# Pediatric HAL®

## S3004/S3005

Gaumard®
Simulators for Health Care Education

Pediatric HAL is an interactive educational system developed to assist a certified instructor. It is not a substitute for a comprehensive understanding of the subject matter and not intended for clinical decision making.

**User Guide G13.6.1**



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# Contents

# Introduction

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# General Care, Maintenance, and Warnings

The Gaumard warranty does not cover damage caused by misuse. It is critical to understand and comply with the following guidelines to prevent injury to the user and damage to the simulator.

## PROCEDURES

Do not attempt to intubate without lubricating the airway adjunct with silicone lubricant (provided). Intubating the simulator without lubrication may result in damage to the airway.

Avoid using surgical tools to cut the neck skin. The precut opening allows the insertion of most medical devices. Always lubricate the medical adjunct before insertion.

Do not introduce flammable gases into the airway.

Providers must use an empty syringe when simulating drug administration via endotracheal tube. Passing liquids into the trachea or esophagus may cause internal damage.

Mouth to mouth resuscitation without a barrier device is not recommended, as it will contaminate the airway. Treat the simulator with the same precautions that would be used with a real patient.

## IV ARM

Vein tubes contain latex, which may cause allergic reactions. Users allergic or sensitive to latex should avoid contact. Discontinue use of this product and seek medical attention if an allergic reaction occurs.

Use only simulated blood provided by Gaumard. Any other simulated blood brand containing sugar or any additive may cause blockage and/or interruption of the vasculature system.

The use of needles larger than 22 gauge will reduce the lifetime of the lower arms' skin and veins.

When the arm veins require replacement, contact Gaumard to arrange for a lower arm exchange. For a small fee, we will deliver reconditioned and warrantied lower arm assemblies to your facility. Upon receiving the replacement arms, use the same box and the enclosed shipping label to return the old arms to Gaumard. For international and express service, additional fees may be charged. Refer to the Consumables and Replacement Parts section of this guide, and contact customer service for more information.

## STORAGE

Store the simulator in a cool, dry place; extended storage above 85 degrees Fahrenheit (29 Celsius) will cause the simulator to soften and slowly warp. It is acceptable to operate NOELLE at an ambient temperature of 95 degrees Fahrenheit (35 Celsius).

Do not store the simulator with a discharged battery. Re-charge the backup battery at the end of every simulation session. In addition, recharge the battery at least once every 30 days even if the simulator is not in use; otherwise, permanent loss of capacity might occur because of self-discharge.

Do not allow any objects to rest on the face or chest skin or store the simulator face down. Pressure points on the face and chest skin may warp or damage the skin.

## CLEANING

Clean the simulator with a cloth dampened with diluted liquid dishwashing soap. If medical adhesives remain on the skin, clean with alcohol wipes.

Do not use citric acid cleaners anywhere on the simulator. Doing so will cause pitting of the various materials comprising your simulator.

The simulator is "splash-proof" but not waterproof. Do not submerge or allow water to enter the interior of the simulator. Do not expose the tablet computer to water or excessive dust.

Always purge and drain the internal fluid reservoirs and vein reservoirs at the end of the simulation session. Doing so will prevent molding or clogging.

# Defibrillation / ECG

## ELECTRICAL THERAPY

Defibrillation is allowed only on the large sternum and apex sites. Do not deliver a shock to ECG electrode sites on the shoulders or waist .

For exercises that incorporate real electrical therapy of any kind, always follow the safety guidelines and operating procedures outlined in the medical device's directions for use documentation.

Only deliver electrical therapy when the simulator is fully assembled, dry, and undamaged.

Make sure the defibrillation patches on the simulator are in good condition, including removing all gel residue on the defibrillation patches from previous use(s).

It is a good practice to remove gel residues after every use. Failure to do so will leave behind a film of electrode gel that hardens causing arcing and pitting.

Do not re-use the gel-adhesive pads. Do not leave them on for next day use.

Use hard paddles or wet-gel pads preferably. Avoid using solid-gel pads since they present higher risk of burning the simulator's skin. Gel pads have a shelf life. Make sure they are not expired to avoid arcing.

Make sure the simulator is not in contact with any electrically conductive surfaces.

Use the simulator only in a well-ventilated area, free of all flammable gases.

NEVER attempt to service or modify any of the electrical connections, especially those between conductive skin sites and the internal electronics.

Discontinue use if any wires are found exposed with damaged insulation.

Real medical products, especially electrodes, sometimes use powerful adhesives that can be difficult to remove. A gentle, degreasing cleanser may be needed.

Electrode gel on the skin between any two electrode targets can become a pathway for electrical current, just as in real life. If this occurs, the simulator's skin can be burned.

Do not allow defibrillation pads to overlap ECG sites. Doing so will may damage the simulator and cause arcing.

Should dark traces appear on the conductive patches due to gel residue or previous arcing, use a pencil eraser to remove the traces and then clean with alcohol.

DO NOT SCRATCH the conductive patches with abrasive objects; doing so will cause irreversible damage to the conductive sites and subsequently cause arcing.

# Terminology

Facilitator - the person conducting the simulation; an instructor or lab staff member.

GUI - the Gaumard User Interface - is the software application, used to control the simulator and evaluate care providers.

Palette - a collection of Palette Items. Each profile has its own palette.

Palette Item - Any full or partial set of physiological parameters that have been grouped and saved together under a single name.

Profile - a unique NOELLE software configuration, including custom Palette, Scenarios, and options. Each Profile acts as a separate program, in that changes made to one profile have no effect on the others.

Provider - a person participating in the simulation as a healthcare provider.

Scenario - a saved sequence of physiological states, like a "playlist." Scenarios provide a level of automation that unburdens the facilitator and allows standardized presentation of symptoms.

Scenario Item - a Palette Item that is part of a scenario. Scenario Items may also represent a fixed delay period ("Wait") or a pause ("Wait Indefinitely").

Stylus - a special pointing device for the tablet computer. The stylus is the fastest and easiest means of controlling the NOELLE software. See the Equipment Set-up section of this guide for more information on working with the stylus.

# Getting Started

# Simulator Setup

## SIMULATOR PLACEMENT

Prepare the simulation area prior to unboxing the simulator. The simulator's designated area should have ample space for multiple participants to move about freely.

Remove the simulator from the blue case with the assistance of at least two persons. Avoid lifting the simulator by the arms as it could damage the shoulder joints.

Rest the simulator on a patient bed capable of supporting the weight of a real patient. It is recommended that HAL's head rest flat on the bed or on a thin pillow to prevent the face skin from shifting.

## BATTERY (HAL 1 YEAR)

HAL 1 Year includes two separate power adapters labeled "**Pediatric 1 Year Charger**" and "**Pediatric 1 Year Power Supply**". Please review the use for each adapter before using the simulator for the first time.

Pediatric HAL 1 year has a maximum battery runtime of approximately 3 hrs. The battery charge is displayed on the software panel after the connection with the simulator is established. Total runtime is dependent on the breathing rate, volumes, seizures, and muscle tone.

| Feature | Runtime |
|---|---|
| Internal Battery | 3 hours |

WARNING: Do not store the simulator with a discharged battery. Recharge the battery at the end of every simulation session. If the simulator will not be used for an extended period, re-charge the battery at least once every 30 days. Doing so will prevent damaging the battery due to discharging.

## CHARGING THE BATTERY (HAL 1 YEAR)

The Pediatric HAL 1 Year battery can only be recharged using the "Pediatric HAL 1 year Charger" while the simulator is off or in standby. Neither the battery charger nor the power supply adapter recharge the battery while the simulator is in use.

**Turn the simulator off and connect the battery charger to recharge the battery.**

To charge the battery:

1. Close the GIGA software to turn the simulator off
2. Connect the adapter labeled "Pediatric 1 Year HAL Charger" to the battery port located on the simulator's right side.
3. Allow the simulator to charge for 2-3 hours (or until the charger displays a green light). The charger indicator light will show red during the charge period and green once the process is complete.
4. After the charger indicator light turns green, disconnect the charger. The simulator is ready for use.

**Avoid using the simulator while the battery charger is connected. Please reference the troubleshooting guide for information on how to resolve battery issues.**

## USING THE POWER SUPPLY (HAL 1 YEAR)

The "power supply" adapter allows the simulator to operate through long simulations sessions by drawing power from the wall outlet and not battery reserve. Use the power supply for simulation sessions lasting 2 hours or more. If simulation sessions are shorter than 2 hours, using the simulator's battery reserve is recommended.

The "power supply" adapter will not re-charge the battery. Avoid using the "power supply" adapter if the simulator's battery is completely depleted.

To operate the simulator from wall power using the power adapter:

1. Fully recharge the simulator's battery using the "Battery Charger" adapter.
2. Disconnect the "Charger" and connect the "Power Supply" adapter.
3. Activate the GIGA software. The GIGA battery icon will display a lightning icon while the power supply is connected.

**Please contact Gaumard for information on the power supply upgrade for earlier Pediatric HAL models.**

## BATTERY (HAL 5 YEAR)

HAL 5 year is equipped with an internal battery that allows the simulator to operate while untethered.

| Feature | Runtime |
|---|---|
| Internal Battery | 3 hours |

## CHARGING THE BATTERY (HAL 5 YEAR)

To charge the battery, connect the “HAL 5 year charger” adapter to the battery port located on the simulator’s right side. The “HAL 5 year charger” can recharge the battery while the simulator is operating.

Battery charge time is approximately 2 hours. The AC adapter’s status indicator light displays red when the battery is charging and green when the process is complete. To display the battery level, the GIGA software must first establish a connection with the HAL.

WARNING: Do not store the simulator with a discharged battery. Recharge the battery at the end of every simulation session. If the simulator will not be used for an extended period, re-charge the battery at least once every 30 days. Doing so will prevent damaging the battery due to discharging.

# Control Tablet PC

The tablet PC is preloaded with the GIGA control software used by the facilitator to initialize the simulator and control the vital signs.

**Before turning on the computer for the first time, please review the documentation included with the product for important care and warning information.**

## USING THE STYLUS

The tablet's stylus is a pen-shaped input used to interact with files and programs.

- Left click - tap the screen with the pointer. Tap twice rapidly to double-click.
- Right click - tap and hold a highlighted item or hold the button near the pointer and tap the item or text.

## CALIBRATING THE STYLUS

As part of the initial setup process, calibrate the stylus using the Tablet and Pen calibration tool in the Windows® control panel. Complete the calibration process while holding the pen in a natural writing position for greater accuracy during normal use.

## WIRELESS COMMUNICATION USB MODULE

The controlling computer transmits the startup and control commands to simulator through the USB RF communication module.

Connect the RF communication module to an available USB port on the tablet.

Secure the RF communication module to the tablet or PRO+ computer using the Velcro patch. The tablet is now ready to communicate with the simulator wirelessly. For information about the signal strength indicator, go to page 19.

## STREAMING AUDIO HEADSET

The computer system includes a headset that allows the facilitator to speak as HAL's voice and listen to the participants reply.

Connect the headset MIC and Speaker connectors to the designated ports on the side of the tablet PC. Go to page 63 for more information about the streaming voice feature.

**Always connect the streaming audio headset before starting the GIGA software.**

# Virtual Monitor

The Gaumard Monitors software displays HAL's simulated vital signs in real time. The interactive monitoring software is preloaded in to the virtual monitors PC.

The virtual monitor PC also allows the facilitator to play back the session recordings stored in the PRO+ PC for debriefing.


## VIRTUAL MONITOR SETUP

Refer to the manufacturer's documentation included with the virtual monitor system components for important safety, installation, and start-up information before turning on the PC for the first time.

To setup the virtual monitor PC:

1. Place the all-in-one PC within line of sight of the controlling computer
2. Connect the power supply to the PC and to the wall outlet
3. Connect the USB keyboard and mouse receiver to the PC
4. Turn on the computer

## VIRTUAL MONITOR WIRELESS CONNECTIVITY

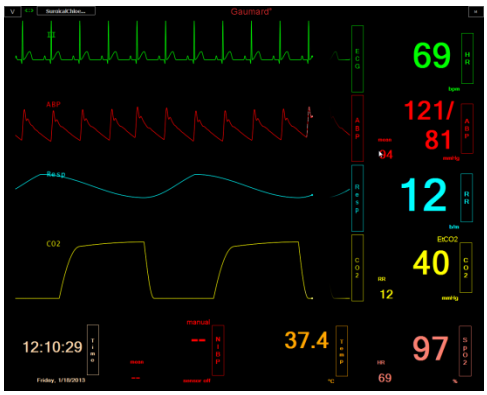
The control PC and the all-in-one virtual monitor PC establish a wireless link at startup automatically. The wireless connection allows the Gaumard control software to transmit the vital signs information to the Gaumard Monitors software.

To verify the wireless link between the two computers, click the wireless icon located on the task tray. The wireless network name is configured at the factory and may differ from the one seen below. To troubleshoot connection issues between the virtual monitor computer and the controlling tablet, please go to page 162.


## GAUMARD MONITORS

After the wireless connection is established, double click or tap the Gaumard Monitors icon to start the vital signs software.


The Gaumard Monitors software is now ready to receive the vital signs information generated by the GIGA control software.




For more information about the Gaumard Monitors software, please refer to the Gaumard Monitors user guide.

# Working with GIGA

# Initializing the Simulator

After reading the simulator's direction-for-use guide, press the power button to turn on the Tablet PC.

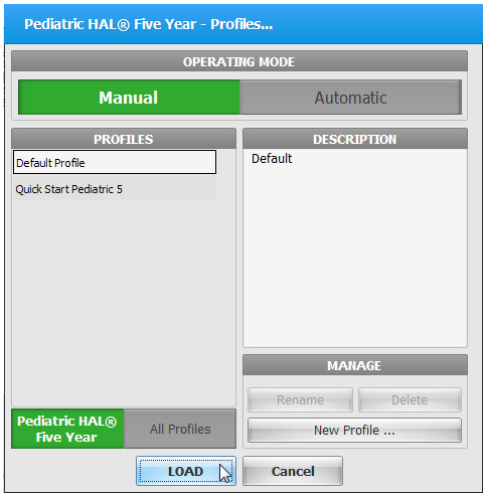
The GIGA software initializes the simulator. Double click the GIGA icon on the tablet's home screen to open the GIGA software.


The simulator selection menu is shown. Select the simulator and click "Start".


The wireless link between GIGA and the simulator is established within 1 minute.

## Profiles and Operating Modes

After the startup screen, the profile and operating mode selection menu is displayed.

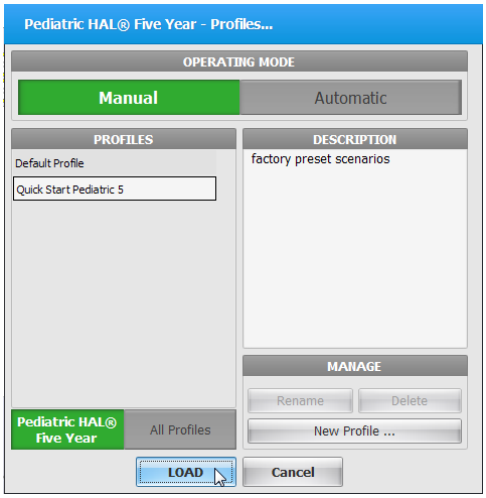



The GIGA control software has two modes of operation: Manual and Automatic. Each mode includes a Quick Start profile with preprogrammed scenarios exercises created in conjunction with experienced healthcare instructors and working medical professionals. Continue to the next section to learn more about the each operating mode and the profiles included.

After selecting an operating mode and profile, click "Load" to continue.

## Manual Mode

In the "Manual" operating mode, the facilitator fully controls the vital signs and physiologic responses.



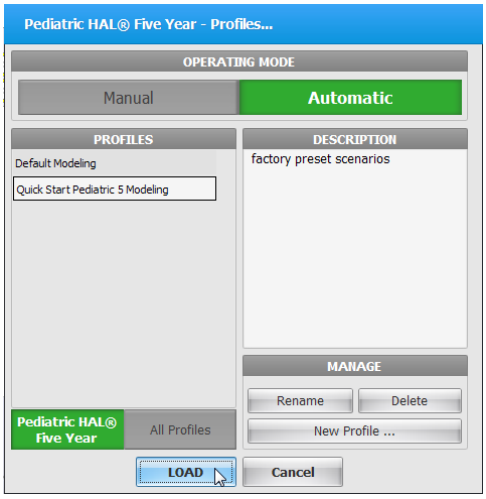
The Manual mode includes the following profiles:

**Default Profile** – includes one preprogrammed palette with healthy vital signs

**Quick Start Profile**– includes basic preprogrammed scenarios

## Automatic Mode

The Automatic mode assists the facilitator by automatically adjusting vital signs in response to caregiver participation, pharmacologic intervention, and manual input. For example, when facilitator increases the heart rate, the Auto mode will calculate the response and adjust the blood pressure automatically. To activate the operating mode as an upgrade option, go to page 103. For more information about controlling the simulator using the Auto Mode, go to page 29.




The Automatic mode includes the following built-in profiles:

**Default Modeling** – includes one preprogrammed palette with healthy vital signs

**Meds Profile** – includes a library of pre-programmed medications

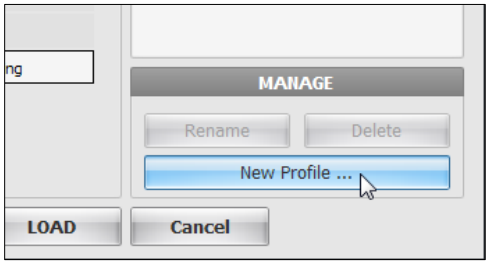
**Quick Start Modeling** – includes preprogrammed scenarios to simulate a variety of preprogrammed exercises

## CREATING A NEW PROFILE

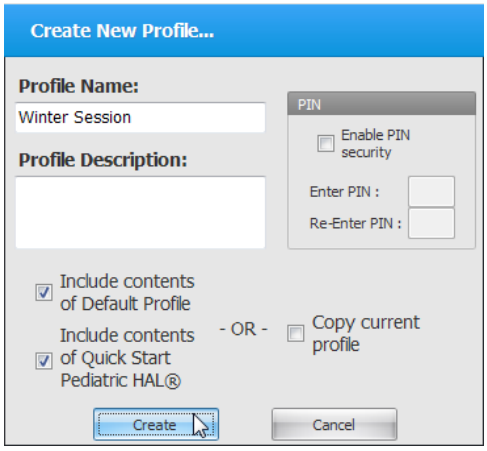
Profiles store palette, scenario, and option settings independently; changes made to one profile have no effect on the others. Below are some examples on how profiles are used.

- Assign one profile to each user of your Gaumard simulator system
- Use profiles to organize and protect palettes and scenarios
- Create a profile dedicated to a specific academic course taught by multiple instructors
- Devote an entire profile to one particular subject area, or even one particular scenario

To create a new profile, click “New Profile”.




Enter a name for the new profile followed by a description.



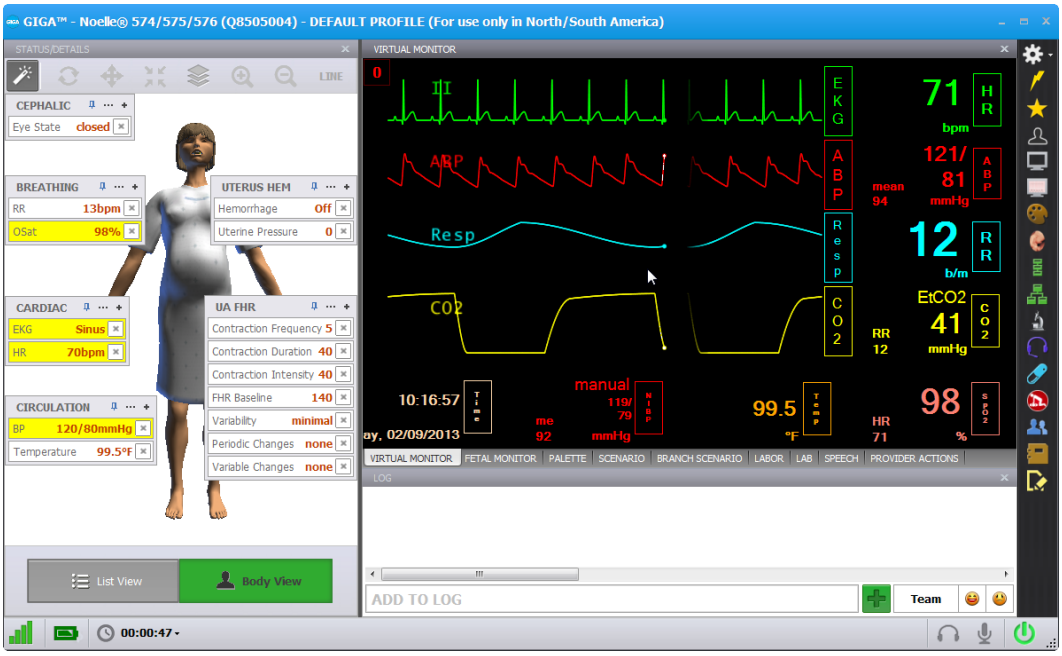

Enable the PIN protection to prevent unauthorized users from accessing or making changes to this profile.

Lastly, click “Create” to save the new profile.

# GIGA Interface

The GIGA software is used control the simulator, monitor the vital signs, and evaluate the provider's performance. The simulation technician or instructor carrying out the simulation operates the GIGA software.

The GIGA control elements and scenario programming procedures are consistent throughout the Gaumard family of high fidelity simulators. Some software controls and features covered in this guide may be hidden depending on the simulator's hardware configuration and optional upgrades.




## Connection Status

The communication indicator displays the status of the radio link between the tablet's USB RF module and the simulator. Full bars indicate excellent communication (i.e., normal operation).

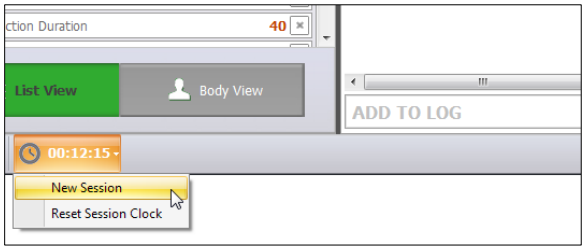
## Battery Indicator

The battery indicator displays the battery charge information. An exclamation sign is shown when there is no communication with the simulator and battery information cannot be retrieved.

The simulator is set to STAND-BY mode automatically when the battery is depleted. The simulator will not initialize until the power adapter is reconnected or the battery is recharged. Refer to the directions for use guide for charging information specific to the simulator model.

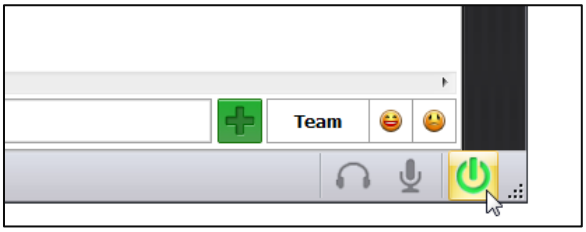
## Session Clock

The session timer displays the duration of the current session. Click the timer to reset the clock or to start a new session. Event entries in the text log are synchronized with the session timer.




## Power/Stand-by

The power button is located at the bottom right corner of the GIGA software. Toggle the power button to set the simulator to stand-by mode and then again to resume.

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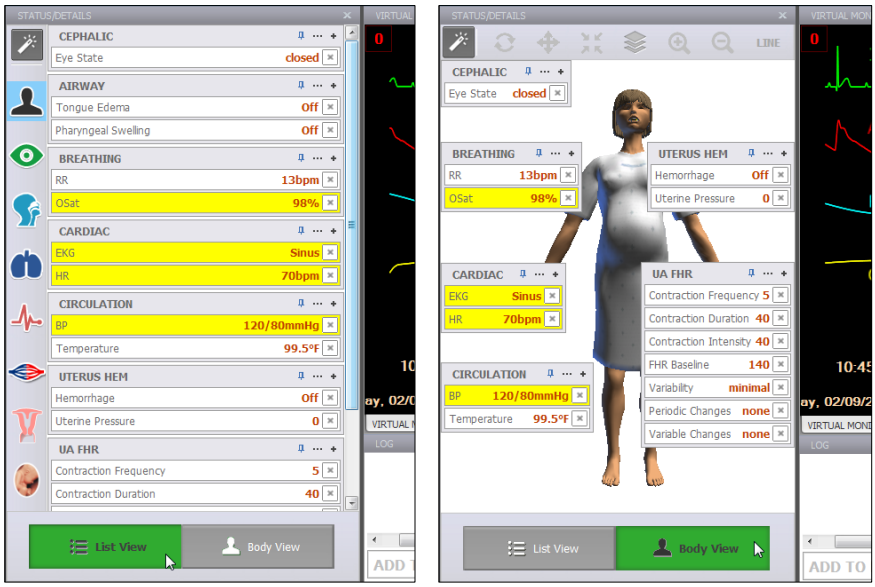
# Status / Details Controls

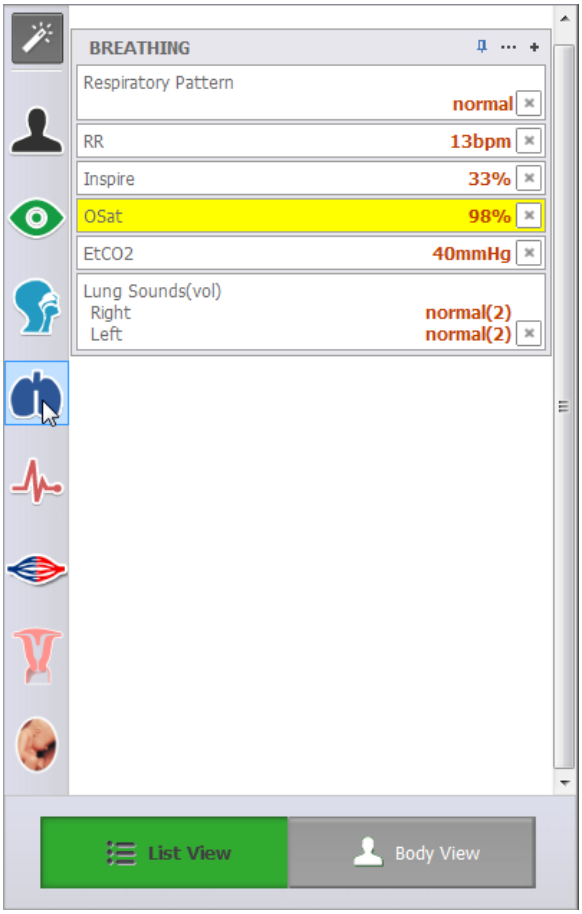
The Status/Details panel is used to monitor and control the simulator's vital signs. The individual parameter controls displayed on the details tab provide the simplest method for controlling the simulator's vital signs, sounds, and features.

There are two viewing modes. The "List view" displays the vital signs controls in a list format, while the Body view displays the interactive patient model with floating control boxes. Toggle the view buttons to switch between the two modes.

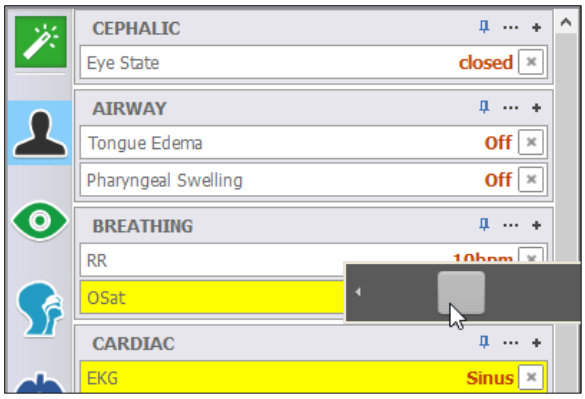


## SYSTEMS LIST VIEW

In the List View, the vital signs controls are divided into separate categories. Click through the categories to view the controls available for the current simulator configuration.

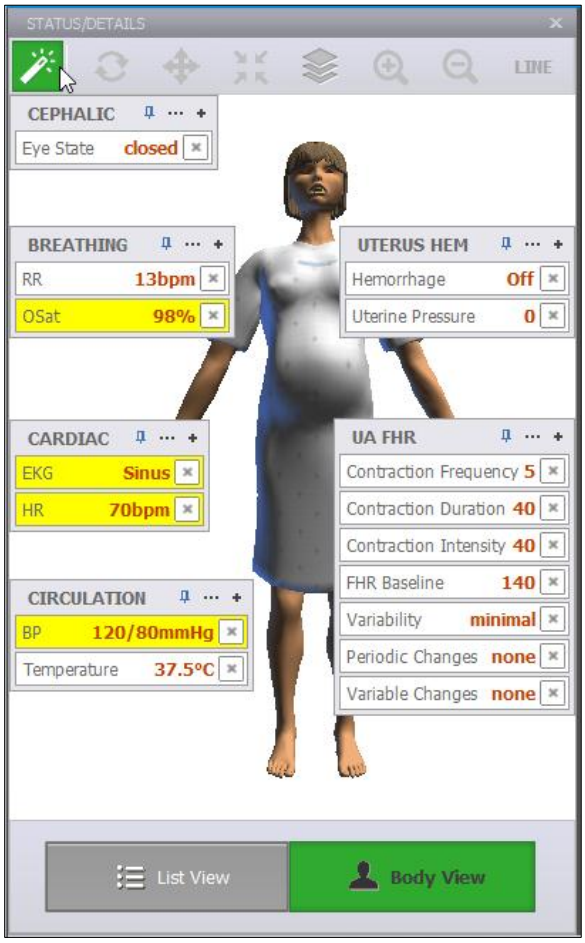



Enable the “instant apply” option and click the control to change the vital sign to a new value. Vital signs undergoing change blink yellow.

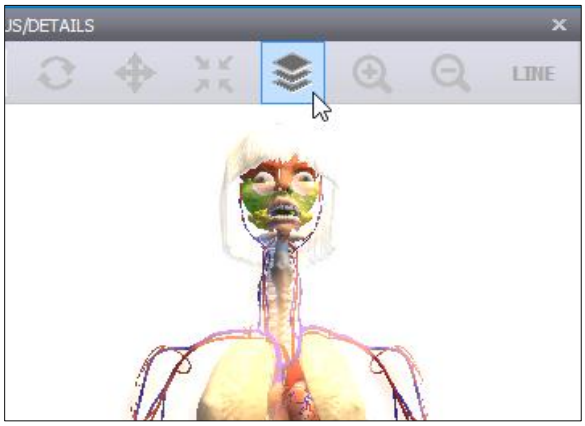


## BODY VIEW

The “Body View” mode displays an interactive model of the simulator. The model is a representation of the simulator and its internal organs. The floating control boxes are used to monitor and change the vital signs just like in the “List View” mode.

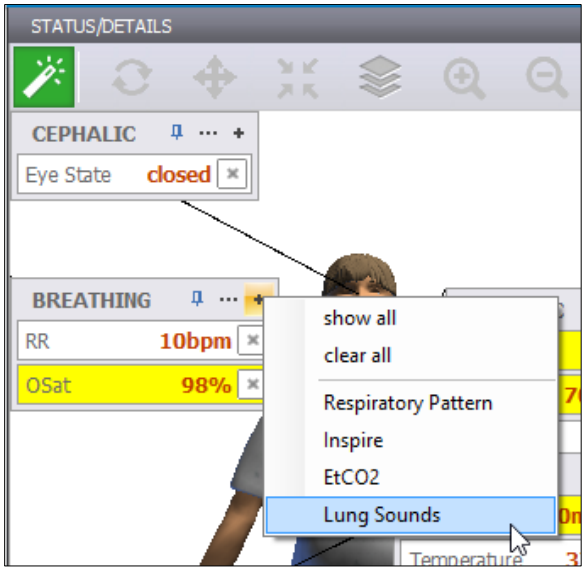



Use the Body View controls to rotate, zoom, and re-center the model. Click the transparency button to view the model’s internal organs.

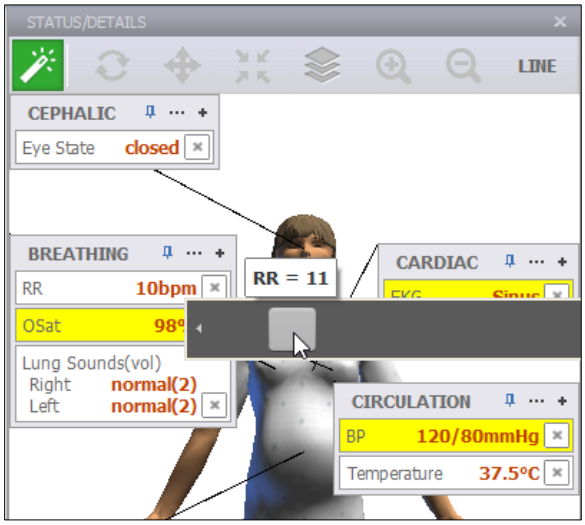


## FLOATING CONTROLS

The floating controls are used to monitor and change the vital signs. The default layout displays commonly used vital signs controls. Click the + button to add controls to the floating window.

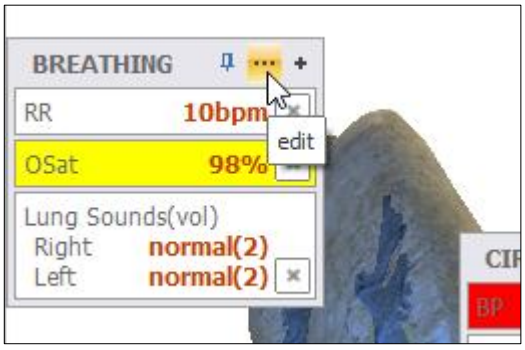



Enable the “instant apply” option and click the control to change the vital sign to a new value. Vital signs undergoing change blink yellow.

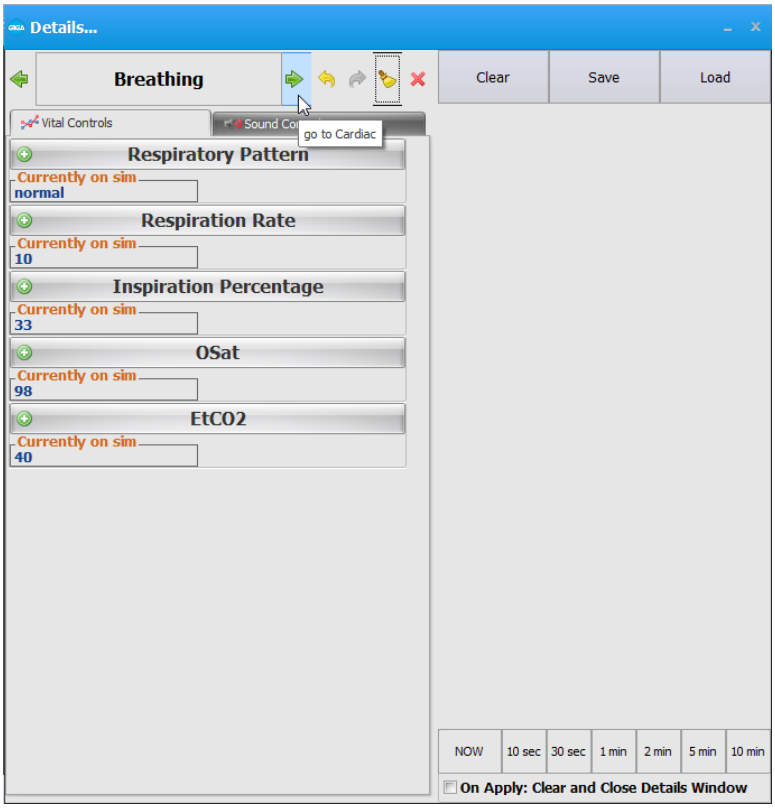


## EXPANDED CONTROLS

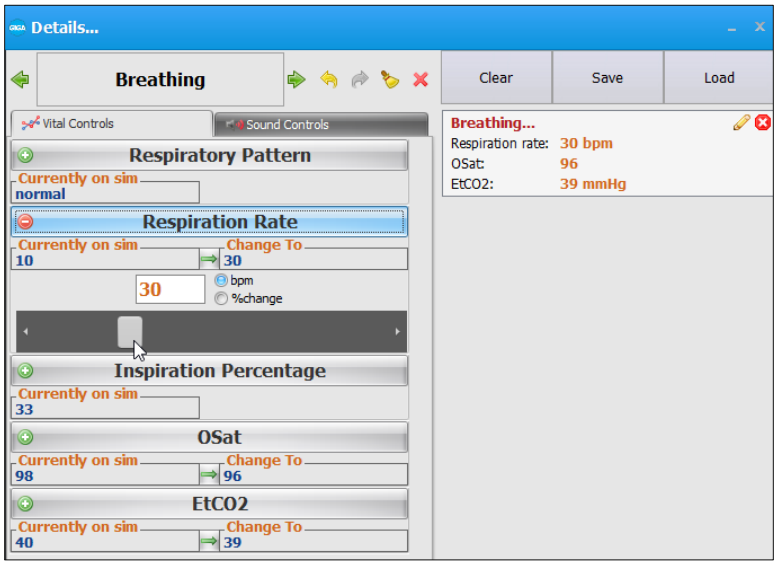
The expanded details view is used to tabulate a list of vital sign changes before applying them all at once. In addition, the Details list is used for creating palette items; a set of vital signs parameters stored in a single loadable item. Click the edit button to open the expanded Details list.



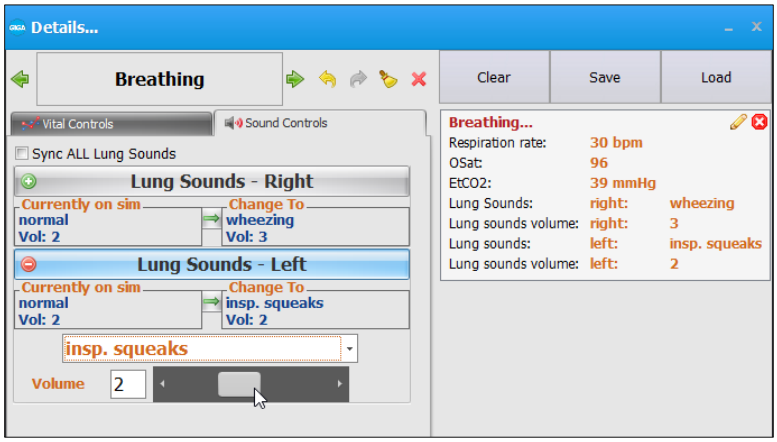

The vital signs controls are divided into categories. Click through the categories to view the controls available for the current simulator configuration.



Change vital sign value or state to add it to the Details list.

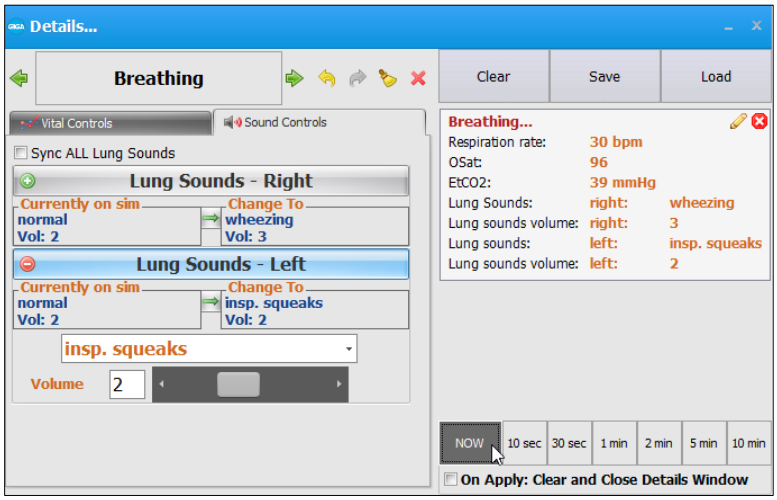



Click the sound controls tab to change the sound types for audible features (e.g. heart rate) and volume level.



## APPLYING CHANGES

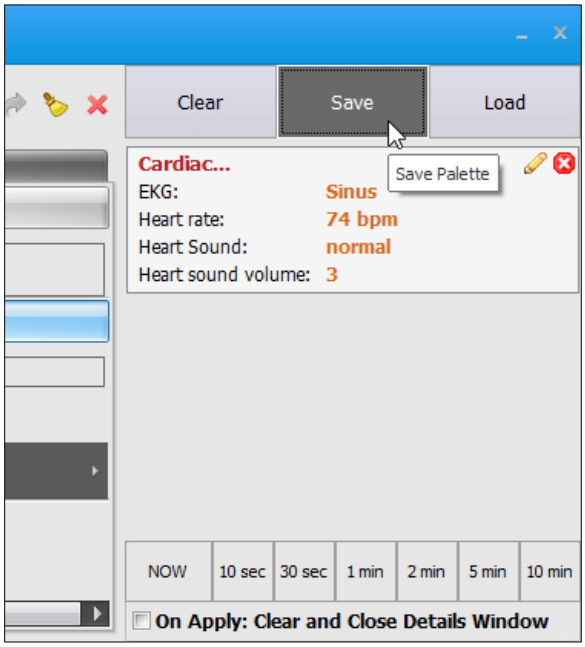
After the list of changes is created, click “NOW” to update the vital signs instantly. Alternatively, click a trending timer to update numerical vital sign parameters (e.g. heart rate, blood pressure) gradually.



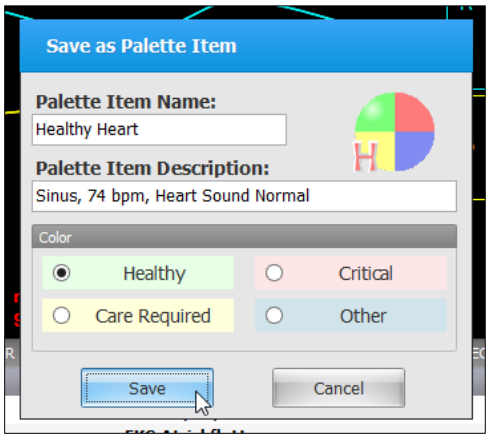

## CREATING PALETTE ITEMS

A palette item stores one or more vital sign settings into a single loadable object. Use a palette item to update a set of vital signs quickly. For example, one palette item can be created to update all the cardiac parameters to a healthy state.

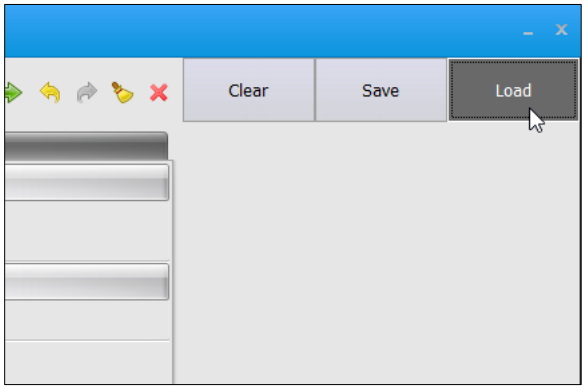
To create a new palette item, set the values for the desired vital signs parameters using the details controls and click “Save”.



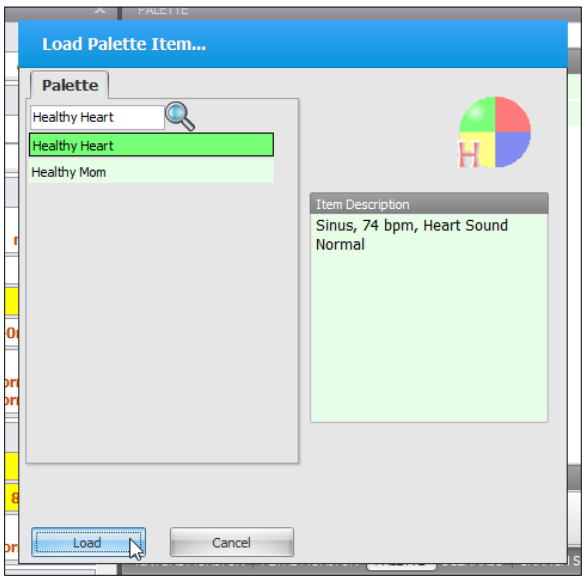
Enter a name for the palette, a description, and choose color code. Click “Save” to create the new palette Item. Palette items are stored in the active profile.



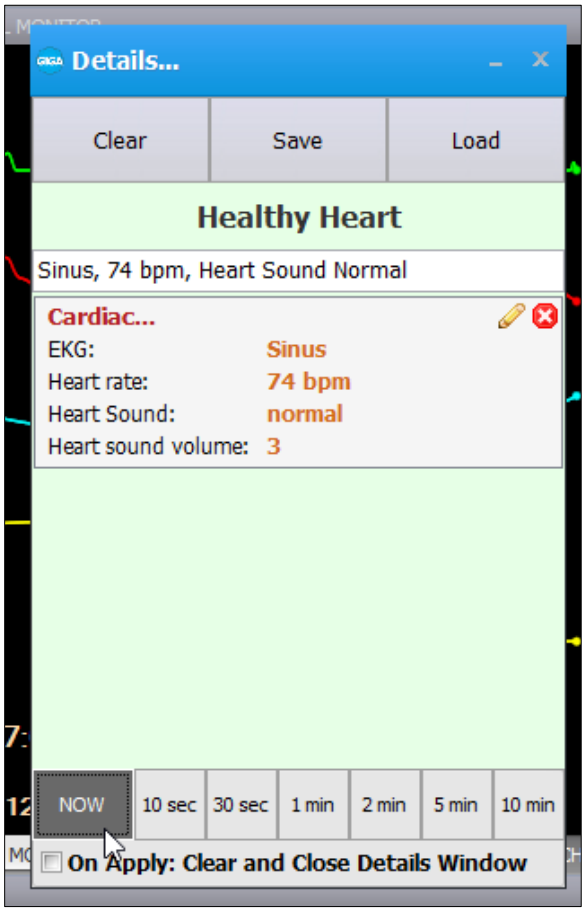

When the palette is needed, click the Load button to select the palette from the library.




Select the palette item from the “Load Palette Item” menu and click “Load”



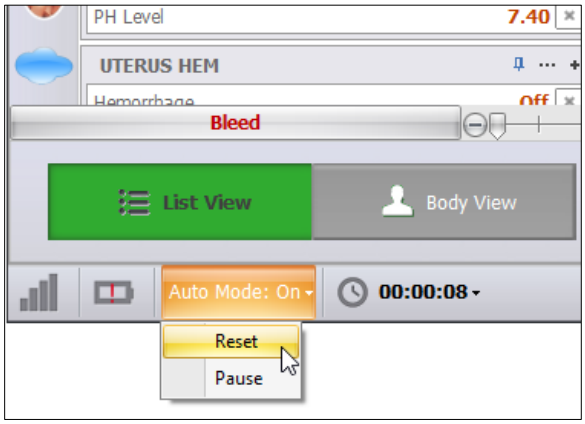
Click the apply option to submit the changes.




## AUTOMATIC MODE CONTROLS

While operating in the Automatic Mode, GIGA adjusts the patient's vital signs automatically in response to caregiver participation, instructor input, and pharmacologic intervention. For example, if the heart rate is increased, GIGA will calculate a realistic response to the event and adjust the blood pressure values automatically. To enable the Automatic Mode as an option in the profiles menu, go to page 103.

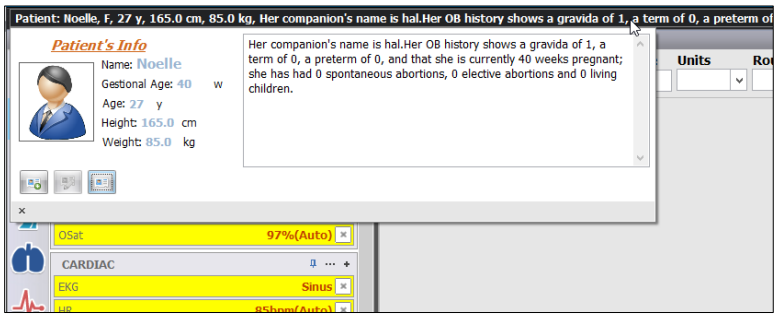
Click "Auto Mode" to pause the automatic changes. To return the patient to the initial state, click "Reset".



## PATIENT PROFILE

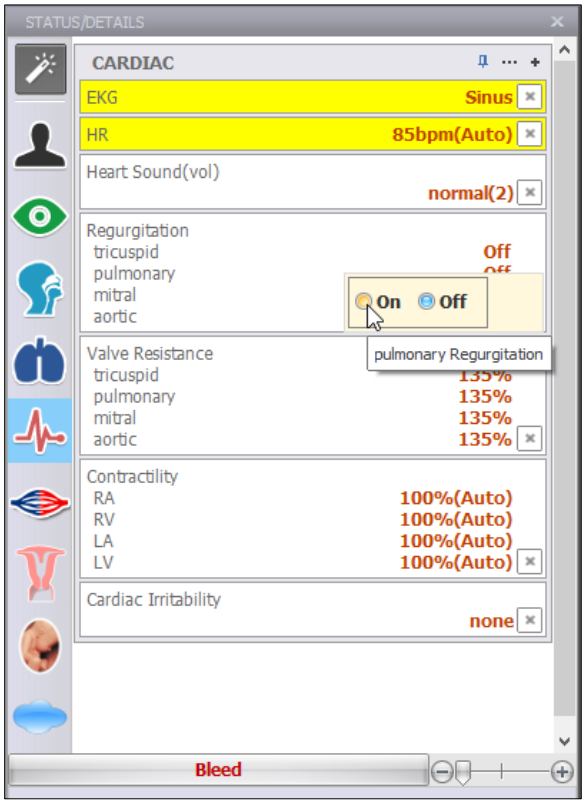
Patient files store general information such as weight, height, and age. The automatic mode factors the patient's weight as it adjusts related physiological parameters. GIGA includes several preprogrammed patients in the Quick Start Modeling profile. For more information on the each patient profile, go to page 106.

