CBME Simulation Primer - Implementing, Debriefing and Assessing

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Dr. Andreas Antoniou MD FRCPC
Dr. Richard Cherry MD FRCPC
Objectives

• Distinguish between different genres of simulation based education

• Formulate strategies to overcome the common challenges in implementing simulation based training

• Contrast different approach to simulation debriefing

• Discuss the challenges and nuances of using simulation for assessment
Conflict of Interest Disclosures

• Andreas Antoniou
  No conflicts to disclose

• Richard Cherry
  No conflicts to disclose
Part 1: What is simulation?
Part 2: Implementation
Part 3: Debriefing
Part 4: Assessment

CBME

Schulich Medicine & Dentistry

ACTS
What is simulation?
Activity

• Is this simulation?
Genres of Health Simulation

• Standardized Patients
• Mannequin-based
• Task Trainer
• Tissue-based
• Web or Screen-based
• Virtual Reality

Hybrid simulation = the combination of 2 or more simulation modalities in one activity
Realism (Fidelity)

• ... the accuracy of a simulation and how closely it imitates the real-life counterpart.

• Specific descriptions of realism levels are subject to interpretation but the following generalization can be made:
  
  — Low - the minimum simulation required for a system to respond to accept inputs and provide outputs
  
  — Medium - responds automatically to stimuli, with limited accuracy
  
  — High - nearly indistinguishable or as close as possible to the real system
Functional Task Alignment

- ...rather than fidelity (Hamstra et al)
- What are you trying to teach / assess?
- What is the ‘best’ way to do simulate that?
- Best = learning goals achieved + efficient (achieved / time) + cost effective
Recap

• Defined simulation
• Introduced some simulation vocabulary
• Genres of simulation
• Realism
Implementing
Activity

What are the challenges to implementing simulation in your home programs?
Science
Staff

• Recruit champions to promote your simulation program

• Coordinator to orchestrate and lead simulation-based training efforts
Supplies

- Simulation is resource-intensive
- Surplus or expired equipment available in other units
- Outside funding when getting supplies from local facilities is not feasible.
Space

• Simulation lab

• Temporary locations
  – Hospital space not being used

• Off-site locations

• In-situ simulation
Support

- Organizational support and upper-level management buy-in play a critical role in the success of simulation-based training programs

- Elevator pitch
Systems

• Match the fidelity of the training system with desired training objectives
• Network and AV infrastructure/capabilities are sufficient
• Upfront costs and recurring maintenance for simulation equipment
Success

• Share success stories throughout the organization
  – Newsletters
  – Bulletin boards
  – Email notifications
  – Website
Sustainability

• Focus on maintenance, not just development

• Component right from the program’s inception

• Constantly recruit new simulation champions and instructors
8 S’s

- Science
- Staff
- Supplies
- Space
- Support
- Systems
- Success
- Sustainability

*The Joint Commission Journal on Quality and Patient Safety*

Teamwork and Communication

 Eight Critical Factors in Creating and Implementing a Successful Simulation Program

*Elizabeth H. Lazzara, PhD; Lauren E. Benishek; Aaron S. Dietz, MA; Eduardo Salas, PhD; David J. Adriansen, EdD, NREMT*
Debriefing
The Goal

Observe

Analyze

Improve
Performance Gap

Learner Frames

Actual Actions+Results

Desired Actions+Results

Instructor Frames
Effective feedback

Timely
‘Correct’ - valid and accurate*
Honest
Non-threatening
Credible

Debriefing – What is it?

“The act of reviewing a real or simulated event in which participants explain, analyze and synthesize information and emotional states to improve performance in similar situations”

CMS Boston

“Highly interactive process in which skills and understanding are not simply dispassionately assessed by the instructor, but in which new insights are co-created in a dialogue between instructor and students.” Jenny Rudolph et al Acad Emerg Med 2008

Feedback vs. Debriefing:
Feedback= providing information
Debriefing= facilitating discussion of a prior event
Debriefing options

There is no “right” way for every situation

There are many OPTIONS

Pros and cons to all the options

Directive Feedback

Plus Delta

Advocacy Inquiry

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Directive Feedback

• It is okay to just teach

• Action oriented coaching

• I saw you do this ... next time do this...**BECAUSE**________________.
Directive Feedback

**PROS**
- You need to absolutely certain your observation is right and indisputable
- Time efficient

**CONS**
- Does not address reasoning or thinking behind the action
- Can limit conversation and engagement
- Instructor centric
Example and practice

• The waiter tonight brought you a rare steak and the wrong side dish. Provide directive feedback to him/her ...

