

Scenario Building with Müse

Human Patient Simulation Network (HPSN)

February 23, 2011, Tampa, FL



Faculty

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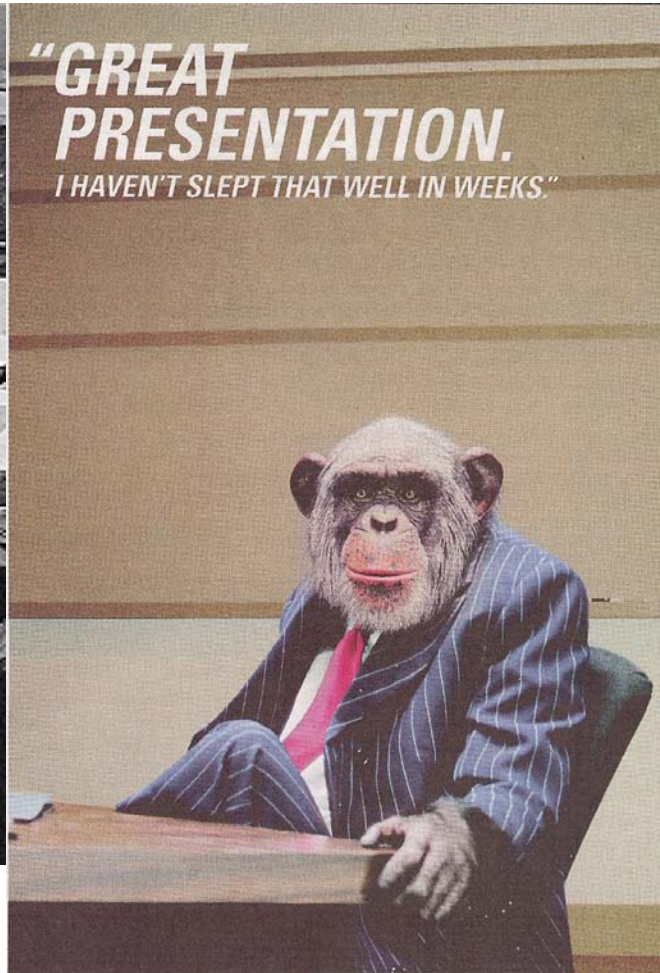
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iStan Cutting Loose in Tampa



Opening Thought: *Why are we here?*



Pre Simulation Era

Course Objectives

At the conclusion of this session participants will be able to:

1. Describe how to use scenario-planning templates and describe where to find them on the Internet.
2. Define the terms Base Patient, Scenario and Simulated Clinical Experience in relation to the Müse software.
3. Perform the steps of designing and programming a basic scenario in the Müse software interface.
4. Develop the structure for a new scenario from information supplied by the participant.
5. Discuss examples of real world scenarios programmed and run in Müse for various levels of providers.

Key Definitions:

Base Patient

The screenshot displays a software interface with a dark sidebar on the left and a main content area. The sidebar contains the following menu items: Learning Modules, SCEs, Base Patients (highlighted in orange), Scenarios, and Conditions. At the bottom of the sidebar is a 'Support' link. The main content area has a top navigation bar with four tabs: Content Management, User Accounts, Groups, and System Settings. Below the tabs is a list of five patient profiles, each with a small portrait photo, a name, and demographic details. The profiles are: Stan D. Ardman II (33 years old, Male, 70.0 kg), GI Stan (20 years old, Male, 85.0 kg), Grandma Smokey (73 years old, Female, 53.0 kg), Norma L. Female (33 years old, Female, 70.0 kg), and Stannette Montobe. An 'Import Patient' button is located at the bottom left of the patient list area.

Name	Age	Sex	Weight
Stan D. Ardman II	33 years old	Male	70.0 kg
GI Stan	20 years old	Male	85.0 kg
Grandma Smokey	73 years old	Female	53.0 kg
Norma L. Female	33 years old	Female	70.0 kg
Stannette Montobe			

Patient physiology based on age, sex, weight and general level of health used to generate a realistic simulation for SCE's or overlaying scenarios.