A default patient is loaded when the Quick Start Modeling Profile is selected and it is an ideal candidate for most simulations. Click the patient information bar to view the patient's profile.



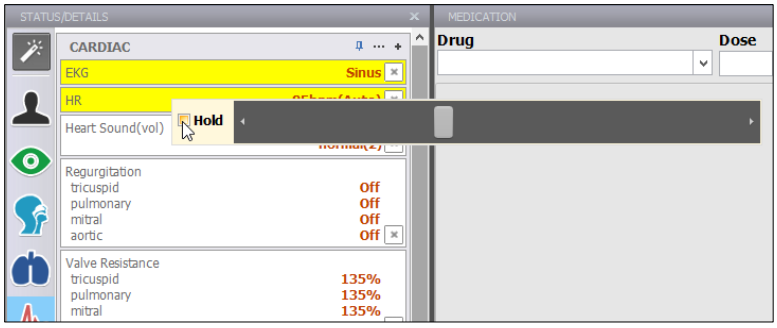

## AUTOMATIC MODE CONTROLS

In the automatic mode, the Details panel includes additional vital sign parameters and control options not available in the Manual mode.



The “Hold” and “Auto” options are unique to the automatic mode. The “Auto Mode” adjusts vital sign controls with an (auto) suffix automatically.

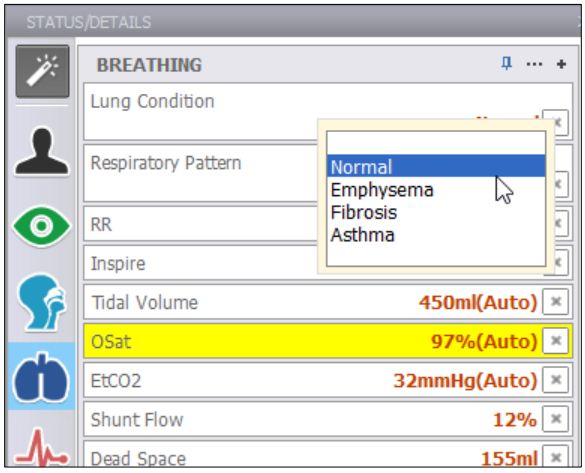
Checkmark “Hold” to prevent the Auto Mode from adjusting the value. Then change the vital sign to the new static value. The automatic mode will not change values set to hold. The “Auto Mode” will adjust all other controls set to “auto”.




Some changes are gradual and even if submitted for immediate change. The delay results from using a closed loop model that adjusts to the target values over time, rather than displaying a unique value that is unrelated to other parameters.

## LUNG CONDITION

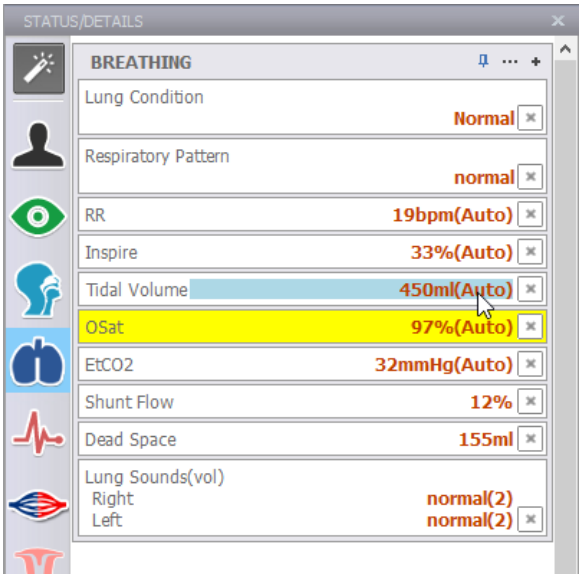
The lung condition parameter adjusts the shunt flow, dead space, airway resistance, and respiratory pattern automatically.



## TIDAL VOLUME

In the automatic mode, a tidal volume of 450 m/L to 500 m/L is considered the normal level for an adult of average build.

**The “auto mode” does not restore the respiratory rate if it is set to zero. Always remember to specify a new respiratory rate.**



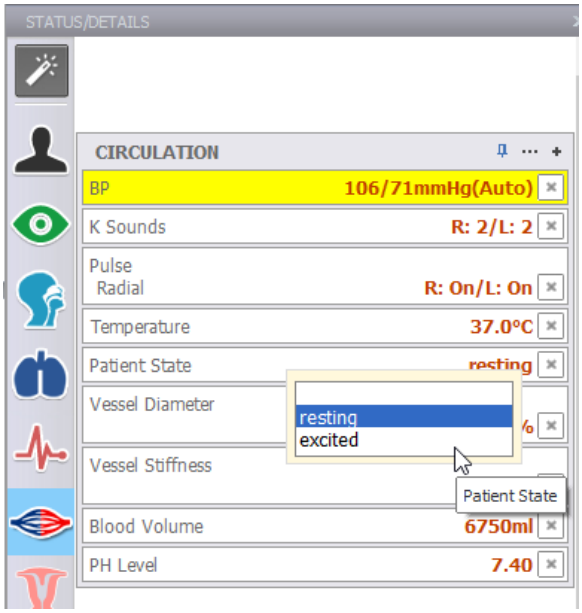

## CIRCULATION

Each cardiac rhythm has a specific effect on the blood pressure waveforms. The pressure waveforms include ABP, CVP, PAWP, and Pulse. The blood pressure values are affected when any of the following parameters are changed:

- Vascular profiles: vessel diameter and vessel stiffness
- Heart Rate
- LV Contractility
- Total Blood Volume

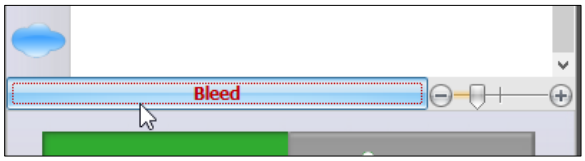
## PATIENT STATUS

Set the patient status to “Excited” (after exercise) to increases heart rate, temperature, respiratory rate, tidal volume, O2, CO2 diffusion capacity, metabolic rate, and CO2 formation rate. Set the status to “resting” for a normal state.

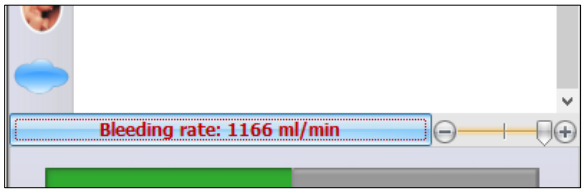



## BLEED AND WOUND SIZE

The Bleed and Wound size options simulate blood loss virtually. To start the virtual bleeding click the “Bleed” button, and then adjust the bleeding rate using the “Wound Size” control.

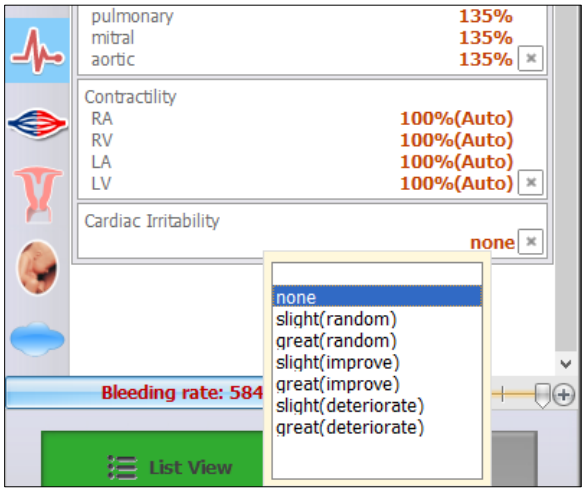



Once the bleeding function is activated, the Auto Mode will adjust the vital signs in response to the blood loss. If the provider does not intervene, the vital signs will deteriorate and myocardial ischemia will occur. For information on how to infuse blood to the model virtually, go to page 71.

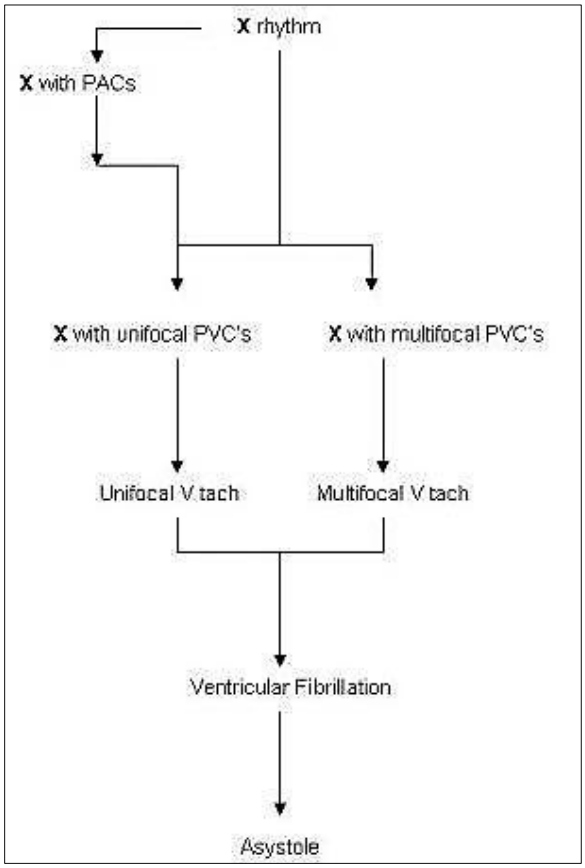


## CARDIAC

The Cardiac irritability control adjusts the cardiac rhythms indirectly. Set the Cardiac Irritability to “improve” to move the current heart rhythm to normal sinus gradually. Alternatively, set the cardiac irritability to “deteriorate” to move the heart rhythm to ventricular fibrillation and eventually asystole.

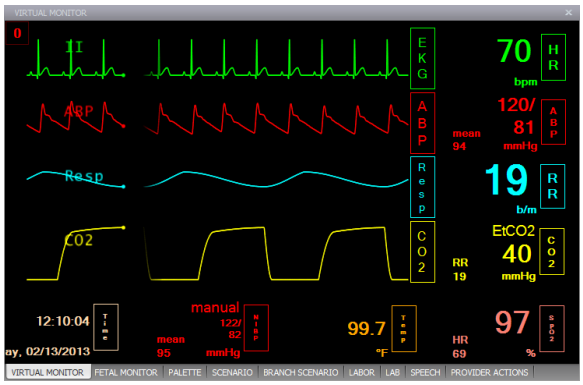



The progression of rhythms generally follows the pattern displayed in the figure below, where “X” represents normal sinus rhythm, multifocal atrial tachycardia, atrial flutter, atrial fibrillation, junctional rhythm, left or right bundle branch block, or atrio-ventricular block:



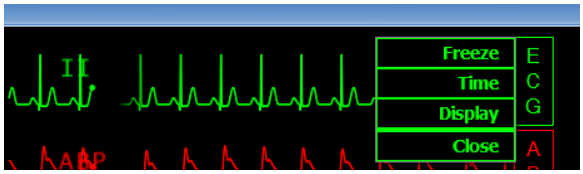
# Virtual Monitor

The interactive virtual monitor tab (VM) displays the patient's vital signs information in real time. The waveform and numerical parameters are interactive, and the layout is fully customizable. If the VM tab is not displayed by default, go to page 103 to activate the virtual monitor add-on.




## WAVEFORM MENU

Click the waveform name to access the waveform options.

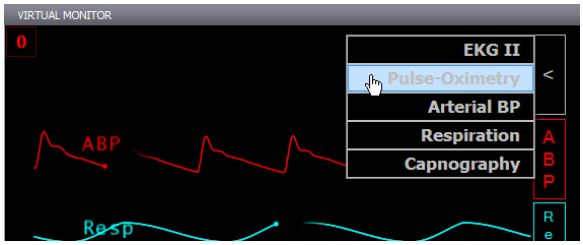



- Freeze - Pause the waveform reading. To unfreeze the selection, click the waveform menu and select "Go".
- Time - Set length of the ECG waveform. The options available are 5 seconds, 10 seconds, 15 seconds, and 20 seconds.
- Display - Open the waveform properties menu. Edit the waveform color, amplitude, intensity and scroll direction.

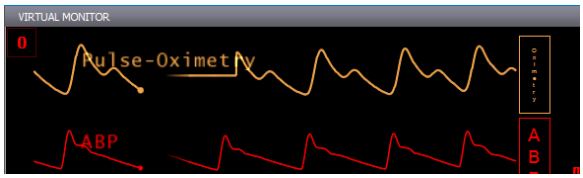
## CHANGING THE WAVEFORM TYPE

To change the type of waveform displayed, click the waveform menu and select "close".


Click the empty waveform menu and select the new waveform type. While operating on the Automatic mode, the ECG option displays a sub menu for 12 individual leads.

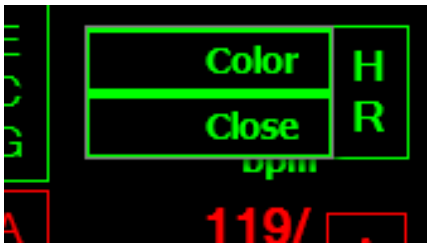


The new waveform type is now displayed

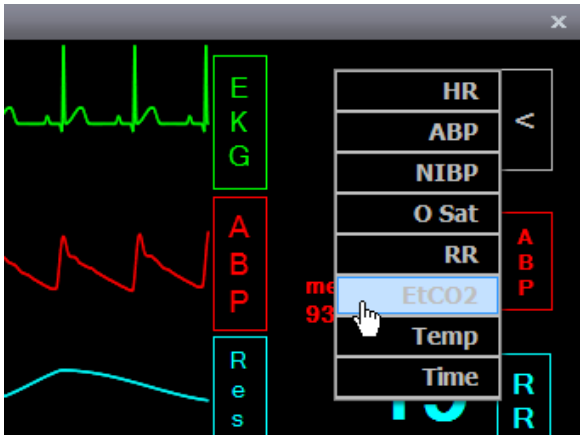



## NUMERIC MENU

Click the numeric menu to access the numerical parameter options. To change the type of numerical parameter displayed, click the numeric menu and select “close”.

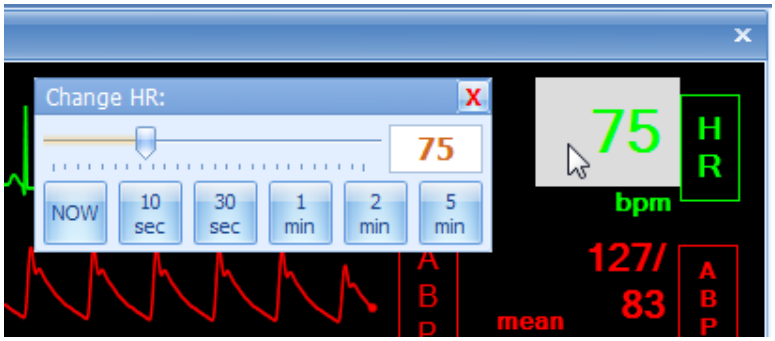



Click the empty numerical menu and select the new parameter type.



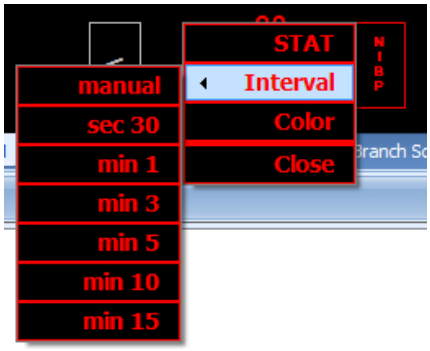

## CHANGING VITAL SIGNS

Numerical parameters can be adjusted directly from the virtual monitor tab. Double-click the numerical parameter to open the floating control window. Adjust the parameter to the new value and submit the changes using the Apply NOW or trending options.



## NONINVASIVE BLOOD PRESSURE

By default, the NIBP parameter does not update automatically. Click the NIBP menu and select “Stat” to refresh the reading. Alternatively, set a refresh interval to automate the stat process periodically.

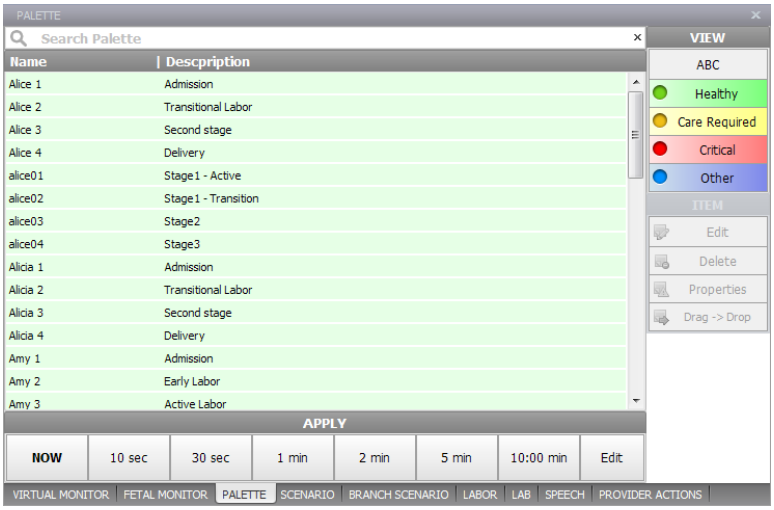


# Palette

Use the Palette tab to sort, manage, and edit the palette items in the current profile. Each profile stores an independent library of palette items.

To modify the vital sign parameters programmed into a palette, select a palette and click the Edit button. After the changes are made using the Details tab, click the “Save as Palette” Item button., See the Tips on Palette Item and Scenario Creation section of the appendix for more information on customizing palettes.

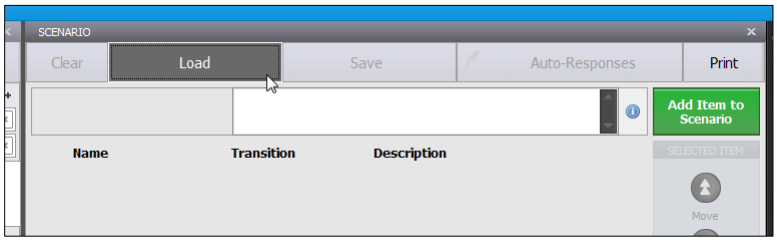
Select a palette item from the list and click an a “Apply” button to update the vital signs to the values stored in the palette item.



# Linear Scenarios

Scenarios automate the vital sign changes, responses, and software actions required to carry out a complete simulation exercise. GIGA includes several preprogrammed scenario based simulation exercises in the “Quick Start Profile”.

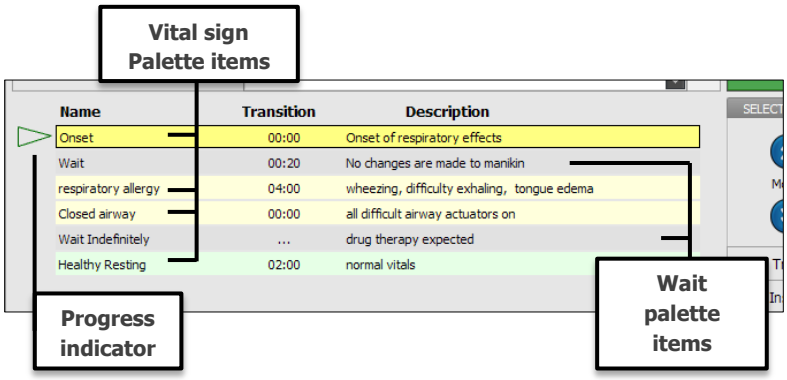
To use a preprogrammed scenario go to the Scenario tab and click “Load Scenario”.




The Load Scenario dialog box appears. Select a scenario and click on Load.

## LINEAR SCENARIO OVERVIEW

A linear scenario is a playlist of vital signs palette items played back in succession.



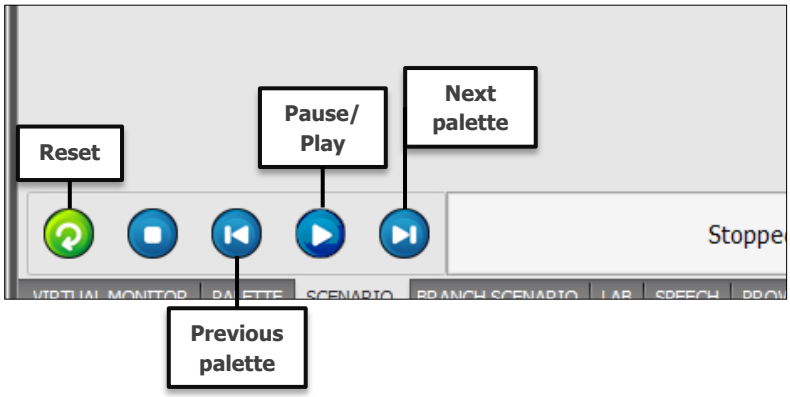

During the scenario, each vital signs palette updates the patient’s vital signs. The palette’s transition time trends the increase or decrease of numerical parameters (e.g. Heart rate, blood pressure) over seconds or minutes. In the figure below for example, the vital signs palette “Healthy Resting” is programmed with a transition time of 2 minutes. When the scenario reaches “Healthy Resting”, it will take 2 minutes for the vital signs to trend from the previous state to the values programmed within the palette.

| Name | Transition | Description |
|---|---|---|
| Onset | 00:00 | Onset of respiratory effects |
| Wait | 00:20 | No changes are made to manikin |
| respiratory allergy | 04:00 | wheezing, difficulty exhaling, tongue edema |
| Closed airway | 00:00 | all difficult airway actuators on |
| Wait Indefinitely | ... | drug therapy expected |
| Healthy Resting | 02:00 | normal vitals |

Wait palettes do not update or change vital signs. Instead, wait palettes give the participant time to perform an action; this may be treatment in response to a complication or performing a standard assessment.

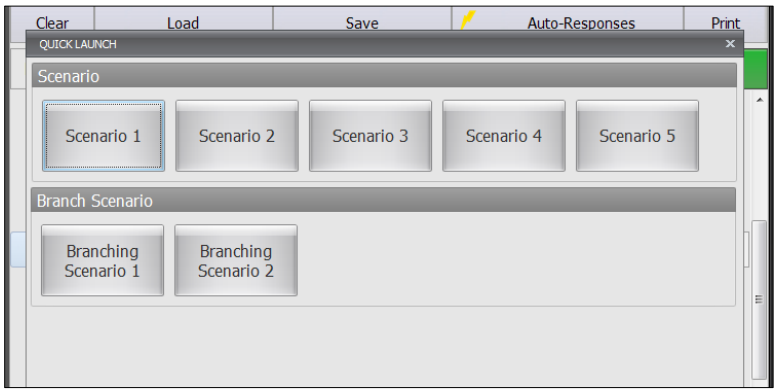
## SCENARIO CONTROLS

Scenarios are controlled using the playback buttons at the bottom of the tab. Intuitively, the click play, stop, pause, or next as necessary during the scenario. Click next to proceed to the next palette from a “wait indefinitely” palette.




## SCENARIO QUICK LAUNCH

Use the scenario Quick Launch tab to start a scenario with a single click. The Quick Launch tab displays all the scenarios saved in the active profile.




## CREATING A NEW LINEAR SCENARIO

The general process of creating a new linear scenario is the following:

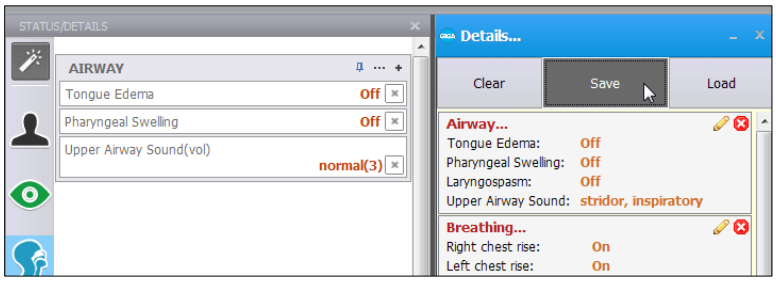
- Create a vital sign palette item for each state in the scenario
- Add the vital signs palettes and wait times to the scenario
- Play the scenario
- Modify and edit palettes
- Save the scenario

## CREATING PALETTE ITEMS

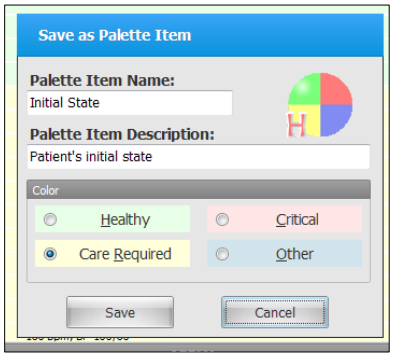
The first step is to create several vital sign palette items using the Details/Status panel. Each palette item represents a physiological state during the scenario.

Program the first palette item to be used as the scenario’s starting point. Set values for all the physiological parameters, sound types, and volumes. This ensures that when the scenario begins no vital signs from a previous state will inadvertently carry into the scenario exercise.

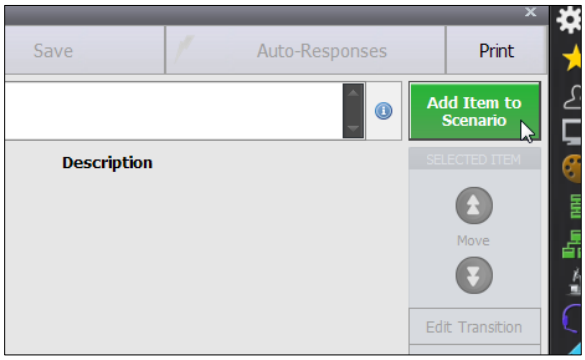
Using the list view controls, select the vital signs parameters for the starting physiological state in the scenario. Click the “Save as Palette Item” button to create the new palette.



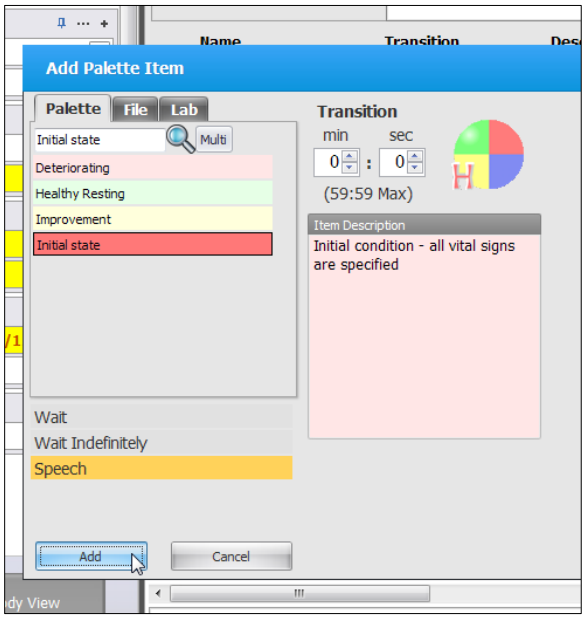

The “Save as Palette Item” dialog box is displayed. Type in the palette item name and a brief description; assign a color tag and click “Save”.



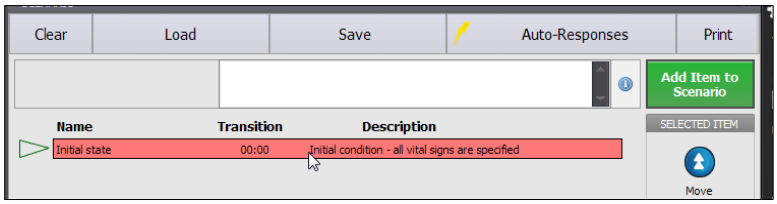

Create the next palette item with only those vital sign parameters that are relevant to the second stage in the patient’s condition. Repeat this process to create palettes for the third and final stage in the scenario. Remember to program only the values that require change. After all the individual vital sign palettes are created, go to the “Scenario” tab and click “Add to Scenario”.



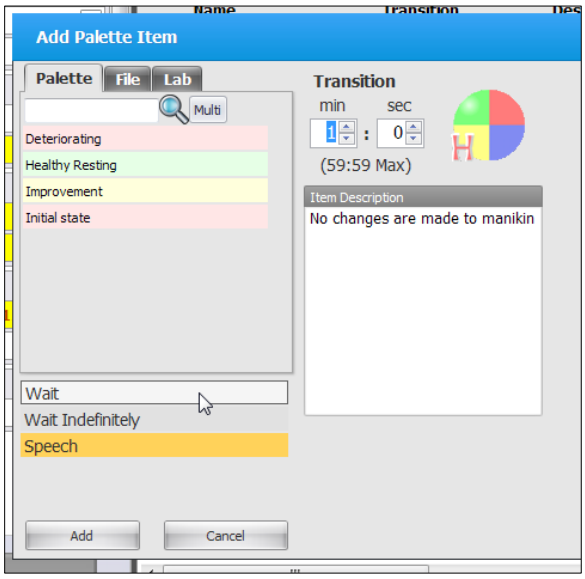
The Add Palette item menu displayed. Select the vital sign palette programmed to be first state in the scenario. Enter 0 min 0 sec for the transition time, so the initial vital signs are applied immediately. Click “Add” to add the palette to the scenario.



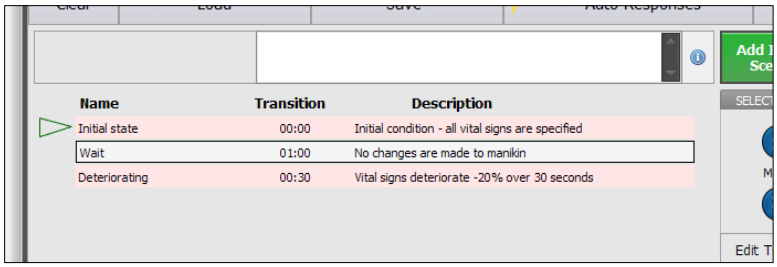

The first palette is now added. Click “Add Palette to Scenario” button again to add more vital sign palettes and wait palette items.



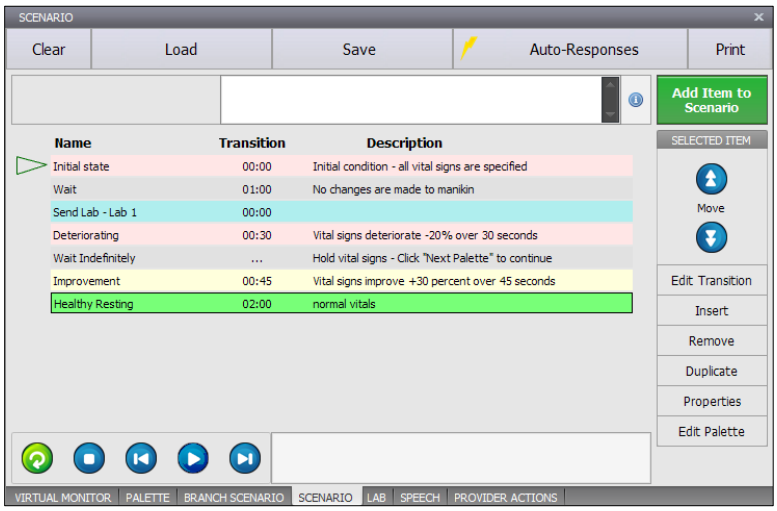
A “Wait” item maintains vital signs values steady for the transition time allotted. Insert a “wait” item to give the provider time to perform an action or an assessment. For example, auscultating blood pressure or gathering general information about the patient. Alternatively, add “Wait Indefinitely” to hold the vital signs until the “next item” button is clicked from the playback controls.



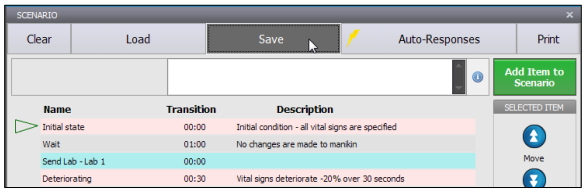

The wait palette item is now added.



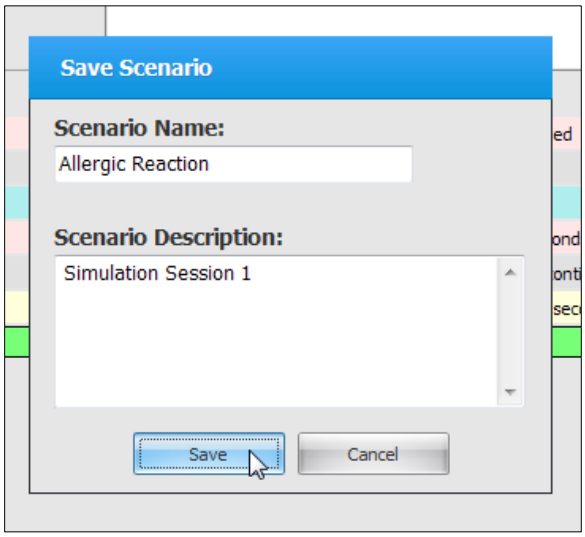

Add more palette items and then use the “Selected Item” menu to make any changes.



Click “Save Scenario” to store the scenario in the current profile for later use.




Type in a name and a description for the new scenario and click Save.



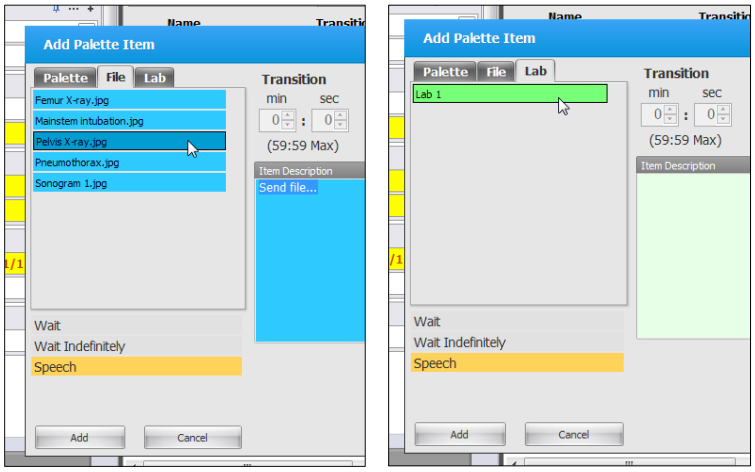

## ADDITIONAL SCENARIO FEATURES

Incorporate the following features into a scenario for added realism.

- Auto responses –move onto the next palette item automatically when virtual electric therapy is detected
- File sharing and lab reports – Send lab reports to the virtual monitor computer
- Speech – add phrases or custom speech

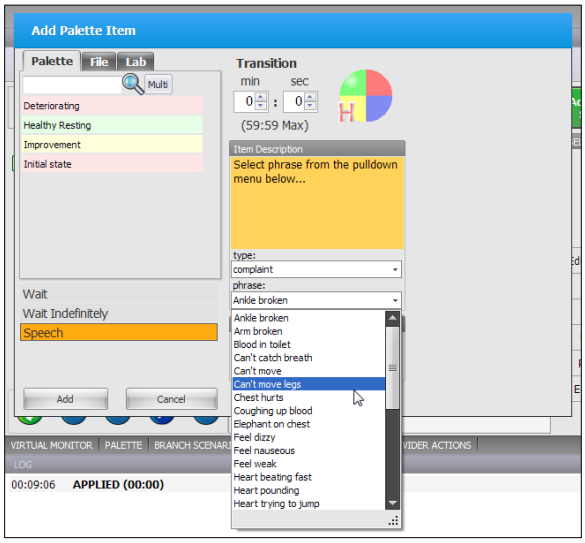
## FILE SHARING AND LAB REPORTS

The scenario can also automate the distribution of shared files and labs. Click “Add to scenario”, and then use the “File” and “Lab” tabs to select from available documents. For more information making files available for file sharing, go to page 109. To create a new lab report, go to page 54.




## SPEECH

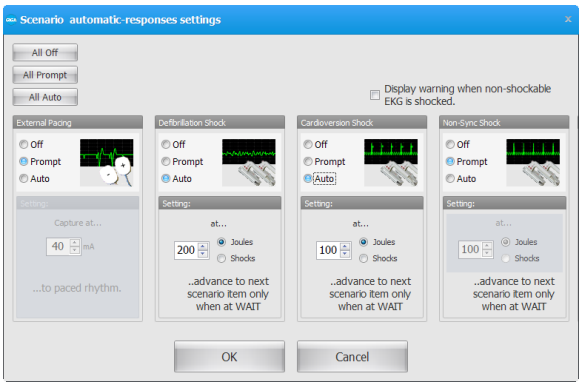
Add realism to a scenario by integrating automated speech phrases. Click the Add to scenario button and select Speech. Then, select the type of speech and phrase using the drop down menus.



## AUTO RESPONSES

The scenario auto-response settings move the scenario to the next palette when electrical therapy is detected. Electrical therapy can be applied by the facilitator via Virtual Shock panel or by the care provider using real medical equipment if the simulator supports it.

**Auto-responses advance to the next palette if the virtual shock is applied while a "wait indefinitely" palette is playing and the heart rhythm is "shockable".**

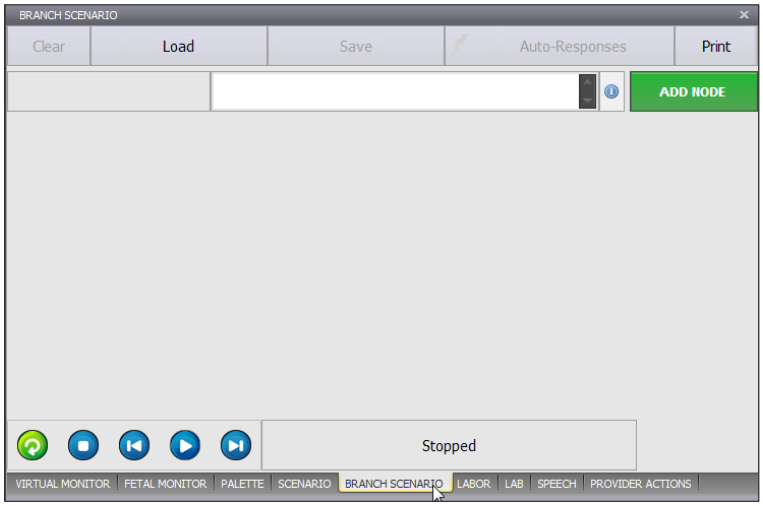



The three response options are defined below:

- Off - The scenario does not respond to the electric therapy.
- Prompt - The software detects the electrical therapy and prompts the user for approval before advancing to the next palette.
- Auto – Advances to the next palette automatically only if the electrical therapy meets the threshold specified

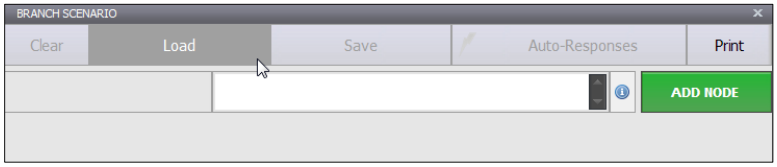
# Branching Scenarios

Unlike linear scenarios, which move from one palette to the next, the trajectory of a branching scenario can change in response to the participant's actions. Click the "Branching scenario" tab to access the branching scenario window.




## DEFAULT BRANCHING SCENARIOS

Use the panel buttons to clear, load, and save new scenarios, or to switch from branching to linear scenarios. Click "Load Scenario" to access the preprogrammed branched scenarios in the current profile.



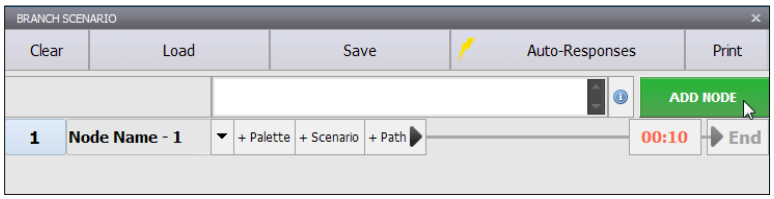

## CREATING A NEW BRANCHING SCENARIO

The process of creating a new branching scenario is the following:

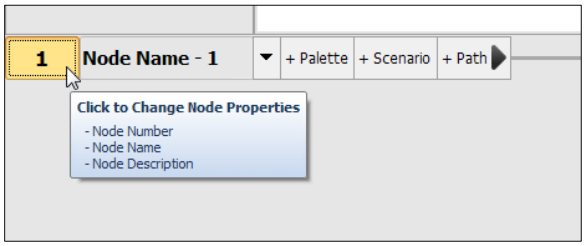
- Add nodes
- Add palettes or scenarios to each node
- Add paths to nodes that require provider action
- Create key events to alter the progress and trajectory of the nodes within the scenario

## ADDING NODES

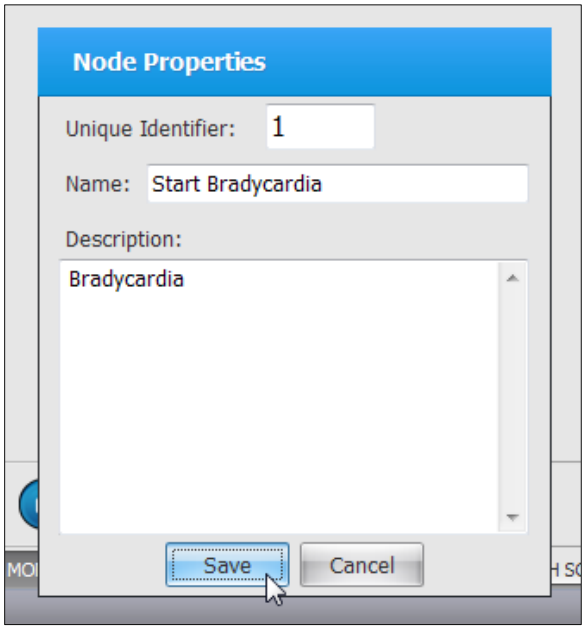
A branching scenario consists of several "Nodes". Each node is preconfigured to run a normal scenario or a series of palettes simulating a specific condition or effect. Click the "Add node" button to create a new node for the first set of vital signs.



Click the node's identifier number to edit the node properties.

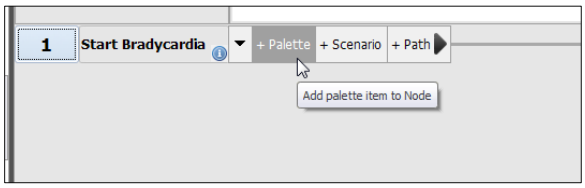



Enter a name for the node and description and then click "**Save".**

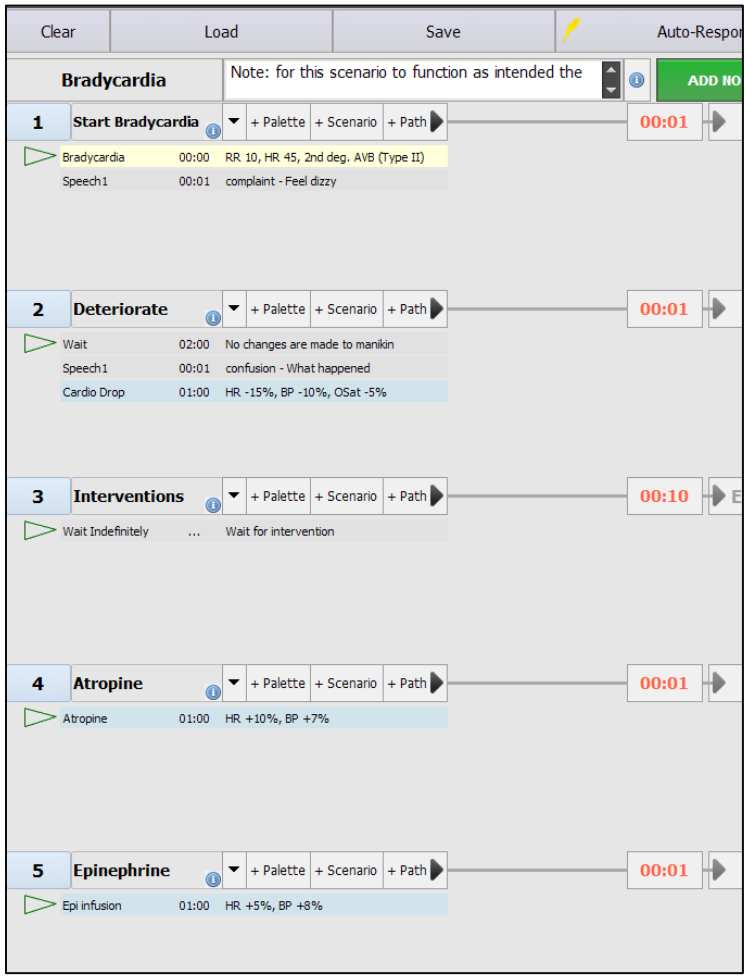



## ADDING PALETTES OR SCENARIOS TO A NODE

Click "Add Item" to add palette items or "Add Scenario" to add full scenarios to the node.

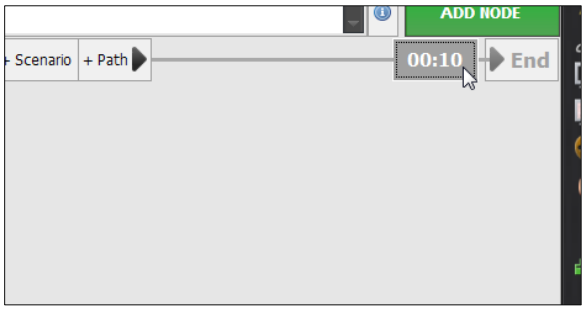


Add more nodes each with palette items to simulate every stage in the scenario. In this example, several nodes simulate the effects of medications that maybe administered to the patient by the provider. The first two nodes simulate the complication [1] Start Bradycardia, [2] Deteriorate. The following nodes: [3] Interventions, [4] Atropine, [5] Epinephrine, [6] Dopamine and [7] Pace are activated only when the provider administers the applicable medication or electrical therapy. Each node is programmed with palettes that simulate the effect described.

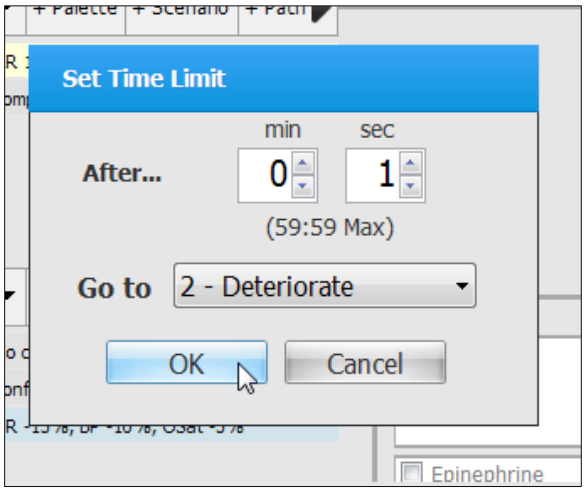



## ADDING PATHS

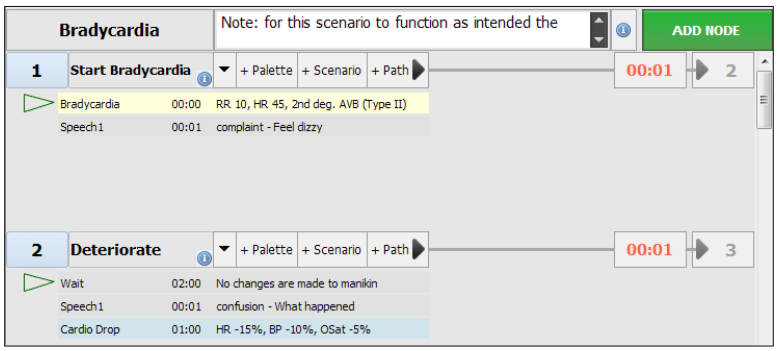
A path refers to the trajectory from one node to another after the last palette in the node expires. The scenario will move on to the node indicated by the arrow. Click on the “Time Limit” icon to modify the “Go To” point for the default path.



In this example, the first node must move to “Node 2 - Deteriorate” after the time limit expires. Click “OK” to save the changes.

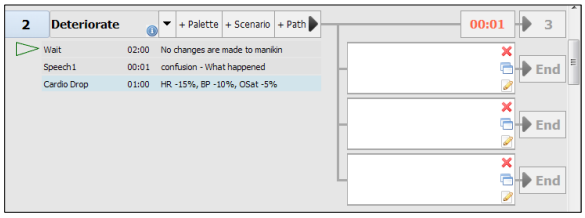



Node 1 is now configured to proceed to Node 2 as indicated by the arrow.

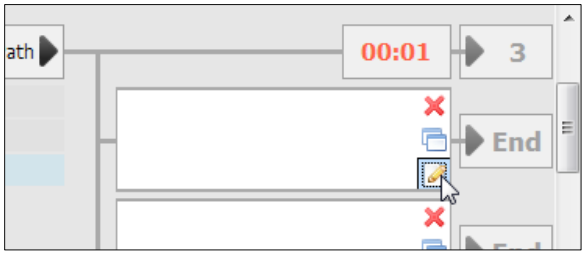



## KEY EVENTS

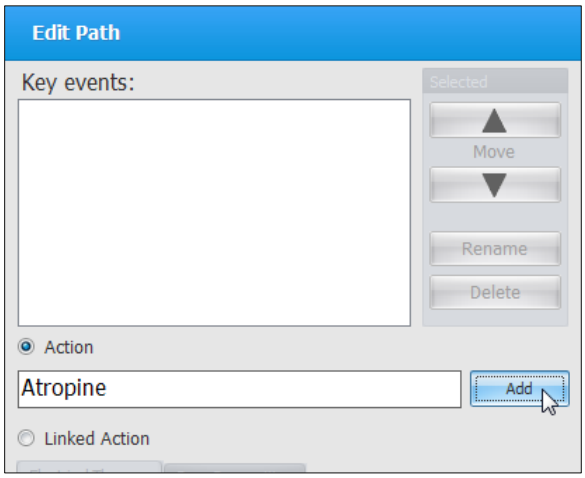
Key events activate alternate paths in a node. The alternate paths are used to change the trajectory of the scenario depending the participant’s actions. To add a key event to a node, first add the additional paths.



