Simulation in Medical Education

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The development and maintenance of expertise in any domain requires extensive, sustained practice in a manner which embeds self-awareness, performance monitoring and critical reflection.
The Circle of Learning
helping build competence
How relevant is it for you?

- Should become relevant by
  - Meeting your needs as learners for ongoing education
  - Being related to your current clinical practice
  - Providing the ability to practice infrequent yet catastrophic events
  - Reinforcing basic patient assessment and decision making
How relevant is it for you?

- Should become relevant by
  - Providing the ability to learn in your own environment
  - Developing confidence and competence in a patient safe environment
  - Helping develop good self reflective skills to improve learning
  - Facilitating human factor training
    Effective Trauma Team Response!
In Summary

- Defined simulation and the different types
- Reviewed advantages and disadvantages
- Discussed how simulation can be integrated into an education process
- Identified why it should be relevant to you in your practice
"Simulation is an educational technique that allows interactive, and at times immersive activity by recreating all or part of a clinical experience without exposing patients to the associated risks”

Maran & Glavin, Medical Education
Vol 37, Issue s1, page 22 – November 2003

Thank you
If Women controlled medicine

The Manogram
Introduction

- Define Simulation
- Advantages and Disadvantages
- Integration into an education process
- How relevant is it for you?
What is Simulation?

- **Simulation is**
  - Close resemblance or imitation
  - Assumption of a false appearance
  - Reproduction or representation

- **Medical Simulation**
  - Training or educating in a synthetic or “almost real” environment

- **Fidelity in Simulation – Internal & External**
  - Exact correspondence with fact or with a given quality, condition, or event; accuracy, degree of similarity.
Types of Simulation

- **Manikin (Mannequin)**
  - Human Patient Simulators - MacroSimulation
  - High or low fidelity

- **Anatomical Models**
  - Part task training - Psychomotor skill development
  - High or low fidelity

- **Software based**
  - Decision making skills - Metacognition - MicroSimulation
  - High fidelity much more effective - immersive for the learner
  - Must provide debriefing/feedback to the learner
Types of Simulation

- **Haptics**
  - Mechanical Models and Virtual Reality combined
  - High fidelity

- **Standardised Patient**
  - “Real” patients for assessment
  - Actors moulaged for a scenario

- **Animal and Cadaveric**
  - Individual skill performance
  - Accurate anatomically
Advantages of Simulation

- **Patient Safety**
  - Safe environment to practice in
  - Fewer “real” cases available for students and junior staff to experience

- **Repetition**
  - Able to repeat experience as necessary - confidence
  - Able to perform infrequently used skills

- **Human Factor Training**
  - Team performance and training
  - Self reflection on practice
Advantages of Simulation

- Learner development
  - Situational analysis of clinical environment
  - Critical thinking skills
  - Decision making skills
  - Application of knowledge in a context
  - Videotaping allows repeated review and comparison
Disadvantages of Simulation

- **May be Intimidating**
  - Having to “perform”
  - Setting yourself up for critical review – “I’m not going to do that, they’ll all be watching me, what if I stuff up!”
  - Confidentiality!

- **Unfamiliar with equipment**
  - Manikin functionality – What you can and can’t do
  - Software functionality

- **New learning environment**
  - Requires self reflection without being defensive
  - Being “Debriefed” by someone else – good skills
Simulation Should

• **Be based around**
  - The needs of the learner and the organisation
  - The opportunity to apply and integrate theoretical knowledge
  - Training in a safe environment

• **Not be**
  - Designed to introduce new material for the first time
  - Used to intimidate or humiliate