• Goal = ?
  – Get your order corrected
  – Improve the future performance
+ / Δ

“What went well”
“What would you change”

NOT “What went well and what went... Poorly
Not so great
Bad”
Plus Delta

**PROS**
- Easy to learn
- Instructor prompted - Learner driven
- Quickly generates an issue list

**CONS**
- Does not address reasoning or thinking behind the action – but can be a starting point for this
- You still need to close the gaps on the list
Application and Practice

• Watch the U of Manitoba
• Generate your own $+/\Delta$
• [https://www.youtube.com/watch?v=Ojq5lOlKdYA](https://www.youtube.com/watch?v=Ojq5lOlKdYA)
The goal of AI

- Use direct observations from the simulation
- Ask questions to understand the participant’s meaning of the simulation events i.e. bring their frames to the surface
- Test your **hypothesis** against their explanation

Advocacy - Inquiry

I SAW ______________ (observation)

I THINK ____________ (judgment / my position)

I WONDER __________ (inquiry)

GENUINE CURIOSITY
Advocacy - Inquiry

**PROS**
- Explores the learners frames – “double loop learning”
- Promotes reflection

**CONS**
- Difficult to learn and master
- Feels forced if you are not genuinely curious
- Time consuming
Debriefing recap

There is no “right” way for every situation

There are many OPTIONS

Pros and cons to all the options

Directive Feedback
Plus Delta
Advocacy Inquiry
Promoting Excellence and Reflective Learning in Simulation (PEARLS)
Development and Rationale for a Blended Approach to Health Care Simulation Debriefing

Walter Eppich, MD, MEd;
Adam Cheng, MD, FRCPC, FAAP
Assessment
Miller

- Work-based assessment
  - Portfolio
  - Real-life clinical exam
  - Multi-source feedback

- Simulation-based assessment
  - Mannequin-based scenario
  - Objective structured clinical examination
  - Simulated patient

- Knowledge application assessment
  - Essay
  - Oral examination
  - Extended matching questions

- Knowledge assessment
  - Multiple choice questions
  - True/false questions
  - Short answer questions
Considerations for Sim Assessment

- Reliability
- Validity
- Standardization
- Tools / Scales
- Piloting
- Rater training
- Process is important
  - Input (Delphi)
  - Consensus
Simulation-based assessment of anesthesiology residents’ competence: development and implementation of the Canadian National Anesthesiology Simulation Curriculum (CanNASC)

L’évaluation par la simulation de la compétence des résidents anesthésiologie: mise au point et mise en œuvre d’un Programme national de simulation en anesthésiologie au Canada (CanNASC)

Michelle Chiu, MD, FRCPC · Jordan Tarshis, MD, FRCPC · Andreas Antoniou, MD, FRCPC · T. Laine Bosma, MD, FRCPC · Jessica E. Burjorjee, MD, FRCPC · Neil Cowie, MD, FRCPC · Simone Crooks, MD, FRCPC · Kate Doyle, MD, FRCPC · David Dubois, MD, FRCPC · Tobias Everett, MBChB, FRCA · Rachel Fisher, MD, FRCPC · Megan Hayter, MD, FRCPC · Genevieve McKinnon, MD, FRCPC · Diana Noseworthy, MD, FRCPC · Noel O’Regan, MD, FRCPC · Greg Peachey, MD, FRCPC · Arnaud Robitaille, MD, FRCPC · Michael Sullivan, MD, FRCPC · Marshall Tenenbein, MD, FRCPC · Marie-Helene Tremblay, MD, FRCPC

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References


Who and what to read about debriefing

Jenny Rudolph
Adam Cheng
Peter Dieckmann
Stan Hamstra