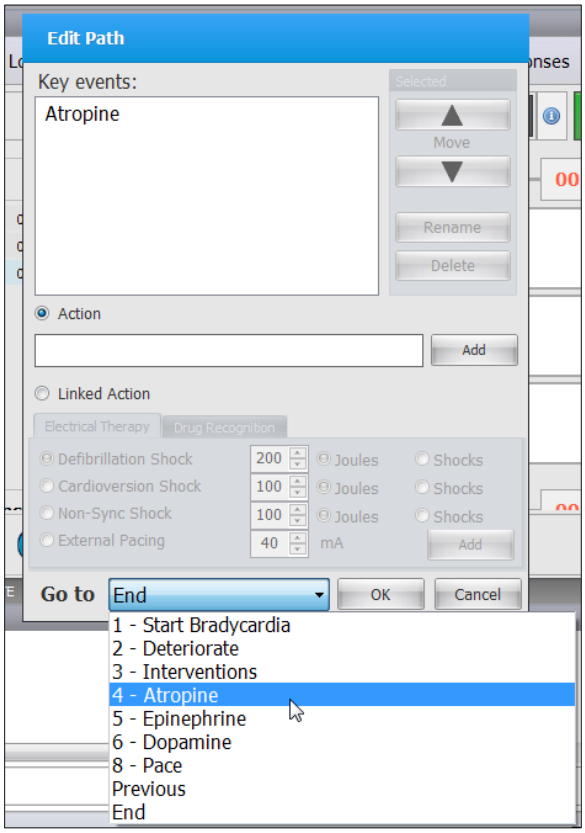

Click the “Edit path” icon to program key events for the node.



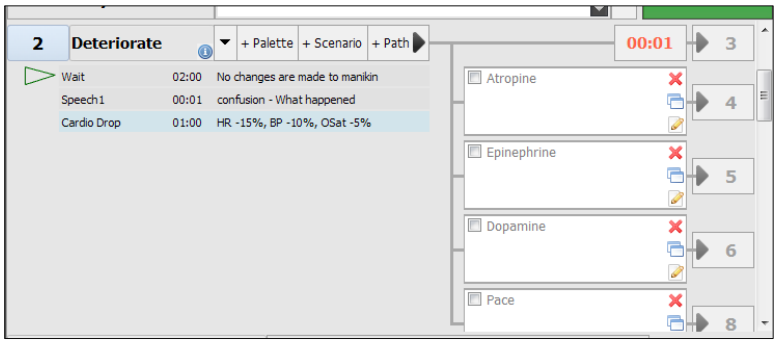
A key event is the action expected by the participant. Type a name for the action and then click “Add”.




After the action is added to the Key Events list, assign the node that this action will move the scenario to using the “Go to” menu. Click “OK” to save changes.



In the figure below, node 2 is configured with four alternate paths. Once the provider performs any one of the actions listed as key events, checkmark the key event to activate the alternate path.

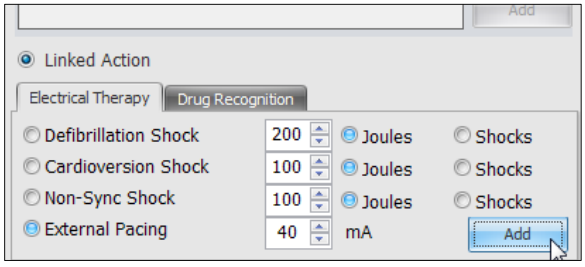



## SAMPLE BRANCH SCENARIO DIAGRAM

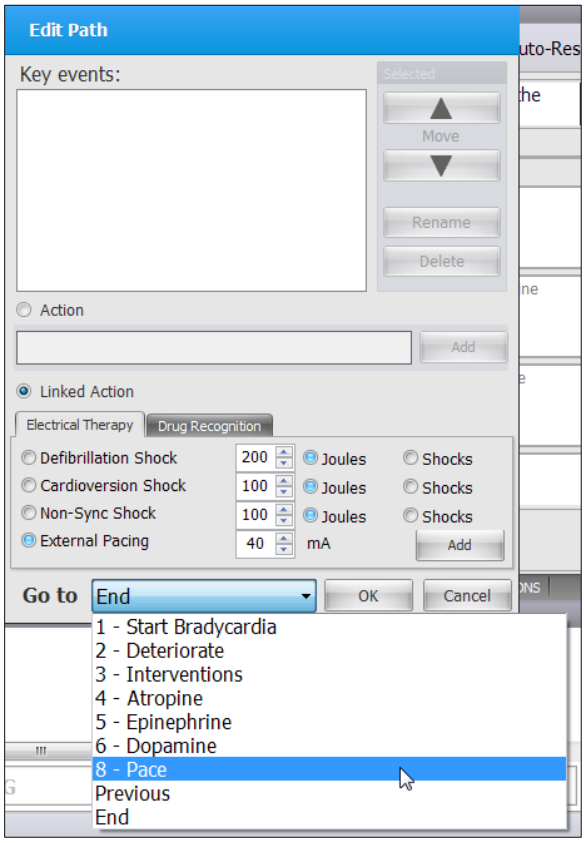
| Node | Node Name | Description |
|---|---|---|
| **1** | Start bradycardia | Node vital signs palettes simulate bradycardia. Go to node 2. |
| **2** | Deteriorate | Vital signs palettes deteriorate the patient's condition by -15%.<br>Care provider has 4 options. Each option (key event) moves the scenario to the node specified. If no action is taken, the scenario will move to node 3 at the end of the time limit. |
| | | **Key event** |
| | | Atropine **Node 4** / Epinephrine **Node 5** / Dopamine **Node 6** / Pace **Node 7** |
| **3** | Intervention | Wait indefinitely, vital signs are on hold. Provider is to intervene again. |
| | | **Key event** |
| | | Atropine **Node 4** / Epinephrine **Node 5** / Dopamine **Node 6** / Pace **Node 7** |
| **4** | Atropine | Node vital signs palettes simulate the response to atropine. **Time limit:** Go to node 3 after 1 minute. |
| **5** | Epinephrine | Node vital signs palettes simulate the response to epinephrine. **Time limit:** Go to node 3 after 1 minute. |
| **6** | Dopamine | Node vital signs palettes simulate the response to dopamine. **Time limit:** Go to node 3 after 1 minute. |
| **7** | Pace | Vital signs simulate the effect of pacing. Scenario ends. |

## LINKED ACTIONS

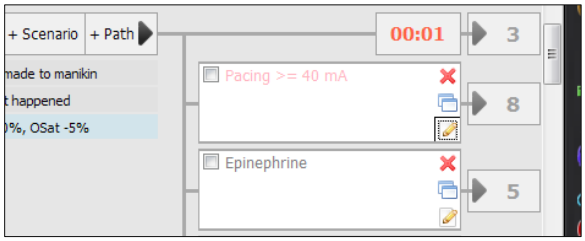
A "Linked Action - key event" triggers an alternate path when electrical therapy is detected. Click the Linked Action radio button and select the available actions. Then, set the electrical therapy thresholds or number of shocks require to trigger the action. Click "add" to create the key event.



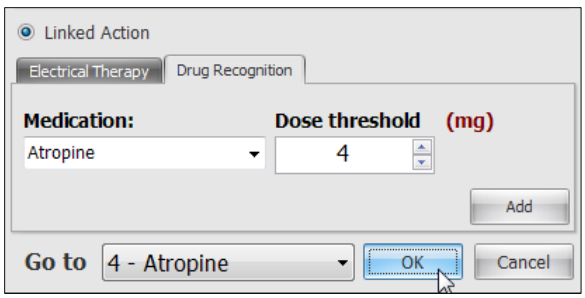
Set the “Go to node” from the drop down and click OK to save the changes.




The key event is now programmed to move the scenario to node 8 if pacing is detected.

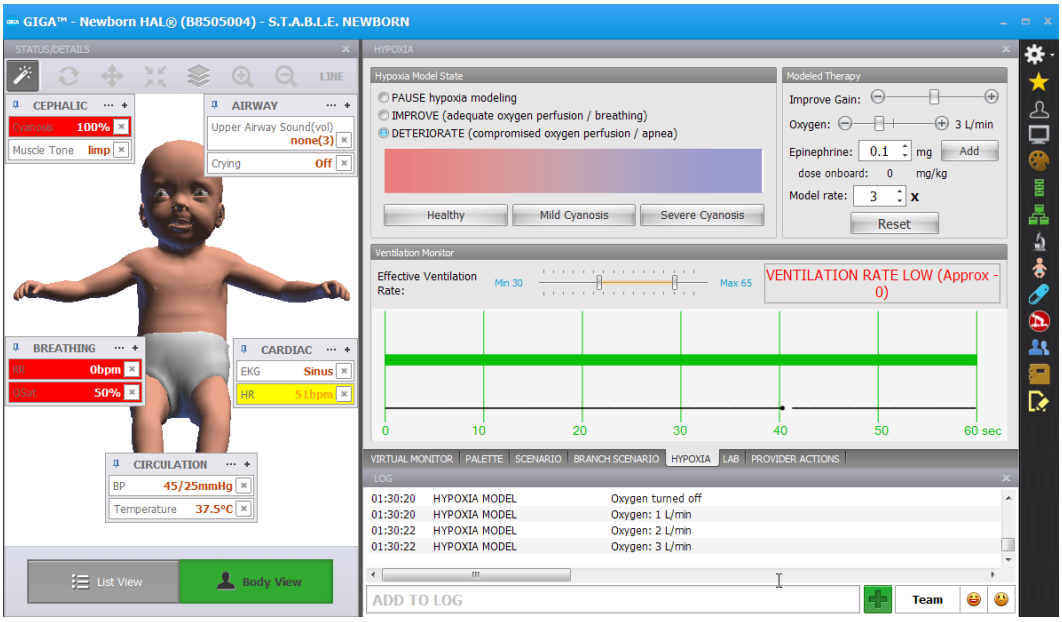



The “Linked Action” model medication tab is exclusive to the automatic mode. Program the medication linked action to trigger an alternate path when the system detects that the specific medication has been administered to the simulator.



# Hypoxia

Use the Hypoxia tab to evaluate the effectiveness of provider intervention on an apneic patient. The model adjusts the cardiac, oxygen saturation, and cyanosis dynamically in response to effective ventilations. The model also responds to the administration of epinephrine and oxygen.




## HYPOXIA MODEL STATE

The hypoxia model options improve or deteriorate the cardiac and respiratory vital signs gradually.

- Pause - Model will pause at the current state.
- Improve - Trend the vital signs to a healthy state.
- Deteriorate - Trend the vital signs to a severe cyanotic state. Ventilations are detected when the respiratory rate is at 0.

## CYANOSIS LEVELS

Select the cyanosis level to move to any of the following states immediately:

- Healthy - Pedi is pink with adequate oxygenation.
- Mild Cyanosis - Pedi is slightly blue, and the vital signs are starting to deteriorate.
- Severe Cyanosis - Pedi is blue, apneic, and vital signs are rapidly worsening.

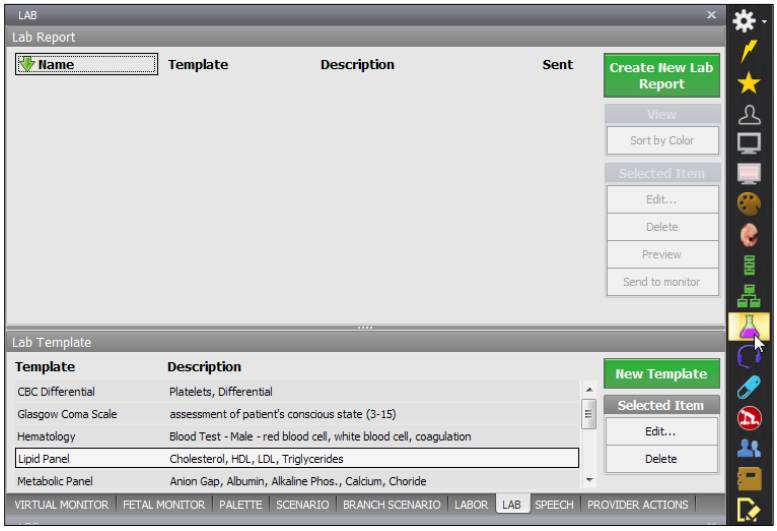
## MODELED THERAPY

The modeled therapy menu provides additional intervention options.

- Improve Gain - Adjust the slider to increase or decrease the cyanotic response to ventilations.
- Oxygen - Adjust the slider to administer oxygen to the fetus in liters per minute.
- Epinephrine - Administer epinephrine to the model. Set the epinephrine dose and then click “add”. Administering epinephrine increases the heart rate.
- Reset - Click “Reset” to clear the oxygen flow and the epinephrine dose onboard.

# Lab

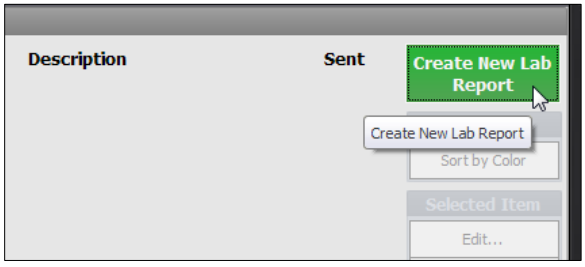
Use the Lab tab to create mock laboratory tests results to aid the participants during simulation. In addition, create new laboratory templates to supplement different types of scenarios. Once a laboratory report is created, send the file to the virtual monitor screen for the provider access during the exercise.



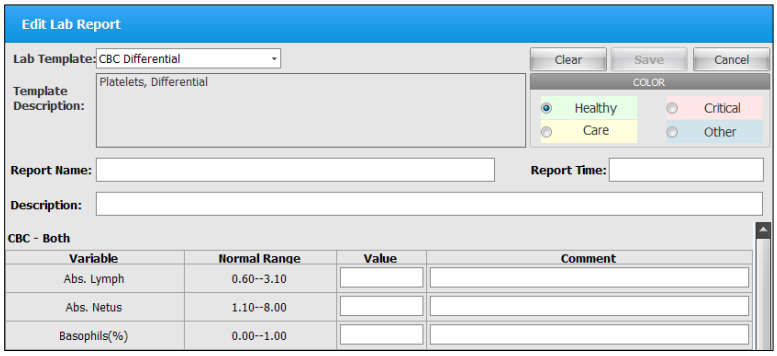

## CREATING A LAB REPORT

To create a new lab report with mock test results:

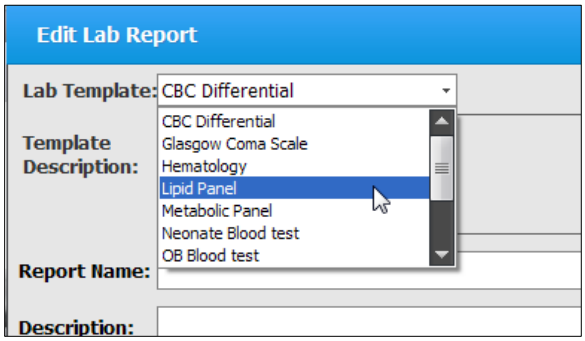
1. Click “Create a New Lab Report” on the right panel.



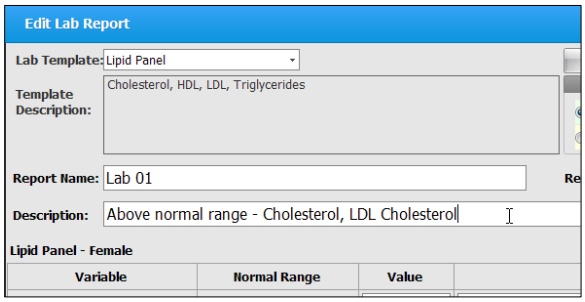

The “Edit Lab Report” window is displayed.



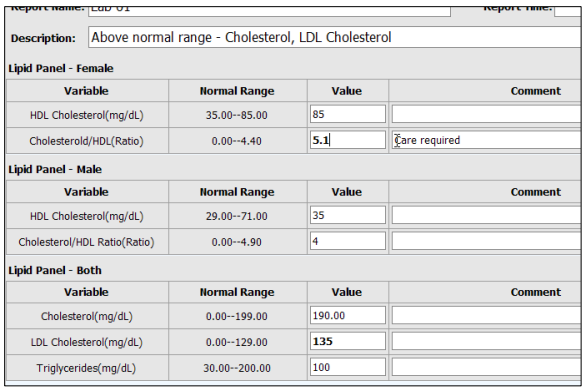
2. Select a “Lab Template” from the drop down menu.



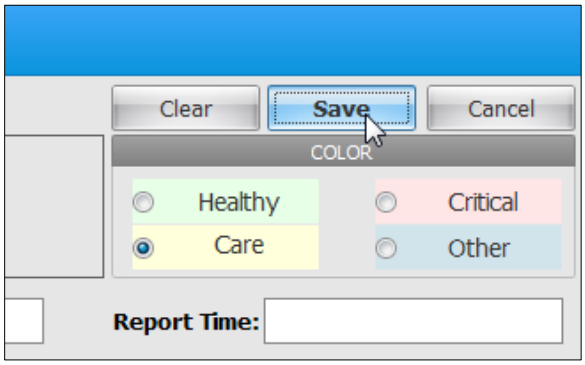

3. Enter a report name, a report time, and a description. In addition, select a color tag for the lab report on the right panel. Color tags aid the sorting of lab reports on the report list window.



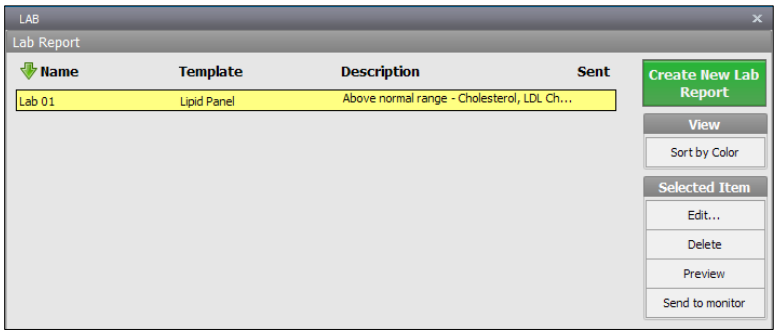

4. Enter the test results in the “Value” column. Include any comments associated with the test performed.



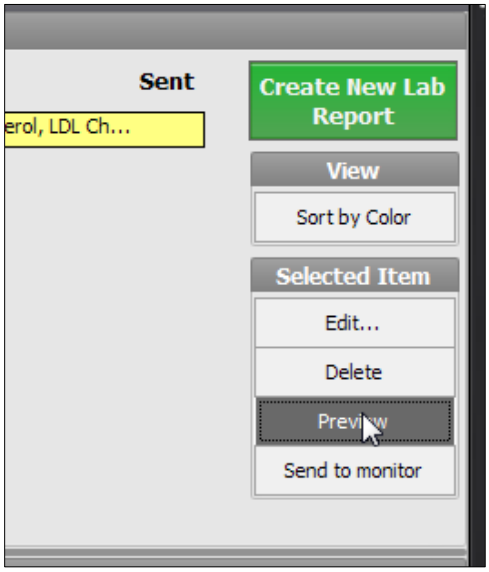

5. Click “Save” to create the lab report.



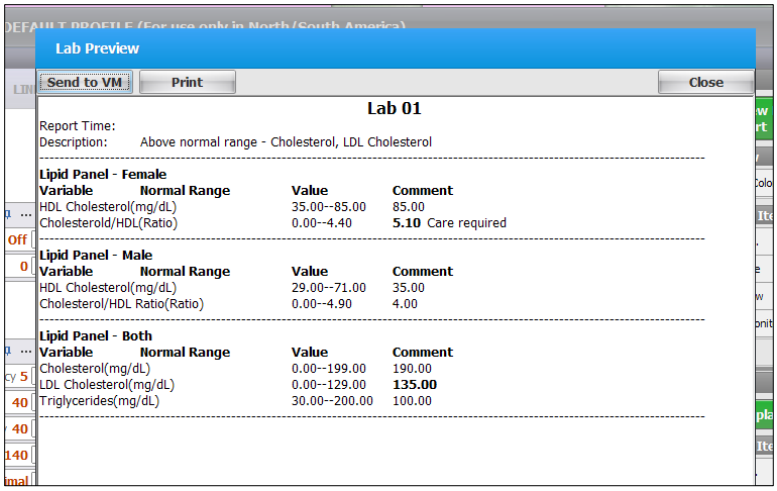
The newly created lab report is now listed in the “Lab Reports” section. Sort lab reports by name, template, description, or color tag.




6. Click “Preview” to review the final lab report.




The preview window displays the test results how the provider will see them on the virtual monitor screen. If the computer is connected to a printer, click PRINT to create a hard copy.

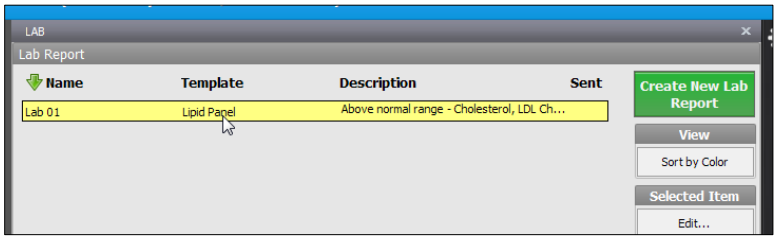


## SEND TO MONITOR

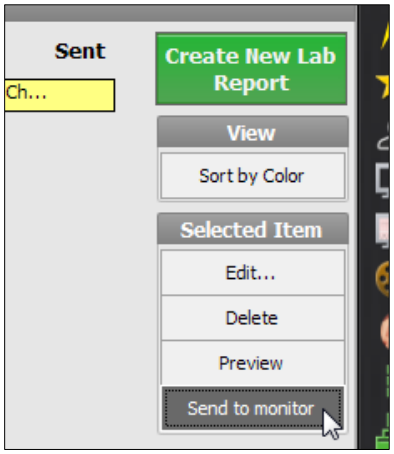
Send the completed lab report to the virtual monitor screen to assist the care provider.

To transfer the lab report to the virtual monitor screen:

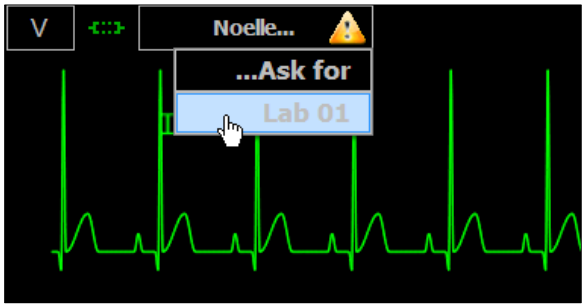
1. First, select the report from the lab reports list.



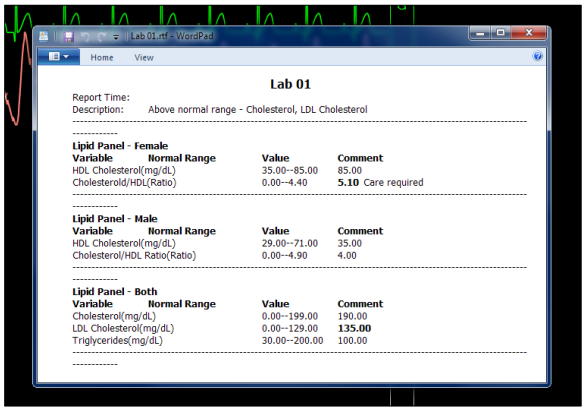

2. Click “Send to Monitor” button to transfer the lab report to the virtual monitor.



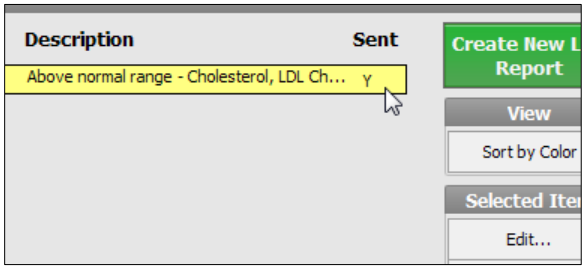

3. An exclamation icon notifies the provider a file is ready for access on the Gaumard Monitors. Instruct the participant to click the patient menu drop down and select the lab report.



4. The lab report opens using the system's default application.




5. The letter Y represents a shared document. Click the "Stop Sharing button" on the right panel to remove the lab report items from the Gaumard Monitors menu.



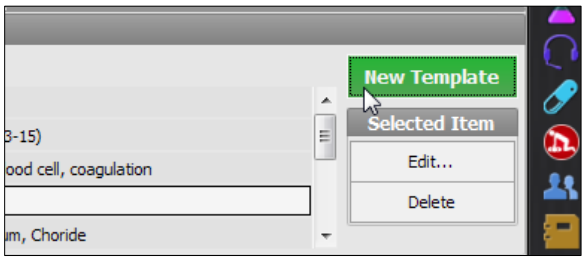

An editable copy of the lab report is stored inside the Gaumard_UI folder on the computer's home screen. Go to page 109 for information on how to access other files from the Gaumard Monitor screen.

## CREATING A LAB TEMPLATE

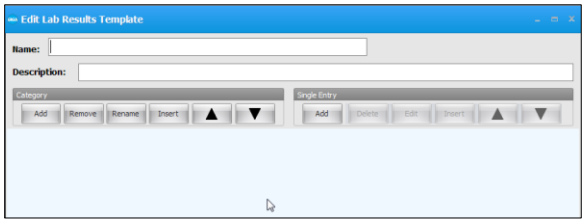
Build new lab templates to supplement new scenarios.

To create a new laboratory test template:

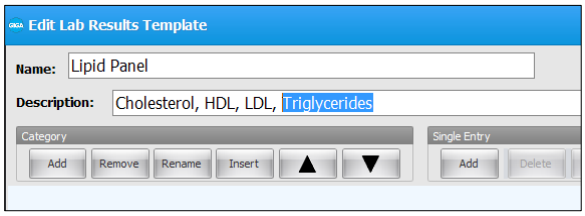
1. Navigate to the bottom of the tab and click “New Template”.



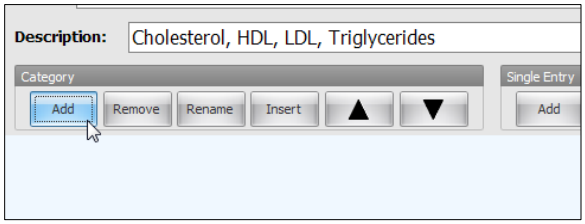

The “Edit Lab Results Template” window is displayed.



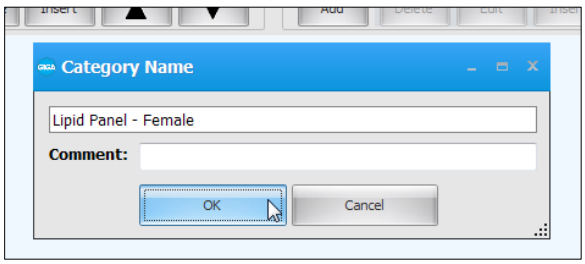

2. Enter a name for the new template followed by a description.



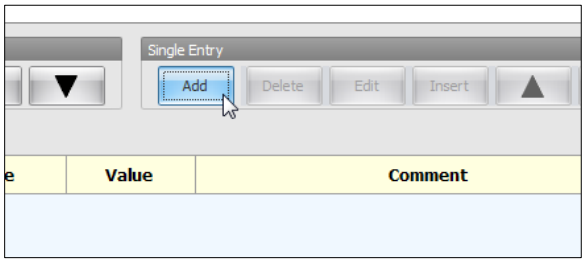

3. Create categories to group a series of tests in a lab report. Click “Add” to create a new category.



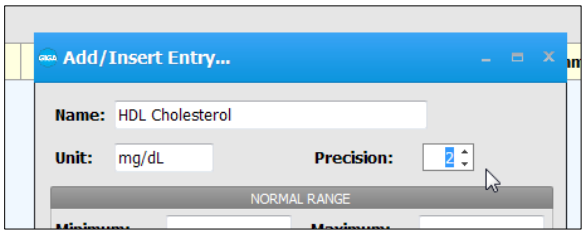

4. Enter the name of the category and click “OK”.



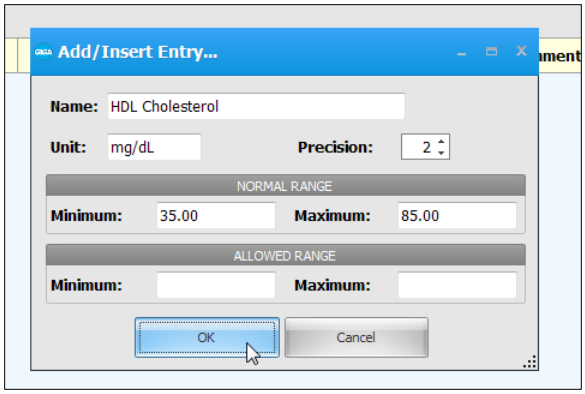
5. Click “add” on the “Single Entry” menu to create a new test under the current category.



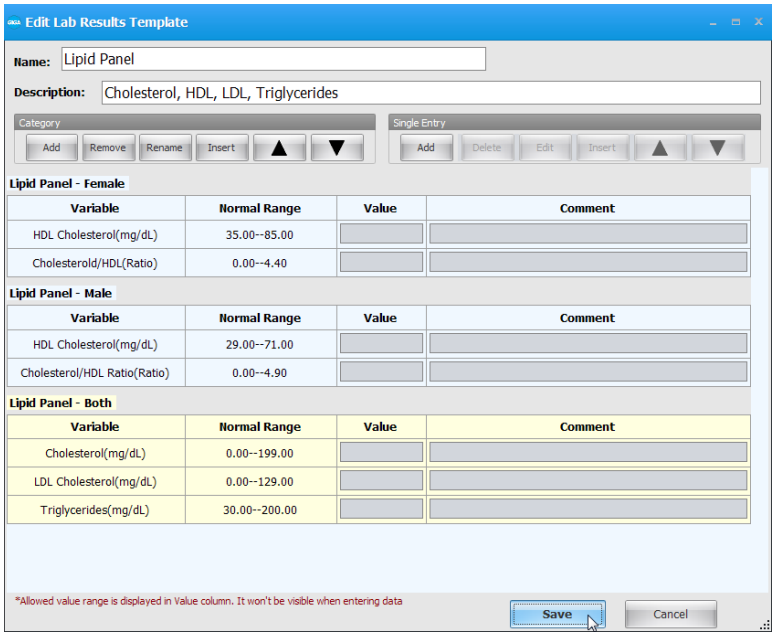

6. Enter the name of the test, the unit, and decimal precision.



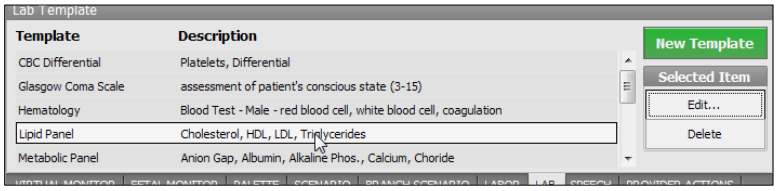

7. Enter a “Normal Range” the provider to reference. The normal range is visible on the lab report. The “Allowed Range” restricts the minimum and maximum value that can be entered a test result. Click “OK” to add the new test.



8. Repeat the process to add more tests and categories. Click “Save” to create the new lab template.



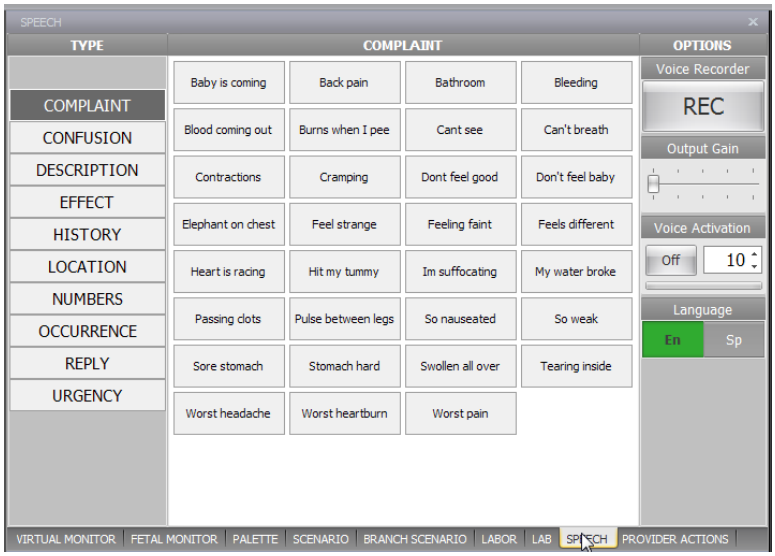

The new template is listed on the “Lab Template” section at the bottom of the Lab tab. Use the buttons on the left panel to edit or delete lab templates.



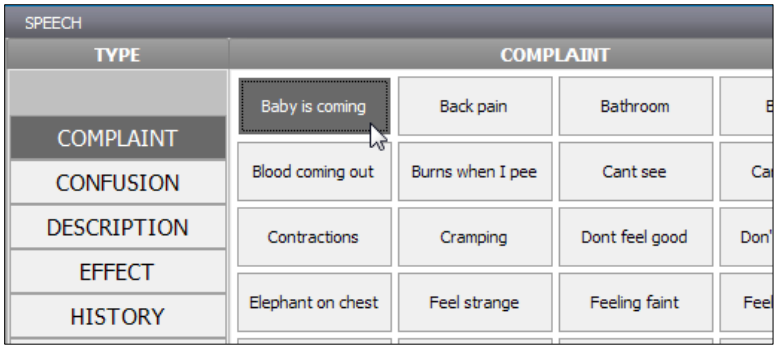
# Speech

## PRERECORDED SOUNDS

Select the Speech tab to command the simulator to speak aloud. The collection of speech and other sounds covers a wide range scenarios. In addition, use the streaming voice option to speak as the simulator's voice and listen to the student responses.




Click the phrase button to have the simulator speak the phrase aloud. Alternatively, program the phrases into a scenario to have the simulator speak automatically (page 63).

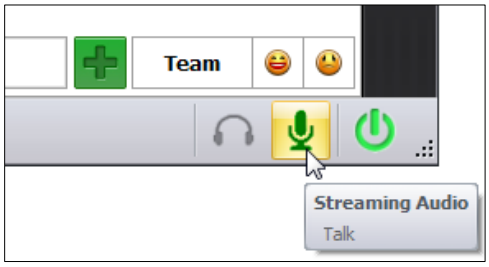


## STREAMING AUDIO

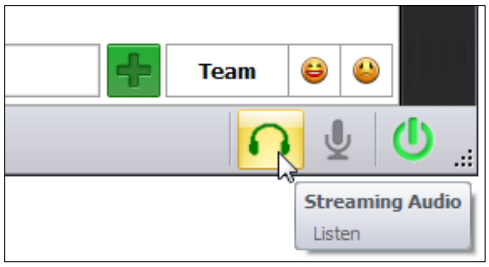
Use the streaming voice to speak as the simulator's voice and engage the provider in a realistic conversation. In addition, record and save custom phrases to be played back during scenarios automatically.

Ensure that the headset and microphone is connected to the PC before starting the GIGA software. The headset minimizes echo and environmental noise to improve audio quality.

Click the "talk" icon and speak in to the headset to talk as the simulator's voice.

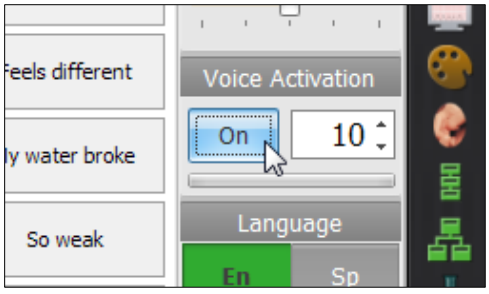



To listen to the provider's response, click "Listen".




## VOICE ACTIVATION

Enable the "Voice Activation" feature to switch to the talk mode when voice input is detected automatically. Adjust the mic threshold to set the voice activation sensitivity. The higher the threshold, the less sensitive the microphone is; and vice versa. For instance, if the threshold is set to high, the voice input volume must be high to trigger the voice activation.



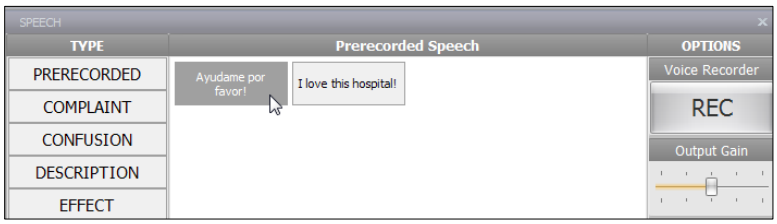
## VOICE CLARITY

Voice clarity can be affected by several factors. To improve audio for the listen and talk options please review the following information.

- Connect the headset to the computer before activating the Gaumard control software
- Connect to the simulator using the strongest channel. Assign separate channels to each simulator if working with multiple simulators at a time.
- Adjust the physical mic control attached to the headset cable.
- Adjust the streaming voice “Output Gain” To raise the output gain in increments, tap and hold the control, then slide to the desired level. Higher gain levels increase the talk volume but degrade the audio quality.
- Fine-tune the Windows® microphone settings.

## RECORDING NEW PHRASES

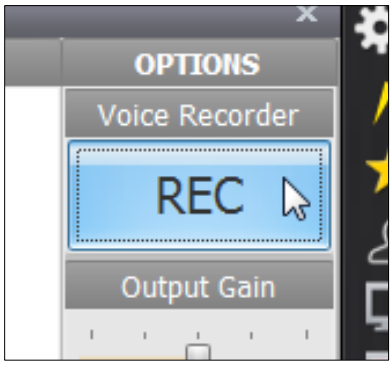
Create a library of custom recordings to play back as the simulator’s voice using the “Prerecorded Speech” feature.



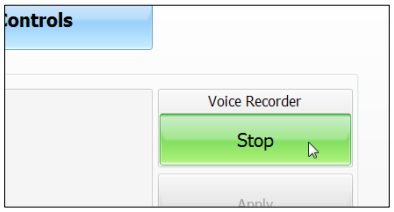

## VOICE RECORDER

To record a new custom phrase:

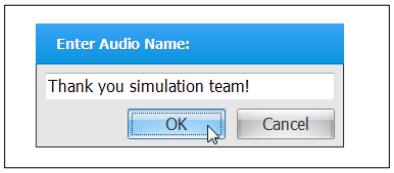
1. Click the “Rec” button and speak into the microphone.



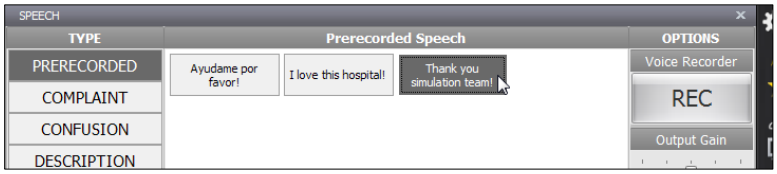

2. Press “Stop” to finish recording.



3. Enter a name and click “OK.”



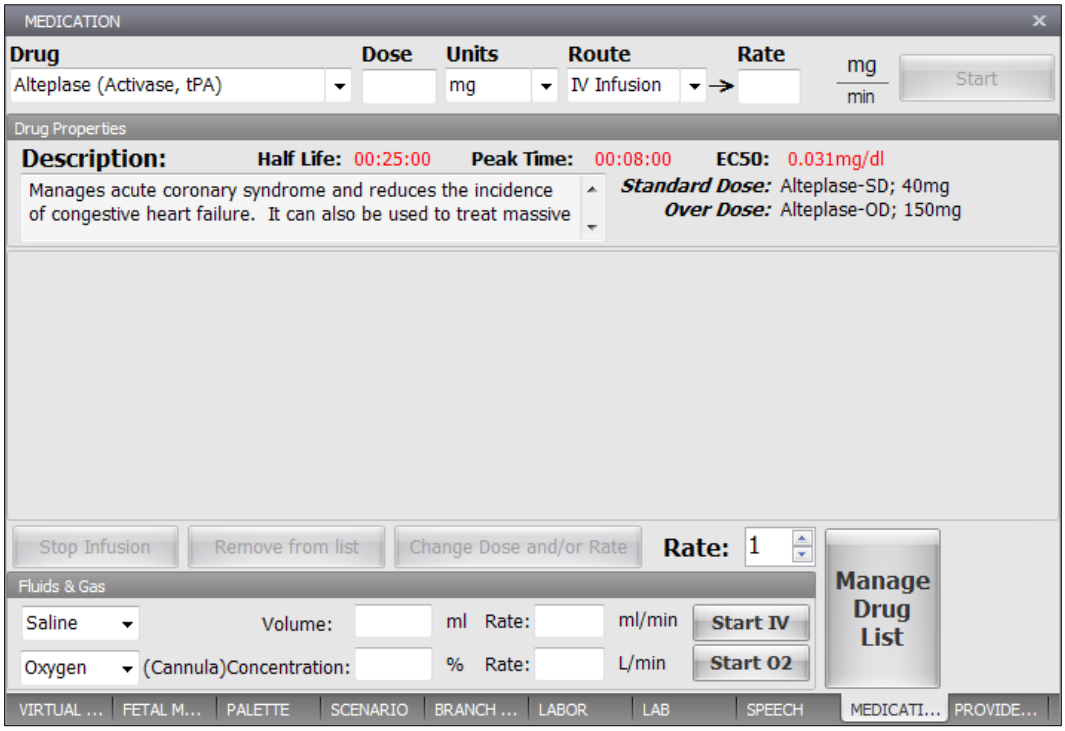

4. The new phrase is listed under the “Prerecorded Speech” menu.



# Medication (Auto Mode)

The Medication tab is exclusive to the automatic operating mode. Use the medication controls to simulate the physiological effects and reactions of medications administered to the patient model. To simulate the effects of a medication, the GIGA software processes the drug's properties, dosage, and interactions, and then adjusts the patient vital signs accordingly.

The Meds Profile includes a library of preprogrammed drugs. The built in drug editor allows facilitators to stay current with new medications or make changes to the properties of the existing drugs. All of the preprogrammed drugs included in the Med Profile library are found in the 2008 Handbook of Emergency Cardiovascular Care published by the American Heart Association.

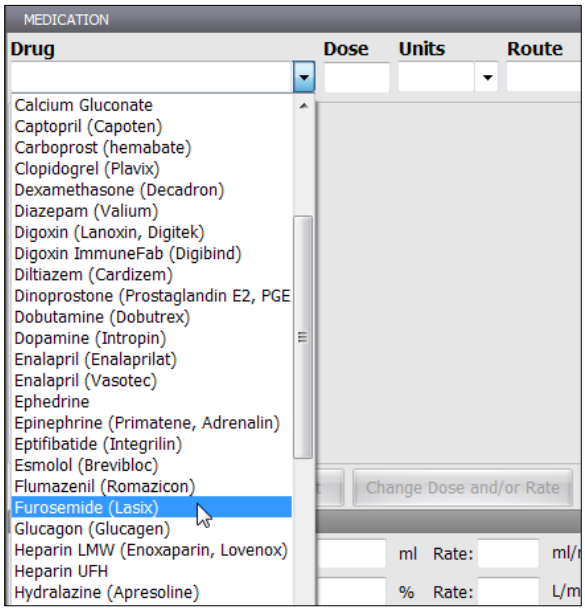


## ADMINISTERING A MEDICATION

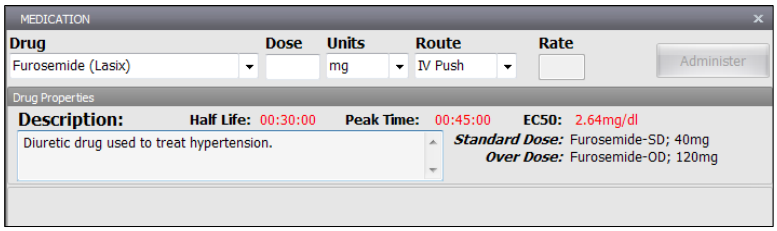
Follow this guide to administer a medication directly from the medication tab. If the simulator is equipped with a Drug Recognition Arm, reference the directions for use guide for information on how to administer medications using the tagged syringes.

To administer a medication from the Medication tab:

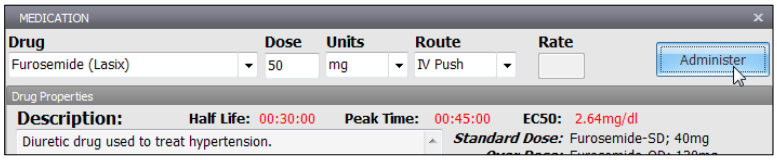
1. Select the medication from the Drug drop down menu.



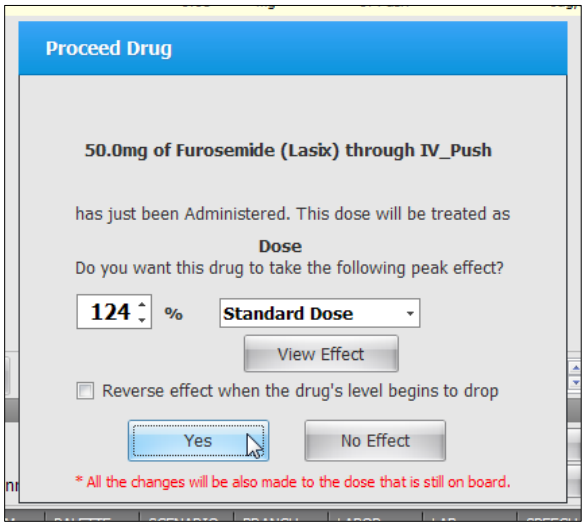

A brief description is displayed at the top of the window. The half-life, peak time and drug concentration values are listed in addition to the standard and over dose dosage.




2. Enter the dose, units, route and rate (if applicable), and click “Administer”.

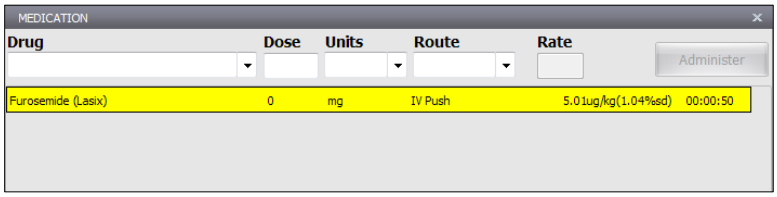


3. The “Proceed Drug” window prompts to confirm the dosage effects before applying them. Adjust the peak effect percentage and/or the dosage effect, and then click “Yes” to apply the effects

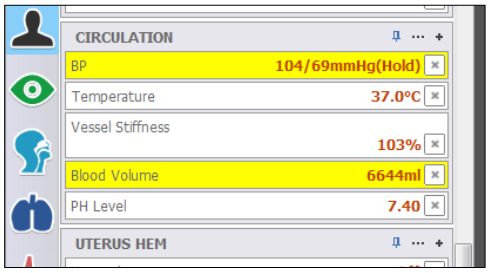



To turn off the Proceed Drug prompt, click Setup>Auto Responses and change the Drug Model Effect settings to “Auto”.

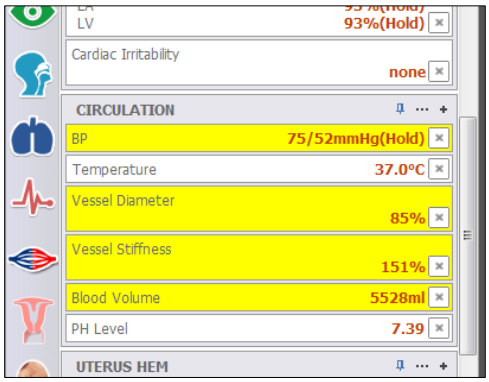
The administered drug panel displays information on dosage rate, does administered, and total time of administration.



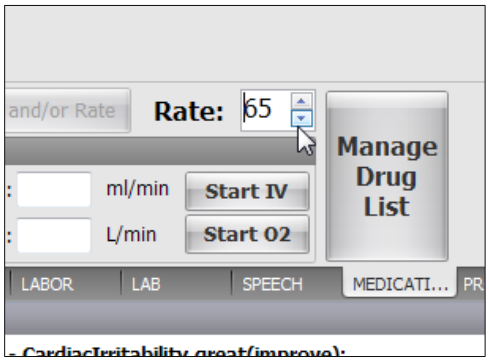
The Auto mode adjusts the patient's vital signs to simulate the effects of the drug automatically.



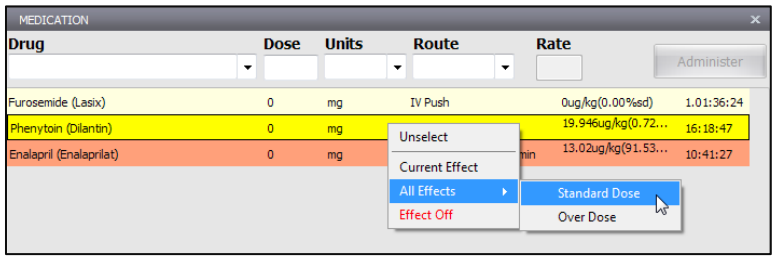

The blood pressure continues to decrease in response to the medication's properties.