Key Definitions: *S.C.E.*

The screenshot shows a software interface for a Simulated Clinical Experience (SCE). On the left is a vertical navigation menu with a 'les' button. The main content area displays patient information for a 'Pregnant Female' named Stannette Momtobe. A table lists her attributes: Age (20 years old), Gender (Female), Weight (90.0 kg), and Base (Stannette Momtobe). Below this is an 'Overview' section with two paragraphs of text. The first paragraph states the purpose of the SCE is to provide a baseline for facilitators. The second paragraph describes the patient as a 29-year-old pregnant adult female. Below the overview are sections for 'Learning Objectives' (Performing a focused history and physical assessment) and 'Scenarios'. At the bottom of the interface, there are buttons for 'New SCE...' and 'Review', and a 'Support' link in the footer.

Age	20 years old
Gender	Female
Weight	90.0 kg
Base	Stannette Momtobe

Overview

The purpose of this Simulated Clinical Experience (SCE) is to provide facilitators with a baseline to run sir the fly" or as a baseline from which to design their own SCEs.

The patient is a 29-year-old pregnant adult female who is being seen for her weekly prenatal physical. T designed to allow the instructor to operate the simulator using the predefined conditions, medications a interventions or to set parameters as needed.

As a **Pregnant Female**, the patient demonstrates a HR in the 80s, BP in the 100s/60s, RR in the mid teen the upper 90s on room air. The patient's cardiac rhythm is model driven and reveals normal sinus rhythm are normal. Breath sounds are clear in all lung fields. Bowel sounds are normal in all four quadrants.

Learning Objectives

Performs a focused history and physical assessment

Scenarios

Combination of base patient physiology and clinical information needed to produce an educational experience. May also include a scenario.

Key Definitions: *Scenario*

Combination of physiological changes and simulator commands to create a realistic simulation of a chosen pathology (e.g. anaphylaxis).

The screenshot displays a medical simulation interface. At the top, there is a timer showing '00:00:44' and a 'Bookmark' icon. Below the timer, there are several control panels for the manikin's eyes, including 'Reactive', 'Auto', 'Blinking', 'Closed', 'Slow', 'Normal', and 'Fast' settings. A central manikin figure is shown with a speech bubble above its head. To the left of the manikin, there are several status indicators for 'Secretions: Tearing', 'Secretions: Ears', 'Secretions: Nose', 'Secretions: Mouth', 'Diaphoresis', 'Convulsions', 'ICP', 'NMB', 'Temperature: Body', and 'Temperature: Blood'. A 'Scenarios' dialog box is open in the center, listing various medical conditions with their last modified dates. The 'Anaphylaxis' scenario is highlighted in yellow. Below the list is an 'Add' button. At the bottom of the manikin, there are icons for 'Sounds' and 'TDCK' (Tidal Volume, Dead Space, Compliance, and Resistance).

Name:	Last Modified:
Anaphylaxis	2010-02-05 16:29:07
Angina with Cardiac Arrest	2010-02-04 15:11:37
Anterior Myocardial Infarction	2010-02-05 16:32:55
Asthmatic with Pneumothorax	2010-02-05 16:45:38
COPD Exacerbation with Respiratory Failure	2010-02-05 18:15:09
Heart Failure w Pulmonary Edema	2010-02-04 15:12:22
Inferior Myocardial Infarction	2010-02-04 15:12:31
Osmannohosphate Exposure	2010-02-05 17:50:15

Pearls and Tips

Focus your SCE using the tools and planning.

1. Plan on paper first
2. Planning decisions
 - a. What do I want to teach (main goal or point)
 - b. Common errors and "wrong paths"
 - c. What will I do if my participants "don't cooperate"
3. Use planning tools (more later)
 - a. METI's
 - b. Develop your own



METI

Course Materials
Scenario Development Form

Scenario Development Form

Scenario Name:

Scenario File Name in HPS6 Software:

Overlay on Which Preconfigured Patient?

