Mobilizing Simulation for Northern Ontario

Introducing the SIMBULANCE
Agenda

Introductions & Review of Objectives

Simulation Modalities, Fidelity of Resources
Review of various forms of simulation
Ranges of fidelity or realism
Determining the correct modality & resource

NOSM’s Simbulance Project & Logistical Planning
History of the Simbulance
High level goals & objectives & outline of the Pilot Project
Table discussions & report back on potential needs, logistics and challenges

Questions & Wrap-up

Presentation of Keys to the Simbulance (parking lot)
ABSTRACT:
Mobile Simulation supports the principles of community engagement and distributed educational activities where NOSM faculty and learners will work together with other health care practitioners, first responders, emergency personnel and learners from health care partners. Workshop participants will review the various modalities of simulation and examine important principles for providing mobile simulation educational opportunities in distributed community sites.

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LEARNING OBJECTIVES:
1. Identify at least four different modalities of simulation.
2. Discuss the NOSM Mobile Simulation Pilot Project 2014 including goals to provide simulation based learning in distributed teaching sites.
3. Identify important principles for planning community based mobile simulation learning
Simulation is ....

..... the imitation or representation of one act or system by another.

http://ssih.org/about-simulation
Simulation Modalities for Health Education

Virtual patients
- Avatars
- Computer based
- Interactive
- Multiple player options

Cadaver
- Synthetic
- Authentic
- Full or partial body

https://www.google.ca/search?q=syndaver&tbm=isch&tbo=u&source=univ&sa=X&ei=6mw4U-CwCeat2QfWjYHIAw&sqi=2&ved=0CDAQsAQ&biw=1366&bih=599
Medium as Message

- Electronic medical records
- Order entry tools
- Digital imagery

Paper cases & scenarios

- Problem based learning
- OSCE stations
Role Playing

• Learners as actors

Standardized Patients

• Actors as patients
• Interactions observed & critiqued by preceptor, peers
Task Trainers

- Includes surgical skill trainers such as laparoscopy, arthroscopy
- Partial body trainers such as IV arms, catheterization simulators, central line insertion

http://www.simulab.com
Electronic Patients or Mannequins

- Ranges of fidelity or realism
- Full body mannequin
- May have physiological responses to actions taken or not taken
Fidelity in Simulation

- **Environment**: the extent to which the physical surroundings replicate reality by the recognition of physical and sensory presentation.

- **Psychological**: the degree to which the learner can adopt this experience as truly representative of reality.

- **Equipment**: the effectiveness with which the equipment duplicates reality ... size, interactivity, tactile, visual, auditory, physiological.

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## Examples of Simulator Fidelity

<table>
<thead>
<tr>
<th>TOOL/SIMULATOR</th>
<th>FIDELITY TYPE</th>
<th>DEFINITION</th>
<th>EXAMPLE</th>
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</thead>
<tbody>
<tr>
<td>Task trainer</td>
<td>Low Fidelity</td>
<td>One segment of a mannequin designed for a specific function; used for rote practice in the acquisition of psychomotor skills. No interactivity.</td>
<td>IV arm, suture/drain model, Leopold’s palpation model, Injection Trainer</td>
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<tr>
<td>Mannequin (also called Static Simulator)</td>
<td>Low Fidelity</td>
<td>Passive, unresponsive full body mannequin that is available in models that range the lifespan and have exchangeable parts. No interactivity.</td>
<td>Mrs. Chase, the original static mannequin Multiple mannequins from Baby → Geriatric</td>
</tr>
<tr>
<td>Homemade device</td>
<td>Low – Hi Fidelity</td>
<td>Creative solutions using readily available materials. No interactivity.</td>
<td>Sponge perineum Chamois suture pads Oranges for injections</td>
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<tr>
<td>Role play</td>
<td>Low Fidelity</td>
<td>Peer learner adopts the patient role with little or no advance training or preparation. Viewed as low fidelity because of limitations in realism. In certain circumstances, fidelity can be increased depending on learning objectives. Interactivity will vary with situation.</td>
<td>Providing opportunity to practice skills such as interviewing, history taking, etc.</td>
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<tr>
<td>Standardized patient (SP)</td>
<td>Low – Hi Fidelity</td>
<td>Individuals who are trained to portray the patient in clinical scenarios. i.e. Low fidelity when SPs cannot replicate physical findings (cardiac arrest), and high fidelity when replicating non-verbal and verbal human responses/reactions (crying, facial expressions, discussions, etc.). Realistic interactivity will vary with situation.</td>
<td>Effective with scenarios related to invasive and non invasive physical examination, interview, patient education and discharge planning</td>
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<tr>
<td>Hybrid Simulation</td>
<td>Low-High Fidelity</td>
<td>The use of a combination of multiple modalities of simulation to provide a more realistic learning experience.</td>
<td>Often a combination of SP, task trainer and/or simulator (i.e. Prompt birthing Trainer worn by SP during birthing scenario.</td>
</tr>
<tr>
<td>Virtual reality</td>
<td>Mid-High Fidelity</td>
<td>Computer-based simulated environment which includes: audio, visual, tactile, hardware, electronics and software</td>
<td>IV simulator, Robotics, data gloves, and helmets, virtual hospital computer games</td>
</tr>
<tr>
<td>High-fidelity Simulator or Advanced Human Patient Simulators</td>
<td>High Fidelity</td>
<td>Full body simulator with advanced level of installed human qualities (gas exchange, spontaneous pupil reaction, human sounds, full remote vocalization. Passive and interactive software with ‘intra-scenario’ programming capability</td>
<td>SimMan 3G Gaumard’s Noelle, Hal: Fetal monitoring, ABG interpretation METI HPS: ABG interpretation, advanced sensors, anaesthesia compatible</td>
</tr>
</tbody>
</table>