4. Increase the "Rate" factor to speed up the effect of a medication on the patient model.




5. Right click on the drug entry to access additional options.

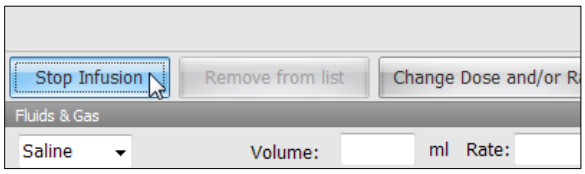



Select from the following options.

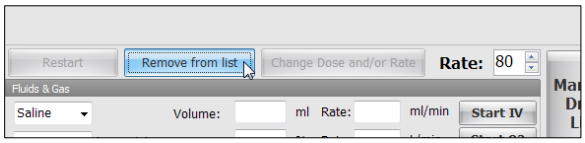
- **Unselect** - Unselect a highlighted drug
- **Current Effects** - View the effect on the patient's vital signs
- **All effects -** View all the available programmed drug effects for this medication
- **Drug effect toggle** -Turn the drug effects on the patient model on or off

## REMOVING A MEDICATION

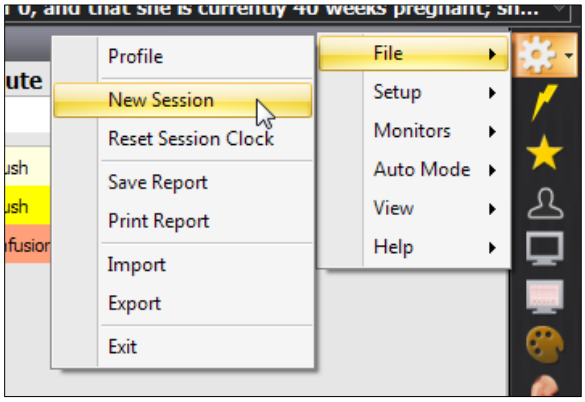
Drugs cannot be removed from the list during the administration process with the exception of IV infusions. To stop an IV infusion before it is finished, highlight the medication from the list, and click stop.




After the dose administration is complete, select the drug and click “Remove from list”.

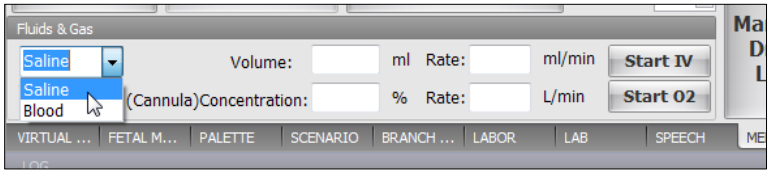



To remove all the medications from the list and reset the effects on the patient model, click “File > New Session”.

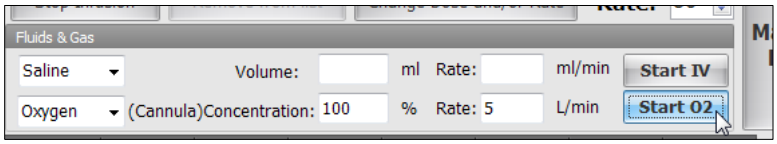



## FLUID & GAS

The automatic mode can process the administration of gas and/or fluids to the patient model.

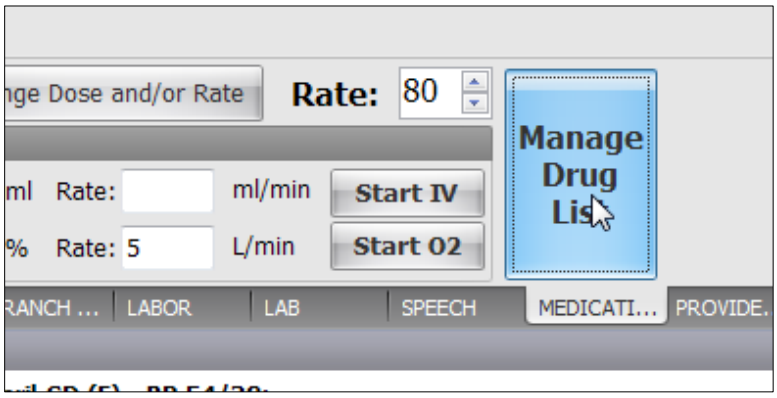



Select from saline, blood, or oxygen and the volume/concentration and rate. Click on “Start” to administer.

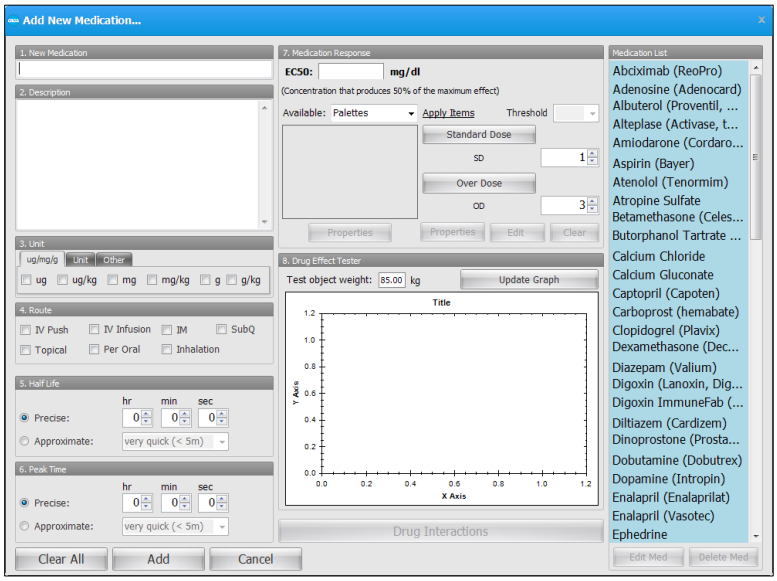


## DRUG LIST MANAGER

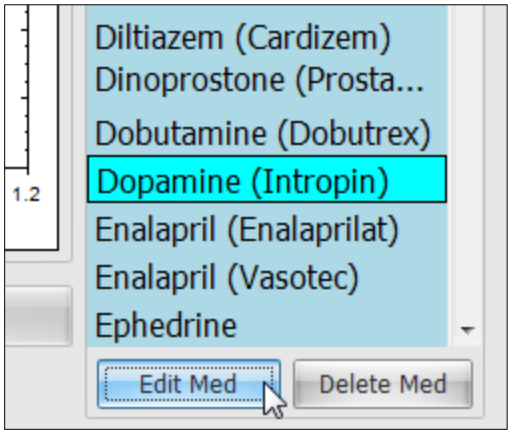
Click the “Manage Drug List” button to open the “Add New Medication…” manager.




Use the “Add New Medication” manager to add new medications, edit medication properties, update existing items, and program medication interactions.




Select a medication from the Medication List and click “edit” to view the medication’s properties.



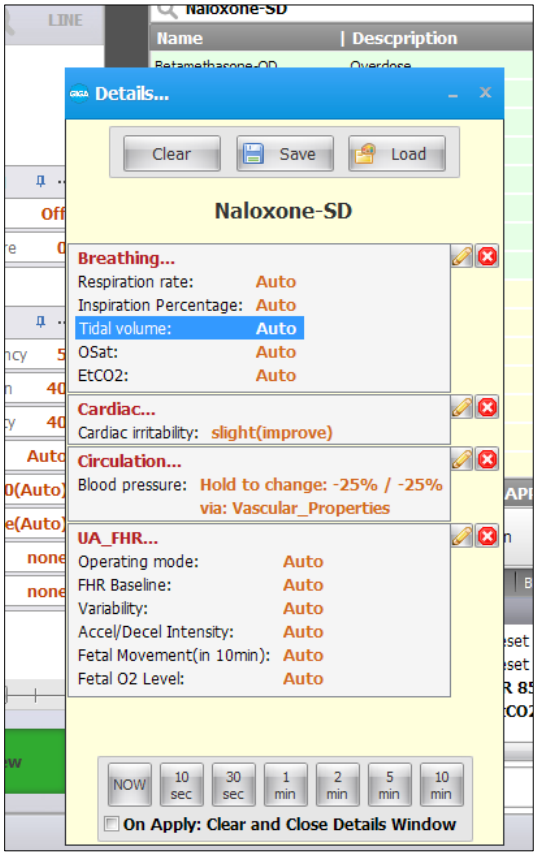
## CREATING NEW MEDICATION

Each medication is programmed with two palette items. One palette item is programmed with the vital signs adjustments to simulate the effects of a standard dose (SD), and the other palette item is programmed with the effects of an over dose (OD). Additional information such as half-life, peak time, and route is also programmed into the medication properties.

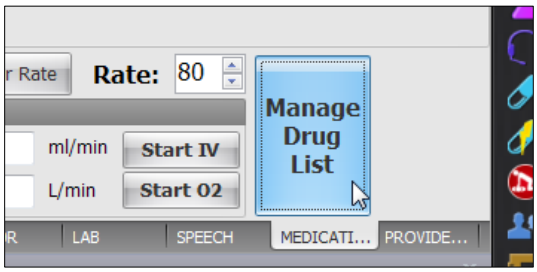
When the medication is administered to the patient, the software applies the palette item associated with the dose threshold. The Auto Mode adjusts the vital signs changed by the palette item gradually to simulate the medication's effect on the patient.

To create a new medication:

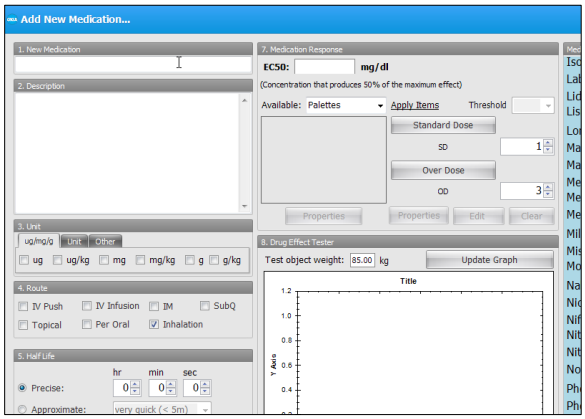
1. Create a palette item using details page for the effects of a standard dose (SD). Then, repeat the process to create a palette item for the effects of an over dose (OD). For general information on how to create palette items, please go to page 27.



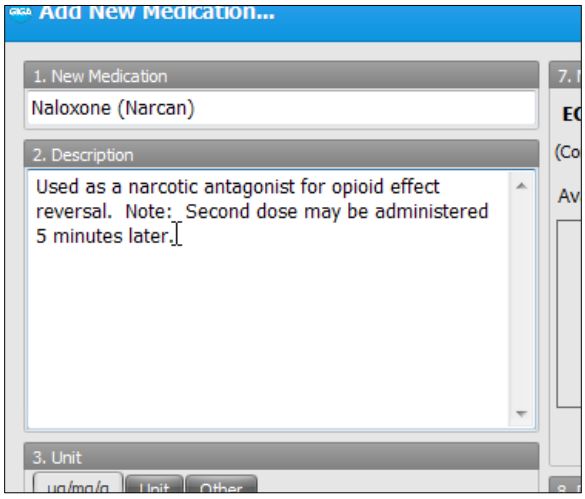

2. After dose effect palettes are created using the Details controls, go to the drug tab and click the "Manage Drug List" button.



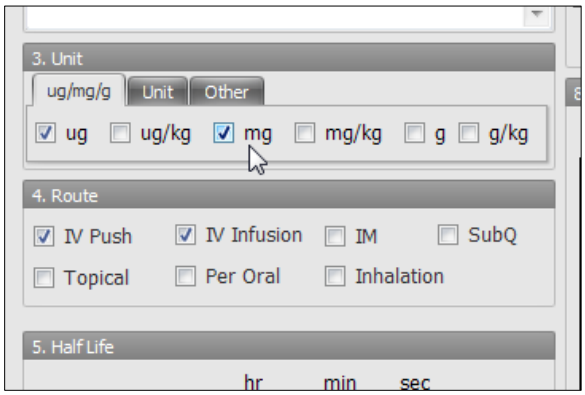
The Add New Medication window is displayed.



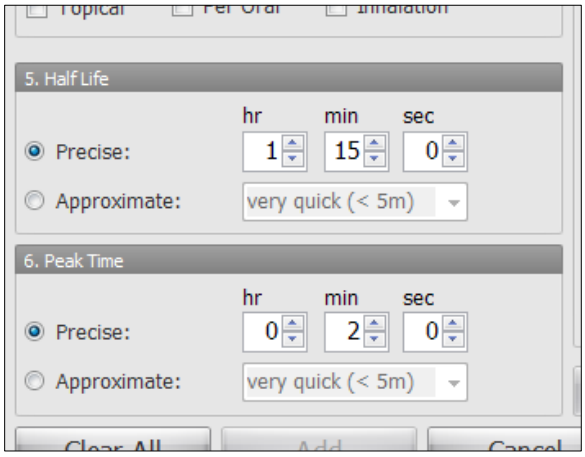

3. Type the name of the new medication ( e.g. Generic Name (Brand Name)) and enter the medication's description and the dosage information



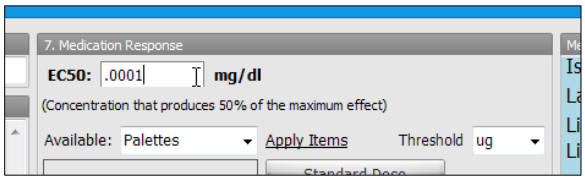

4. Select the units and the administration route.



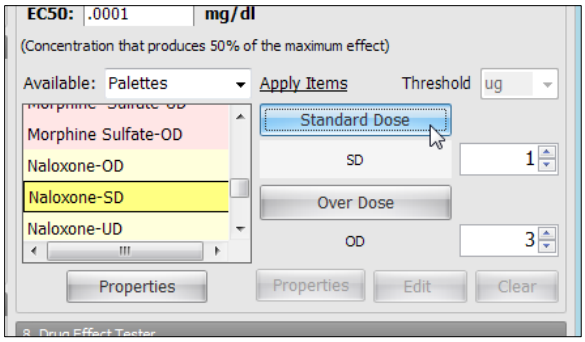
5. Enter the drug's Half Life and Peak time.



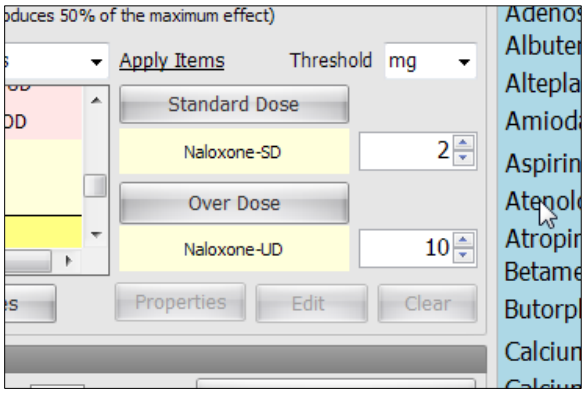

6. Enter half-maximal effective concentration.



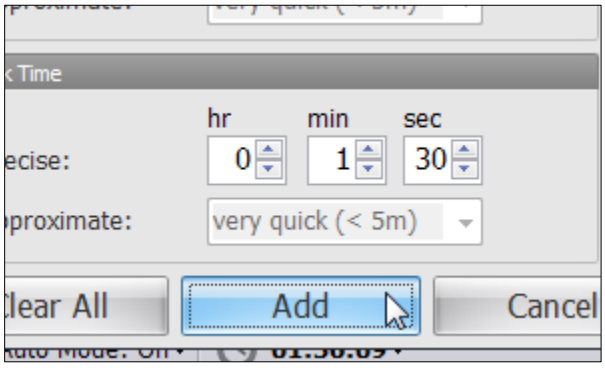

7. Select the standard dose (SD) effect palette created earlier and then click the applicable dosage button to assign it to the threshold. Repeat this step to assign the over dose (OD) effect palette to the Over Dose threshold.




8. Select the threshold unit and set the dosage amount that will trigger the programmed palette effect.

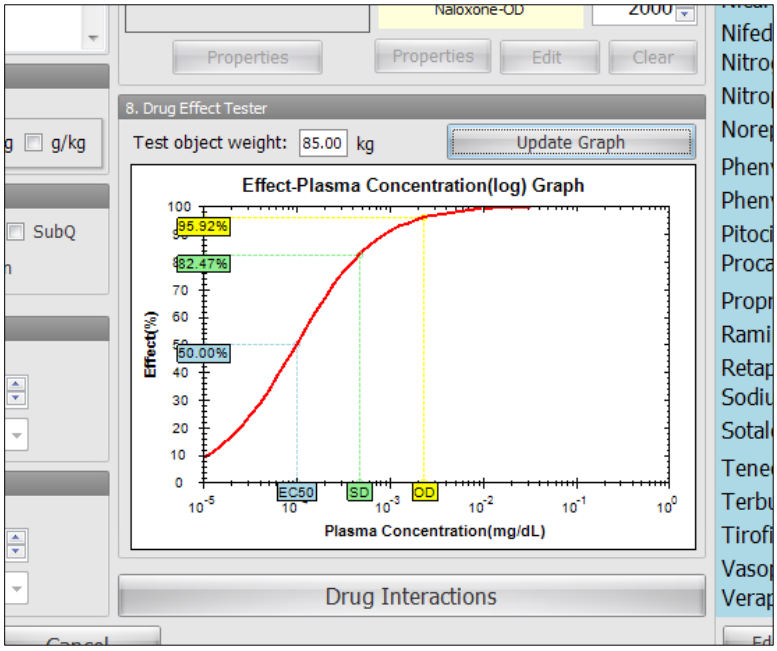


9. Click “Add” to save the new medication to the Medication List library.



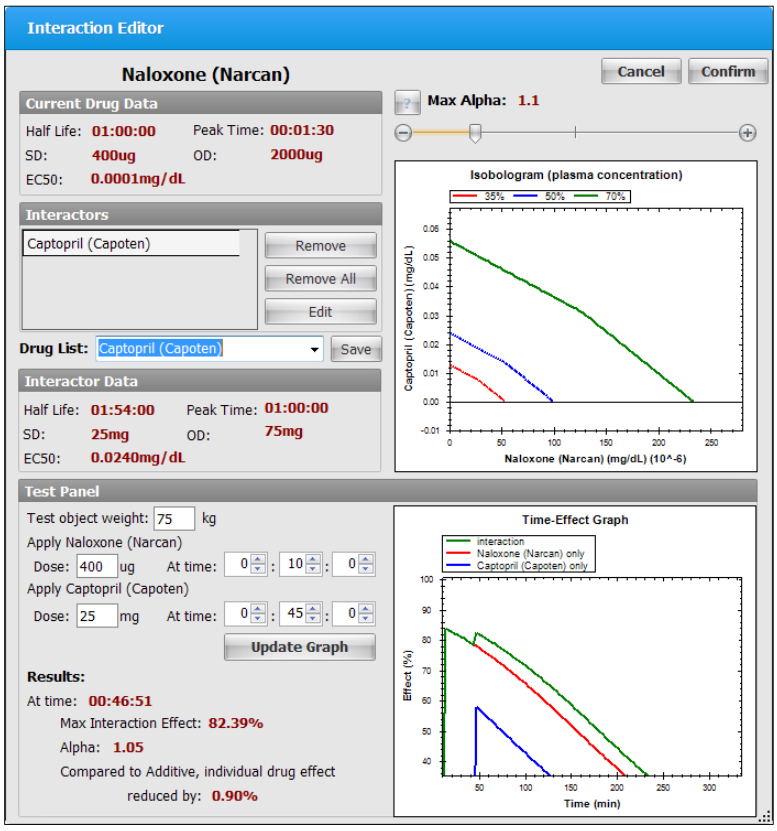

## DRUG EFFECT TESTER

After configuring the drug properties using the “Add New Medication...” menu, click the “Update Graph” button to generate the effect-plasma concentration results. Continue to the next section to program interactors for this drug.

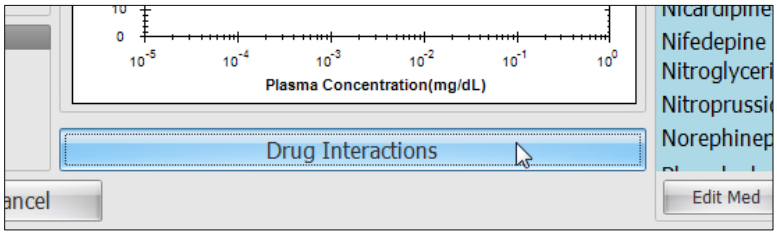


## DRUG INTERACTION EDITOR

Use the “Interaction Editor” window to program drug interactions. When two or more medications preprogrammed to interact are administered, the physiologic model will adjust vital signs to simulate interaction effect.



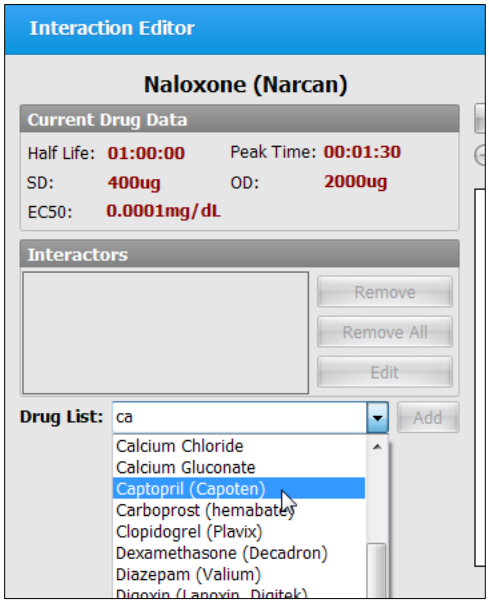

Click “Drug Interactions” on the “Add New Medication…” window to open the Drug Interaction editor.



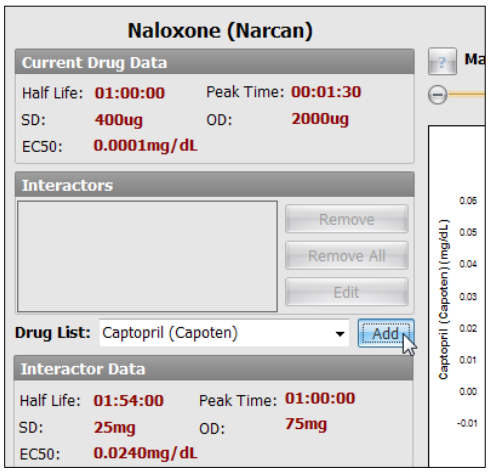
## PROGRAMMING INTERACTORS

To program one or more medications to interact with the current drug:

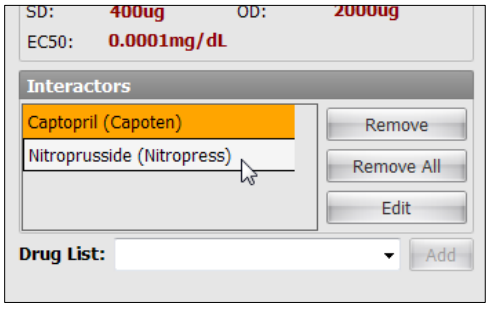
1. Select the interactor from the drug list click “Add”:



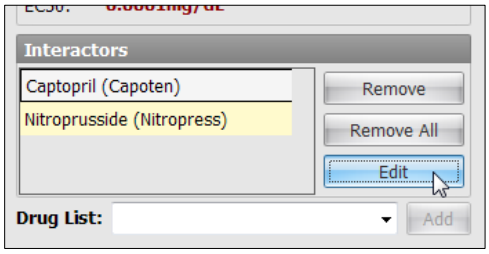

Information about the interactor drug is displayed in the Interactor Data window.



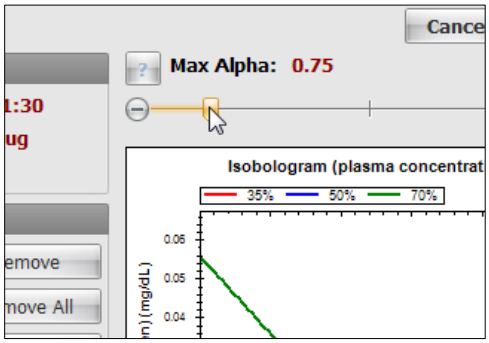

2. The drug is included into the interactors list. Repeat the process to add more drugs to the interactors list if necessary.



3. Select the interactor and click “Edit”

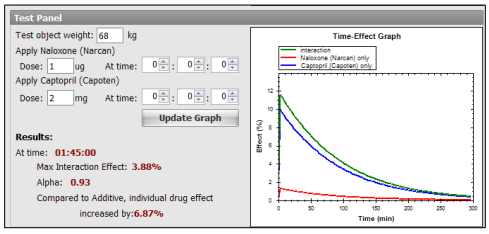



4. Adjust the **Max Alpha** to modify the type of interactivity effect. Monitor the graph for a visual model of the plasma concentration.
    - **Alpha** = 1: Additive
    - **Alpha** < 1: Synergistic/Induction
    - **Alpha** > 1: Antagonistic/Inhibition



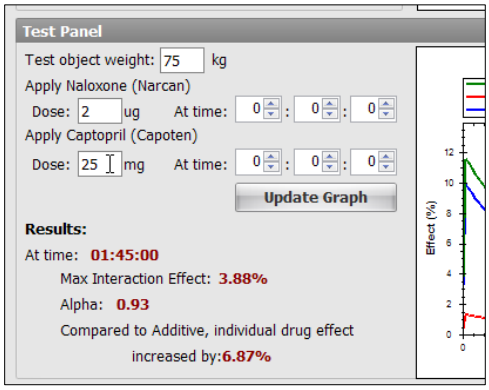

## TEST PANEL

Use the test panel to simulate the interaction between the drugs based on dosage and time of administration.

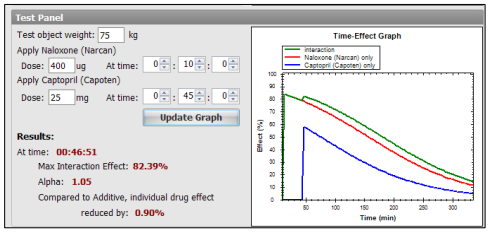


To simulate the medication interactivity using the test panel:

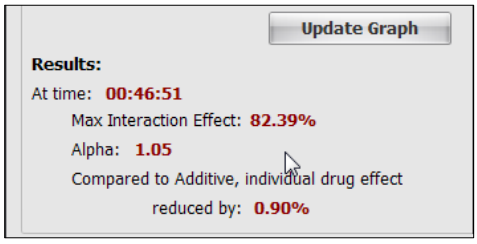
1. Enter the patient's weight and the dose for each drug.



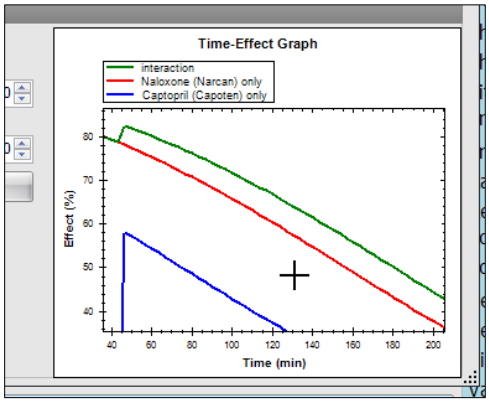

2. Enter the time of administration for each drug and click "Update Graph".



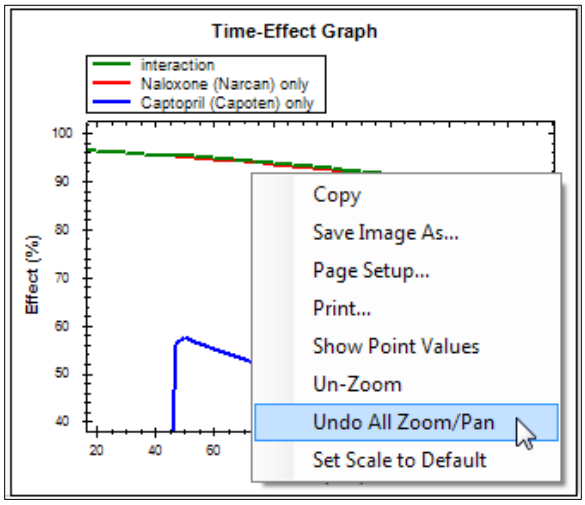

The results indicate that the maximum interaction effect (82.39 %) occurs at 00:46:51. The alpha at that point is 1.01 and the drug effect for each drug is reduced by 0.90%. Fine-tune the Max Alpha control and retest if the drug interaction effect is not realistic.



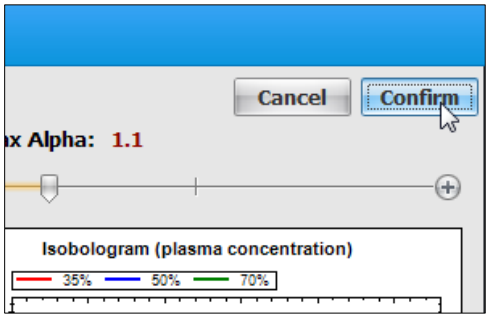

A time-effect graph is generated from the test results. Tap and hold to draw a zoom area.



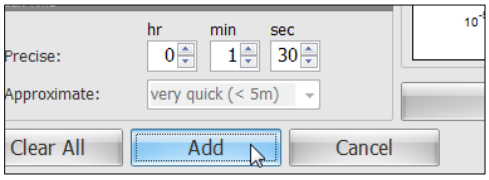
3. Right click anywhere on the graph access the zoon and print options.



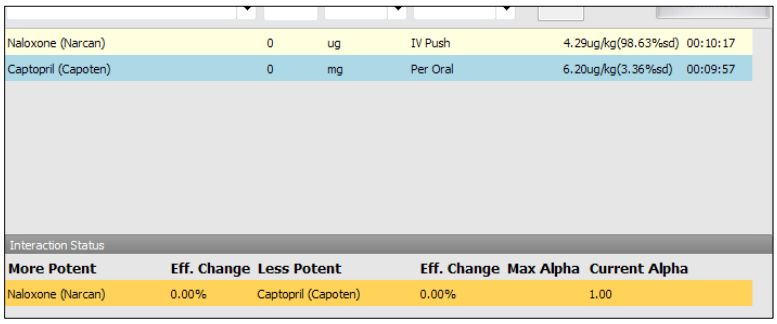

4. Click “Confirm” to save the settings.




5. Review all the properties of the new medication in the “Add New Medication…” window, and click “Add” to save the new changes.



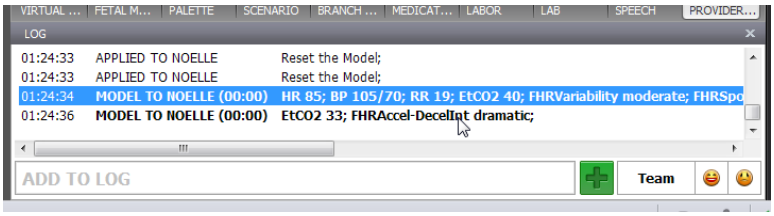

In the example below, two drugs preprogrammed to interact have been administered. The interaction information is listed in the Interaction Status panel.



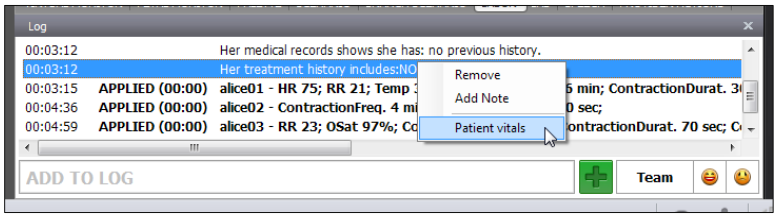
# Event Log

The event log records a time stamped entry of events that occur during the simulation session. It addition, every individual entry records a snapshot of the vital signs parameters at the time the event occurred. The text log records the following events:

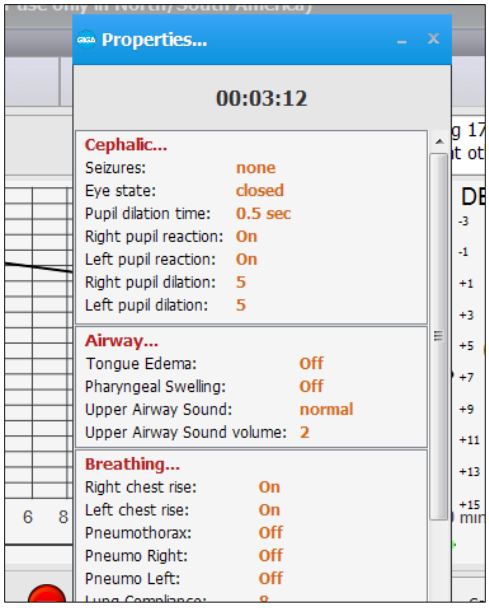
- Vital sign changes applied manually or made by scenario
- Events detected by onboard sensors (e.g. intubation sensor, defibrillation sites)
- Preprogrammed speech phrases
- Satisfactory or unsatisfactory evaluation
- Facilitator notes




Select an entry from the list and right click to view additional options.

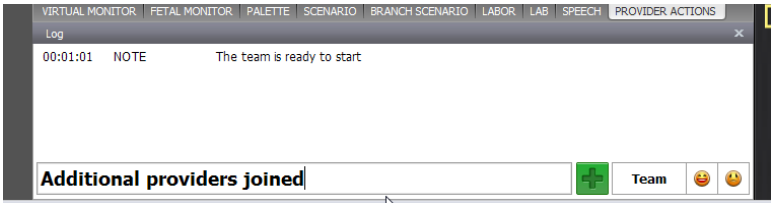



Select “patient vital signs” options to view a snapshot of the vital signs values when the event occurred.



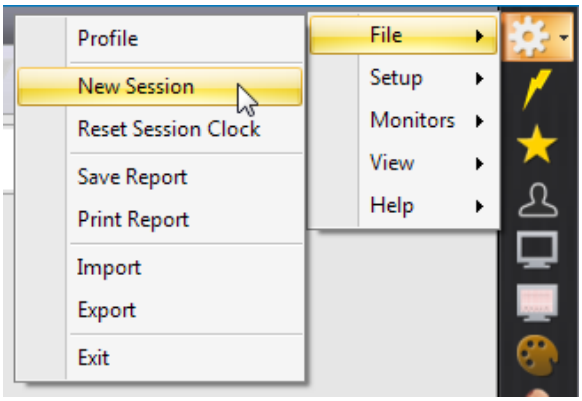
## ADDING NOTES

Enter notes into the “add to log” field to record notes manually. The information is categorized in the log as “NOTE”.




## CREATING A NEW SESSION LOG

The log event “time stamps” reference the GIGA session clock. At the start of a new simulation exercise, click File>New Session to reset the session clock 00:00:00, reset any vital parameters settings, and clear all the event entries.




## SAVING THE LOG INFORMATION

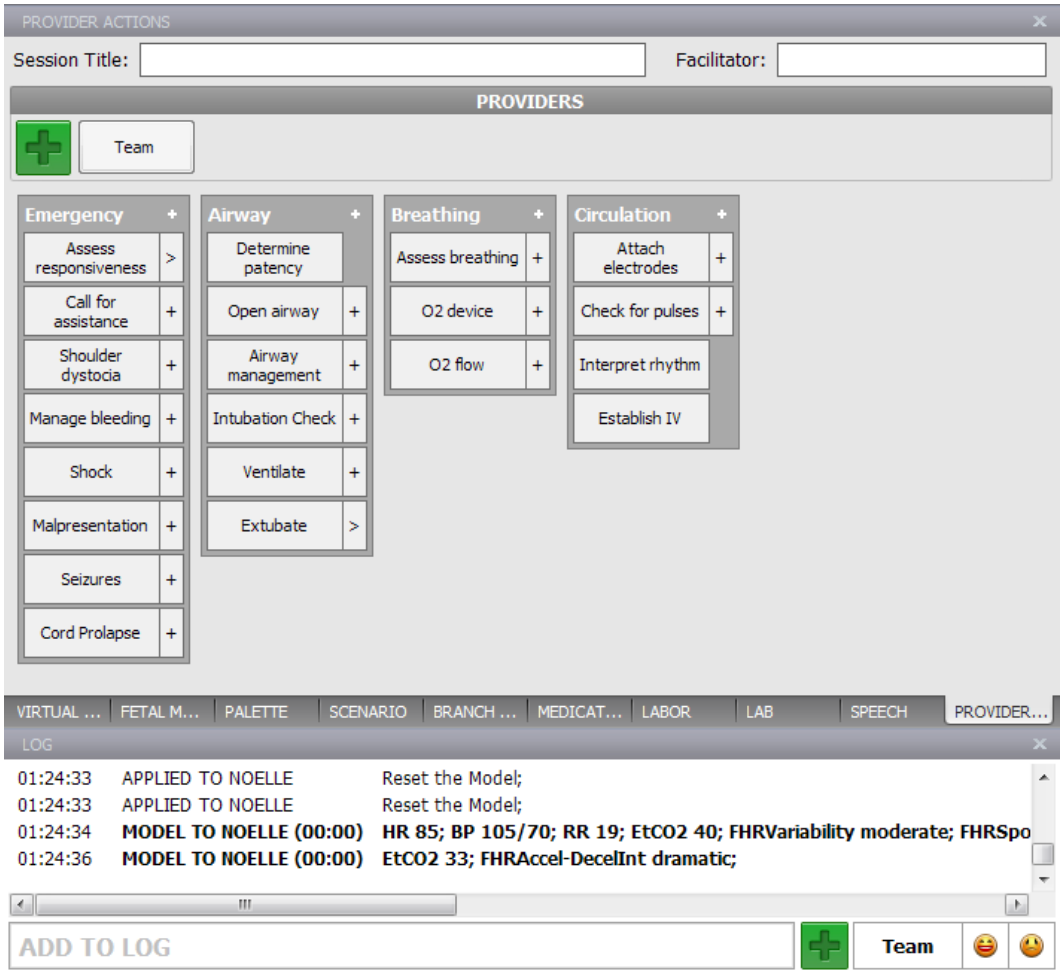
The log information is recorded in a rich text format. Export the log information to save a detailed history of the events that occurred during the session.

To save the session log report as a text file:

1. Click FILE>Save report
2. Enter a name for the report
3. Select the desired name and path, and click “Save”.

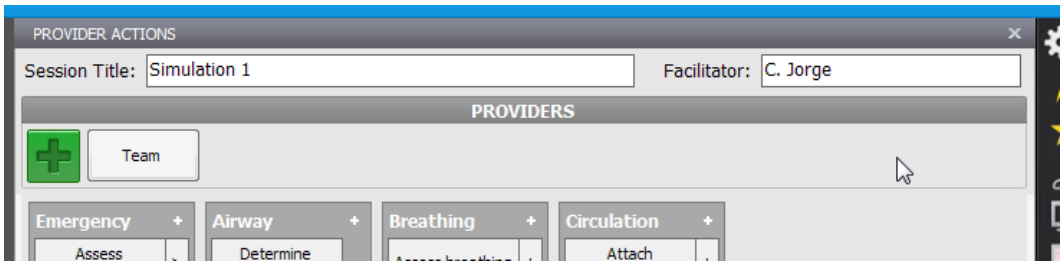
# Provider Actions

Use the Provider Actions tab to track actions performed by the provider manually. Each option on the Provider menu generates a time stamped entry in the text log below.




## SESSION INFORMATION

Enter the session tile information and the name of the facilitator at the start of the session. The information is included in the final log report.

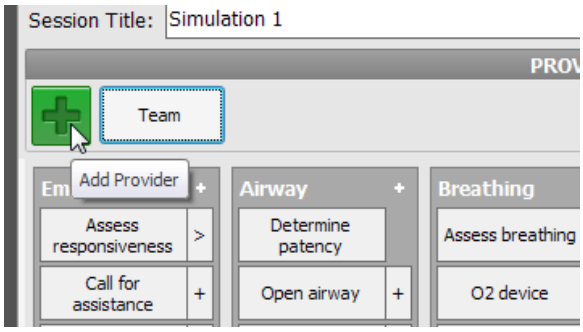


## TEAM LOGGING

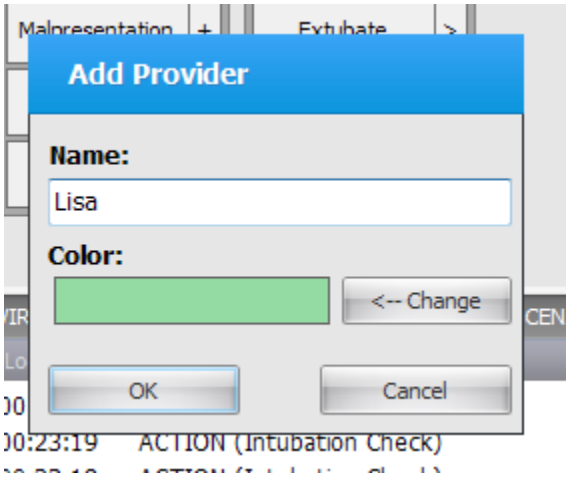
The team logging feature is used to track the individual actions of up to six providers manually. The feature records the name of the provider with the action as an event entry in the log.

To add a new provider to the Provider Actions" window:

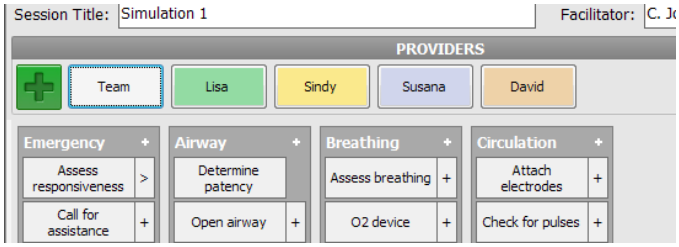
1. Click Add" button to add a new provider.




2. Enter the provider's name and select a color tag. Click OK to save the provider.

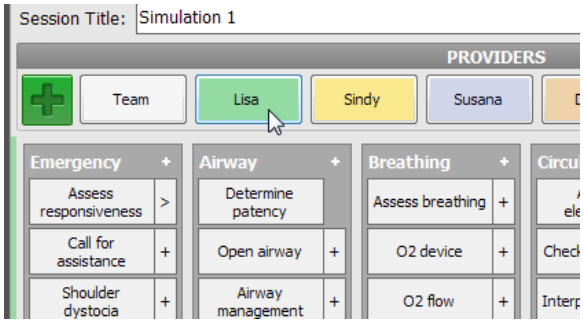



3. The provider is now added to the log tab. Repeat the steps to add up to six different providers.

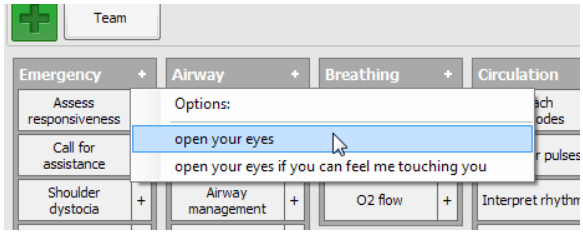


## TRACKING PROVIDER ACTIONS

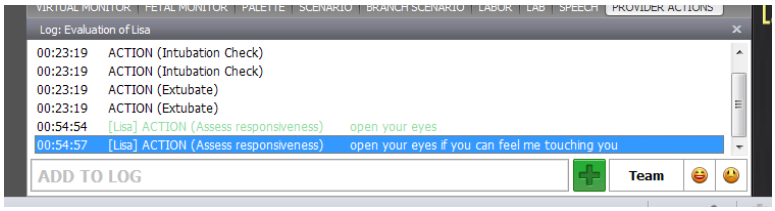
Provider actions can be tracked as a team or individually. Click the provider's name to set the provider as active and track the actions individually.



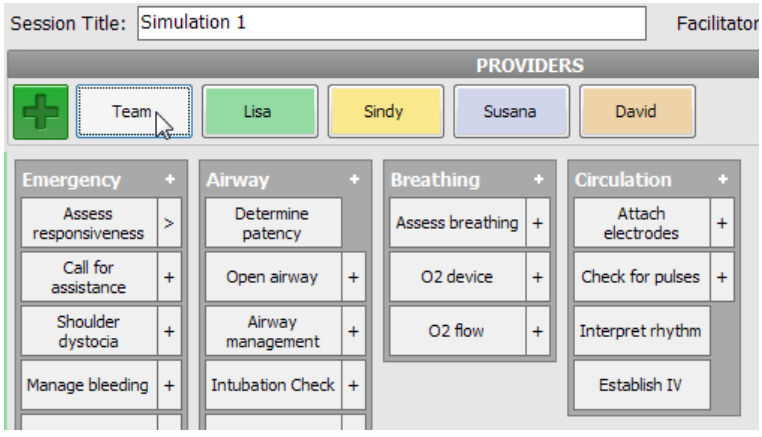

Click the appropriate option to track the action. For example, if the provider assesses the patient's responsiveness by requesting them to open their eyes, click the "Assess responsiveness" button and select "Open your eyes".




The following log entry is generated with the name of the active provider who performed the action:



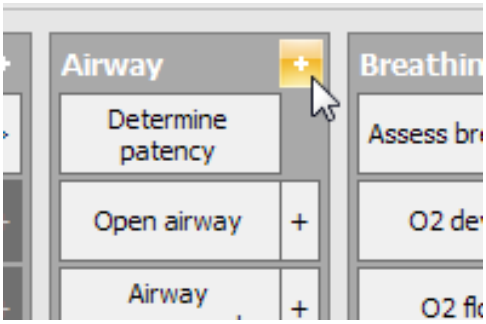

Click the "Team" button to deactivate the active provider and return to general logging. Right click the provider button to delete or rename a provider.



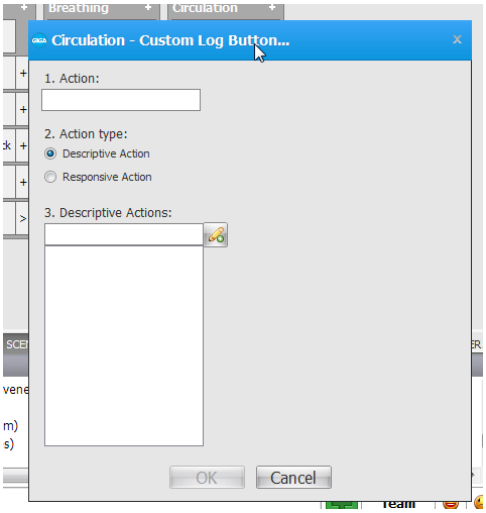
## CREATING NEW PROVIDER ACTION BUTTONS

Create new clickable provider action buttons to expand the library of actions. To add a new action to an existing category:

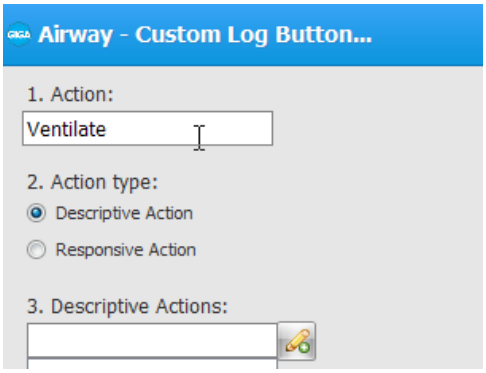
1. Click the + button on the category



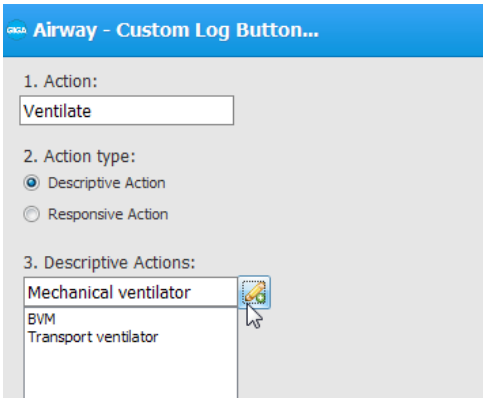

2. The category menu is displayed



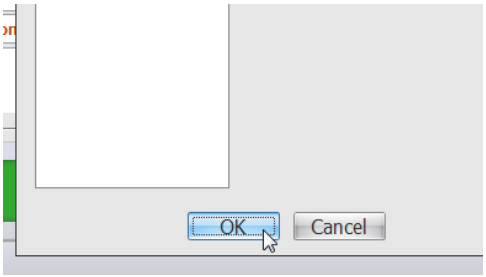

3. Enter the name of the action and select the type of action



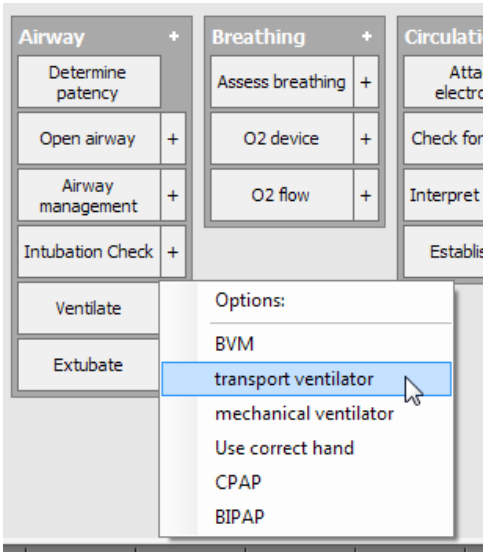
4. Enter a description for the possible action and click + to add. Repeat the process to add several actions.




