Using the Playbar

To progress through this course you will use the buttons located on the playbar. Use the **Right Arrow** button to progress content forward and the **Left Arrow** button to return to the previous slide. Clicking the **TOC** button will toggle the Table of Contents pane allowing you to jump to a section you have already viewed.
Getting Started with Simulations

Katie Ondo, M.A., CCC-SLP, CHSE

Katie Ondo M.A., CCC-SLP, CHSE

Financial / Non Financial Disclosure

- Certified Simulation Healthcare Educator (SSIH)
- Editor in Chief for Simucase
- Speech-Language Pathologist at Cincinnati Children’s Hospital Medical Center, Inpatient
Learning Objectives:

- As a result of this continuing education activity, participants will be able to:
- Describe the history on the use of simulations for training and education
- Define the current use of simulations in CSD
- Explain the benefits of simulations
- Define the different types of simulation modalities

Simulation Overview

Who  What  When  Why  How
Who’s Using Simulations?

- Naval Air Systems
- Medicine
- Nursing
- Emergency Medical Training
- Military Training
- Dentistry
- Police
- Allied Health Professions

What is a Simulation?

- A simulation is a reproduction of a real life experience.
- “A simulation is a technique--not a technology--to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner.” (Gaba)
Simulation Terms & Definitions

Fidelity
High Fidelity
Scenario

Facilitator
Learner
Confederate
Simulation Terms & Definitions

Pre-Brief
Feedback
Debrief

Simulation Terms & Definitions

Create matching activity for the terms reviewed thus far
Simulation Terms & Definitions

- Standardized Patient
- Manikin
- Part Task Trainer
- Computer-based

Closer look at Simulation Modalities

- Standardized Patients
- Manikins
- Computer Based
- Part Task Trainers
Standardized Patients

- Trained to provide constructive feedback from the patient’s perspective

- SP terminology is often used interchangeably however there is a distinct difference:
  - A standardized patient portrays a patient encounter consistently
  - A simulated patient changes the responses given based on the scenario

Advantages

- SPs can be trained to provide constructive feedback to students
- SPs are trained to be consistent so you should know how a scenario will play out
- SPs can tolerate more students than a real patient can
- The consistency provides students with the same experience if the SP stays on script
- The potential harm to a real client is removed
Disadvantages

- SPs are actors and some disorders are difficult to simulate
  - May not be possible to simulate physical changes
  - Credibility of speech errors
- SPs are human and susceptible to human error
  - Forgetting the script
  - Improvising
- Recruiting, training and organization of SPs takes time and resources
- SPs are often paid for the time to train and participate in scenarios

Uses for Standardized Patients

- Collecting a case history and practicing interview skills
- Exposure to what a specific disorder looks like
- Management of ethical and moral dilemmas
- Delivering test results
- Crisis management skills
- Conflict resolution skills
Manikins

- Human simulators
- Programmed to exhibit a wide range of clinical symptoms
- Levels of realism
  - Talking
  - Breathing
  - Pulse and blood pressure
  - Lung sounds
  - Pupil response
  - Medication recognition
### Manikin Terms & Definitions

- Baby Sim
- SimBaby
- METIman
- SimMan
- Moulage

### Advantages
- Encourages teamwork and discussion

### Disadvantages
- Expensive
- May be difficult to gain access to a simulation center
- Authoring scenarios can be time consuming
- Require maintenance and simulation operator
Find a simulation center near you

- SSIH Simulation Center Directory
  http://www.ssih.org/Home/SIM-Center-Directory/Area/US

Scenario

Video
Example of hybrid approach

Video

Computer-Based Simulations

- Created and completed on a computer

Avatar

Video of Virtual Patient
Advantages

- Simulations are repeatable and available 24/7
- Platforms offer simulation scenarios that are already created
- Feedback and scoring algorithms are built into the online system
- Supervision is typically asynchronous

Disadvantages

- Time intensive to create and program
- Can be challenging to create a connection

Scenarios

- Screenrecording of simucase

Video
Part Task Trainer

- Simulation designed for practice of specific skills

Advantages

- Practice for a specific task
- Beneficial for novice learners

Disadvantages

- Carryover of skill to full simulation scenario
### When did simulations begin?