Original version 2003, Debra Spunt, University of Maryland, Faculty of Nursing Updated by Colette Foisy-Doll and Susan Morhart, March 2013
Rate the fidelity based on the objective

Objective: communicating with elderly in home environment
Objective: skill development

Team work

Catheterization

Grant MacEwan University, Robbins Health Centre

NG insertion

www.laerdal.com

Multiple patients

www.flinders.edu.au
Objective: Critical Event
Hybrid Sim or Mixed Modalities

Simulation Labs

Sim Approaches

Mobile Sim

In situ Sim
Choose the Right Tool
Mobilizing Simulation for Northern Ontario

Introducing the SIMBULANCE
History of Mobile Simulation

• Contrast of needs and cost
• Distances
• Spectrum of fields of practice

http://www.stars.ca/ab/what-we-do/education-training/mobile-education.html
Simulation for Health Education Programs (SHEP) and Distributed Simulation Teaching

Goals & Objectives

- Provide learning opportunities for NOSM medical students, residents and faculty across Northern Ontario in distributed teaching sites
- Enable faculty to develop additional educational expertise
- Include members of the community who are engaged in health care and public safety to facilitate Interprofessional Learning
- Work with other education and health care organization partners to connect their learners for Integrated Clinical Learning
- Address identified clinical learning needs
- Prepare for future accreditation demands for simulation
- Assist faculty to address RCPS requirements for simulation and CanMED roles
• Take the knowledge, expertise and equipment to the learner
• Begin in North West Ontario
• Replicate for North East Ontario following evaluation and activation of lessons learned
• Engage faculty and learners, along with healthcare and community services staff in Simulation Based Learning scenarios to develop skills related to team work, communication, crisis resource management and to practice critical intervention skills
• Remove the need to replicate expensive simulation environments and equipment in multiple communities
Target Communities for 2014 - 2015

- Atikokan
- Fort Frances
- Dryden
- Kenora
- Sioux Lookout
- Nipigon
- Terrace Bay
- Marathon
- Geraldton
- Long Lac
- Manitouwadge
Identifying Simulation Needs

1. What are your priority needs for high fidelity simulation?
2. What are your learning objectives?
3. Do you want include more than high fidelity mannequin simulation?
4. Does this plan appropriately connect the NOSM participants with their curriculum?
5. Other:
Identifying Logistical Details

1. What planning steps need to be addressed in your community?
2. What people need to be engaged in setting up the project?
3. What location will work best in your community? You need space for the scenario delivery & debriefing ...
4. Full day or ½ day?
5. What participants would you want to include from your community?
6. When is the optimal time of year for you to engage with the Simulance project?
7. Other
Identifying Challenges