5. Click OK to save

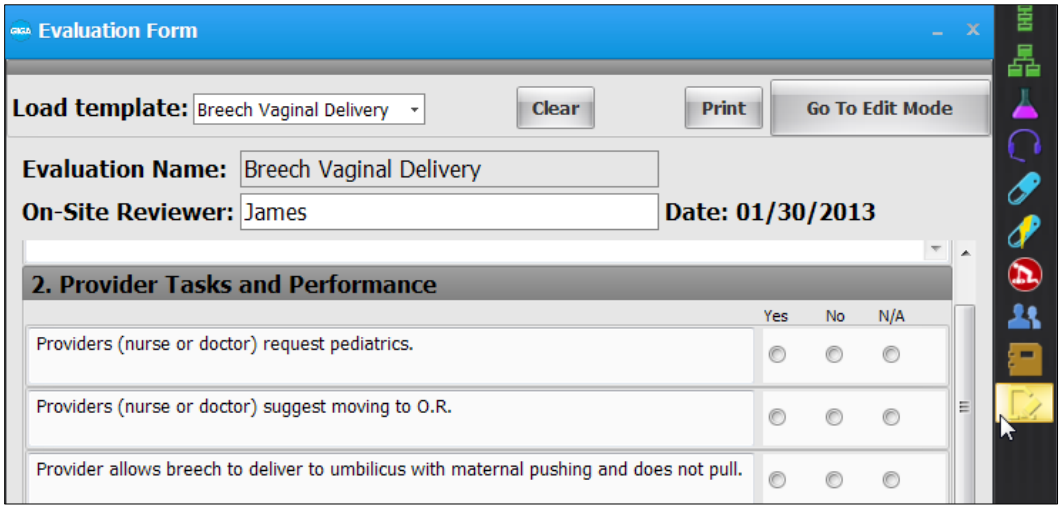



The new action is listed in the airway category.



# Evaluation Form

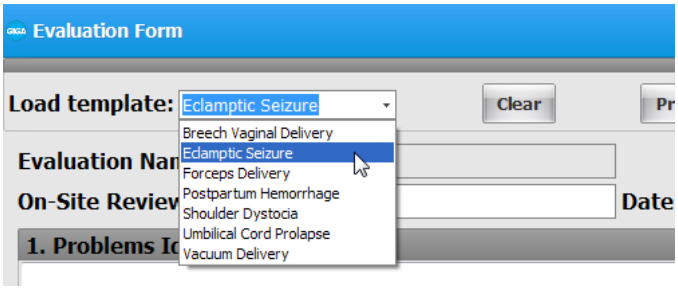
The evaluation tool assists facilitators in reporting and assessing provider interaction using a questionnaire form. A completed evaluation form can then be stored as a digital document or printed for distribution.



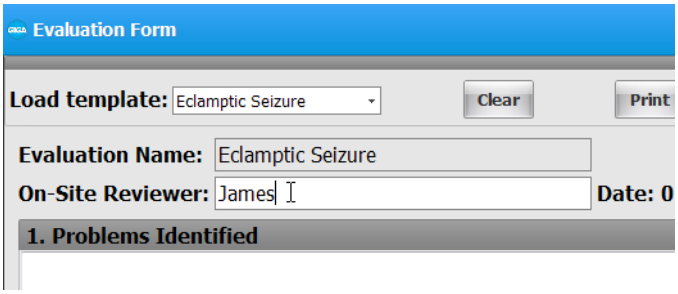

## COMPLETING AN EVALUATION

Several preprogrammed evaluation templates included in the GIGA software. Each template includes a set of multiple-choice questions, fill in the blank, and true or false questions for a variety of scenarios.

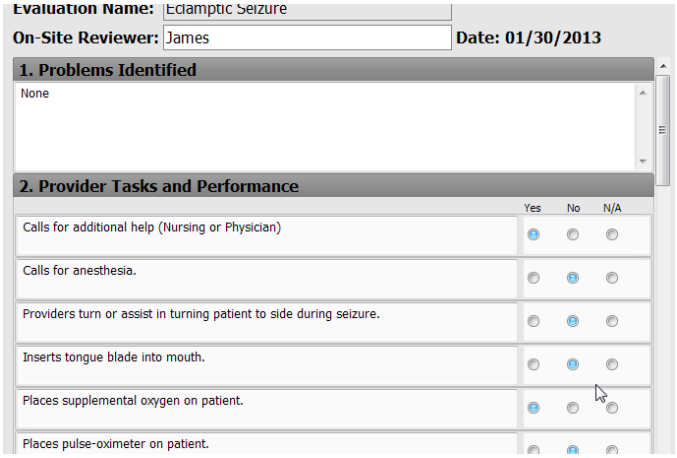
Select an evaluation template from the “Load template” drop down to begin.



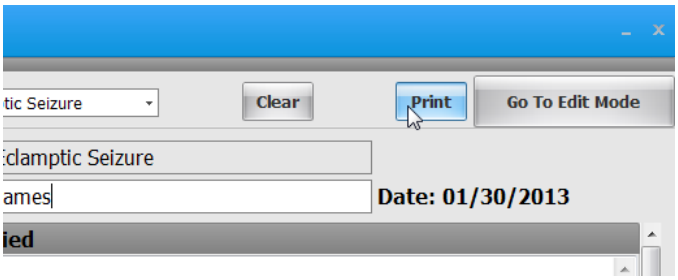

Enter the name of the facilitator administering the evaluation in On-Site Reviewer field.



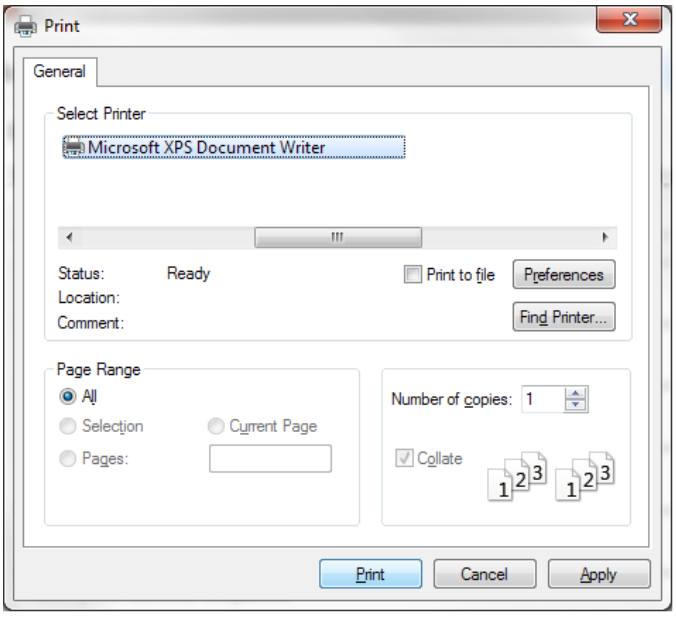
Complete the form by answering each question.



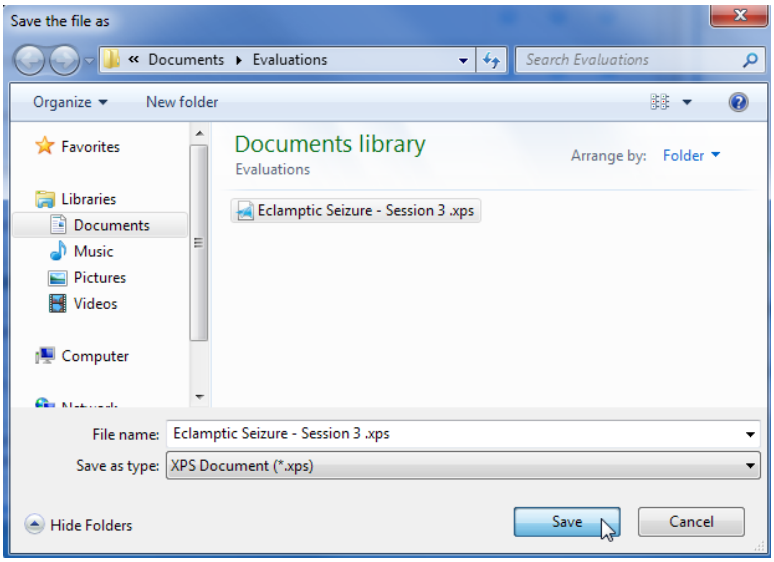

Click “Print” at the top right corner of the screen once the evaluation is completed.




Select the Microsoft XPS Document writer to save the finished evaluation as digital document. Click “Print” to save the digital copy in the system.

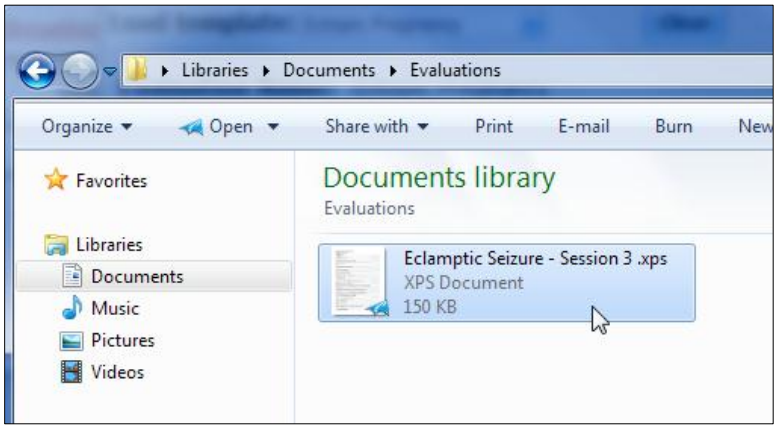


Enter a name for the evaluation and click “Save”.

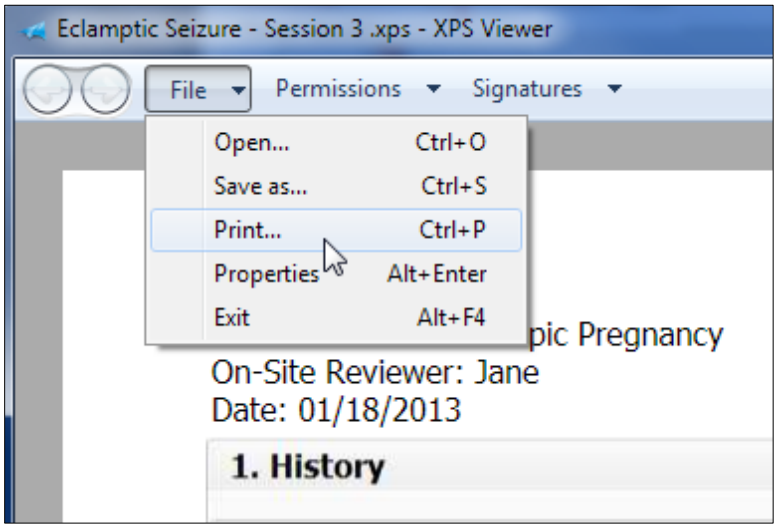



## PRINTING AN EVALUATION

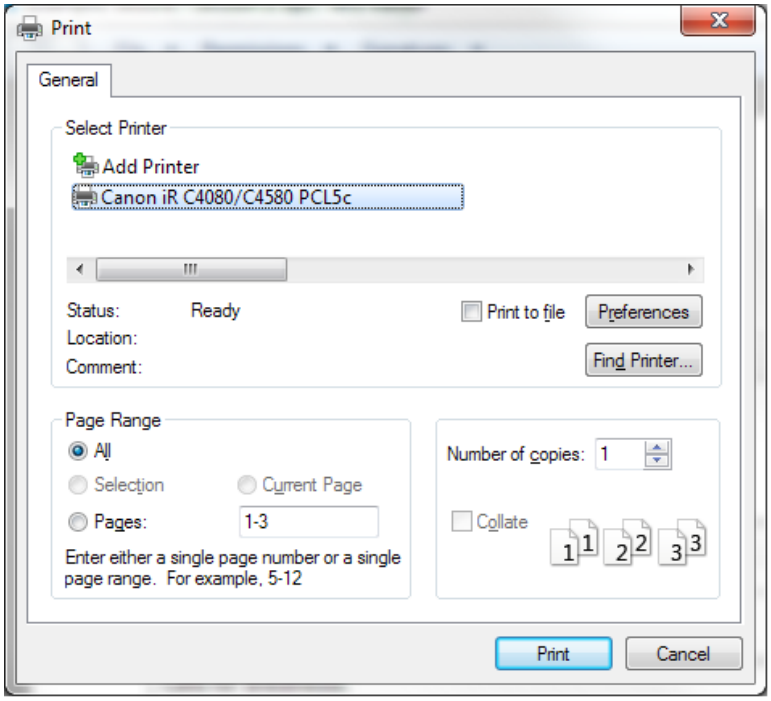
If the PC is connected to a printer, select and open the evaluation document saved in the previous step.



Navigate to the XPS Viewer file menu and select “Print”.




Select the printer device from the list box and click print.

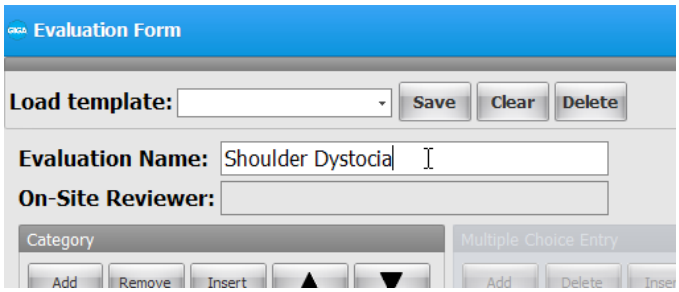



It is recommended that documents be first saved as XPS files before being printed into hard copies.

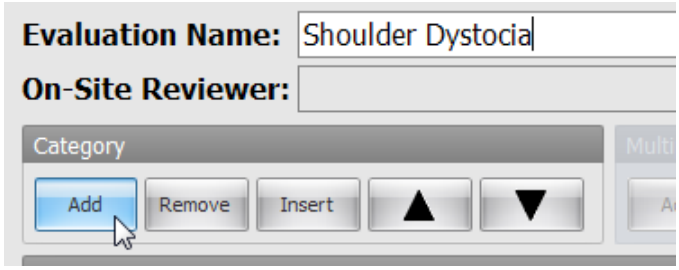
## CREATING AN EVALUATION TEMPLATE

Create new evaluation templates for new scenarios using the edit mode. To enter the edit mode, toggle the “Go To button” located on the top right of the evaluation form window.

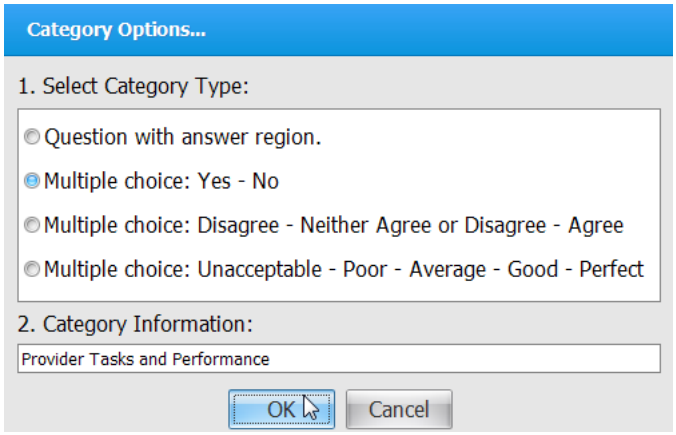
Enter a name for the new evaluation template in the “Evaluation Name” field.



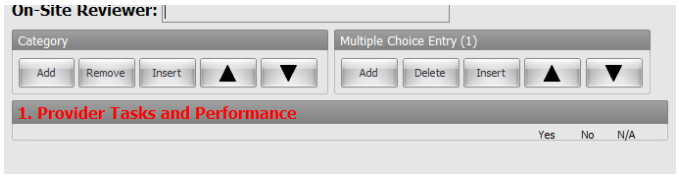

Click “Add” on the Category menu.



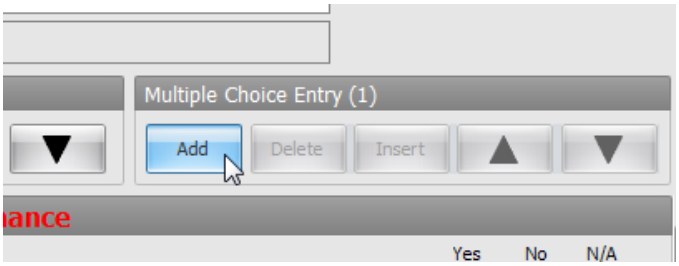

Select the category type and enter the category title. Click OK to save.



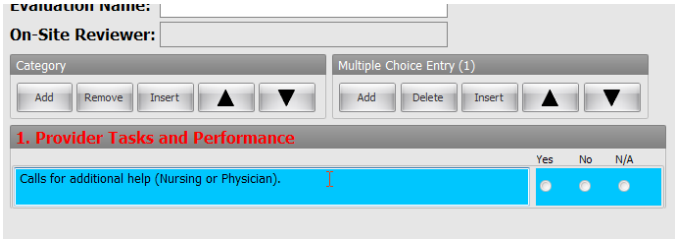

The new category is now created.



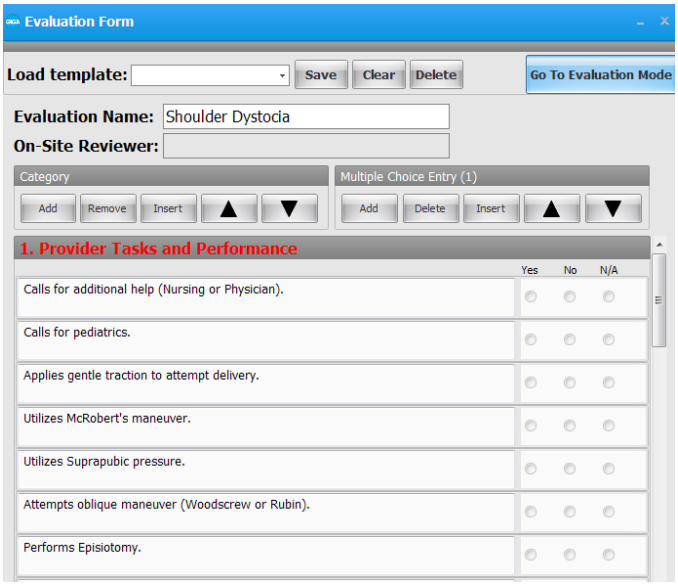
Highlight the new category and then click “Add” on the “Multiple Choice Entry” menu.



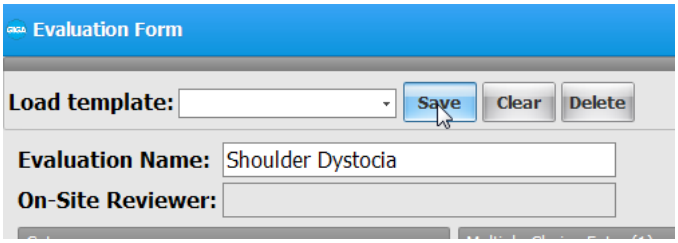

Type the evaluation statement in the new multiple choice field.



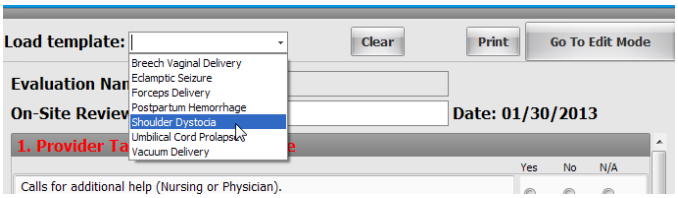

Repeat the previous steps to add more categories, questions, and multiple-choice options.




After the evaluation template design is complete, click Save at the top of the window.

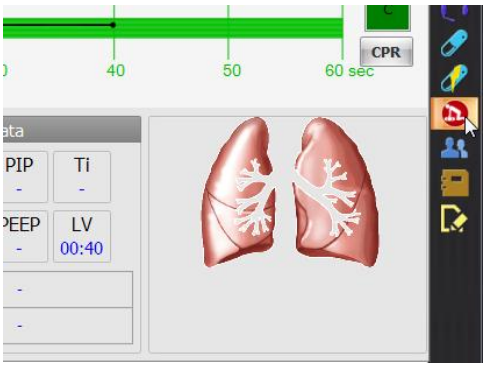


The evaluation form is now available for use.

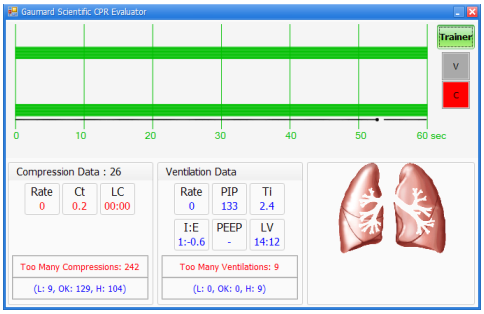


# CPR

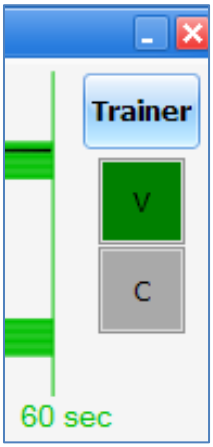
GIGA features a CPR performance evaluator and trainer. Click the CPR icon on the vertical menu bar to open the CPR window.




The CPR evaluator feature provides real time feedback on the provider's compression and ventilation performance.

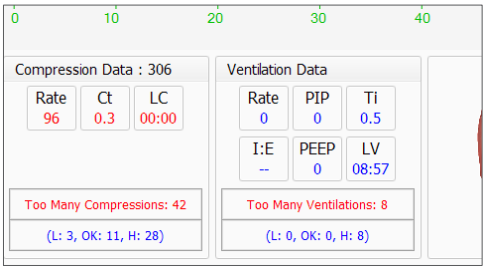



The provider performance indicator boxes are located on the right. The V (ventilation) and C (compression) box fill color changes between the following states:




- **Grey** – No intervention was detected.
- **Yellow** – Compression was too shallow. Ventilation was too weak.
- **Green** – Compression/ventilation was performed correctly.
- **Red** – Compression was too deep. Ventilation was too strong.

Compression and ventilation data is displayed at the bottom of the window as CPR is performed by the provider.




Compression Data

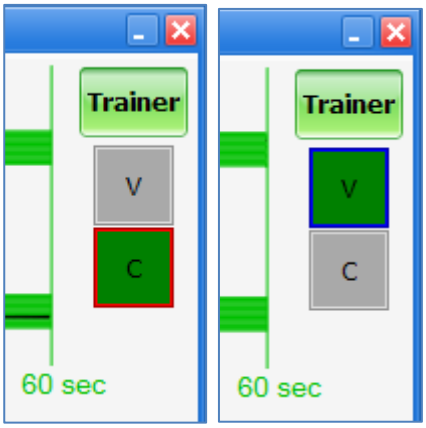
- **Rate** – Rate of compressions in real time.
- **Ct** – (Compression time) – Average length of each compression in seconds.
- **LC** – (Last Compression) – Time elapsed since the last compression performed.

Ventilation Data

- **Rate** – Ventilation rate in real time.
- **PIP** – (approx.) Peak Inspiratory Pressure
- **Ti** – Time Inspiration
- **I:E** – Inspiratory: Expiratory Ratio
- **PEEP** – (approx.) Positive end-expiratory pressure
- **LV** – (Last Ventilation) **–** Time elapsed since the last ventilation performed.

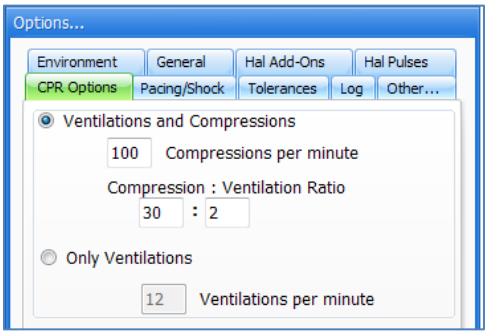
## CPR TRAINER

The CPR trainer reference boxes generate a visual prompt of the compression to ventilation ratio programmed in the “CPR Options” menu. Click the “Trainer” button to start. The V (ventilations) and C (compressions) box borders blink to indicate the correct reference CPR rate.



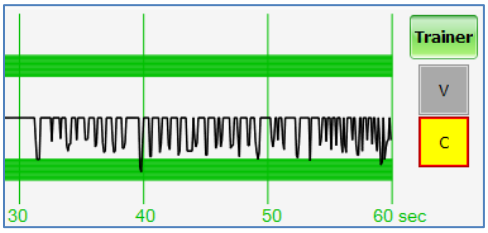

## CPR OPTIONS

By default, the CPR trainer is configured to blink the reference borders at a 30:2 compression to ventilation ratio. To change the ratio, navigate to the menu bar and click the CPR dropdown and CPR Options.

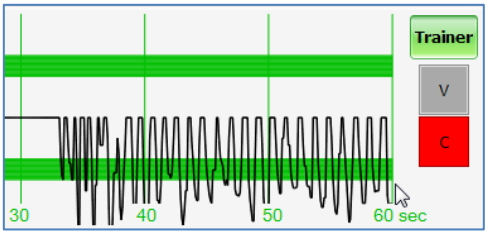



## PERFORMANCE EXAMPLES

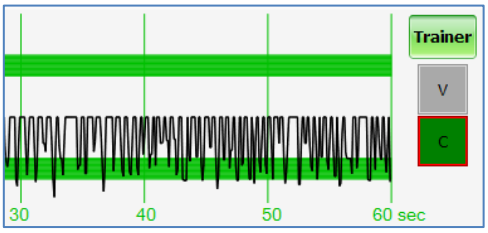
Compressions are too shallow. Waveforms mostly do not reach the green zone. Compression indicator is yellow.



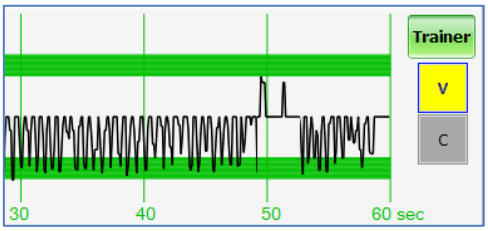

Compressions are too deep. Waveforms mostly exceed the green zone. Compression indicator is red.



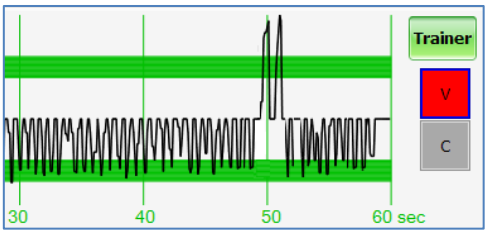

Compressions are performed correctly. Waveform peaks are mostly inside the green zone.



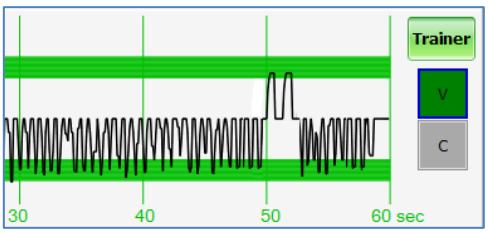

Ventilations are too shallow. Waveform peaks do not reach the green zone.




Ventilations are too strong. Waveform peaks exceed the green zone.

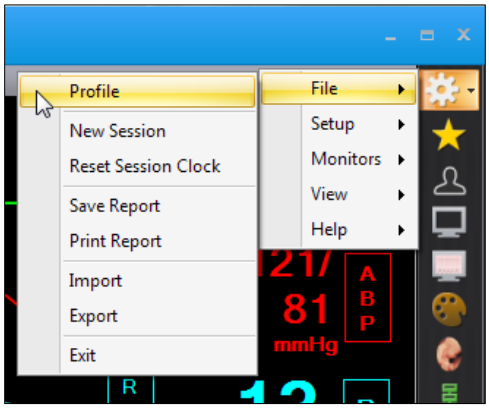



Ventilation was performed correctly. Waveform peak is inside the green zone.



# Menus

## File




### PROFILE

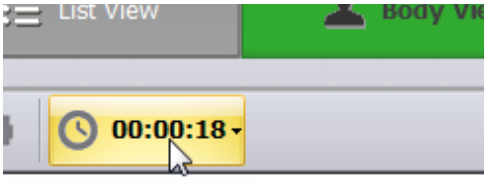
Click the Profile menu option to open the Profiles menu. To switch to a different profile, select the operating mode and the new profile and click “Load”.

### NEW SESSION

Clicking New Session in the file menu will:

- Clear any loaded/playing scenario
- Clear any loaded/playing palette
- Reset vital signs to normal values
- Clear out log page
- Restart the session clock.

The session clock is located at the bottom of the dialog box.



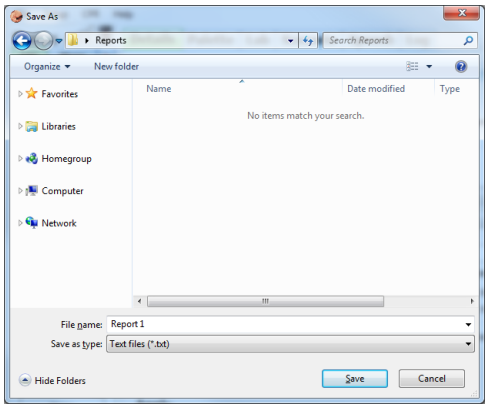

The shortcut key for staring a new session is: **Ctrl + N**

### RESET SESSION CLOCK

Clicking on Reset Session Clock resets the clock back to zero. It does not have any effect on the transition time remaining on a scenario; it does not reset the vital signs, or clear out loaded scenarios. The facilitator can also reset the session clock by clicking on the Session button next to the session time.

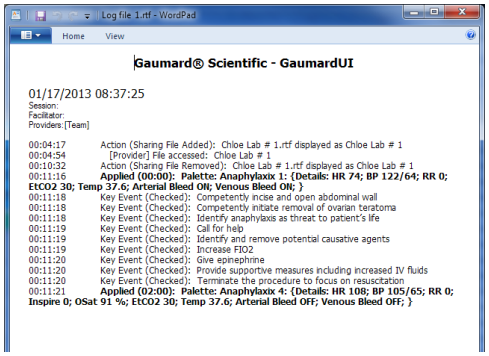

### SAVE REPORT

This option allows you to save all the information recorded in the log page as a text file. Clicking on it brings up the “Save As” dialog box:




Select the desired name and path, and click “Save”.

The shortcut key for saving a report is Ctrl + S. For a sample report, look at the figure below:



## PRINT REPORT

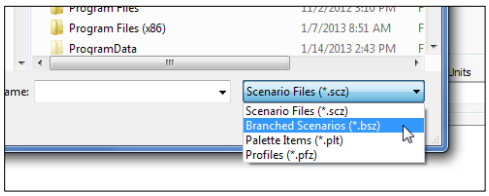
This option allows you to print a text file containing all the information in the log for the latest session. Clicking on “Print Report” brings up the Print dialog box. The shortcut key for this option is **Ctrl + P**.

## IMPORT

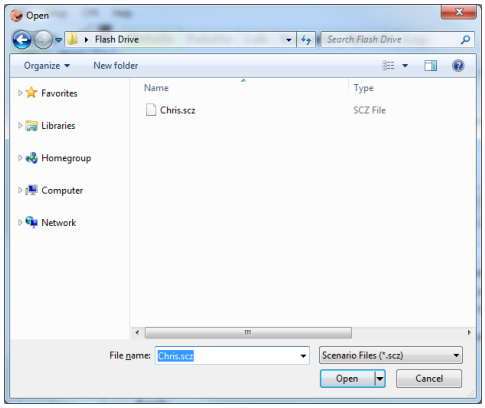
Use the “Import” menu to import palettes, scenarios, and modeling patients created on another PC or stored in a backup location.

To import an item into GIGA:

1. Click File>Import on the menu to access the “Open” menu.
2. Set the type of file to import.




3. Browse to the location where the item is saved and click “Open” to import.



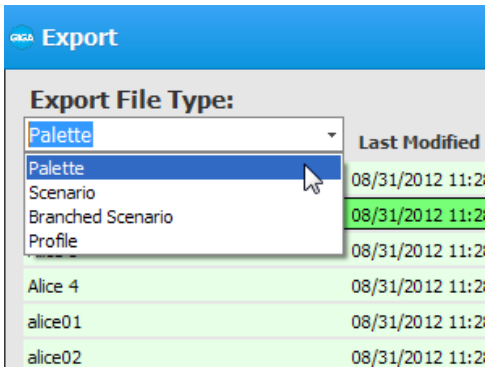

The scenario file is copied to the GIGA scenario library automatically.

## EXPORT

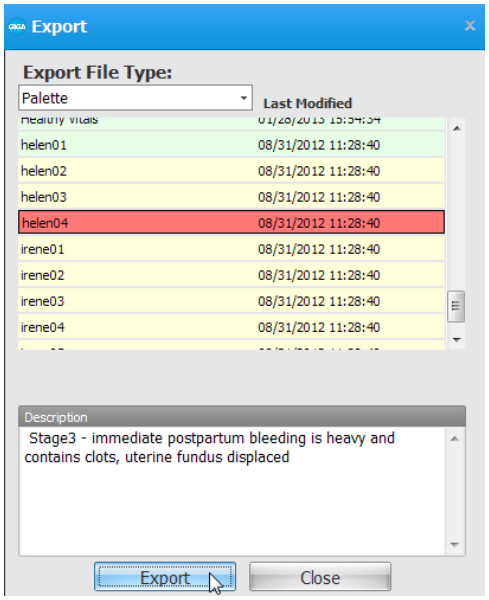
Use the Export feature to backup palettes, scenarios (branched or linear), and model patients files.

To export an item and save it to a location on the computer:

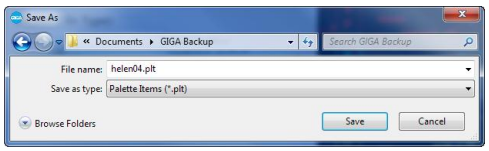
1. Click File > Export to open the “Export” menu
2. Select the file type from the “Export File Type” drop down menu:



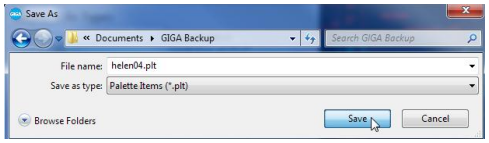

3. Select the item to export from the list and click “Export”




The “Save As” window is displayed.



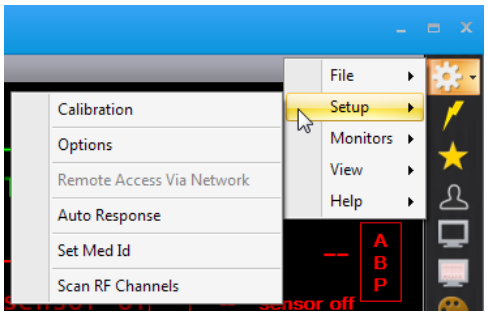

4. Browse to the location where the file will be saved and click “Save”.




## EXIT

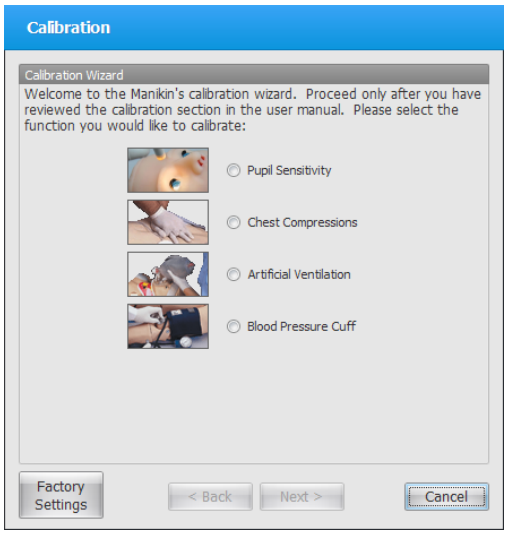
Click File > Exit to close the GIGA software and turn the simulator off. Alternatively, click the power bottom and click the X icon near the top corner of the screen.

## Set-up




### CALIBRATION

Use the Calibration menu to calibrate the simulator's features, and to reset the sensors back to default settings. Reference the simulator's directions for use guide to determine which feature calibrations apply.




**Chest rise will stop when the "Calibration" menu is active.**

- Chest compressions
- Artificial Ventilations
- Blood Pressure Cuff

### CHEST COMPRESSIONS

The chest compression calibration wizard records the average depth (as pressure) of 5 chest compressions. GIGA evaluates provider performance using the information recorded during the calibration as the correct benchmark.

To calibrate the compression performance benchmark:

1. Click Setup > Calibration > Chest Compressions, and click "Next"

   The wizard prompts to perform compression "#1"

2. Perform one chest compression correctly. A green filled oval indicates that the chest compression was recorded successfully.
3. Perform chest compression # 2 as prompted by the wizard. A green filled oval indicates that the chest compression was recorded successfully
4. Continue the calibration process to record a total of 5 compressions as prompted by the wizard

At the end of the calibrating session, the wizard reports the average peak, pressure, and duration values for the procedure. Click "Save" to store the settings.

**Please test the compressions calibration using the CPR trainer. Go to page 96 learn more about the CPR trainer and the feedback graphic.**

### VENTILATIONS

The ventilation calibration wizard records the average pressure of 5 ventilations. GIGA evaluates provider performance using the information recorded during the calibration as the correct benchmark.

To calibrate the ventilation performance benchmark:

1. Click Setup > Calibration > Ventilations, and click "Next"

The wizard prompts to perform ventilation "#1"

2. Perform one ventilation correctly. A green filled oval indicates that the chest ventilation was recorded successfully
3. Perform ventilation # 2 as prompted by the wizard. A green filled oval indicates that the ventilation was recorded successfully
4. Continue the calibration process to record a total of 5 ventilations as prompted by the wizard

At the end of the calibration process, the wizard reports the average peak, pressure, and duration values for the procedure. Click "Save" to store the settings.

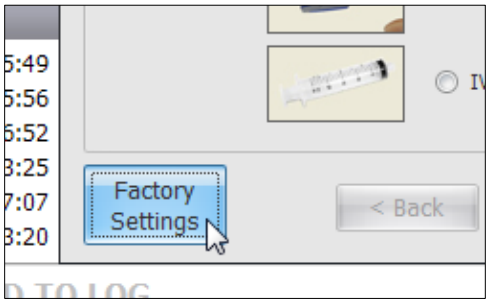
**Please test the ventilation calibration using the CPR trainer. Go to page 96 learn more about the CPR trainer and the feedback graphic.**

## BLOOD PRESSURE CUFF

Calibrate the Blood pressure cuff feature if the Korotkoff sounds do not match the systolic and diastolic values set using the GIGA controls. Reference the simulator's directions for use section to calibrate this feature.

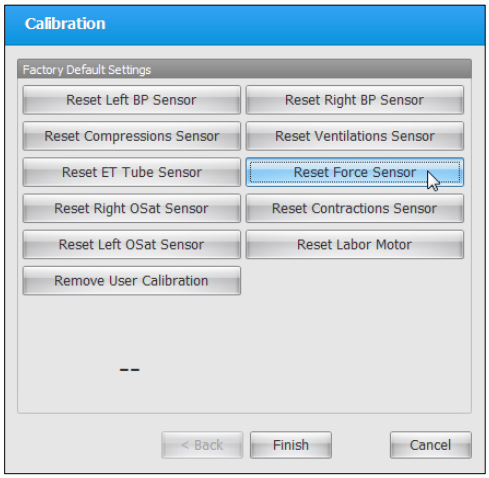
## FACTORY SETTINGS

Use the Factory Settings menu to restore sensors settings back to the factory default values. Resetting the sensors deletes all current calibration settings.



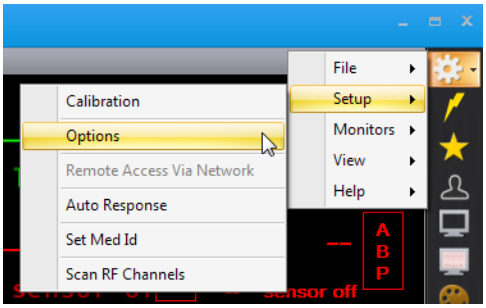

**Remove all adjuncts, or peripherals that may alter the neutral state of a sensor prior to resetting it.**

Click the sensor button to reset it to the factory setting. Please reference the directions for use guide for troubleshooting information.



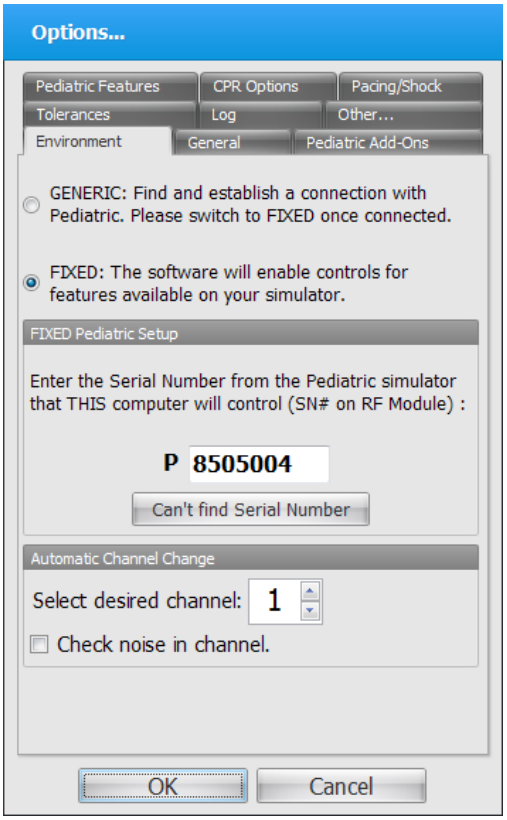
## OPTIONS

Navigate through the Options menu to configure software settings and enable additional features.




## ENVIRONMENT

The environment tab is used to configure the connectivity options. Select the “GENERIC” option to scan and connect to the nearest simulator. Alternatively, select the FIXED option and enter the simulator’s serial number to connect to a specific simulator only. The FIXED mode is required to enter activation code for upgrade features.

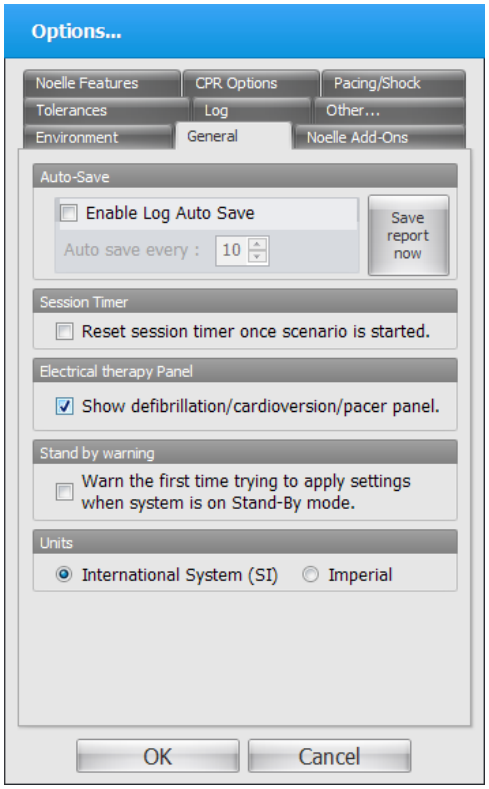



## GENERAL

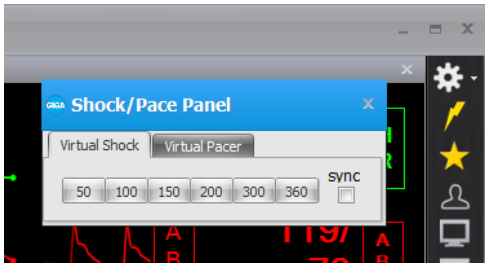
This tab allows the facilitator to:

- Enable auto saving of the log
- Save your current log report
- Enable stand-by warning
- Select units (SI or English)
- Enable electrical therapy shock panel

The shock panel is a floating window used to apply electrical therapy to the patient virtually. Go to page 46 for more information on how to work with the “auto responses” feature and the virtual shock panel.




Click the lightning icon to open the “Shock/Pace” panel.



## PEDIATRIC FEATURES

Customize the following simulator specific features:

- Fine-tune the pulse intensity for normal blood pressure.
- Configure the systolic threshold for each pulse.

## PEDIATRIC ADD-ONS

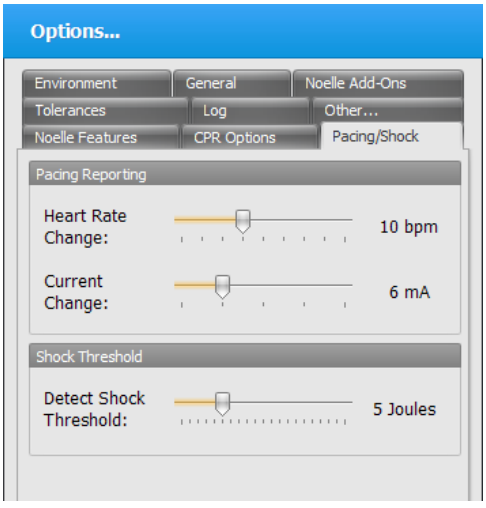
Activation codes enable upgrade and additional software features.

Activation codes are unique to the simulator's serial number. Before entering a code to activate a feature, go to the Environment tab, set the connectivity mode to FIXED, and enter the simulator's serial number.

- Virtual Monitor - Enables the "Monitors" menu option to configure the virtual monitor connection.
- Automatic Mode – Enter the Automatic Mode activation code to enable the automatic operating mode option in the profile menu.

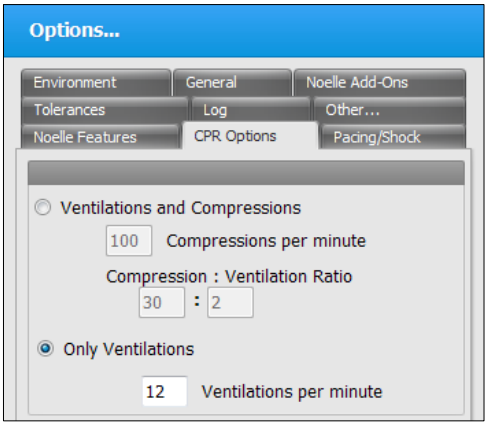
## PACING

GIGA can detect small variations in the heart rate and current during pacing. Each variation could trigger a programmed auto response or create a new entry in the log event. Adjust the threshold for each parameter so only the changes greater than the ones specified will be detected by the GIGA software.




## CPR OPTIONS

Configure the CPR trainer parameters to meet the most current CPR standards.



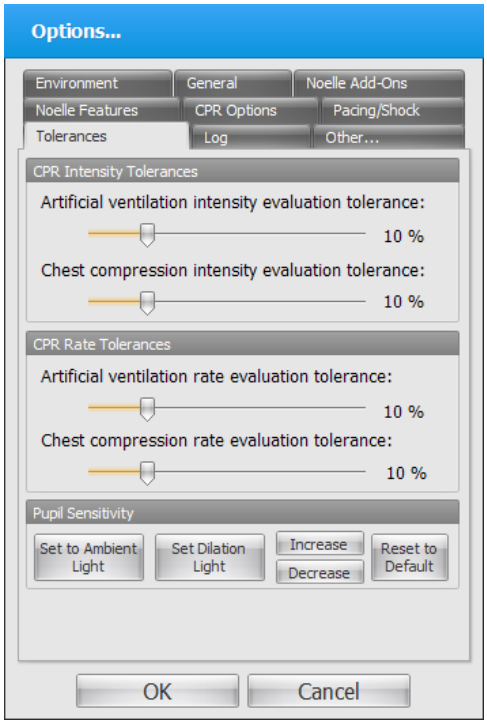

- Ventilations and compressions - Set the trainer's ventilations to compressions ratio prompt
- Ventilations only - Set the trainer to prompt for ventilations only, and set the rate per minute.

## TOLERANCES

Use the Tolerances controls to adjust error margin allowed by the CPR intensity and rate.

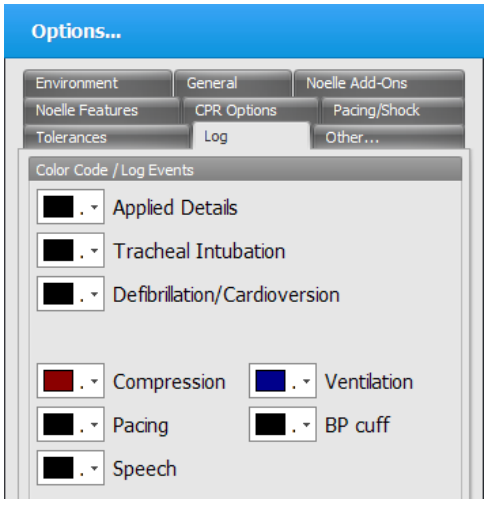
The simulator's pupils react to light. Use the "Pupil Sensitivity" controls to recalibrate the pupil reaction if dilation is erratic.

- Set ambient light - Click "Set ambient light" to recalibrate the pupil diameter to the current ambient light.
- Set Dilation Light - While covering both eyes from most incoming light, click "Set Dilation Light" to set the low light pupil diameter.
- Increase/Decrease Sensitivity - Click increase or decrease to adjust the pupil's sensitivity to light
- Reset to Default: Reset the pupils' ambient and dilation settings to the factory settings.




## LOG

Log event text entries are color-coded. Use the log tab to customize the color of each log entry type.

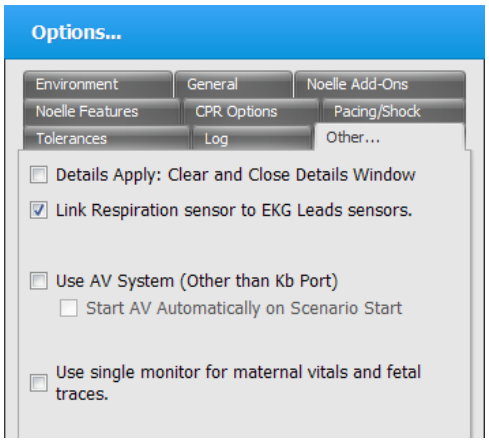



## OTHER

Checkmark "Once a 'Palette' is applied load to “Details Tab"' to show the value of each palette’s vital signs parameter on the Details tab control fields.

