Keep flexible - equipment, tables, chairs on wheels
- Re-create spaces
- Task Trainers
- Office space
- Laundry Facilities
- Storage
- Standardized Patient training rooms/lounge

Primary Care Exam Room
SIMULATION FOSTERS INTERPROFESSIONAL EDUCATION

Interprofessional Education

IPE occurs when learners from the health professions and related disciplines learn together about the concepts of health care and the provision of healthcare services toward improving the effectiveness and quality of patient care.

Essential Elements:
- Collaboration
- Respectful communication
- Application of knowledge and skills
- Experience in Interprofessional teams
- Reflection

Initiating Partnerships

Simulation- Fosters IPE Partnerships

Academic

Learners
- Healthcare Professional Students
- Healthcare Professionals

Vendors
- Equipment
- Supplies
Foster Teamwork

- Establish a clear team leader
- Actively share info among team
- Delegate tasks
- Encourage team members to speak freely and ask questions
- Address patient concerns
- Communicate diagnosis and plan to patient
- Verify information that is communicated (call back the order)
- Collaborate with team members
- Use “CUS” I’m Concerned, Uncomfortable, Safety issue
- Delegate tasks
- Provide support to team members

Create environments that foster opportunities to speak up

Psychological Safety

Knowing-how → Performance

Education Vision

Class → Simulation → Clinical → Real world
Integrated into mainstream healthcare education
Integrated models for both teaching and assessment using simulation
Setting standards and guidelines for various kinds of learning and assessment

Simulation Research

Nursing Research projects
- Impact on nursing competence
- Impact on patient care, patient safety, and quality of care
- Validated and reliable competency tools
- Large cohort studies
- Use of standardized patients in the evaluation of nursing students

How Do We Foster Innovation?

- What is it that you believe?
- What is your dream?
- Leaders hold a position of power and authority, but those who lead, inspire us
- We follow those who lead, not because we have to, but because we want to
- It’s those who start with “why” have the ability to inspire those around them and find others who inspire them
Beyster Institute of Nursing, Advanced Practice, & Simulation

Entrance

Courtyard

Questions?

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