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1942</td>
<td>First flight simulator created</td>
</tr>
<tr>
<td>1950s</td>
<td>US Army Corps begins to investigate fatalities</td>
</tr>
<tr>
<td>1950s</td>
<td>Army Corps begins to require simulator training</td>
</tr>
<tr>
<td>1960</td>
<td>First simulator for mouth-to-mouth created</td>
</tr>
<tr>
<td>1964</td>
<td>Use documented use of actors to portray patients</td>
</tr>
<tr>
<td>1968</td>
<td>First Cardiology Patient Simulator created</td>
</tr>
<tr>
<td>1988</td>
<td>First manikin with physiologic responses and feedback created</td>
</tr>
</tbody>
</table>

### Historical Overview of Medical Simulation

- 2007 medical schools incorporated Virtual Reality and the use of Second Life
- Present day- Medical Board examinations include computer-based simulations and standardized patients
Overview of Simulations in CSD

- Standardized patients simulating characteristics of Aphasia in 1995 (Edwards, Franke & McGuiness)
- Computer-Based Simulations 2010 (Williams & Schreiber)
- Manikins for FEES 2011 (Benadom & Potter); tracheostomy care 2012 (Ward et al.)

When are simulations used?

- Assessment and decision making skills
- Interviewing Skills
- Communication and Team Collaboration Skills
- Skills training
- Error Management and Error Prevention
- Testing of clinical skills
  - Objective Structured Clinical Evaluations (OSCEs)
  - Medical Licensing Examination
  - Competency Trainings
Why are simulations used?

- Repeated Practice
- Patient Safety
- Anxiety Reduction
- Standardization
- Patient Access
- Consistency and accuracy
- Focus on performance of the learner
- Encouragement of active learning

The Practice Gap

Education | The Practice Gap | Clinical Functionality
Benefits of Simulations

- Opportunity to bridge the gap from classroom to clinic
- A safe learning environment – opportunity for repeated practice to learn from mistakes
- Guaranteed exposure to particular experiences
- Technical and non-technical skills training
- Opportunity for confidence building
- Opportunity for reflective practice

Theories supporting the use of simulations for learning

- Experiential Learning Theory
- Constructivism
Experiential Learning

- The process of acquiring skills and expertise by doing things
  - Able to learn from one’s mistakes, consequences, & achievements
- Kolb’s learning style theory is typically represented by 4 stages

Experiential Learning Cycle
Activity

- Complete the 4 phases of the experiential learning cycle for completing an oral mech
Constructivism

- People construct their own understanding and knowledge of the world through experiencing things and reflecting on those experiences
- Encourages learners to use active techniques to create more knowledge and then to reflect
  - Experiments
  - Real-world problem solving

How to use simulations

- Perform a needs assessment
- Define your learning goals and objectives
- Select your assessment method and evaluation tools
- Design your simulation event and select your modality
- Identify additional resources needed
- Organize your simulation team
- Prepare materials
- Conduct pilot activity
How to Design a Simulation

Define Learning Goals & Objectives

Identify Client to Fit Objectives

Develop Storyboard

Decision Point

Reflective Option
Acceptable Option
Rejected Option

Feedback

Mastering Competency

Developing Competency

Emerging Competency

How to create real connections through simulation

Video
Wrap Up

katie@simucase.com

References & Resources

References & Resources

Technical Reports:

- National Council of State Boards of Nursing Simulation Report [https://www.ncsbn.org/685.htm](https://www.ncsbn.org/685.htm)

Resources

- Simulation & Gaming: An Interdisciplinary Journal [http://sg.sagepub.com/](http://sg.sagepub.com/)
- Simulation in Healthcare - [http://journals.lww.com/simulationinhealthcare/Pages/default.aspx](http://journals.lww.com/simulationinhealthcare/Pages/default.aspx)
- Clinical Simulation in Nursing - [http://www.nursingsimulation.org/](http://www.nursingsimulation.org/)