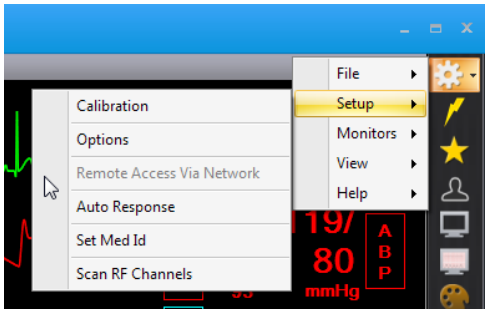
Checkmark the “Link respiration sensor to ECG leads sensors” to generate artifacts with each compression.

Checkmark the “Use A/V” to display the audio and video configuration menu on the menu bar.




## REMOTE ACCESS VIA NETWORK

The “Remote Access via Network” feature allows GIGA to communicate with the simulator remotely using the virtual monitor PC as the RF transmitter. The alternate configuration may provide better connectivity in environments with numerous walls or obstructions between the simulator and the control PC.




**The USB RF module drivers must be installed on the virtual monitor PC before the “Remote Access via Network” feature can be configured.**

**Go to [www.Gaumard.com](http://www.Gaumard.com) to download the latest USB RF module drivers using PC with internet access. Do not connect the Virtual Monitor PC to the internet. Transfer the USB RF module setup file to the virtual monitor PC using a USB drive and complete the installation.**

To configure the “Remote Access via Network” connection:

1. Connect the simulator’s USB RF module an available USB port on the virtual monitor PC

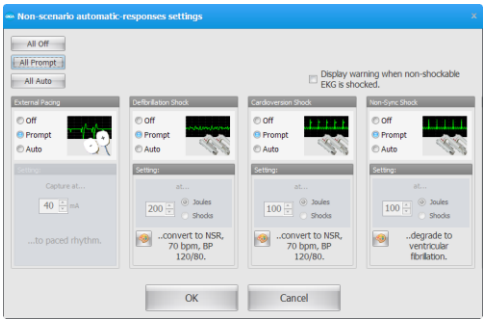
2. Verify that both computers are connected to the ad-hoc network (e.g. GaumardNet,)
3. Initialize GIGA on the tablet PC open the Remote Access via Network menu from the Setup menu
4. Select the Remote access via network radio button
5. Verify that Wireless Network Connection is selected from the adapter list
6. Click “Find available” to auto configure the port used for this connection
7. Write down the controller IP and port number, then click “Connect”
8. Navigate to the V menu on the virtual monitor computer and select “Remote access Via Network”

   Please wait 30 seconds for the feature to initialize
9. Enter the “controller IP” and “port number” as shown on step 7 and click “connect”

## AUTO RESPONSES

The Non-Scenario Automatic Response feature allows the facilitator to set preprogrammed responses to electrical therapy events. When the electrical therapy is detected, auto-responses can automatically load a specific palette item or prompt the facilitator before making preprogrammed changes to the simulator’s vital signs.

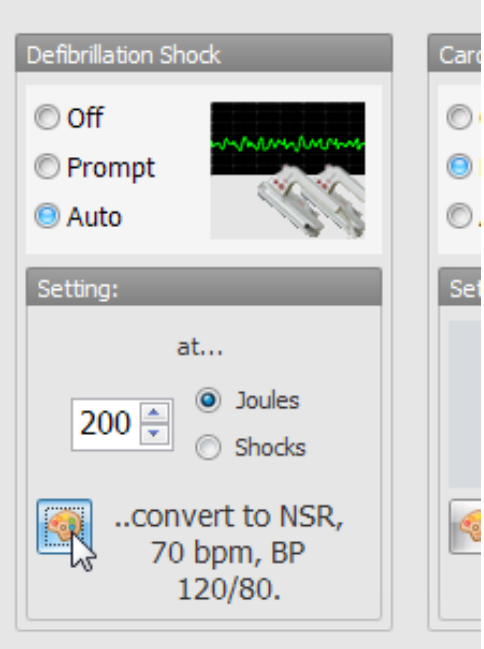
Non-scenario response settings detect electrical therapy administered when a scenario is not in progress. For information on how to configure auto-responses for use during a scenario, go to page 46. To activate the virtual shock panel for administering electrical therapy virtually, go to page 102.



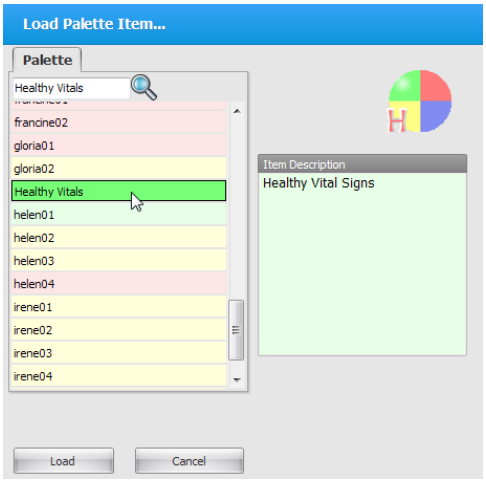

The behavior of each auto response option is explained below:

- Off - The software does not respond to the electric therapy
- Prompt - The software detects the electrical therapy and prompts the facilitator before applying the changes configured in the “Settings” section.
- Auto - The software automatically detects the electrical therapy and compares it to a threshold selected by the provider. If the threshold is met, the vitals will automatically change to the parameters specified on the “Settings” section.

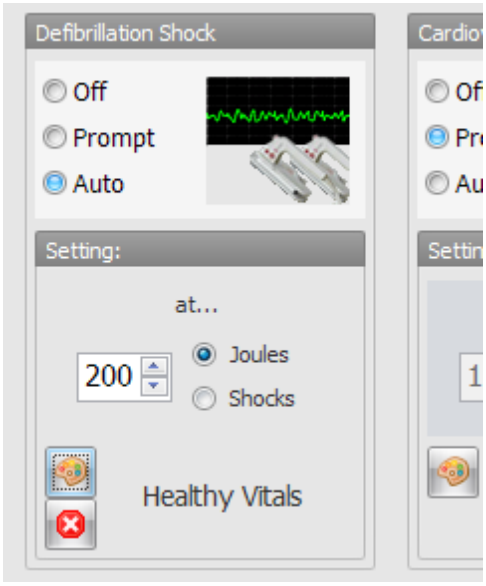
Each type of electrical therapy has a unique set of default parameters. For example, the default response to a defibrillation Shock applies the following vital sign parameter changes: NSR, 75 bpm, BP 120/80. Click the palette button to program a specific palette item as an auto-response.



Select the desired palette from the “Load Palette Item…” window and click “Load”.



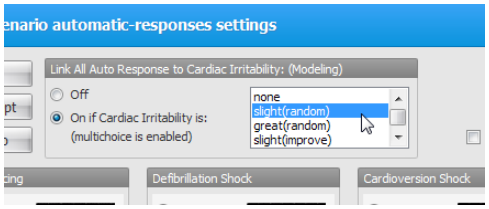

The defibrillation shock auto-response is now configured apply the “Healthy Resting” palette if a virtual defibrillation shock of 200 Joules or greater is detected. The programmed response palette is listed in the “settings:” panel.




## AUTOMATIC MODE NON-SCENARIO AUTOMATIC RESPONSES

The “Automatic Mode non-scenario Automatic Responses” are unique to the automatic mode.

Link All Auto Response to Cardiac Irritability - Auto-responses will work only if the cardiac irritability option on the details page matches the selection on this window.




An event prompt is displayed if electrical therapy is detected and the cardiac irritability set does not match the selection on the responses window.

Drug Model Effect – Configure the auto-response behavior for drug administration.

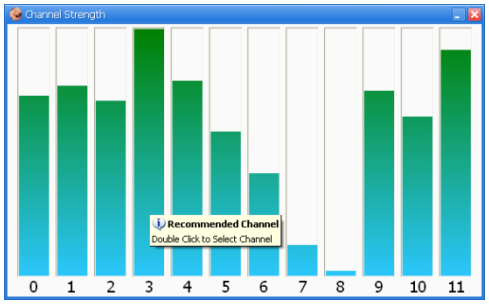
- Auto – Apply the drug effects based on medication’s programmed properties and dosage
- Prompt – Display a confirm prompt before applying the drug’s effects

## SCAN RF CHANNELS

Use the Scan RF Channel tool to search for the strongest RF communication channel available.

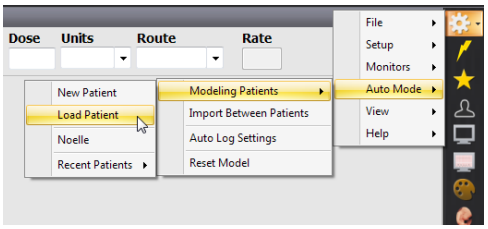
Click the “Scan RF Channels” option in the setup menu to start the scan. Please wait while the system completes the process.

The tallest bar represents the strongest channel. Double click the bar to connect to the simulator using the channel selected.



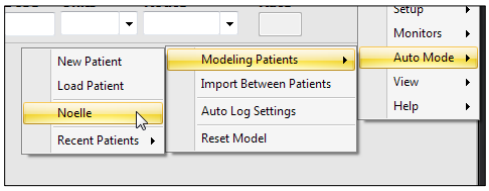
# Auto Mode (Upgrade)

The “Modeling” drop down menu in the top left corner of the GIGA contains four options: Modeling Patient, Reset Model, Import Between Patients, and Auto Log Setting.

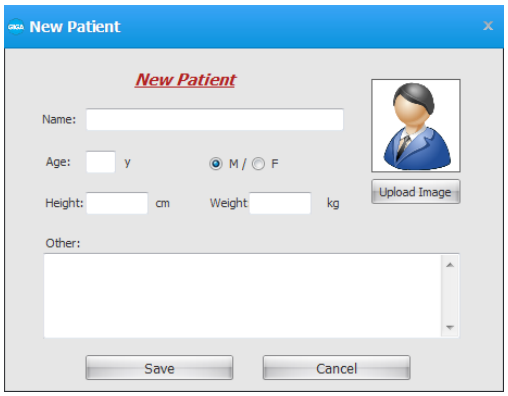



## MODELING PATIENTS

This option allows you to create a new patient or load an already existing one.

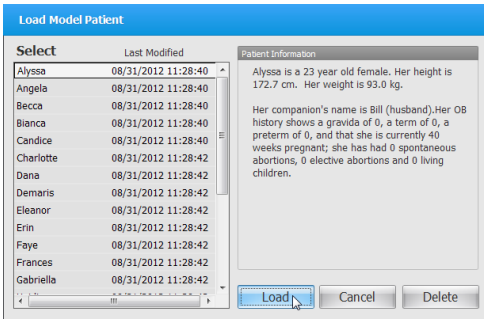



To create a new patient, go to Modeling, Modeling Patient, new patient. The following dialog box is displayed:




Enter the name of the patient, age, gender, height, weight, and/or additional notes. Then, click “Save”.

To load an already existing patient, go to Modeling, Modeling Patient, Load Patient.




Select the desired patient, and click on Load. Notice that the factory pre-set patient cannot be deleted, as opposed to any of the patients that you create yourself, which can be deleted.

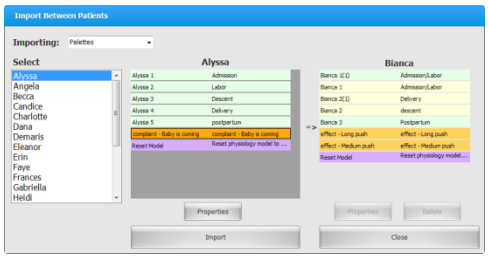
Patient information is displayed on the right side and near the top of the Details tab.

## RESET MODEL

Clicking on Reset Model under the Modeling drop down menu, will restore all vitals and physiologic controls to normal state. For instance, if the ECG rhythm is currently on Ventricular Fibrillation, clicking on reset model changes the ECG rhythm back to sinus.

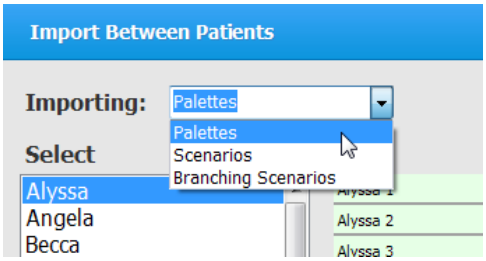
## IMPORT BETWEEN PATIENTS

Use the “Import between patients” menu to import palettes, scenarios, and branching scenarios from other patient profiles into the current active one.

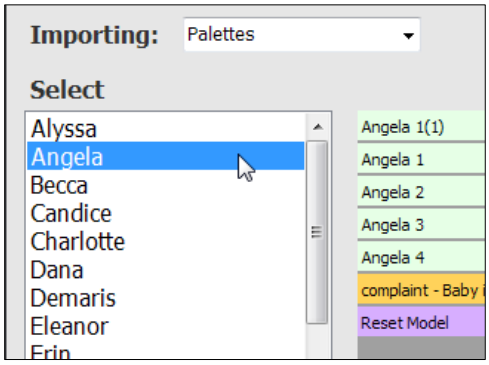



To import an item another patient in to the active patient:

1. Click Auto Mode> Import Patient to open the ”Import” menu
2. Select the item category to import

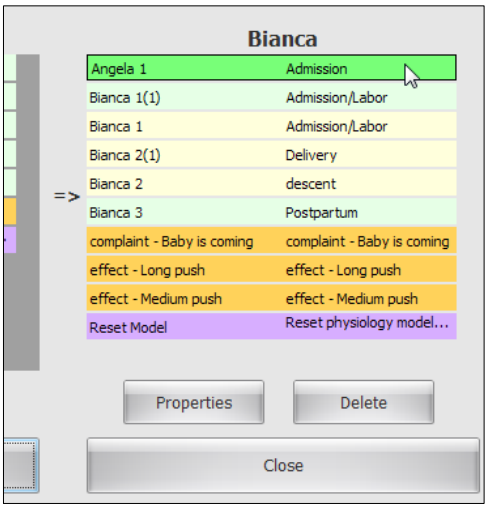



3. Select the patient name that contains the items to be imported into the active patient



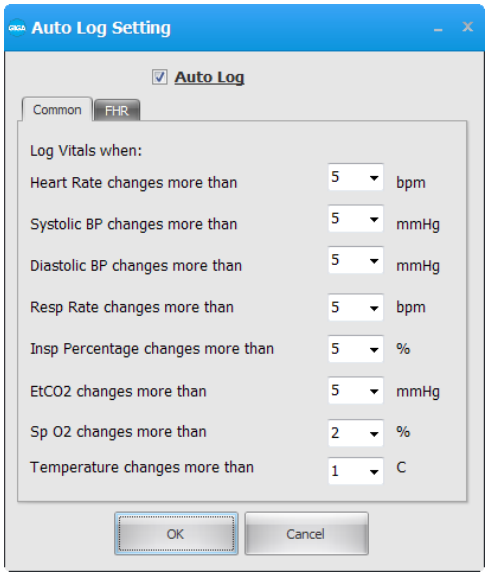

4. Select the items to import from the list and click “Import”


The palettes are now copied into the active patient.



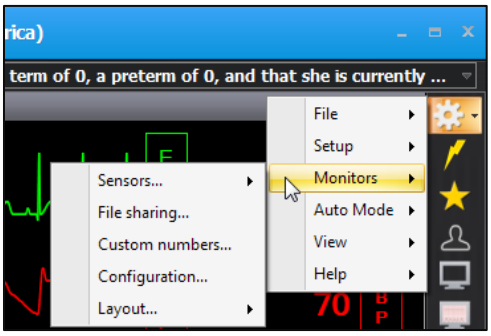

## AUTO LOG SETTING

This menu option is used to specify various vitals to be logged automatically after reaching a specific threshold.



# Monitors

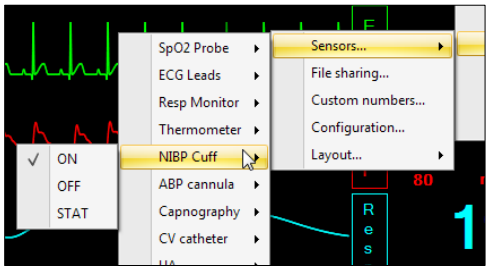
Use the Monitors drop down menu to enable/disable sensors on the virtual monitor screen, share files, program custom scalars, and verify the connection between the GIGA and Gaumard Virtual Monitor software.




**If the "Monitors" drop down is not showing, go to Setup>Options> Add-ons, and checkmark "Use Virtual Vital Signs Monitor."**

## SENSORS

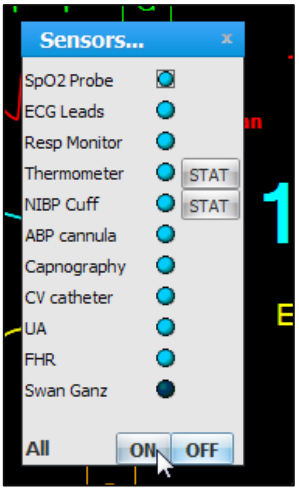
Use the sensors option to enable or disable any of the waveforms displayed in the vital signs monitor. Select the waveform and click "ON" to display the readings on the virtual monitor screen. To disable a parameter reading, click "OFF". The vital signs monitor sensors defaults to "All On."




Some sensors, such as NIBP and Thermometer feature a STAT control that will allow the facilitator to activate readings on the virtual monitors from the controller software.

## SENSOR CONTROL WINDOW

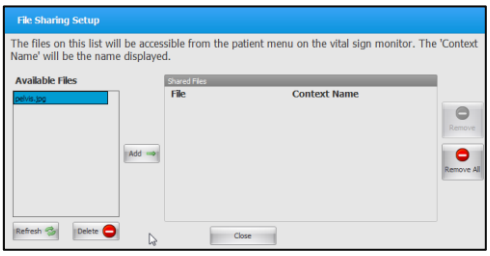
The sensor control window is a floating panel with on/off toggle controls. Click Monitors> Sensors> Window to open the floating sensor control panel.




Single click the circular icon to enable or disable the sensors displayed on the virtual monitor screen. Click the circle dark to disable the sensor and light blue to re-enable it. In the example above, all the sensors are on except the thermometer.

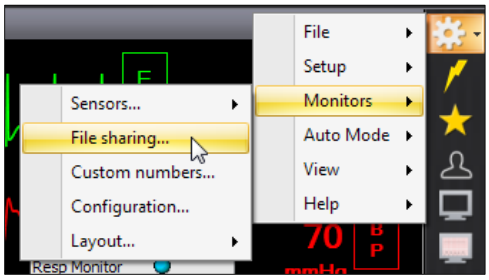
## FILE SHARING

The file sharing menu allows the facilitator to send images, audio, and text files to the virtual monitor screen. Use the file sharing feature to fulfill file requests by the provider during simulation.

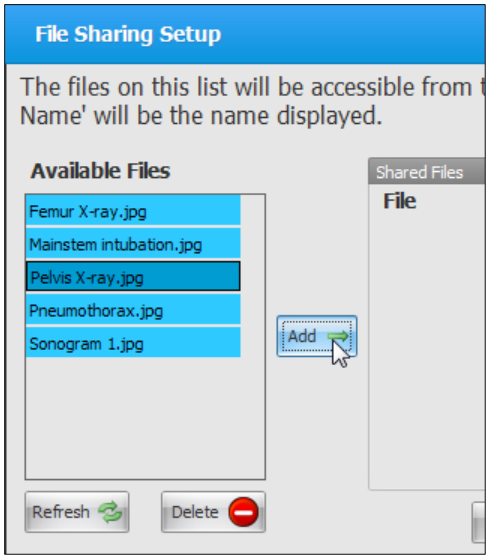


The files used for sharing are stored in the control PC. Before the simulation begins, add mock image (.jpg, .bmp) or text files (.txt) into the Gaumard_UI folder located on the home screen of the control computer.

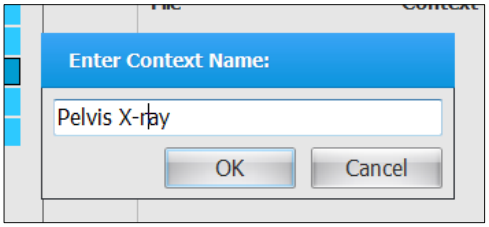

Open the “File Sharing” menu.



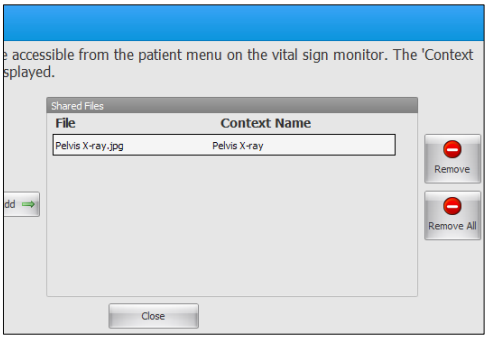

The list of files stored on the Gaumard_UI folder available for sharing is displayed on the left panel. To share a file, select the file from the left panel and click “Add”.



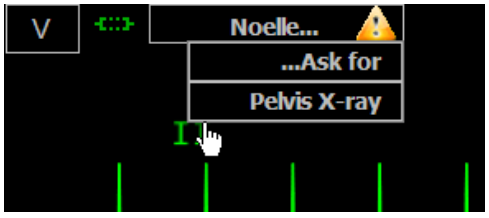

Enter a context name on the pop-up menu and click “OK” to share.



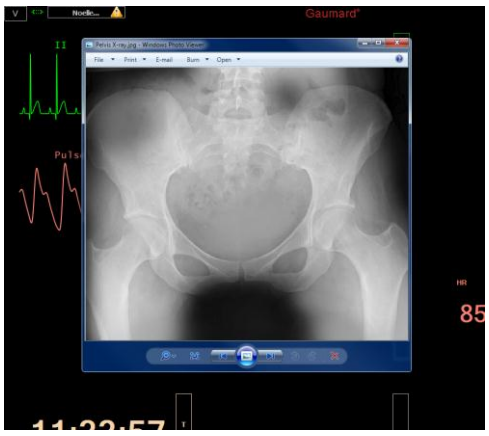

Files currently shared are listed on the “Shared Files” list.



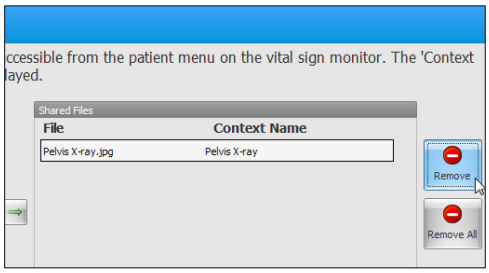

A yellow notification icon is displayed on the patient menu at the top left of the virtual monitor screen. The icon notifies the provider that a file is available for viewing. Click the patient menu and select the file open it.




The x-ray file is now open on the virtual monitor computer.



To unshared the file, select the file from the file sharing menu and click remove.

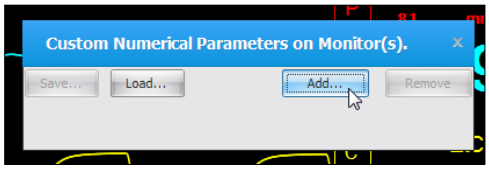



To troubleshoot file sharing access errors, please reference the Gaumard Monitors user guide.

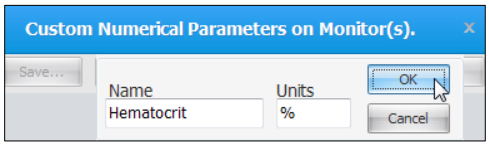
## CUSTOM NUMBERS

Use the custom numbers feature to add custom numerical parameters to the Gaumard Monitors screen. For example, glucose levels or platelets count.

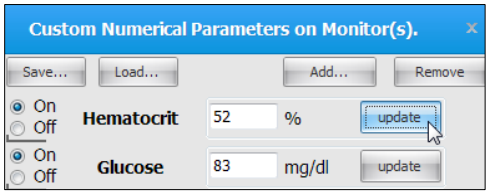
On the GIGA menu bar click Monitors>Custom Numbers to open the “Custom Numerical Parameters on Monitor” menu. Click the “Add” button to create a new parameter.



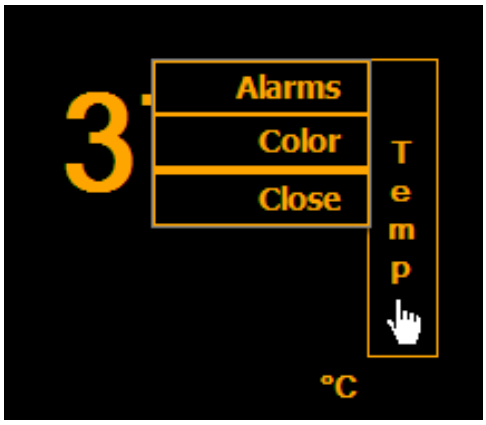

Type the name and units of the new parameter and then click “OK”.



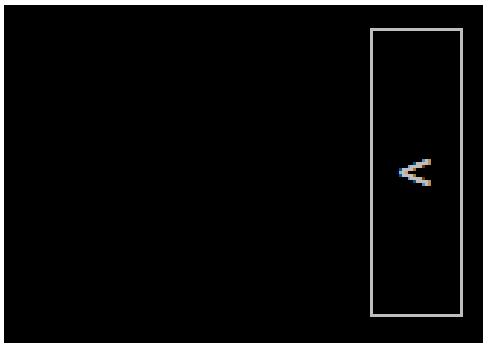

The scalar parameter is now created. Enter a value for the parameter and click “Update”.



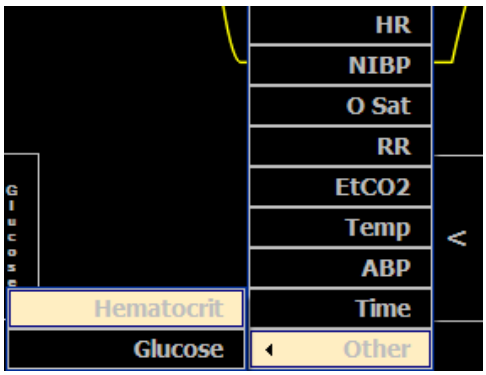

On the virtual monitor screen, click on a scalar’s menu and select “Close” to make the entry available for the custom parameter.




The scalar entry is now a blank field.



Click on the empty scalar menu and select “Other” from the list of available scalar parameters. Select the name of the custom parameter.



The figure below shows two new values: Glucose level and hematocrit levels. Return to the custom parameter menu on the GIGA software to update the values when necessary.

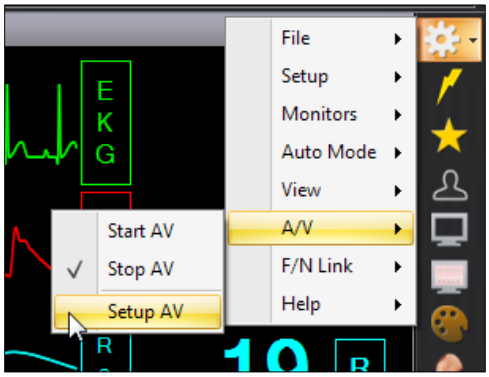

## CONFIGURATION

On the GIGA menu bar, click Monitors>Configuration to open the “Virtual Monitor Setup” window. Use the setup window to verify the connection between the GIGA software and the Gaumard Monitors vital signs software, re-configure the communication ports, and view the controller IP address. To troubleshoot connectivity issues between the two computers, please reference the Gaumard Monitors user Guide.

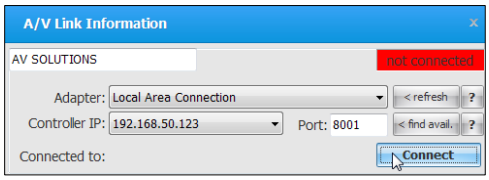
# A/V (Audio & Video)

GIGA is capable of interfacing with a number of third-party A/V recording systems. Generally, A/V solutions capture footage of the simulation and interlace it with the event information generated by the simulator control software.

To enable the fetal Neo link menu option, go to Set Up > Options > Other and checkmark “Use AV System”.



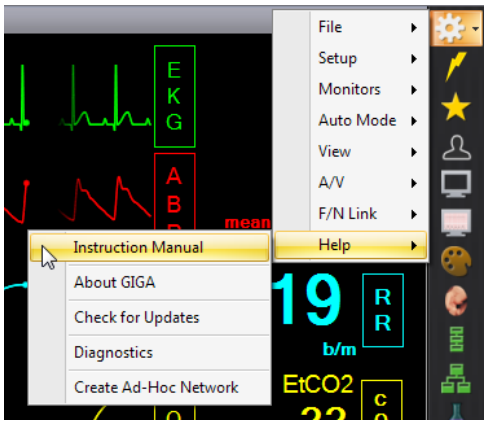

Click “Setup AV” to configure the software connection to the AV system. Enter a port number for the connection and click “Connect” to establish a link. Please contact the AV administrator for information on how to accept incoming connections from the GIGA software.




Return to the A/V menu and click “Start AV” to initialize the recorder. Some third party A/V solutions may not recognize the “Start” command generated by the log event. If the recorder does not start remotely, please start the new video manually using the third party controls.

**The log event does not command the recording to stop at the end of the scenario automatically. Click Stop A/V from the menu to end the recording.**

# Help




## INSTRUCTION MANUAL

Click the Instruction Manual option to open a digital copy of the latest “User Guide” information.

## ABOUT GUI

Click “About GUI” to view the software version.


## CHECK FOR UPDATES

Redistributable GIGA installer files are available for download at http://www.gaumard.com/software-updates/.

To update the GIGA software using a flash drive:

1. Download the update file to a flash drive using a computer with internet access
2. Copy the setup file to the simulator’s control computer
3. Run the GIGA update file to update the software

**Do not change the wireless network settings. Doing so will disconnect the virtual monitor computer and the Gaumard Monitors vital signs software.**

To update the GIGA software using an Ethernet connection:

1. Connect an Ethernet cable to the laptop PC.
2. Click “Check for Updates”.
3. Click “Install” to begin the update. The download progress bar begins to auto-fill as the setup file is downloaded

After the download is complete, the update setup wizard is launched automatically.

4. Click “Next”, and follow the wizard to complete the software download.

## DIAGNOSTICS

The diagnostics menu is used to test the status of electronic and mechanical components in the simulator.

Click “Check all Modules” to run a full systems check. Active modules report blue. Modules that are inactive or not installed report black.

# Working with HAL

# Features

Disclaimer: The section below describes all possible features in the HAL simulator. The content of this table is subject to change without prior notice. Please contact Gaumard Scientific for the most current information. Y = Yes included / O = Optional

| | **Simulator Feature** | **HAL 5 Year S3005** | **HAL 1 Year S3004** |
|---|---|---|---|
| Airway | Nasal Intubation | Y | Y |
| | Oral Intubation | Y | Y |
| | ET Tube Position Sensor | Y | Y |
| | Tongue Edema | Y | Y |
| | Cricothyrotomy / Tracheostomy | Y | Y |
| | Airway Sounds | Y | Y |
| Breathing | R/L Chest Rise | Y | Y |
| | R/L Lung Sounds | Y | Y |
| | Ventilation Sensor | Y | Y |
| Cardiac | Heart Sounds | Y | Y |
| | ECG Lead II | Y | Y |
| | Defibrillation/ Cardioversion / Pacing | Y | Y |
| | Compression Sensor | Y | Y |
| Circulation | Bilateral IV arms | Y | Y |
| | Blood Pressure (Left Arm) | Y | Y |
| | Bilateral Pulses (Carotid, Brachial, Radial, Femoral, Radial) | Y | Y |
| | Disable Radial Pulse | Y | Y |
| | Central Cyanosis | Y | Y |
| Neurological | Reactive Eyes | Y | Y |
| | Seizures | Y | Y |
| Other | CPR evaluation | Y | Y |
| | Intraosseous Access | Y | Y |
| | Intramuscular Injection Sites | Y | Y |
| | Urinary Catheterization | Y | Y |
| | Gastric Distention | Y | Y |
| | Bowel Sounds | Y | O |
| | Automatic Mode | O | O |
| | Streaming Audio | O | O |

# Airway

## AIRWAY COMPLICATION

Use the software controls to enable the airway complications and make intubation more difficult. HAL can display tongue edema.

## NASAL AND ORAL INTUBATION

Intubate HAL's airway via the nasal or oral route using an endotracheal tube or an LMA.

WARNING: Always lubricate the endotracheal tube and the medical device using silicone oil before intubating. Do not introduce liquids into the airway. Doing so can permanently damage the system.

| Procedure | 5 Year - S3005 | 1 Year - S3004 |
|---|---|---|
| Intubation (Blade size) | Miller 2 or MAC 3 | Miller 1 |
| LMA | Size 2/2.5 | Size 1.5/2 |
| Nasal Intubation | 10 Fr catheter | 10 Fr catheter |
| Oral Intubation | Lubricated ETT 5.0 or 5.5 no cuff; 10 Fr suction catheter | Lubricated ETT 3.5 no cuff; 8 Fr suction catheter |
| Nasogastric Tube | 10 Fr catheter | 10 Fr catheter |

## INTUBATION SENSOR

Sensors in the airway detect the placement of the endotracheal tube. If the endotracheal tube is inserted too deep, the left lung is automatically disabled demonstrating right mainstem intubation. Correcting the tube position enables the left lung chest rise.

## AIRWAY SOUNDS

The simulator can produce airway sounds. Use the software controls to change the sound type and adjust the volume. Auscultate using a standard stethoscope.

## Cricothyrotomy/Tracheostomy

Providers can perform a cricothyrotomy through the precut opening on the neck skin. The airway itself features an opening covered with tape that simulates the soft cricothyroid membrane.

Avoid using surgical tools to cut the neck skin. The precut opening allows the insertion of most medical devices. Always lubricate the medical adjunct before insertion.

## REPLACING THE CRICOTHYROID TAPE

To replace the cricothyroid membrane tape:

1. Turn off the simulator and place it on a clean flat surface
2. Unscrew the bolts located at either side of the midsection
3. Gently slide the skin off each bolt and life the chest skin over the face to expose the airway
4. Remove the punctured cricoid tape from the airway and any glue residue
5. Wrap a new piece of tape around the airway to cover the cricoid opening. Ensure that the tape provides an airtight seal to prevent air leaks

# Breathing

## BILATERAL CHEST RISE

Bilateral chest rise and fall is automatic. Use the software controls to enable or disable the lungs independently and to adjust the breathing rate and the inspiratory percentage.

## RESPIRATORY SOUNDS

The simulator is generates anterior, left and right lung sounds. Use the software controls to select between the available respiratory sounds and to adjust the volume of each lung independently. The respiratory sounds include normal, wheezing, inspiratory squeaks, crackles, and rales.

## VENTILATION

Set the respiratory rate to 0 and ventilate the simulator using a standard bag valve mask. Open the CPR window to monitor the provider's ventilation performance in real time. Complete the ventilation calibration process before using the ventilation feature for the first time.

## VENTILATION CALIBRATION

The ventilation calibration wizard records the performance average of five ventilations as the benchmark for correct ventilation. Perform the actions requested by the calibration wizard following the most current CPR guidelines. The CPR window evaluates provider performance based on the benchmark recorded during the calibration process.

To calibrate the ventilation performance benchmark:

1. Click Setup > Calibration > Ventilations, and click "Next"

The wizard prompts to perform ventilation "#1"

2. Perform the first ventilation. A green filled oval indicates that the ventilation was recorded successfully
3. Perform ventilation # 2 as prompted by the wizard. A green filled oval indicates that the ventilation was recorded successfully
4. Continue through the calibration wizard to record a total of five ventilations

At the end of the calibration process, the wizard reports the average peak, pressure, and duration values for the procedure. Click "Save" to store the calibration settings.

# Cardiac

## HEART SOUNDS

HAL generates audible heart sounds (normal, distant, systolic murmur, S3 and S4) tied to the heart rate and selectable rhythms. Use the software controls to change the heart sound type and volume level.

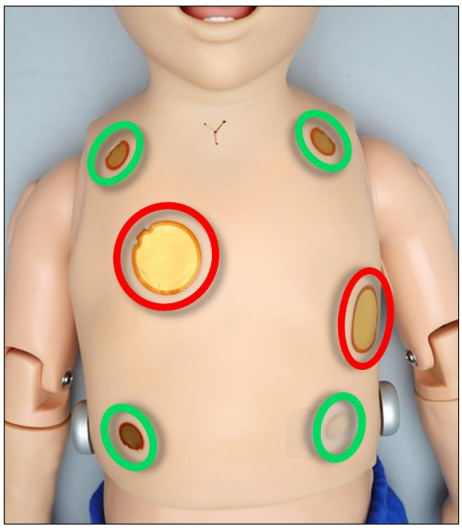
## ECG MONITORING AND ELECTRICAL THERAPY

The simulator is equipped with conductive skin sites that allow the attachment of real electrodes and defibrillator pads. This feature allows the provider to track cardiac rhythms using real medical equipment just like with a human patient.

The simulator's ECG and defibrillation sites generate waveforms detectable using real medical equipment and standard electrodes. Real automated external defibrillators can detect the simulator's heart rhythm and treat shockable rhythms.

Defibrillation, pacing, and cardioversion is supported only on the large sternum and apex sites circled RED. Do not deliver a shock to ECG electrode sites on the shoulders or waist marked GREEN. The warranty does not cover damaged to the simulator caused by applying an electrical charge to the ECG sites.

For exercises that incorporate real electrical therapy of any kind, always follow the safety guidelines and operating procedures outlined in the medical device manufacturer documentation.



## ECG AND DEFIBRILLATION WARNINGS

- Always follow the standard medical guidelines and precautions for handling electrical therapy devices. Improper use of a real electrical therapy device may result in personal injury.
- Operate simulator in a well-ventilated area free of flammable gases.
- Ensure the simulator is fully assembled, fully operational, dry, and undamaged before administering electrical therapy. Never apply electrical therapy if the simulator is in contact with a conductive surface or substance.
- Do not leave electrodes or pads attached to the conductive sites when the simulator is not in use.
- Use hard paddles or wet-gel pads preferably. Avoid using solid-gel pads as they increase the risk of burning the simulator's skin if arcing occurs. When using gel patches, make sure not to leave air gaps or bubbles between the pads and the conductive area on the simulator's skin to avoid arcing.
- Clean the conductive sites at the end of the simulation. Refer to the care section for more information on approved cleaning products. Gel residue, adhesive residue, or dirt can increase the risk of arcing during defibrillation.
- Do not reused gel-adhesive or use expired pads.
- Do not attempt to repair or modify any electrical connections or conductive sites. Discontinue use if wires are exposed, wire insulation is damaged, or if any conductive sites are damaged.
- Electrode gel can become a pathway for electrical current. Do not allow defibrillation pads to overlap ECG sites or gel to carry a current to the ECG sites. Applying an electrical current to the ECG sites will result in damage to the simulator's internal components.
- Some electrical therapy devices may be sensitive enough to detect the simulator's electrical current for operation. If the interference is displayed on the ECG reading, please disconnect simulator's charger and operate the simulator on battery power only.

## CHEST COMPRESSIONS

Set the heart rhythm to asystole and instruct the provider to perform chest compressions. Monitor the depth and frequency of chest compressions from the CPR trainer window. Before using the chest compression feature for the first time, please calibrate the chest compression feature.

## COMPRESSION CALIBRATION

The compression calibration wizard records the performance average of five compressions as the benchmark for a correct compression. Perform the actions requested by the calibration wizard following the most current CPR guidelines. The CPR window evaluates provider performance based on the benchmark recorded during the calibration process.

To calibrate the compression performance benchmark:

1. Click Setup > Calibration > Compressions, and click “Next”

The wizard prompts to perform compression “#1”

2. Perform the first compression. A green filled oval indicates that the compression was recorded successfully
3. Perform compression # 2 as prompted by the wizard. A green filled oval indicates that the compression was recorded successfully
4. Continue through the calibration wizard to record a total of five compressions

At the end of the calibration process, the wizard reports the average peak, pressure, and duration values for the procedure. Click “Save” to store the calibration settings.

# Circulation

## BILATERAL PULSES

The simulator's palpable pulses are blood pressure dependent. Use the software controls to disable the radial pulses to simulate severe hypotension.

## IV ARM

The simulator is equipped with an IV arm that allows for bolus or intravenous infusions as well as for drawing fluids.

> WARNING
>
> Do not attempt to fill IV system without the drain connector in place. Always leave the drain port connected when injecting fluids into the system.
>
> Use only Gaumard's artificial blood concentrate or clean water to fill the vasculature. Any other simulated blood brand containing sugar or any additive may cause blockage and/or interruption of the vasculature system.
>
> Always flush the IV system with distilled water at the end of every simulation.

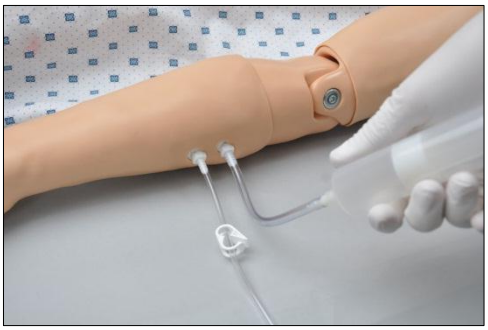
## INSTRUCTIONS FOR USE (HAL 5 YEAR)

To prime the IV arm for an infusion exercise or to draw fluids:

1. Locate the fill syringe with tubing and the drain tube with pinch-clamp. Fill the syringe with the desired fluid -- water or simulated blood.

2. Connect the syringe with tubing to one port and the drain tube with clamp to the other port as shown.

3. Insert water in the system until fluids exits through the drainage tube into the container and all air bubbles are purged.



The IV arm is now ready for use.

To simulate a patient with no accessible peripheral IV sites, connect only the syringe. Pull the plunger to create suction, which will collapse the veins. Disconnect the syringe tube from the arm port while maintaining suction. The port will seal, and the veins will remain collapsed.

## INSTRUCTIONS FOR USE (HAL 1 YEAR)

To prime the IV arm for an infusion exercise or to draw fluids:

1. Locate the fill syringe kit and port adapters. Fill the syringe with water or simulated blood.
2. Using the kit adapters, connect the syringe and drain tube to the vein ports located on the forearm.
3. Push fluid into the vein port until it exits through the drain tube.
4. Disconnect the fill syringe and drain tube.

The IV arm is now ready for use.

To simulate a patient with no accessible peripheral IV sites, connect only the syringe. Pull the plunger to create suction, which will collapse the veins. Disconnect the syringe tube from the arm port while maintaining suction. The port will seal, and the veins will remain collapsed.

## CLEANING THE VEINS

Clean and dry the forearm vasculature at the end of the simulation session to prevent mold or clogs.

To clean and dry the IV arm:

1. Fill the filling syringe with distilled water
2. Connect the fill syringe and the drain tube to arm
3. Flush the vasculature with distilled water. If the IV arm is not going to be used for a week or more, purge the system with 70% isopropyl alcohol solution.
4. Fill the filling syringe with air and purge the clean water to dry the vasculature.
5. Disconnect the drain tube and filling syringe

Warning: Do not store the simulator with fluids in the veins. Doing so may lead to molding and damage to the internal electronics. Complete the vasculature cleaning procedure at the end of the simulation sessions.

## BLOOD PRESSURE PORT

Connect the modified blood pressure line to the port on the simulator's left shoulder. Before using the blood pressure feature for the first time, place the blood pressure cuff on the arm and calibrate the blood pressure feature using the blood pressure calibration wizard.

## BLOOD PRESSURE CALIBRATION WIZARD

Before starting the calibration process, place the blood pressure cuff on the simulator as it would be placed on a real human patient.

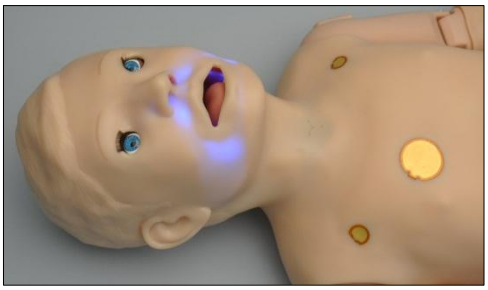
To calibrate the blood pressure feature:

1. Click Setup>Calibration>Blood pressure and click "Next"
2. Set the pressure on the BP cuff to 0 (i.e. cuff valve open) as prompted by the calibration wizard.
3. Click the "OK" button to record the current cuff pressure for the interval. A green filled oval indicates the pressure interval was recorded successfully.
4. Set the pressure on the BP cuff to 20 mmHg as prompted by the wizard and then Click "OK" to record.
5. Continue increasing the BP cuff pressure as indicated by the prompt and recording the pressure intervals.

At the end of the calibration wizard, click "Finish" to close the calibration wizard.

## CENTRAL CYANOSIS

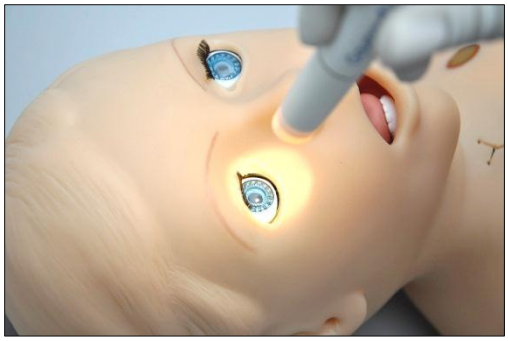
Use the software controls to adjust the cyanosis intensity.



# Neurological

## REACTIVE EYES

The simulator is equipped with programmable blinking eyes and pupils that dilate. Use the software controls to change the blinking rate and to enable or disable pupil reaction.



## PUPIL CALIBRATION

The eye reaction is factory calibrated. Use the “Pupil Sensitivity” controls to recalibrate the pupil reaction for the current room lighting only if needed.

To calibrate the pupil dilation:

1. From the File menu, go to Setup>Options>Tolerances
2. Click “Set ambient light” to recalibrate the pupil diameter to the current ambient light.
3. Cover both eyes from most incoming light and click "Set Dilation Light" to set the low light pupil diameter.
4. Click increase or decrease to adjust the pupil’s sensitivity to light

## SEIZURES

The simulator is capable of convulsing to simulate mild or severe seizures. Use the software controls to enable the seizure behavior.

# Other

## URINARY CATHETERIZATION

HAL features an internal bladder for catheterization exercises.

| Simulator Model | Maximum Infusion Volume (mL) | Catheter size |
|---|---|---|
| S3004 HAL 1 year | 48 | 8 Fr |
| S3005 HAL 5 year | 90 | 10 Fr |

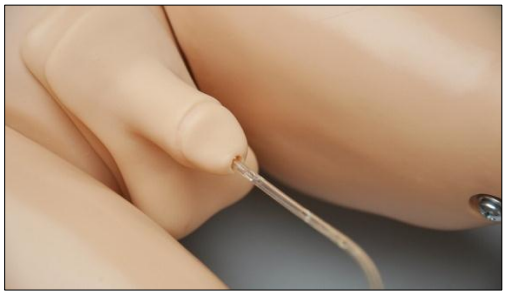
To fill the bladder with fluid to perform a catheterization exercise:

1. Place the simulator face down and locate the bladder fill port.

2. Fill the kit syringe with water.
3. Connect the fill kit syringe to the bladder fill port.
4. Inject fluid into the bladder. Do not exceed the maximum infusion volume.

## INSTRUCTIONS FOR USE

Catheterize the simulator using the appropriately sized catheter lubricated with silicone oil. At the end of the exercise, drain the fluid from the bladder reservoir to prevent mold.



## RESUSCITATION (CPR)

The simulator features ventilation and compression sensors for monitoring CPR performance. The CPR window detects ventilations when the respiratory rate is set to zero or apneic and compressions when the heart rhythm is in an unhealthy state.

Complete the ventilation and compression calibration process before using the CPR window for the first time.

## INTRAMUSCULAR INJECTION SITES

Intramuscular injection sites are located on both deltoids and quadriceps for injection technique and placement exercises.

## GASTRIC DISTENSION

HAL can exhibit gastric distension if ventilated excessively. To relieve the gastric distension, press down on the stomach gently.

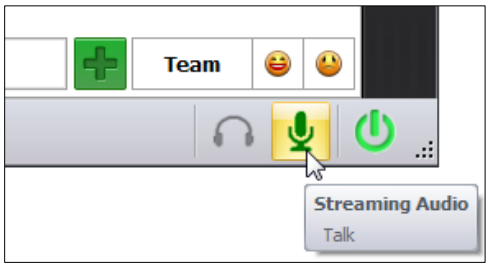
## STREAMING AUDIO

Use the streaming voice to speak as the simulator's voice and engage the provider in a realistic conversation.

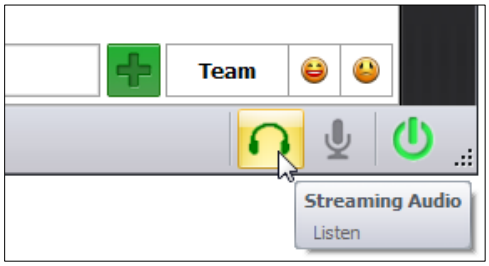
## INSTRUCTIONS FOR USE

Ensure that the headset and microphone is connected to the PC before starting the GIGA software. The headset minimizes echo and environmental noise to improve audio quality.

Click the “talk” icon and speak in to the headset to talk as the simulator’s voice.




To listen to the provider’s response, click “Listen”.



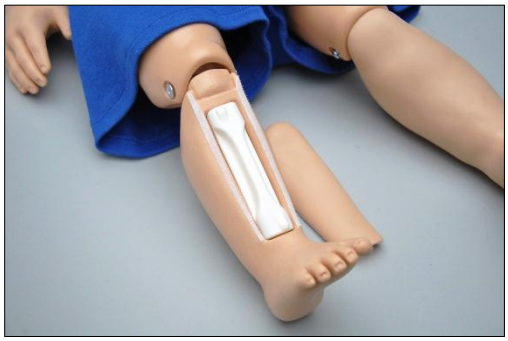

Reference the GIGA software User Guide for information on additional streaming voice features and functions.

