

# **Modifying a PNCI Scenario**

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## **Learning Objectives:**

1. Identify reasons for and benefits of modifying a pre-existing PNCI scenario.
2. Discuss and understand the overall process of scenario modification.
3. Demonstrate the ability to change parameters and events in the scenario as needed using several different methods (editor options, delete, add using recorder).
4. Demonstrate the ability to modify and save a scenario successfully.

## **Content/Topics:**

1. Why modify an existing PNCI scenario?
2. Process of Modification-overview.
3. Changing Events with Editor Show option-how to change parameters, events, use recorder, delete or add events, etc.
4. Complete modification & save scenario- review process of saving in Shared drive.

## **Teaching Methods:**

Participants will use laptop computers with HPS-ECS/PNCI software in order to learn via hands on experience how to modify a PNCI scenario. They will be given a handout with a detailed outline of the modification process to take with them.

**Simulator System to be used:** ECS Adult

## **Reasons & Benefits of Modifying a PNCI Scenario:**

1. To customize Simulated Clinical Experiences (SCE) to meet your program's specific learning objectives.
2. To shorten the length of a scenario for time efficiency.
3. To change the acuity of a patient in a pre-existing scenario.
4. To adapt scenarios to be used by other healthcare related programs (Respiratory Therapists, Medical Assistants, LVN's, Kinesiology; Athletic Training, etc.)
5. To learn how to navigate and utilize the METI simulators computer system.

## **References:**

1. METI Training Course Materials, (2006).
2. METI ECS PNCI Scenario Materials. Care of the Patient with Anaphylactic Reaction to Blood was originally developed by the University of Florida faculty, (2005).
3. Consultation with Diana Avans, Chair of Kinesiology at Vanguard University of Southern California, (2007).

## How To Modify A PNCI Scenario

**Step 1:** Open and Connect to Standard Man.

**Step 2:** Click on Scenario tab and open Anaphylactic Reaction scenario.

**Step 3:** In the Show area, click on the drop down menu arrow and select Editor.

Then reopen the Anaphylactic Reaction scenario.

- ❖ **Note:** You will be switching back and forth between Player and Editor while you are modifying a scenario.
- ❖ While in Player you will be making changes in the physiologic parameters using the cardiovascular, respiratory tabs, etc., and will be monitoring the simulator's responses until you reach the desired physiologic status in each state.
- ❖ While you are in Editor you will set the parameter changes within the program so that you can create and save the modified scenario.

**Step 4:** Click on Recorder icon in upper left area of screen. Click on the Automatically Begin Recording box  so that it records all of your changes every time you open a scenario. Click on the shrink symbol (-) to get it out of the way until needed.

- ❖ **Note:** Recorder will only record the changes that are made in the Player mode. That's why you always want it on.

**Step 5:** Switch back to Player, then click on the downward grey triangle symbol (▼) on the right side of the scenario area to view all of the pre-programmed parameters (Events) in each state. Run the scenario and decide what parameters need to be changed to reach your desired SCE goals and outcomes.

- ❖ **Note:** Change Respiratory parameters first using Resp. Tab (ie. Respiratory tab → click on drop down menu in Show area → Respiratory Control → highlight Respiratory Rate Factor (**RRF**) and change parameter as needed. Then highlight Shunt Fraction (**SF**), change parameter as needed, and so on). Then go to the Cardiovascular tab and make CV changes as needed (ie. go to Cardiovascular tab → click on drop down menu in Show area → Heart → highlight Heart Rate Factor (**HRF**), change parameter as needed. Then go to Systemic and follow same process to make parameter changes for BP, etc.).
- ❖ **You will need to make the necessary changes to parameters in each State.**

**Step 6:** Switch to Editor and apply changes in parameters made, starting with State 1 and working your way through each State.

- ❖ **Note:** There are a couple ways to do this as listed below
  - Open Recorder screen → highlight desired parameter → click, hold and drag it over to the Events section under State 1. Then highlight the original parameter and click the delete key. Now you should have the desired parameter and not the original under the Events list. Repeat process until all desired parameters have been changed.

**OR**

- Highlight parameter to be changed on the Events list → edit the parameter in the box to desired number → click on apply or enter. Make sure that it has changed on the list above.

## OR

- To add a new Event (make sure that the State you want to add an event in is highlighted)→Scenario drop down menu under the Editor mode→scroll down to New Event menu→click on New “set” Event→highlight **set?to?** which is now on the Events list of parameters in the State you had highlighted→click in the **set (?)** area on the down arrow to show the entire list of events that you might add and highlight the one you want, or you can begin typing the event you want to add and it will bring up the list of events in that letter category→set parameter in the lower **to (?)** area and then **apply** changes.