Synopsis of Scenario:

Learning Objectives:

Background information and History:

Monitors Required:

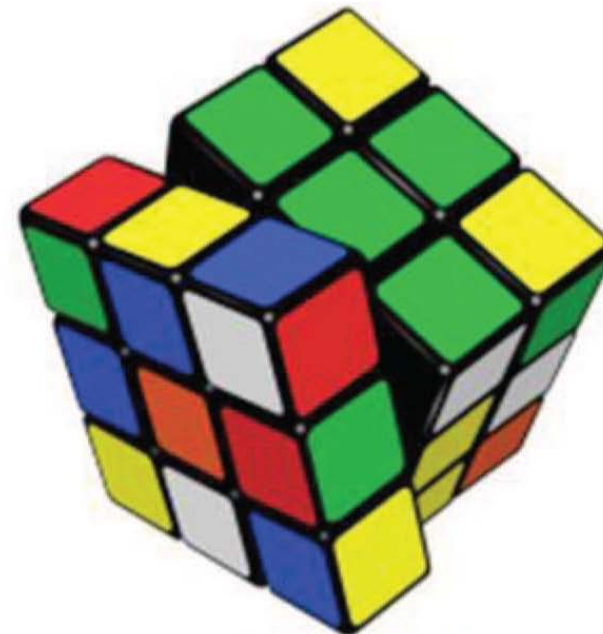
Specific Equipment and Supplies Required:

Notes:

References:

Simulation Cube

1. **Learners**
 - A. Novice
 - B. Intermediate
 - C. Experienced
2. **Simulator**
 - A. Task trainer
 - B. Computerized (manikin or virtual)
 - C. Standardized Patient / Hybrid
3. **Environment**
 - A. Lab
 - B. Replica
 - C. Actual
4. **Fidelity**
 - A. Low
 - B. Medium
 - C. High
5. **Participation**
 - A. Individual
 - B. Group
 - C. Team
6. **Objective**
 - A. Diagnostic
 - B. Instruction
 - C. Assessment



Rubik's Cube®

Pearls and Tips

Use the Physiology

- This is what makes your simulator different
- Can be frustrating until you understand the simulator gets better or worse like a human
- Determine core physiological changes – program those and let the simulator follow
- This is what we will show you and assist you with
- In case I didn't mention it...don't fight the physiology!



Pearls and Tips

Use the Physiology

HR 71	MAP 79	C.O. 5.9
SpO2 98	Hct 42.30	Isch.Idx. 1.74
ABP 116/52	PAP 30/16	CVP 10
CS-X 0.00	ICP 9	CS-Y 0.00
Left Vol. 1182	Right Vol. 1182	Spont.VT 507
PACO2 40.4	PAO2 110.1	Spont.RR 11
Alv. N2O 0.0	Alv. Iso. 0.0	Alv. Sevo. 0.0
Alv. Halo. 0.0		Alv. Enf. 0.0
PaCO2 40.0	pH 7.44	PaO2 102.8
PvCO2 45.5		PvO2 39.9
TBody 36.5	Weight 70.0	TBlood 37.0

HPS6

Additional	
Respiratory Rate	Modeled
Tidal Volume	Modeled
Tidal Volume Factor	1
pH Shift	0
PEEP	0
Chest Tube Enable: Left	Disable
Chest Tube Enable: Right	Disable
Chest Tube Flow: Left	50
Chest Tube Flow: Right	50
Chest Tube Air Leak Type: Left	Pneumo...
Chest Tube Air Leak Type: Right	Pneumo...
Chest Tube Air Leak Flow: Left	0
Chest Tube Air Leak Flow: Right	0
O2 Consumption	250
CO2 Production Factor	1
PaCO2 Set-point	40
I to E Ratio (1:X)	2
PetCO2-PaCO2 Factor	1
Respiratory Gain Factor	1

Müse

(Black) Pearls and Tips

- How to avoid over programming
 - Prime objective
 - Plan and outline first
 - Determine core physiology changes
 - Practice run in real time



Pearls and Tips

- Case Studies – the good, the bad and the ugly
 - The Good
 - Realism
 - Crowd pleaser
 - “The rest of the story”
 - Rerun events to study outcome
 - The Bad
 - Complex
 - Isolation of prime objective can be difficult
 - The Ugly
 - HIPPA / record security
 - Always blind
 - Ego bruising



Resources

- SSIH
 - <http://www.ssih.org/SSIH/ssih/Home/>
- METI
 - <http://www.meti.com/index.html>
 - <http://meti.com/mymeti/index.html>
- HPSN
 - <http://www.hpsn.com/>
- Center for Medical Simulation
 - <http://www.harvardmedsim.org/>
- The International Nursing Association for Clinical Simulation and Learning
 - http://www.inacsl.org/INACSL_2010/index.php

The show must go on...