## INTRAOSSEOUS ACCESS

HAL features replaceable tibia bones on the left leg for intraosseous access. The hollow bones allow for the aspiration and infusion of fluid using real medical devices.

To fill the tibia bones with fluid:

1. Remove the skin cover from the right leg.



2. Remove the tibia insert.

3. Remove the bone’s reservoir cap and use the fill kit syringe to fill the bone reservoir with fluid.
4. Replace tibia bone in the leg and the skin cover.

## INSTRUCTIONS FOR USE

Intraosseous access is only supported on the hollow tibia insert. To view a list of replacement parts including leg skin covers and tibia bones, go to page 168.

# Appendix

# Scenario Frequently Asked Questions (FAQs)

THINKING IN TERMS OF PALETTE ITEMS

As described previously, Palette items represent complete or partial groups of settings that have been stored as a single item. We learned how applying partial states will hold constant all settings that are left unspecified.

Not only does it take time to customize the palette, but a very large palette becomes difficult to navigate. So, it is desirable to minimize the number of Palette Items in each Profile. To accomplish this, an experienced facilitator tries to create items that are as generally applicable as possible and can, thus, be applied to a wide range of scenarios. The key is to only include in your Palette Items the settings that are directly related to the physiological event represented by that Palette Item.

SMART SCENARIOS

After reading the Details, Palette, and Scenarios sections of this guide, it should be clear how to build a scenario. You may have already tried building your own or modifying some of the factory presets. The following four guidelines will refine your ability to build the best possible scenarios.

1. How will the scenario begin?

The first thing to consider is the initial condition of the patient. Create a Palette Item to describe this condition. Make sure that this first step in the scenario is a complete state. That is, indicate some selection for each and every available setting on the Details page. Remember that only the settings you specify will cause a change in HAL®, and all other settings will remain constant. So, by starting with a complete state, HAL®'s condition will always be the same when the scenario starts, regardless of what he was doing previously.

Likewise, the "transition duration" of the first step in the scenario should be zero, indicating that changes are applied immediately.

There is one point that can cause confusion and warrants further explanation. It is an extension of the above discussion of partial states. The issue is best illustrated through the following example:

Suppose that you are creating a Palette Item to start your scenario. In this case, you have decided that the patient will be apneic. The question is, "How should the lung sounds be set?"

Most people's first inclination is to set the lung sounds to "none." This is incorrect, despite apnea. Obviously, no lung sounds should be heard during apnea, but since you have already set respiratory rate to zero, none will be. (Sounds are synchronized to the breathing cycle.)

What you are really setting here when you choose a lung sound is the condition of the lungs, given respiratory drive. That is, if the patient's respiratory rate were changed from zero, what sound would be heard? Assuming that the lungs themselves are normal in this scenario, you would choose "normal" for the lung sound setting.

Then, as the scenario progresses, if the patient starts breathing, there will be no need to set the lung sound again. It will already be set. The same principle applies to the heart sound and other settings.

2. Include notes to guide the facilitator during the simulation.

It is common for scenario designers, especially those who act as facilitators, to neglect the importance of notes in the scenario. They think that they will remember the learning objectives, patient history, and other details at the time they are ready to conduct the simulation.  hey usually don't, especially when revisiting a scenario months after creating it.

When you add "Wait" and "Wait Indefinitely" steps to a scenario, you have an opportunity to edit the item description. Use this description field to hold notes to the facilitator. Typically, scenario designers write notes in that space to indicate what the provider(s) or facilitator should be doing at that point.

Further, when saving the scenario, you may edit the scenario description. This is the best place to put patient history and any other longer notes and instructions.

3. Assume that providers will do the right thing.

Usually, you should create a scenario with the assumption that the providers will perform correctly. As long as they do, the scenario can simply be allowed to continue.

Naturally, you must be prepared for what might happen to HAL® when providers deviate from expectations. The consequences of such deviations can sometimes be included in the scenario, punctuated by "Wait Indefinitely" items. In other cases, the simulation will require more direct control by the facilitator via either the Palette or Details page.

4. Choose auto-response settings based on the scenario content and the objectives.

As you've seen, auto-responses can be used to free the facilitators attention. They also enhance realism by presenting instant reactions to the care providers. On the other hand, sometimes it is not possible or desirable to determine the responses before the simulation begins. Different environments and applications call for different settings.

Some teaching practices are best done with the auto-response settings in Prompt mode. Responses must be triggered by a vigilant facilitator. Though it is slower and requires more attention, the benefit of Prompt over other modes is that the simulation can be allowed to go in any direction, and it will be possible to choose the response on a case-by-case basis.

Other learning exercises require a higher degree of automation. For such applications, most facilitators choose Auto mode for the auto-response settings. The key issue is standardized timing of symptom presentation. A consistent, repeatable simulation is essential for fair assessment of that care provider in relation to others and for the broader interpretation of results in the context of training validation studies.

When in doubt, it is best to choose Prompt mode, in which the facilitator will be given direct control of the responses as events are detected.

# Scenario Flow Charts

## PEDIATRIC HAL 5 YEAR SCENARIOS

| Category | Scenario |
|---|---|
| Respiratory | |
| | 1. Asthma |
| | 2. Foreign Body Aspiration |
| | 3. Upper Airway Obstruction (Toy Balloon) |
| | 4. Epiglottitis |
| Trauma | |
| | 1. Chest Injury |
| | 2. Hypothermia |
| | 3. Alcohol Ingestion |
| | 4. Organophosphate Poisoning |
| | 5. Renal Failure and Hyperkalemia |
| Cardiac | |
| | 1. Soccer boy with SVT |
| | 2. Cardiac Arrest |
| | 3. Cardiac Ischemia |
| | 4. Cardiac Tamponade |
| | 5. Supraventricular Tachycardia |
| Systemic | |
| | 1. Gram Negative Sepsis |
| | 2. Status Epilepticus |
| | 3. Fire Victim |
| | 4. Septic Distributive Shock |
| | 5. Diabetic Ketoacidosis |
| Automatic | |
| | Adenosine OD |
| | Adenosine SD |
| | Adenosine UD |

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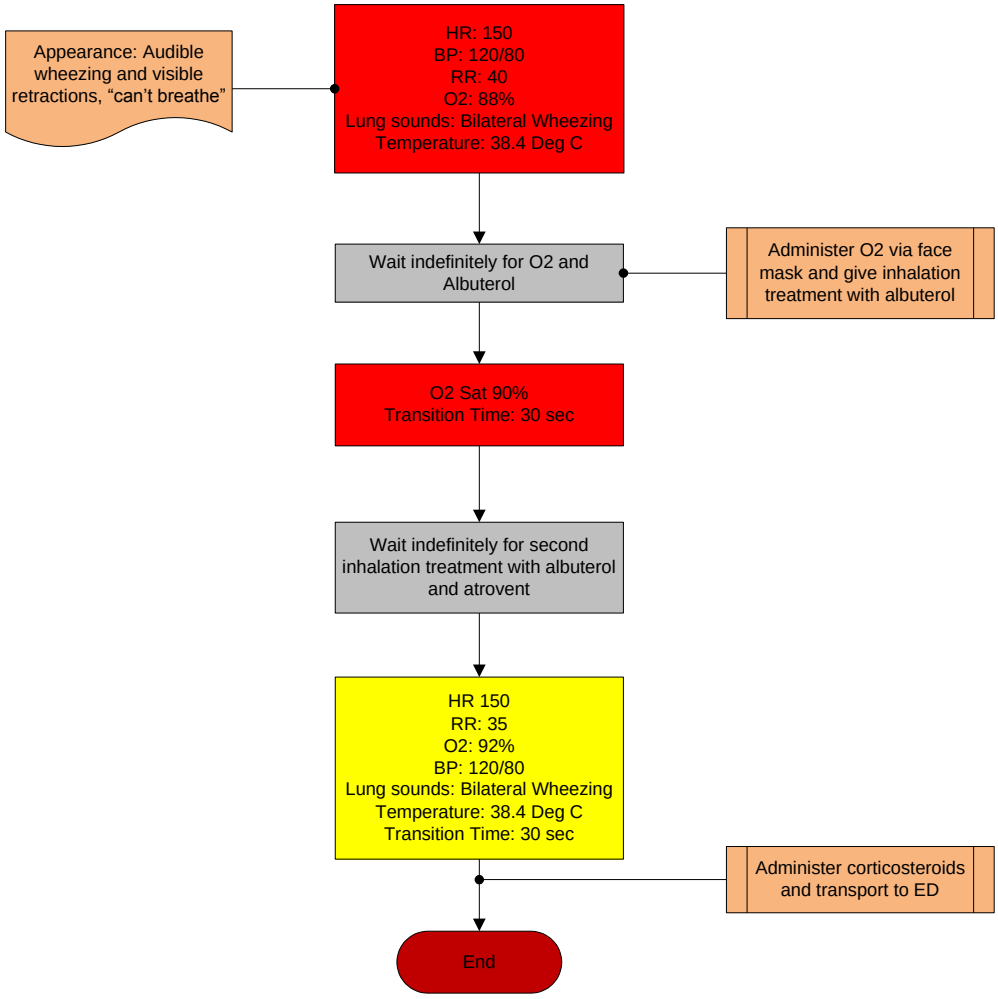
Pediatric HAL® Five Year - Respiratory Scenario

## Asthma

A five year old, known asthmatic began coughing and wheezing the previous day. His parents had "run out" of his daily steroid inhaler two weeks ago. He received two nebulized Albuterol the day before and slept through the night. He had one treatment this morning but by mid morning he was in respiratory distress with audible wheezing and visible retractions. He cannot speak in full sentences.



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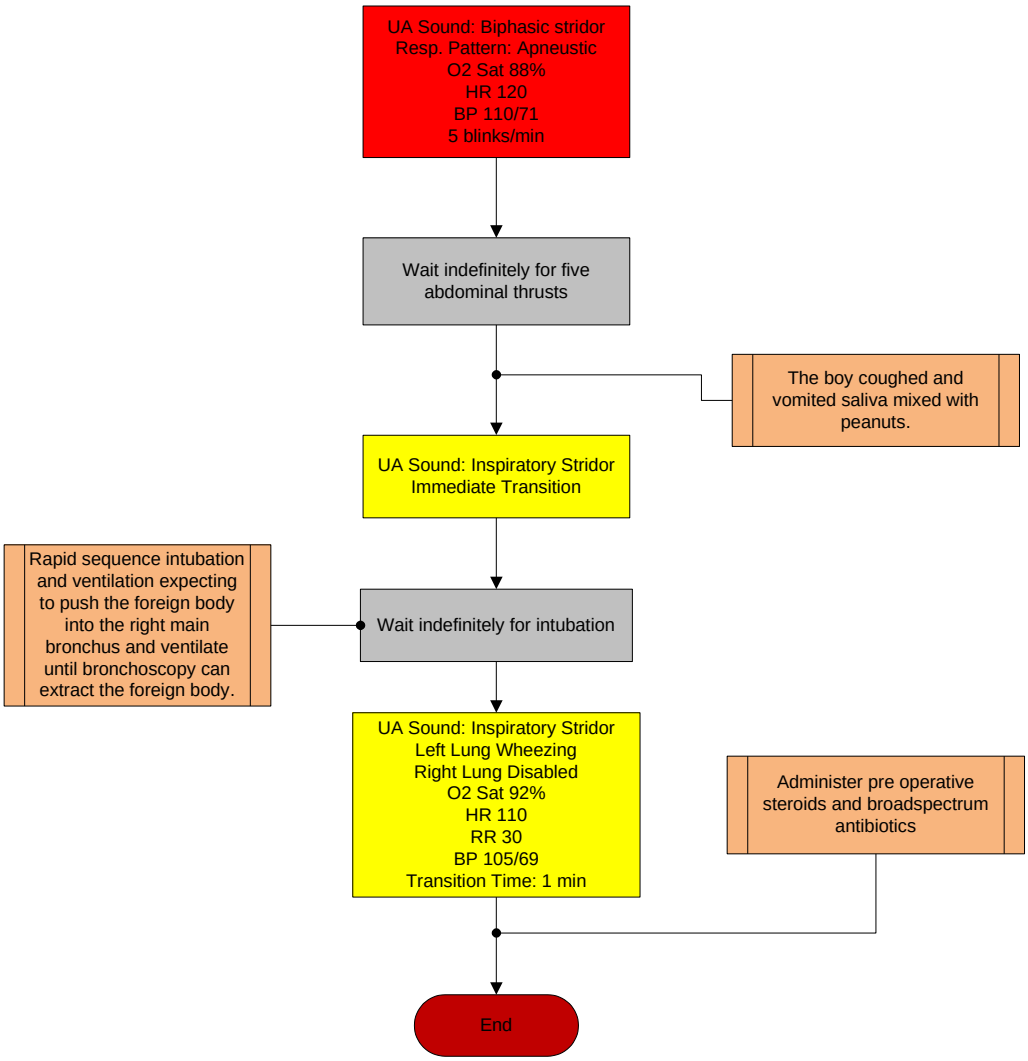
Pediatric HAL® Five Year - Respiratory Scenario

# Foreign Body Aspiration

A five year old boy was visiting his grandmother who had a bowl full of peanuts on the table. He and his older brother were throwing the peanuts in each others mouths and laughing. The five year old began choking and gasping for air. He could still say a few words between coughing, but then he collapsed to the floor. His grandmother ran into the room and his older brother explained he had choked on a peanut. His grandmother saw he was turning "blue". She told her grandson to call 911.



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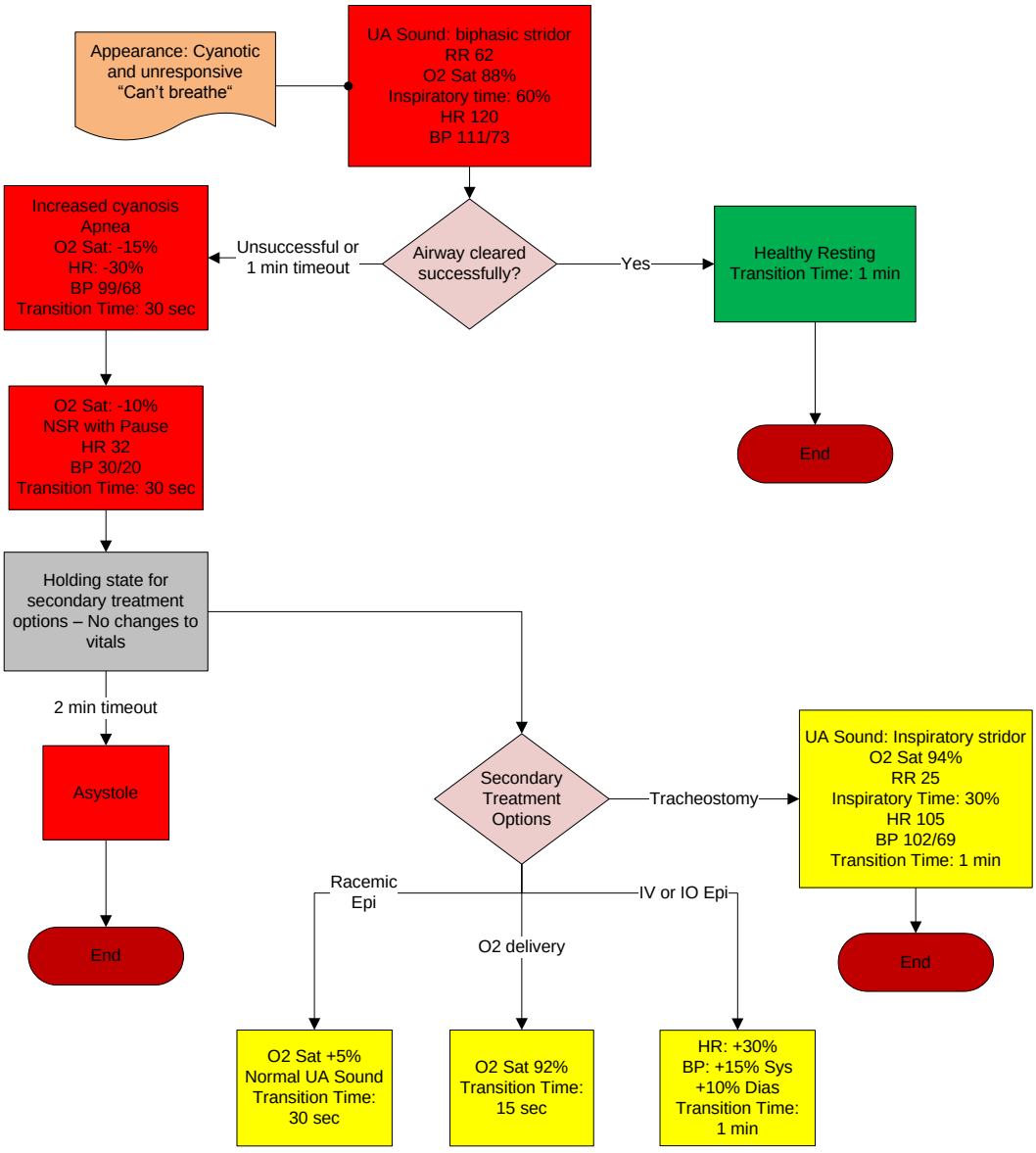
Pediatric HAL® Five Year - Respiratory Scenario

# Upper Airway Obstruction

"Toy Balloon 5yr"

You are at a birthday party where you see a five year old trying to blow up a balloon. Instead of blowing out he sucks the balloon in and begins gasping for breath. He is turning cyanotic and cannot cry. You assess his airway is obstructed and the obstruction must be removed. You try simple measures as back blows and chest thrusts and activate EMS.



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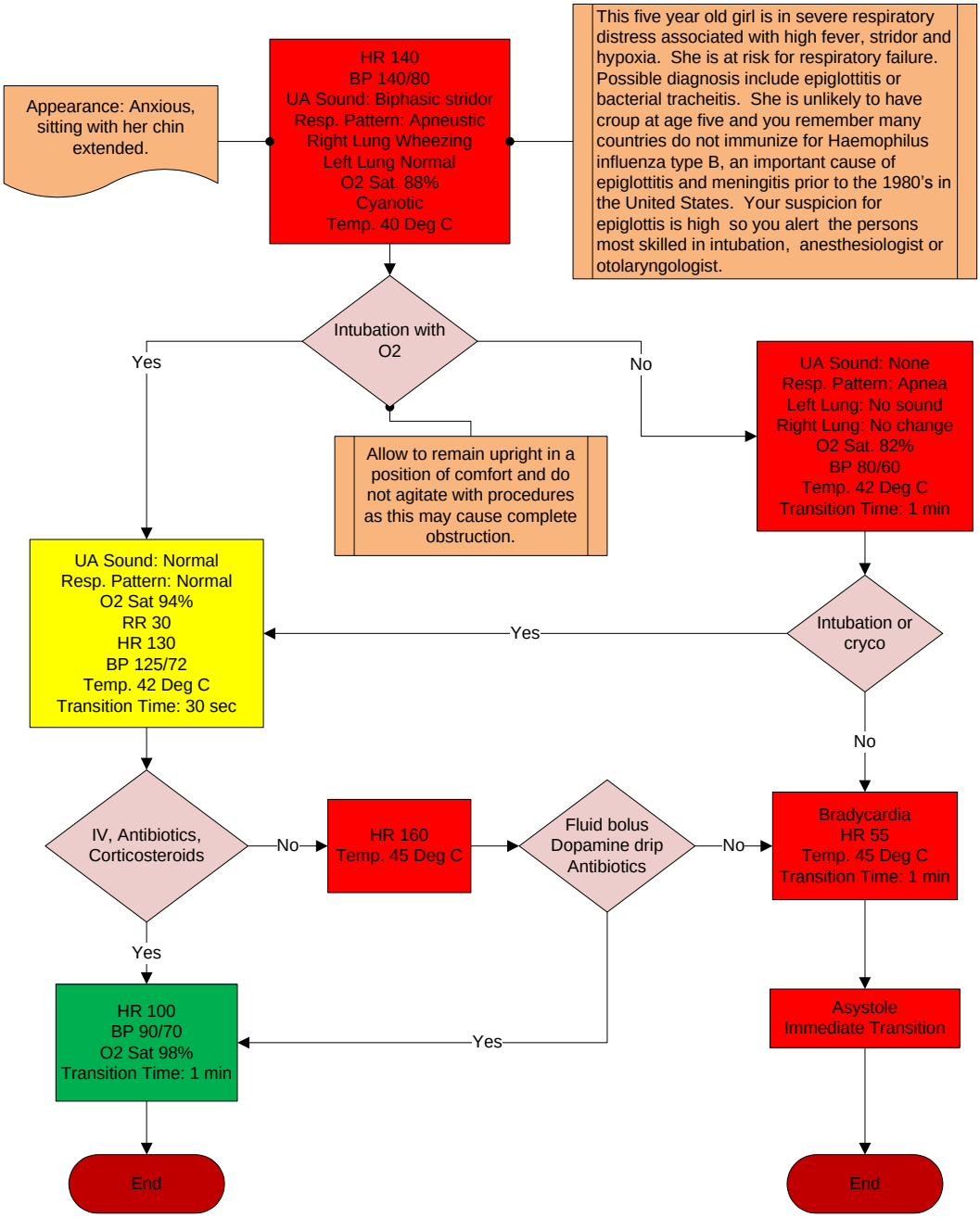
Pediatric HAL® Five Year - Respiratory Scenario

# Epiglottitis

A five year old girl was recently adopted from another country. Her immunization status is in question and her parents had planned to have her immunized soon. Two weeks after her arrival in the United States she developed a high fever of 40 Deg C and has difficulty in swallowing. Her voice became weak and she had coarse stridor with every breath. Her parents tried treating her for croup with some cool mist as they had their other children but she showed no improvement. Her parents then brought her to the E.D.

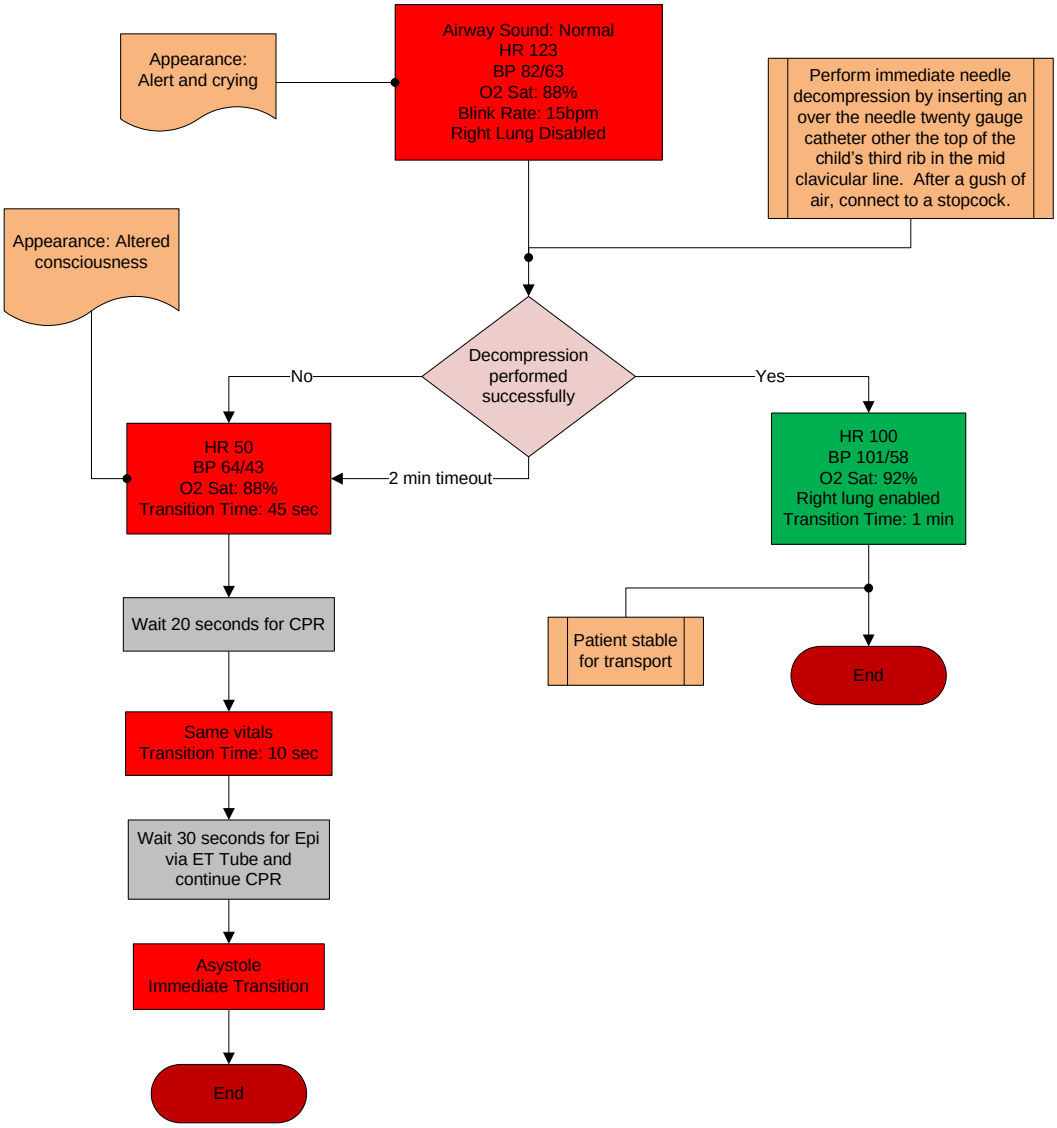


Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Trauma Scenario

## Chest Injury

A five-year-old boy was racing his BMX bike over a dirt hill in his back yard. He had his helmet on but not his chest protector. His mother was watching and said he became airborne and the handle bar of the bike landed on his chest when he hit the ground. He is crying, “my chest hurts” and “I can’t breathe”. He was not unconscious and his extremities and abdomen appear normal. You suspect fractured ribs, a lung contusion or a tension pneumothorax.



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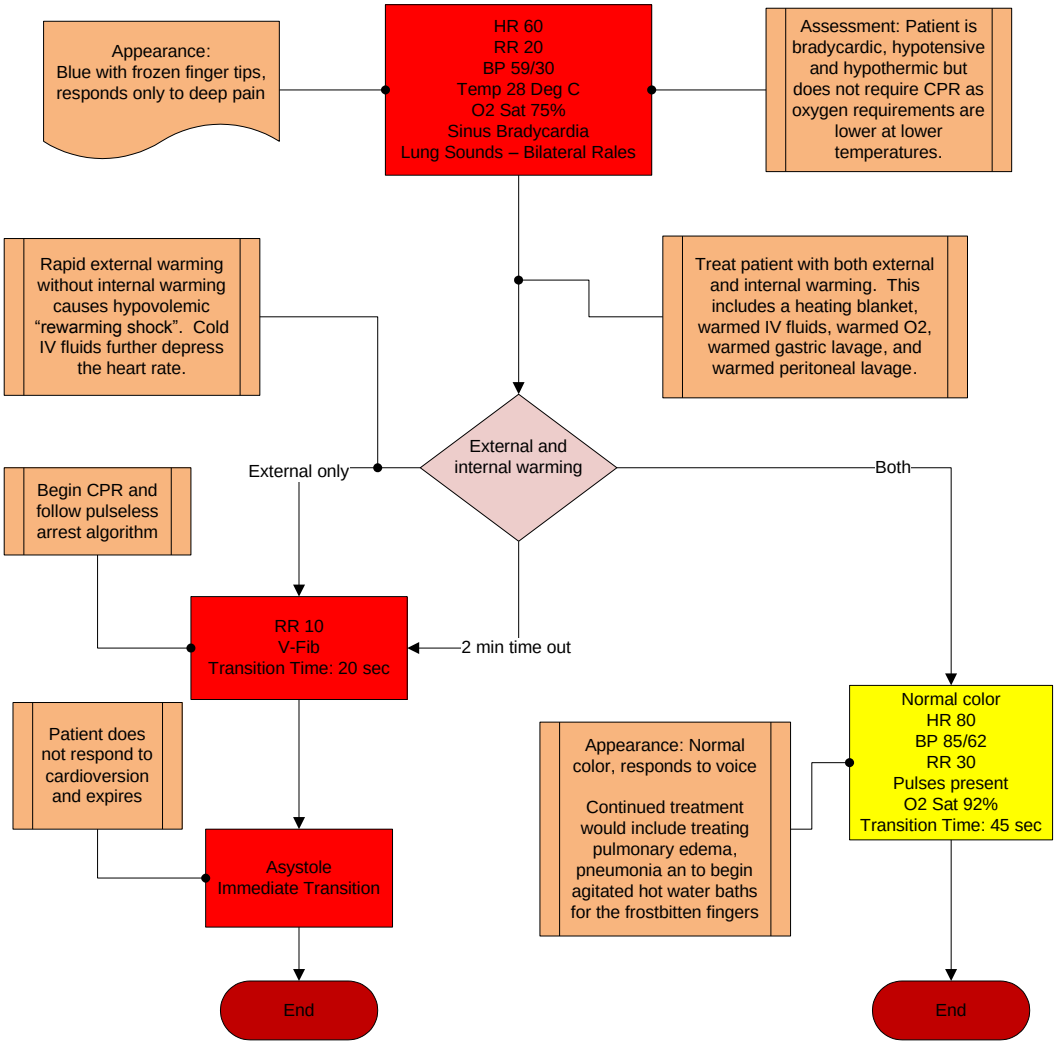
Simulators for Health Care Education

Pediatric HAL® Five Year - Trauma Scenario

# Hypothermia

A five year old boy wandered away from his parent's farm house in freezing temperatures. He was found by a passing motorist curled in a snow drift. He was dressed only in pajamas and his exposure time was at least four hours. The motorist wrapped him up and drove him to the hospital.



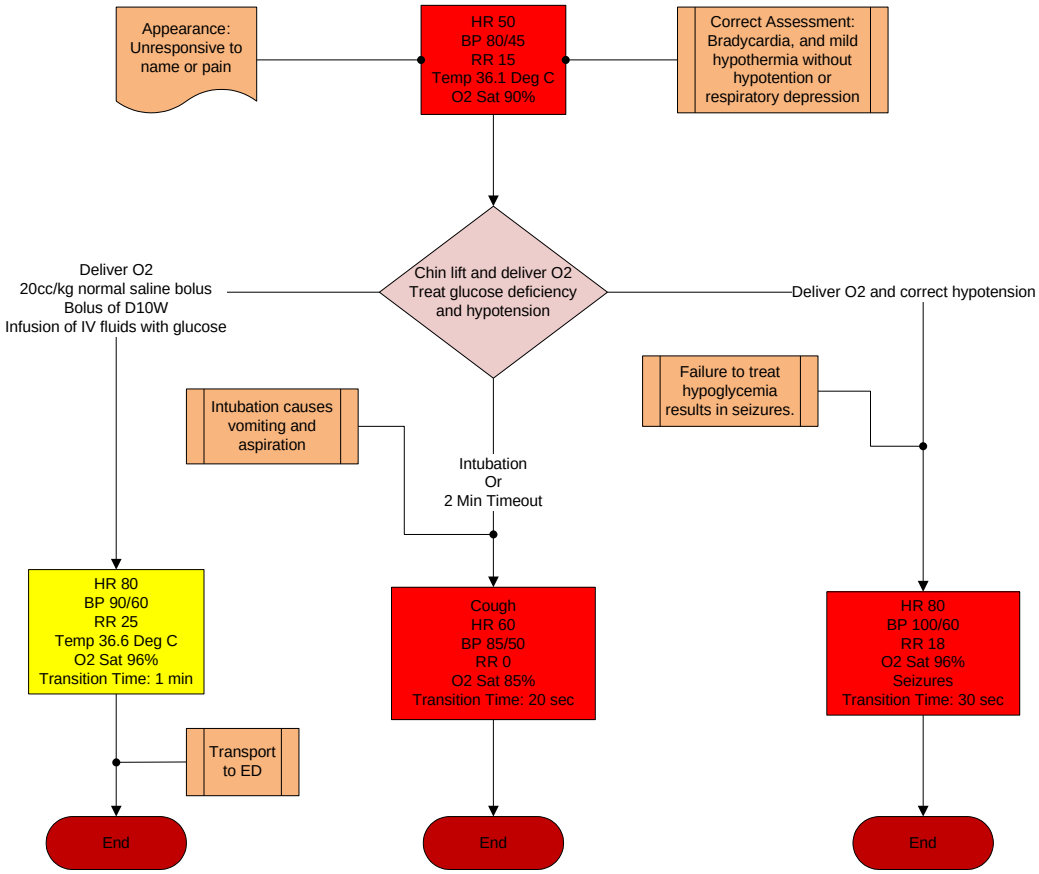
Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Trauma Scenario

## Alcohol Ingestion

Bradycardia and Hypoglycemia

A five year old boy wakes up early and is thirsty. His parents had a party the night before and left glasses half full of mixed alcoholic drinks around the living room. When the parents get up two hours later they find him asleep on the floor and smelling of alcohol. They cannot wake him up so they call 911.

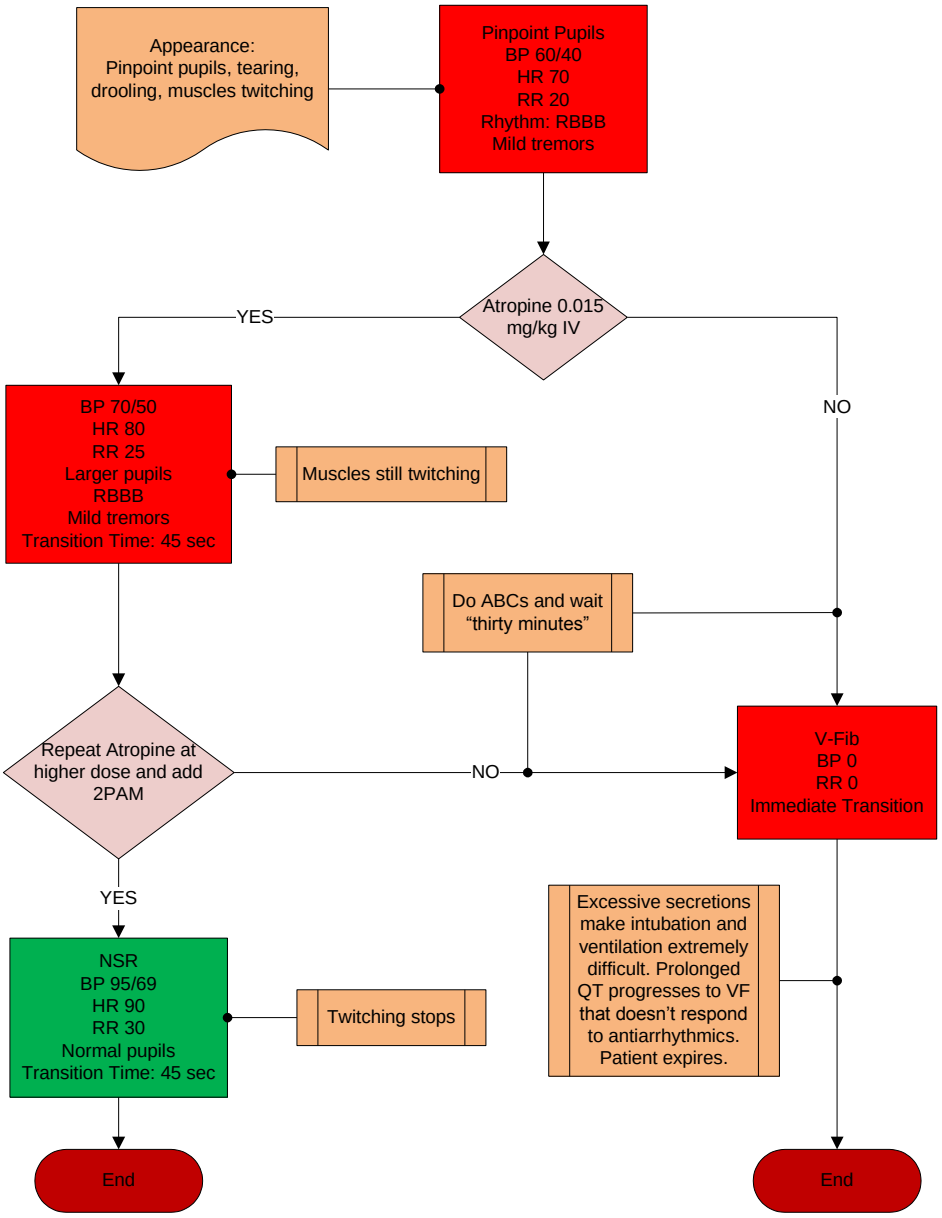


Pediatric HAL® Five Year - Trauma Scenario

# Organophosphate Poisoning

"OP Poisoning"

A five year old immigrant boy wandered in a field that was recently sprayed with pesticides (Organophosphate). His parents took off his cloths and washed him off with water but a few minutes later he began vomiting and became "limp". They drove him to the ED that was thirty minutes away.



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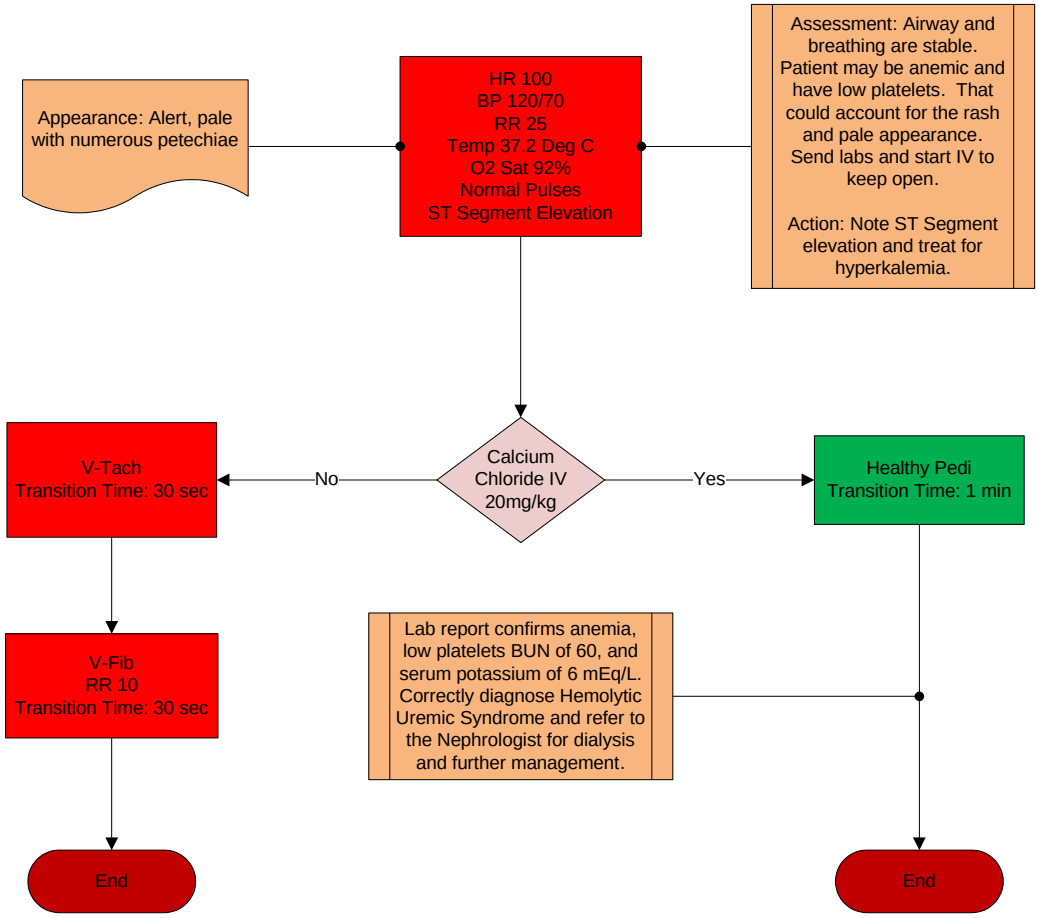
Simulators for Health Care Education

Pediatric HAL® Five Year - Trauma Scenario

## Renal Failure and Hyperkalemia

A five year old boy presents to the ED with some tiny red dots on his arms and legs and his mother says he hasn't "peed" since yesterday. Last week he had some bloody diarrhea and has been vomiting for two days but they were on vacation so they didn't see a doctor.

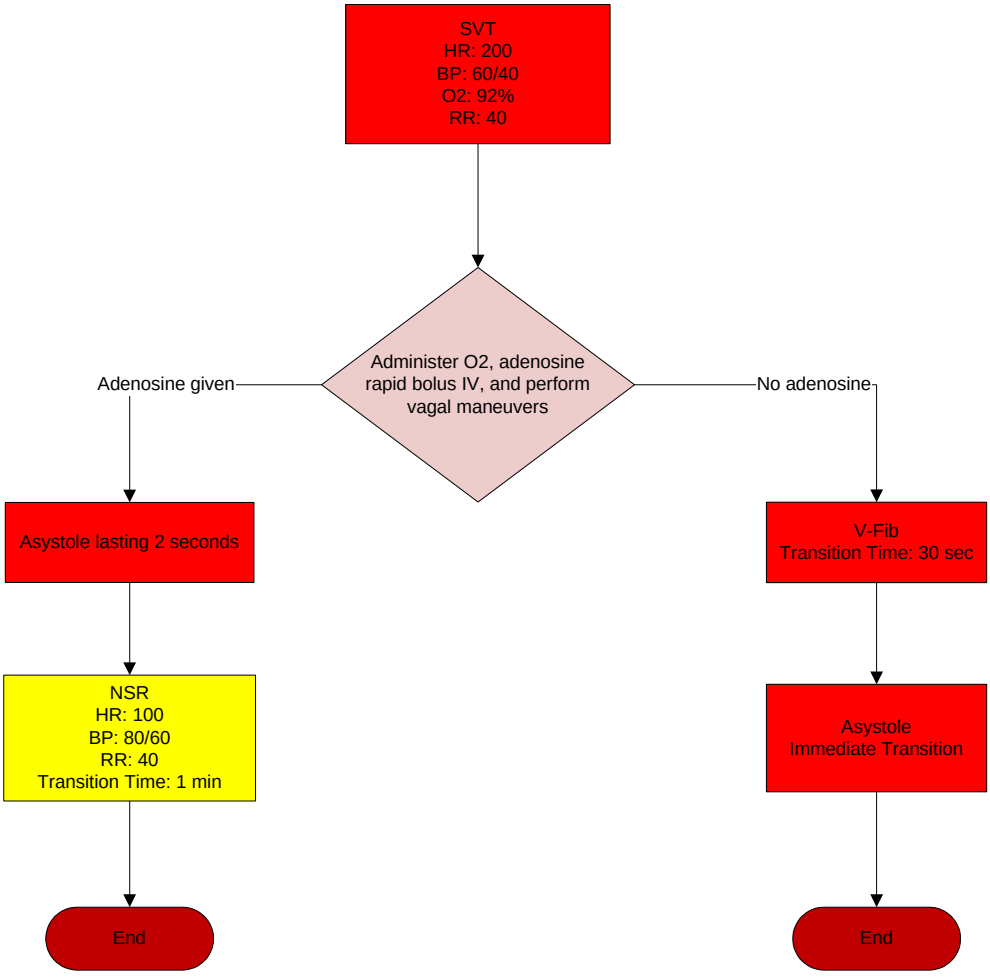


Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Cardiac Scenario

## Soccer Boy with SVT

A previously healthy boy is brought to the ED because his mother says he has been acting tired and passed out while playing soccer today. He said his chest hurts and his heart jumps.

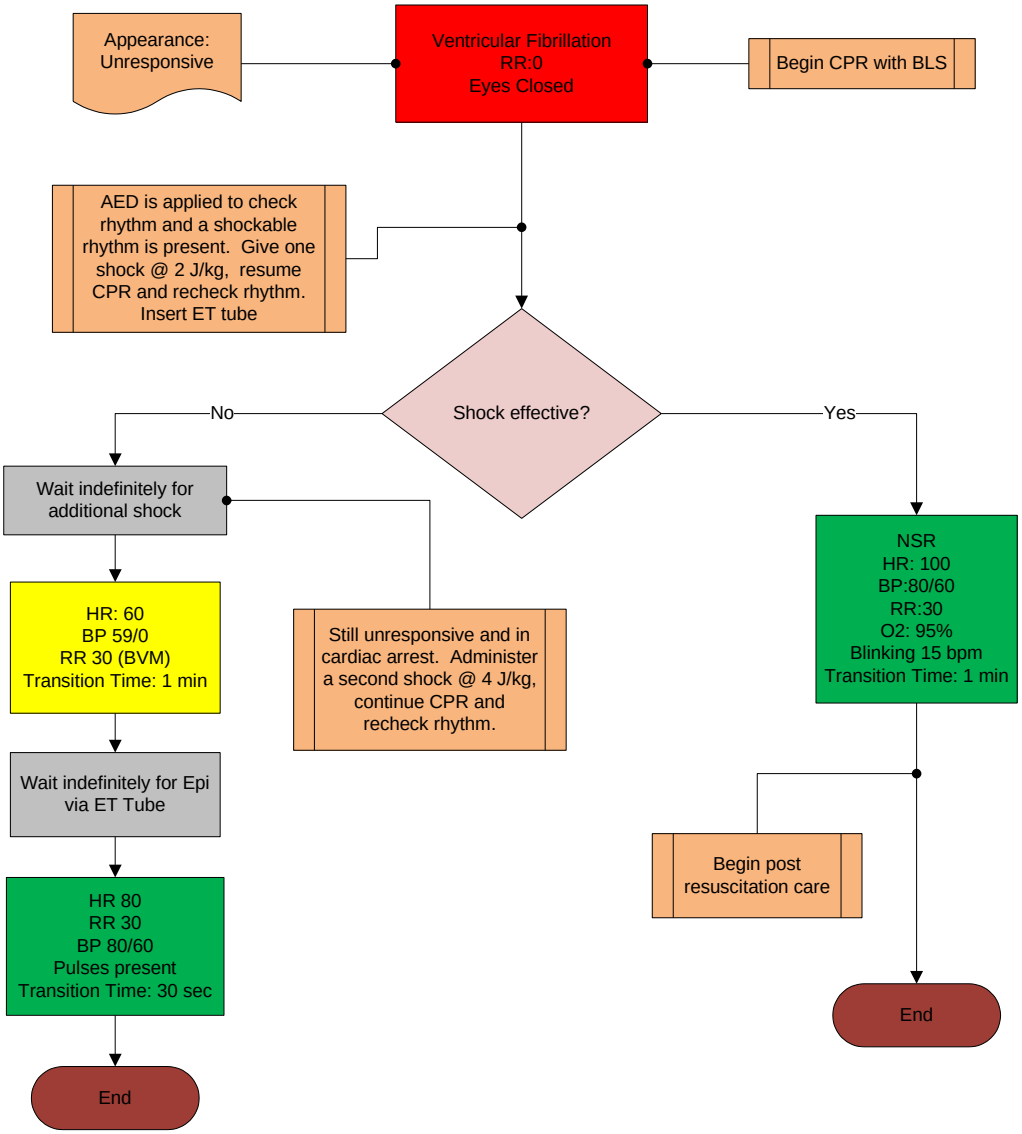


Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Cardiac Scenario

## Cardiac Arrest

While watching a baseball game a five-year-old boy was hit by a high velocity “foul ball” in the chest. He immediately falls to the ground and cries “I’m hurt”. As you approach he becomes unresponsive. You access the ABC’s and find him to be pulse less and not breathing. You call for an EMT and report a cardiac arrest.



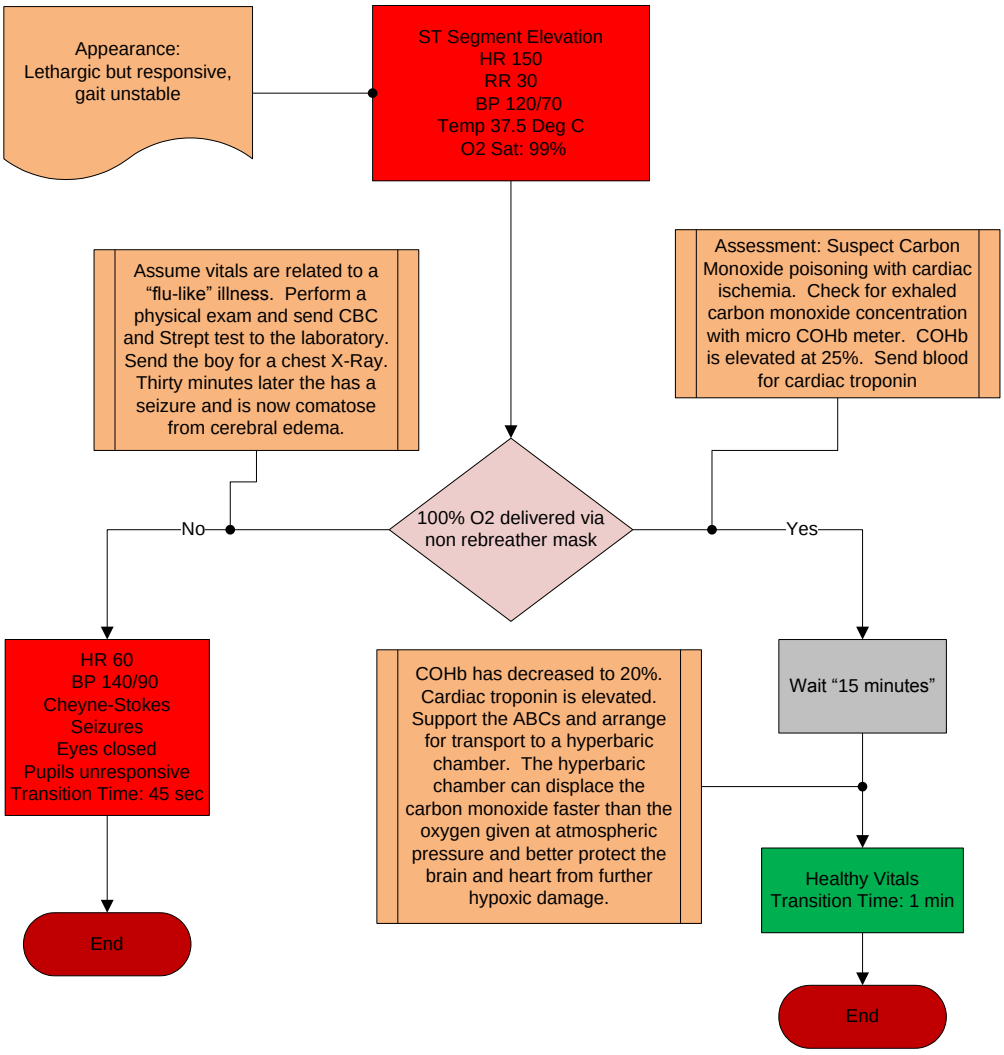
Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Cardiac Scenario

# Cardiac Ischemia

*Carbon Monoxide Poisoning*

During the ride home from a family camping trip a five year old boy falls asleep in the back of his parents truck camper. The night was cold so the heater in the cab was turned on. When they returned home he seemed confused, couldn't walk and complained of a headache and vomited. His parents bring him to the ED and are worried about meningitis.