**Step 7:** For this scenario we are going to edit/change the following in the Editor Mode:

- ❖ In State 1 (Initial Assessment at 0800 Hours), highlight that title→change state name to Baseline→apply.
- ❖ Stay in Editor→highlight State 2 (Blood Started at 1000 Hours)→click on delete key.
- ❖ Repeat process to delete State 3 (Beginning Anaphylaxis 30 minutes later).
- ❖ Scroll down to the **Transitions** section in State 4 (Mild Anaphylaxis)→ highlight and delete the 2<sup>nd</sup> line (If time in state  $\geq$  60 seconds then go to Worsening Anaphylaxis). This will keep the scenario from skipping ahead of where you want it to go.
- ❖ Highlight State 5 (Worsening Anaphylaxis)→change title of state to Severe Anaphylaxis. Then scroll down to **Transitions** in State 5→highlight and delete the 2<sup>nd</sup> line (If time in state  $\geq$  60 seconds then go to Severe Anaphylaxis).
- ❖ Highlight and delete the original Severe Anaphylactic State.
- ❖ Scroll down to **Transitions** in State 6 (Epinephrine Administered)→highlight and delete line (If time in state  $\geq$  60 seconds then go to Worsening Anaphylaxis).

**Step 8:** Save Changes as follows:

- ❖ Click on Scenario drop down menu while in the Editor mode
- ❖ Click on Save as
- ❖ Go to Shared Drive by clicking on the back slash symbol (/)→click on Users→click on Shared Drive
- ❖ Rename scenario (ie. Anaphylactic Reaction version 2 or Modified Anaphylactic Reaction)
- ❖ Click on Save

**Step 9:** Disconnect→Stop→Don’t Save→Reopen Standard Man→Reopen Modified Anaphylactic Scenario in Shared Drive (open in Player and Editor modes).

**Step 10:** Run Modified Scenario in Player Mode. Review each State and make any adjustments to parameters to achieve your target values. Make sure that the Recorder is still on.

**Step 11:** Save any additional changes using the same process in Step 8.

- ❖ **Note:** When you save additional modifications a window will automatically display stating, “The specified file already exists. Are you sure you want to overwrite it?” Click on Overwrite, otherwise your new modifications will not be saved.

**Step 12:** If you are satisfied with how the scenario runs, you can disconnect→stop→quit HPS→shutdown.

- ❖ **Note:** You will find your modified scenario in the Shared Drive when you want to use it.

<b>State:</b>	<b>Target Values:</b>	<b>Parameter Changes:</b>
<b>1: Baseline Assessment</b>	<b>RR: 12-14 SpO2: 98% HR: 68 BP: 114/54</b>	<b>RRF: 1.5 SF: 0.05; Ischemic Index: 0.1 HRF: 0.9 SVRF: 1; VCF: 1; EETHA: 1; EITHA: 2; BR Gain: 0 BRP Min: 66; BRP Max: 106</b>
<b>2: Mild Anaphylaxis</b>	<b>RR: 24 SpO2: 94% HR: 94 BP: 100/40</b>	<b>RRF: 1.5 SF: 0.3 HRF: 1 SVRF: 0.95; VCF: 1.28; EETHA: 1.86; EITHA: 3.5; BRP Min: 50; BRP Max: 85; FL: 1000ml</b>
<b>3: Severe Anaphylaxis</b>	<b>RR: 36 SpO2: 87% HR: 125 BP: 80/40</b>	<b>RRF: 1.8 O2 Consumption: 375 HRF: 1.03 VCF: 1.4; EETHA: 2.5; EITHA: 3.75; FL: 500ml</b>
<b>4: Epinephrine Administered</b>	<b>RR: 18 SpO2: 96% HR: 96 BP: 96/56 Tongue: Breath sounds:</b>	<b>RRF: 1.4 SF: 0.12 HRF: 1.1 SVRF: 1.5; VCF: 1.03; EETHA: 1.2; EITHA: 2 Semi-swollen Change to Wheezing</b>
<b>5: Complete Recovery</b>	<b>RR: 12 SpO2: 97% HR: 66 BP: 102/50 Tongue:</b>	<b>RRF: 1.3 SF: 0.02 HRF: 0.95 SVRF: 1.2; VCF: 0.75 Normal</b>

**Abbreviations Glossary:**

**BP:** Blood Pressure  
**BR Gain:** Baroreceptor Gain (Overall) Factor  
**BRP Max:** Baroreceptor Maximum Pressure  
**BRP Min:** Baroreceptor Minimum Pressure  
**EETHA:** Elastance: Extrathoracic Arteries  
**EITHA:** Elastance: Intrathoracic Arteries  
**FL:** Fluid Loss  
**HR:** Heart Rate  
**HRF:** Heart Rate Factor  
**RR:** Respiratory Rate  
**RRF:** Respiratory Rate Factor  
**SF:** Shunt Fraction  
**SpO2:** Pulse Oximeter Saturation  
**SVRF:** Resistance Factor: Systemic Resistance  
**VCF:** Venous Capacity Factor

**Target Values if you are not connected to a Simulator:**

<b>State:</b>	<b>Target Values:</b>
<b>1: Baseline Assessment</b>	<b>RR:22 SpO2: 97% HR: 71 BP: 111/67</b>
<b>2: Mild Anaphylaxis</b>	<b>RR: 34 SpO2: 92% HR: 92 BP: 98/36</b>
<b>3: Severe Anaphylaxis</b>	<b>RR: 40 SpO2: 86% HR: 122 BP: 60/20</b>
<b>4: Epinephrine Administered</b>	<b>RR: 31 SpO2: 93% HR: 98 BP: 112/66</b>
<b>5: Complete Recovery</b>	<b>RR: 24 SpO2: 96% HR: 79 BP: 120/68</b>