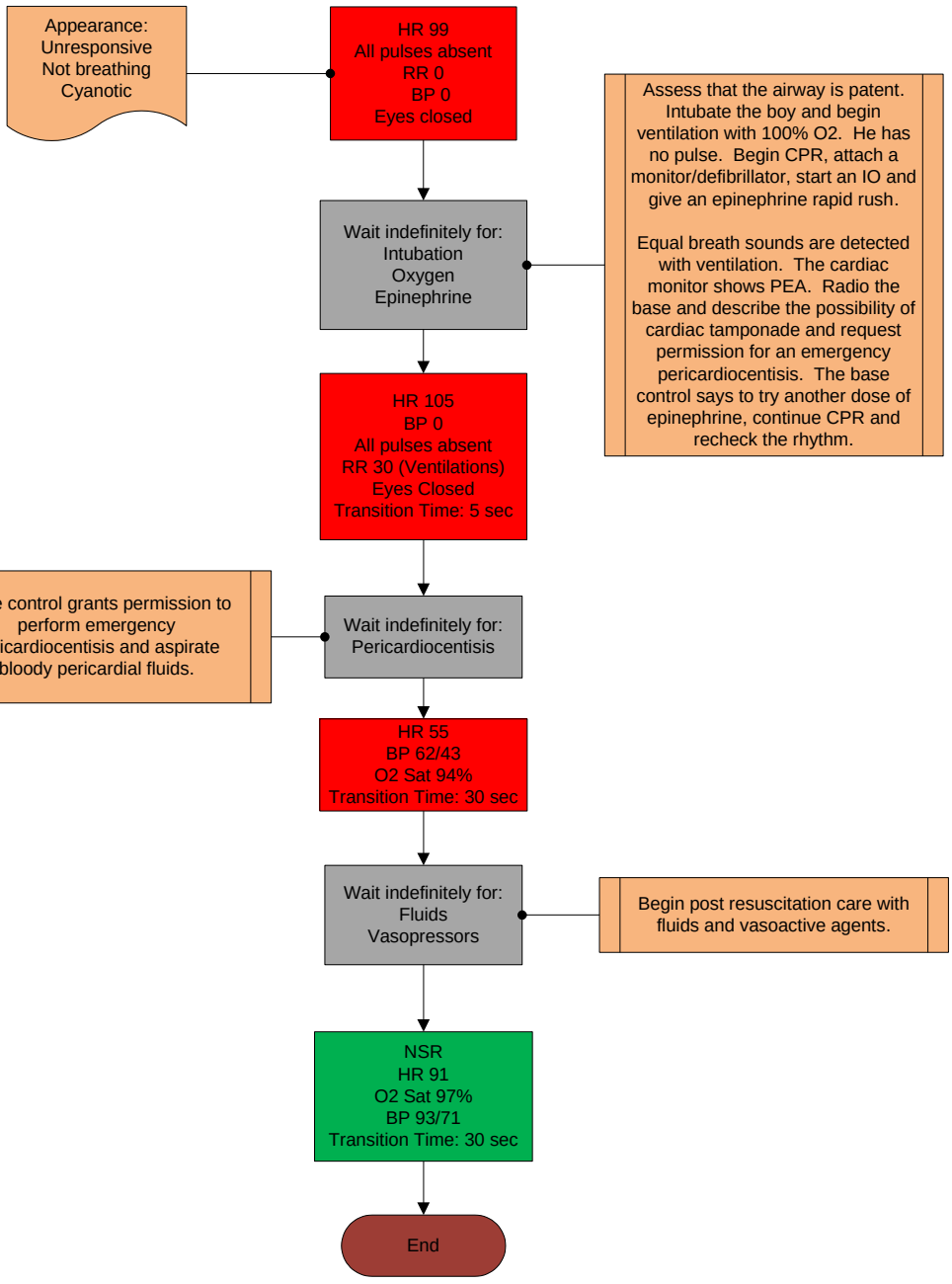
Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Cardiac Scenario

# Cardiac Tamponade

*Obstructive Shock / Pulseless Arrest*

A five year old boy has a gunshot wound to his chest. The family has called 911 but has not begun CPR .You are the first responder with your emergency team. The boy is unresponsive with an entry wound near his heart. The family said he was crying a few minutes ago.

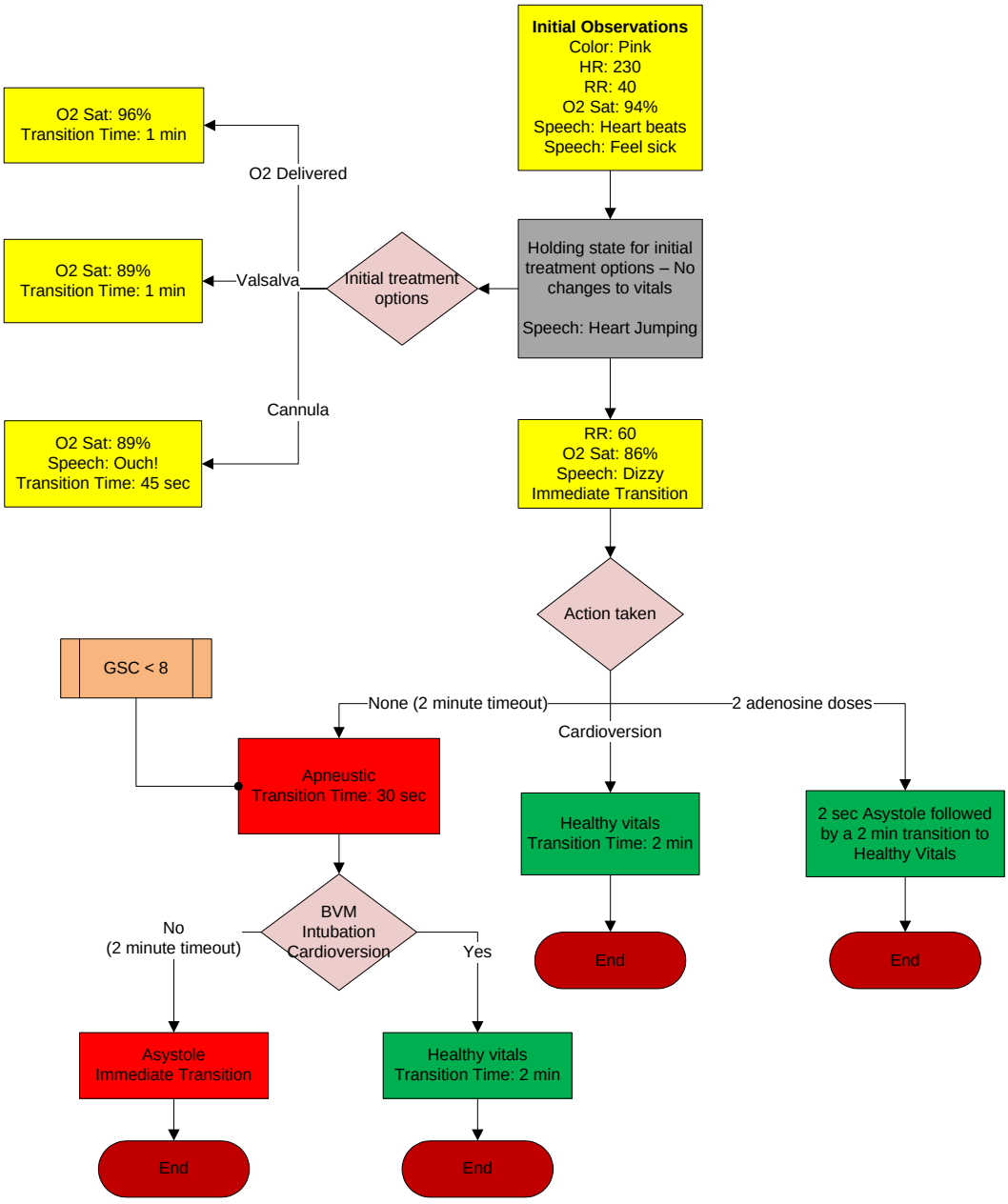


Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Cardiac Scenario

# Supraventricular Tachycardia

A previously healthy boy is brought to the ED. According to his dad he has been acting tired and passed out today. He said he feels dizzy and his heart jumps.

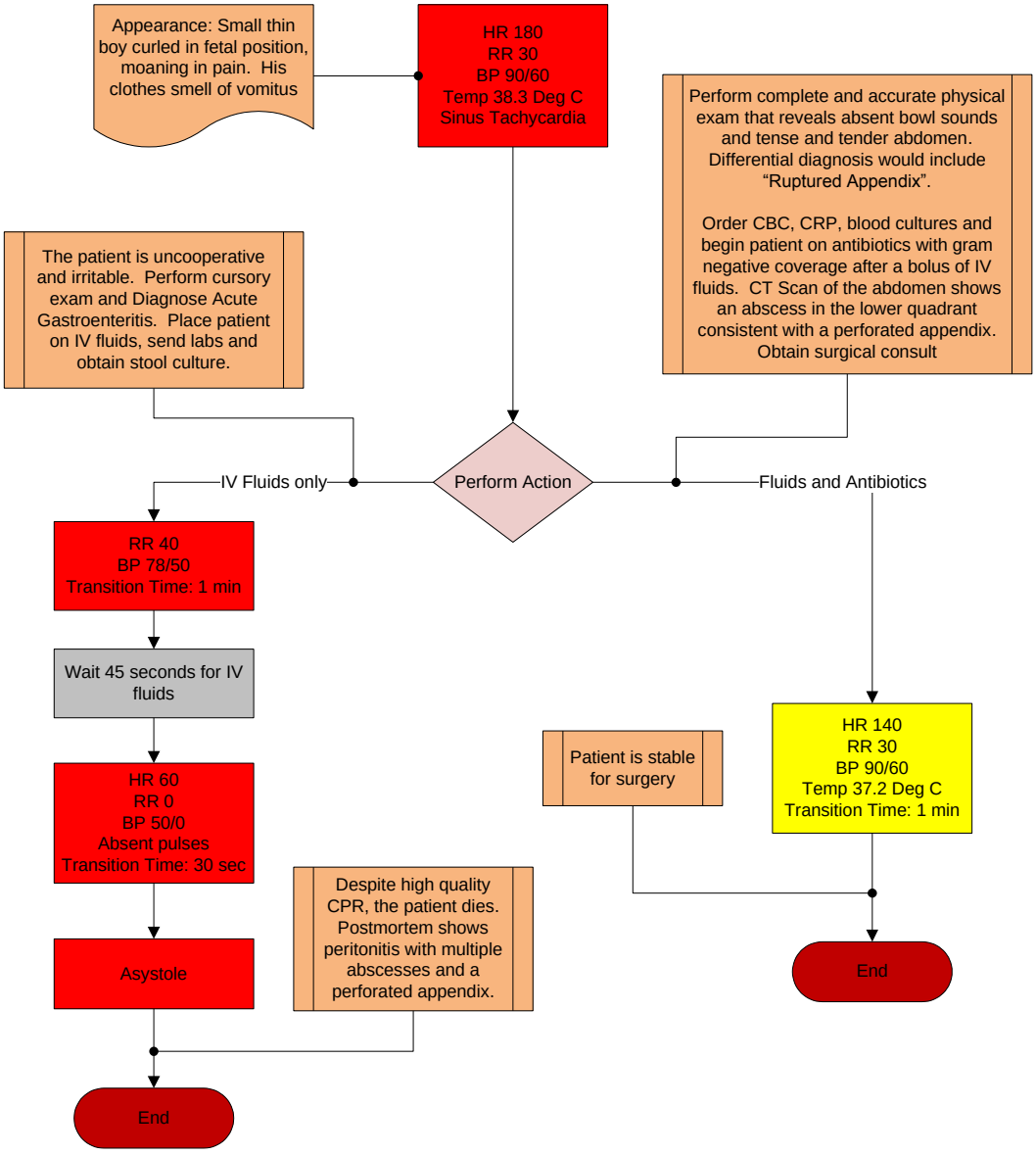


Pediatric HAL® Five Year - Systemic Scenario

# Gram Negative Sepsis

*Perforated Viscous and Peritonitis*

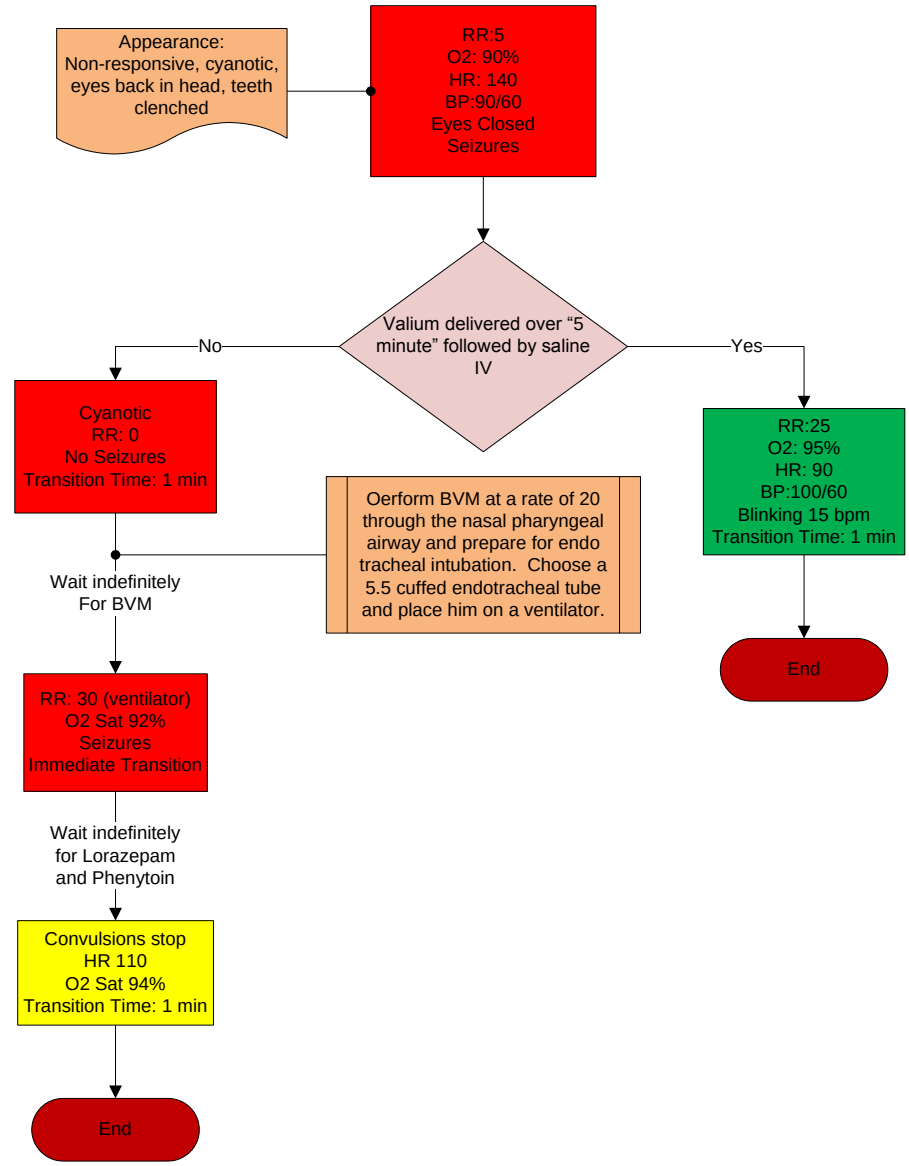
A five year old boy, with cerebral palsy is carried in to the ED by his foster father. He is one of five foster children, all with special needs. He wears braces to walk and has speech and language delays. He has been vomiting for three days and has been refusing to eat. He has also been crying a lot. He has no medications. His foster father says he has to leave because his wife needs the car to go to work.



Pediatric HAL® Five Year - Systemic Scenario

# Status Epilepticus

Mom calls 911 because as her son was falling asleep she noticed seizure activity of his arms and legs. He had had short seizures with high fever when he was one and two. This Time he had no fever and was well the entire day. There has been no history of trauma. He has been seizing for at least fifteen minutes.



Gaumard®
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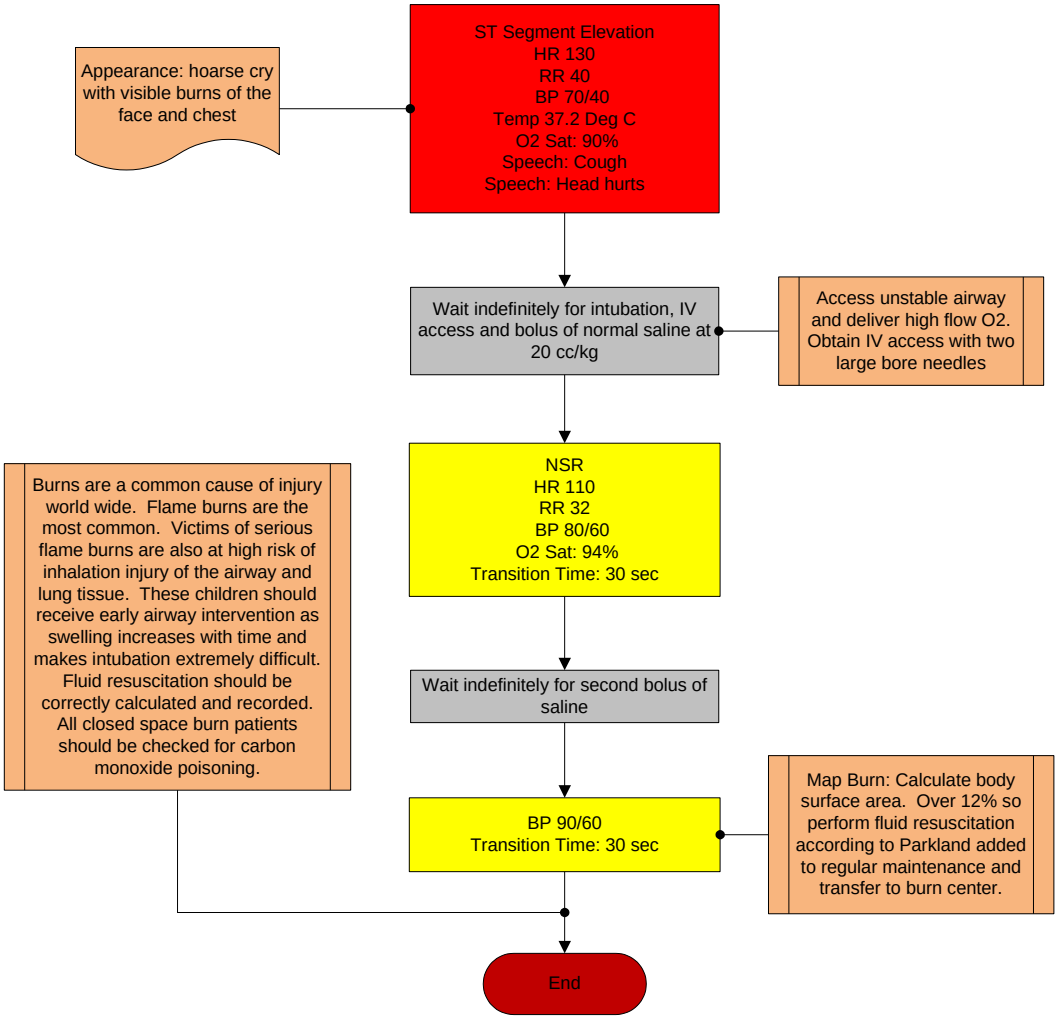
Pediatric HAL® Five Year - Systemic Scenario

# Fire Victim

A five-year old boy is rescued by his father from a house fire. He was found in his bedroom asleep. The room was engulfed with flames and smoke. His pajamas are charred and his face is burned and covered with soot. His pajamas are removed to reveal his arm and torso are burned. He inhaled a large amount of smoke during the fire.

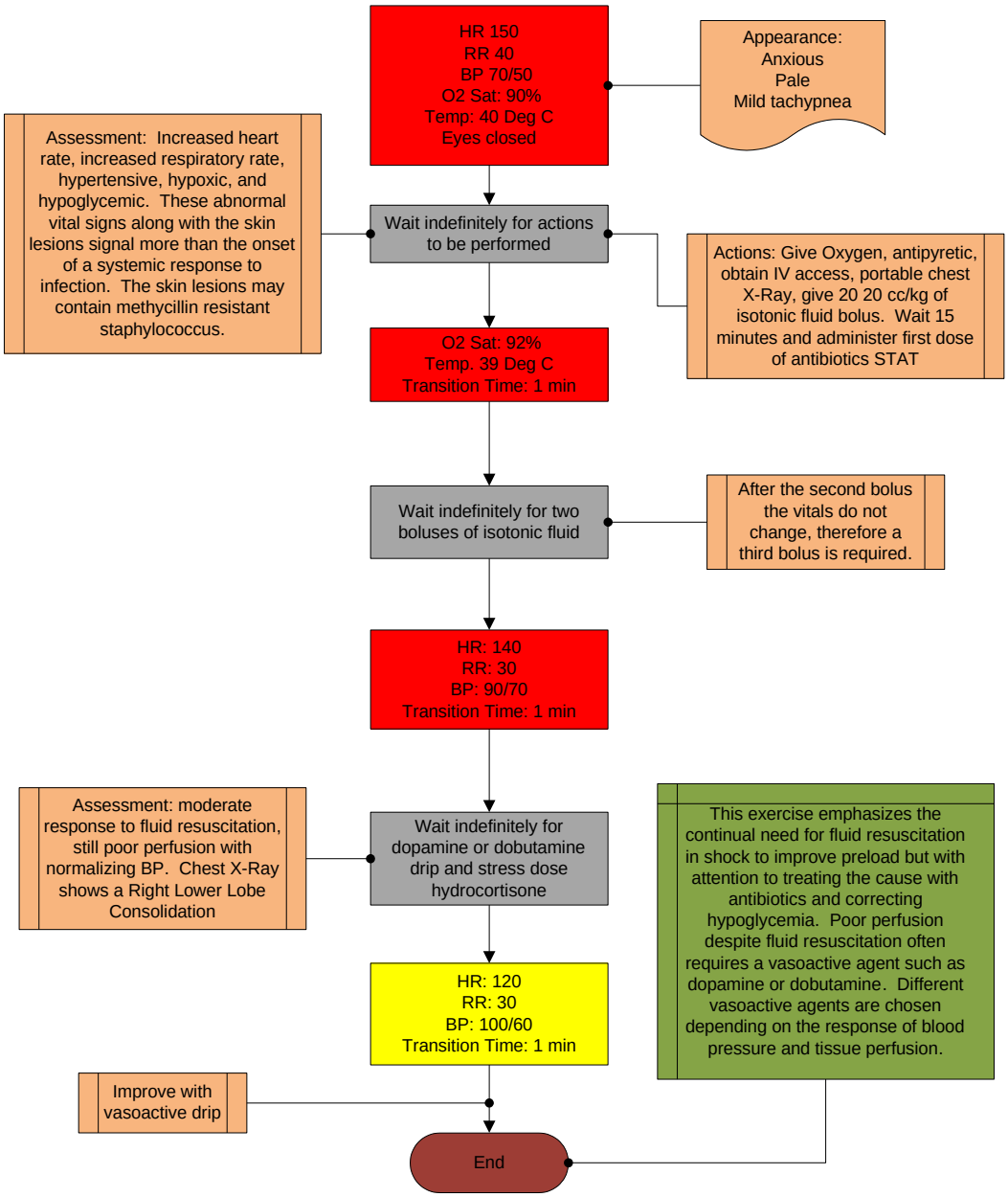


Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Systemic Scenario

## Septic Distributive Shock

A five year old boy with Sickle Cell Anemia is brought to the ED with what the mother thought were infected mosquito bites. She treated them with antibiotic ointment. Most of them improved except for one large area on his abdomen that now measures 3X4 cm. with a localized abscess formation. He developed fever yesterday of 40 Deg C. Today he has developed chills and his temperature is still 40 Deg C despite fever reducers. He takes folic acid and penicillin daily. His immunizations are up to date.

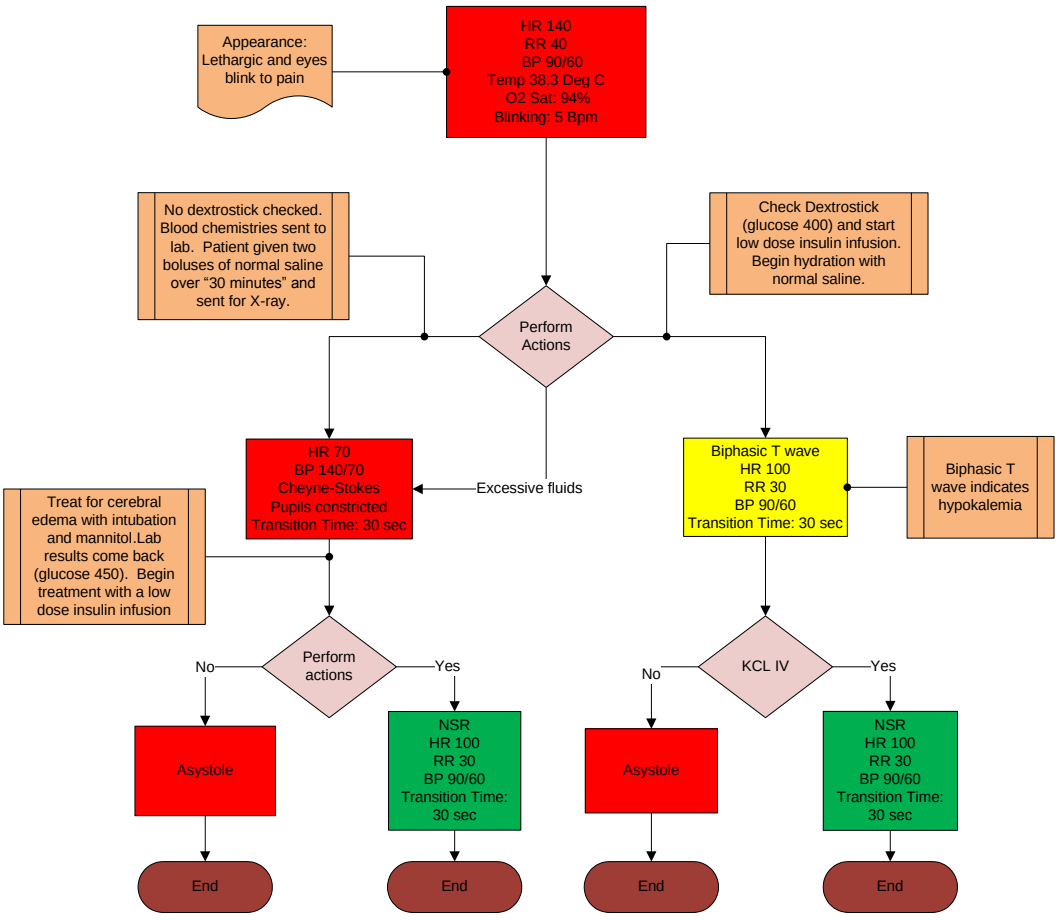


Gaumard®
Simulators for Health Care Education

Pediatric HAL® Five Year - Systemic Scenario

## Diabetic Ketoacidosis

A five-year old boy presents to the ED with a history of vomiting for one day. His mother says he has vomited at least ten times since the night before and he can't keep anything down. He has a low-grade fever and has not had diarrhea but he has been wetting the bed. He appears pale with sunken eyes and breathing very rapidly.



## PEDIATRIC HAL 1 YEAR SCENARIOS

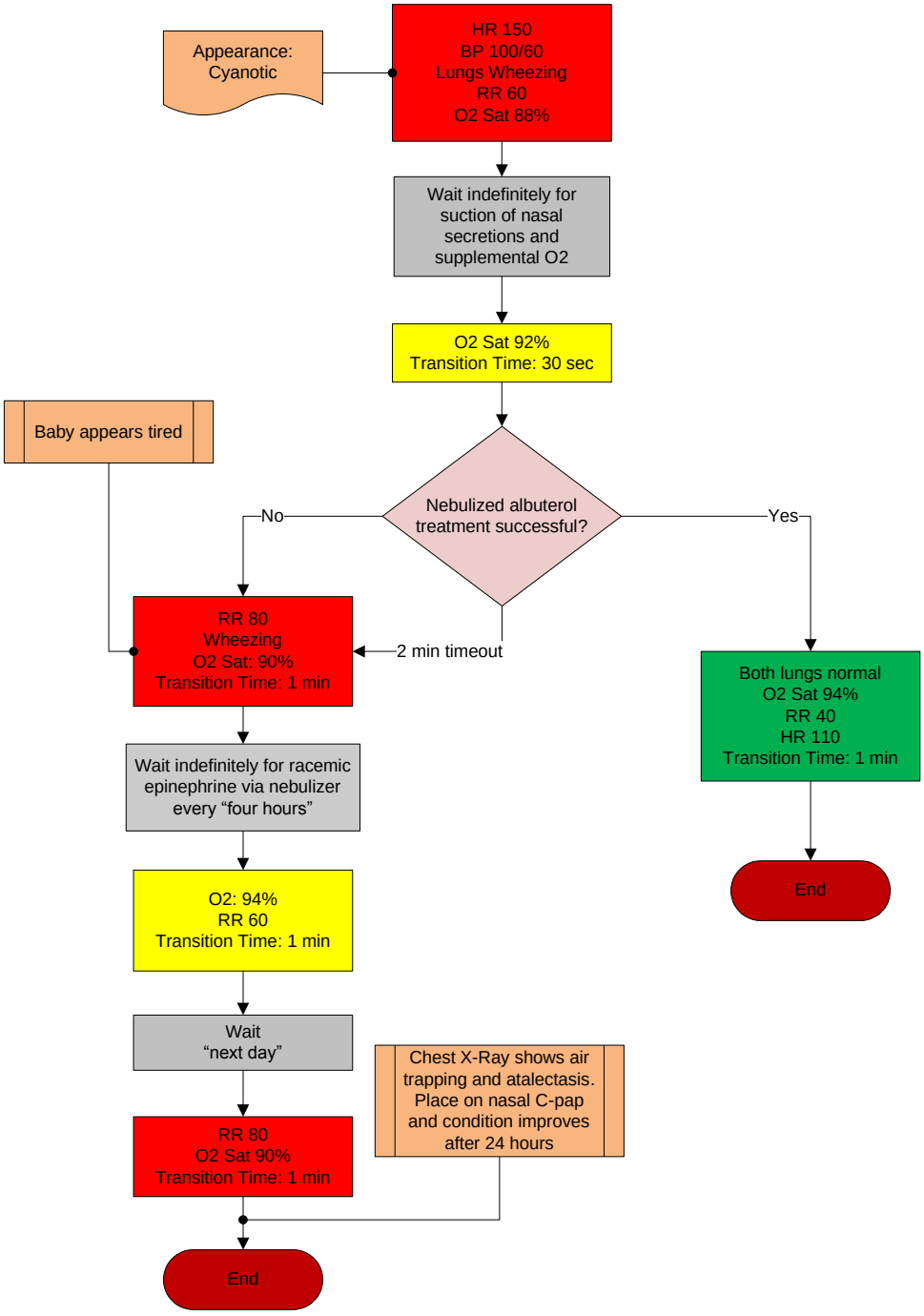
| Category | Scenario |
|---|---|
| Respiratory | |
| | 1. Bronchiolitis |
| | 2. Upper Airway Obstruction (Toy Aspiration) |
| | 3. Croup |
| | 4. Pneumonia |
| | 5. Pneumonia with Septic Shock |
| Trauma | |
| | 1. Shaken Baby Syndrome |
| | 2. Drowning Boy |
| Cardiac | |
| | 1. Second Degree Block |
| | 2. Sinus Tachycardia and Hypertension |
| | 3. Congenital Heart Failure |
| Systemic | |
| | 1. Bee Sting |
| | 2. Hypovolemic Shock |
| Automatic | |
| | Adenosine OD |
| | Adenosine SD |
| | Adenosine UD |

Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Respiratory Scenario

## Bronchiolitis

A one year old child is brought to your ER with a one day history of a clear runny nose, low grade temperature and a wet cough. His mother states today that he is refusing to drink and appears to be breathing fast. She claims his immunizations are up to date and he has been in good health.

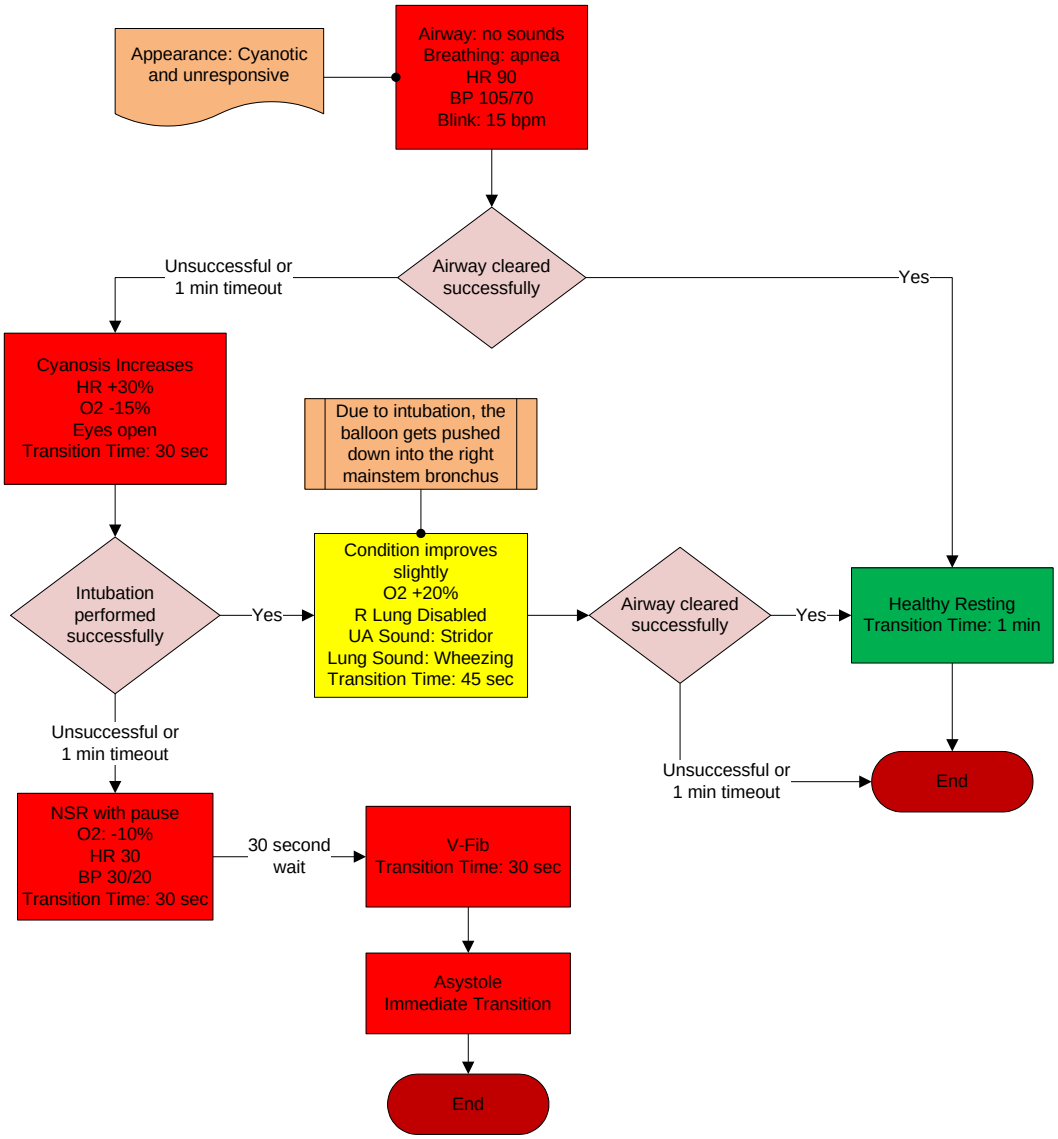


Pediatric HAL® One Year - Respiratory Scenario

# Upper Airway Obstruction

"Toy Aspiration"

You are at a birthday party where you see a one year old trying to blow up a balloon. Instead of blowing out he sucks the balloon in and begins gasping for breath. He is turning cyanotic and cannot cry. You assess his airway is obstructed and the obstruction must be removed. You try simple measures as back blows and chest thrusts and activate EMS.



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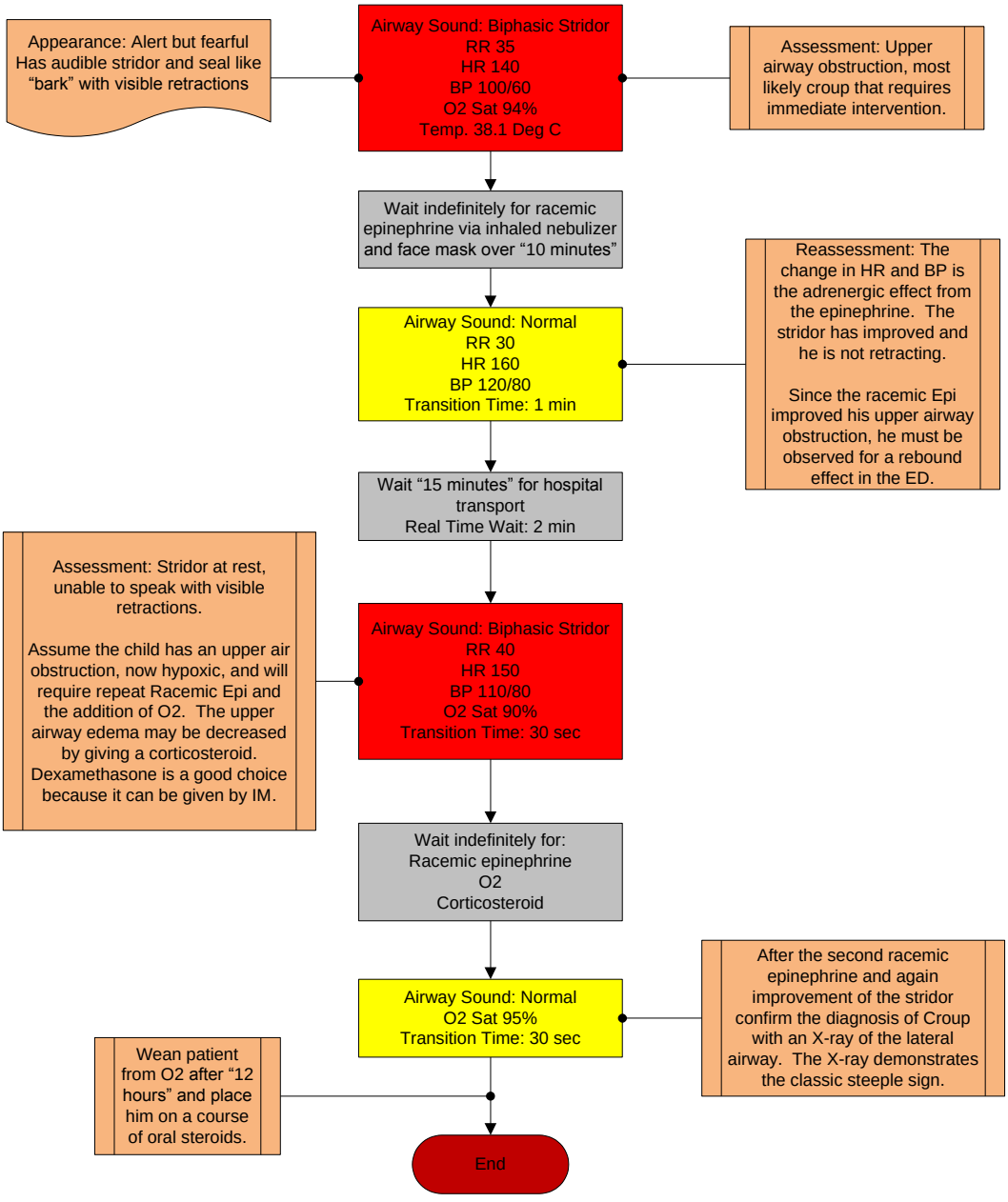
Simulators for Health Care Education

Pediatric HAL® One Year - Respiratory Scenario

# Croup

You are called to a home at two a.m. because a one-year old boy "can't breathe". His parents said he was fine when they put him to bed. He has had no illness before and there is no history of asthma. He woke up with a "barking cough" and then began to struggle for each breath. They called their advice line that said to put him in some steam from the bathroom shower. He did not improve, so they called 911.



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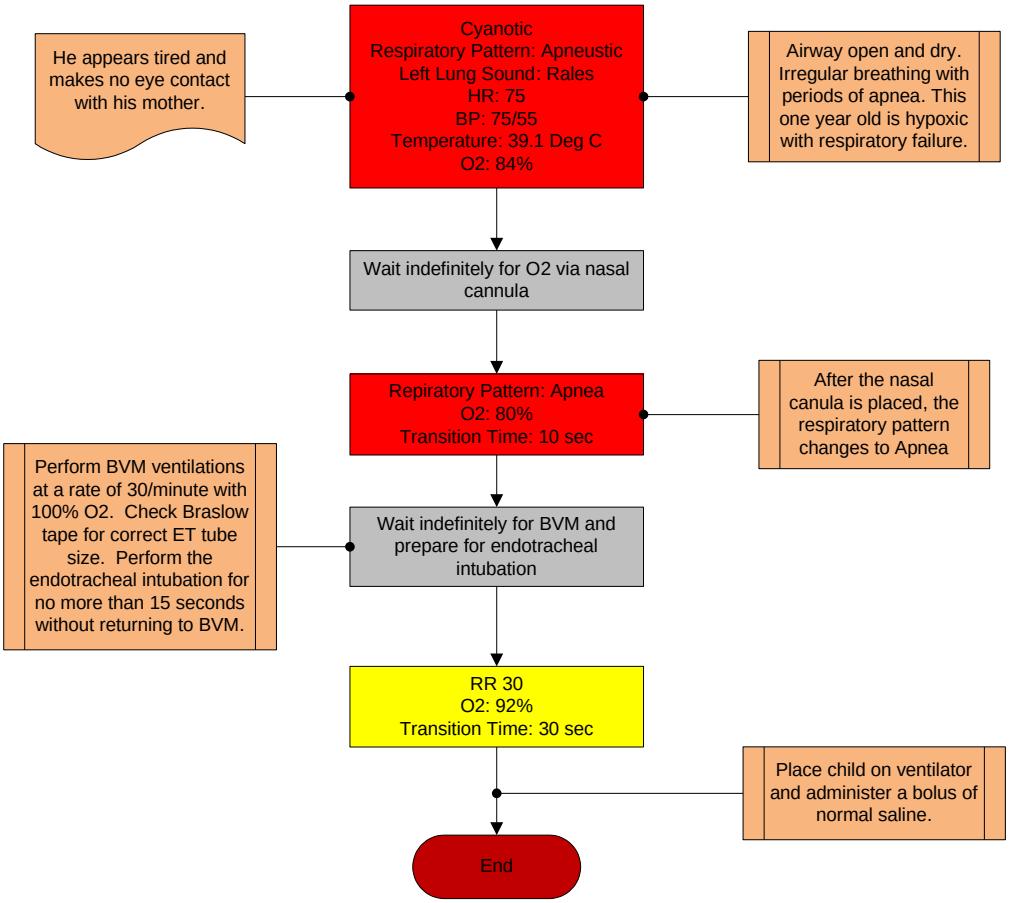
Simulators for Health Care Education

Pediatric HAL® One Year - Respiratory Scenario

# Pneumonia

You are called to a home where a one-year old child is gasping forbreath. His mother says he has had wheezing before and is being treated for ”baby asthma”. He saw his doctor last week and has been receiving nebulized Albuterol three times a day for one week. Over the past few days his fever has increased to 39.1 Deg C, his nose has become more filled with yellow mucous and he has had little to drink. He is not taking any antibiotics.

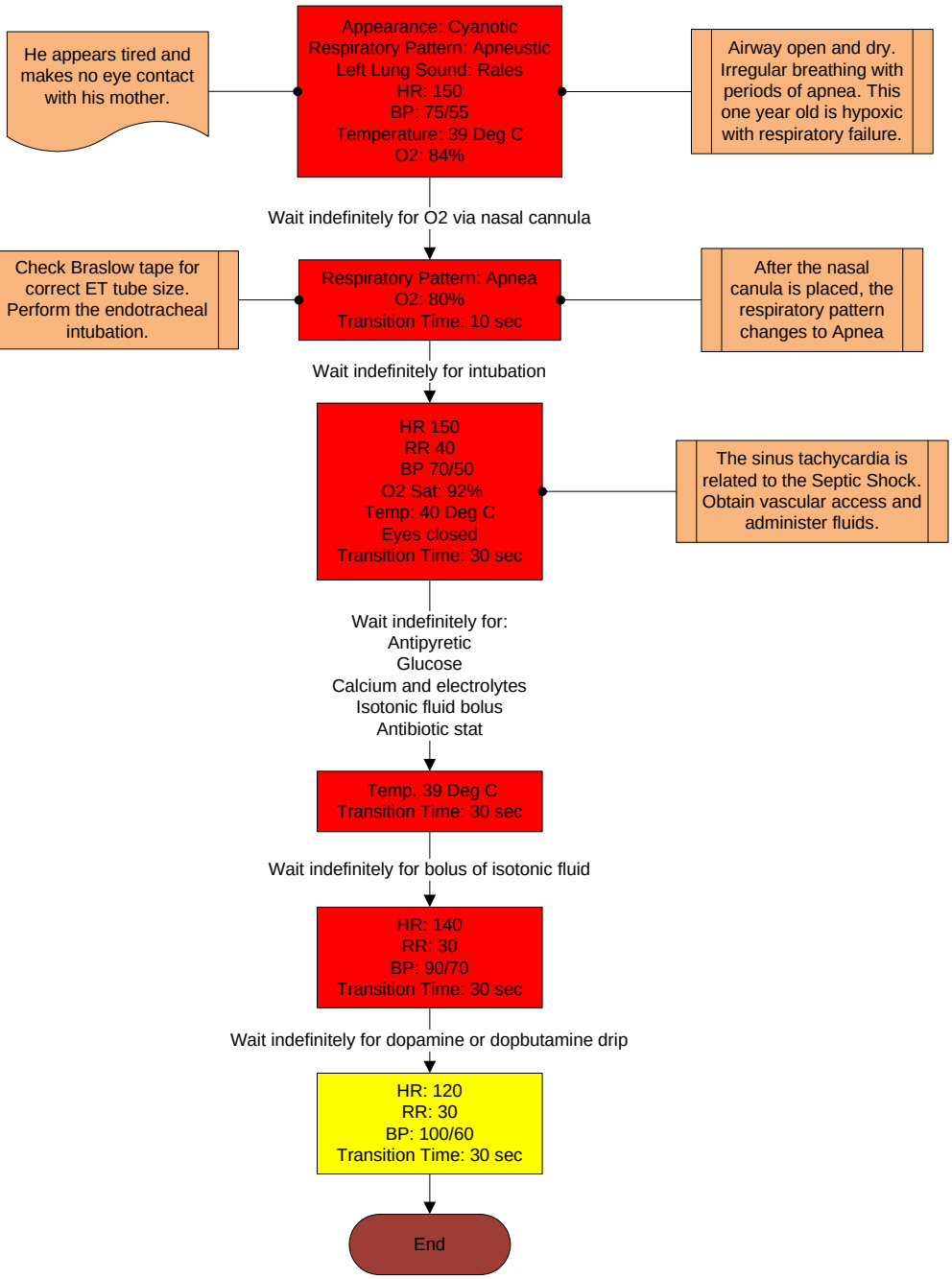


Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Respiratory Scenario

# Pneumonia with Septic Shock

You are called to a home where a one-year-old child is gasping for breath. His mother says he has had wheezing before and is being treated for "baby asthma". He saw his doctor last week and has been receiving nebulized Albuterol three times a day for one week. Over the past few days his fever has increased to 39 Deg C, his nose has become more filled with yellow mucous and he has had little to drink. He is not taking any antibiotics.

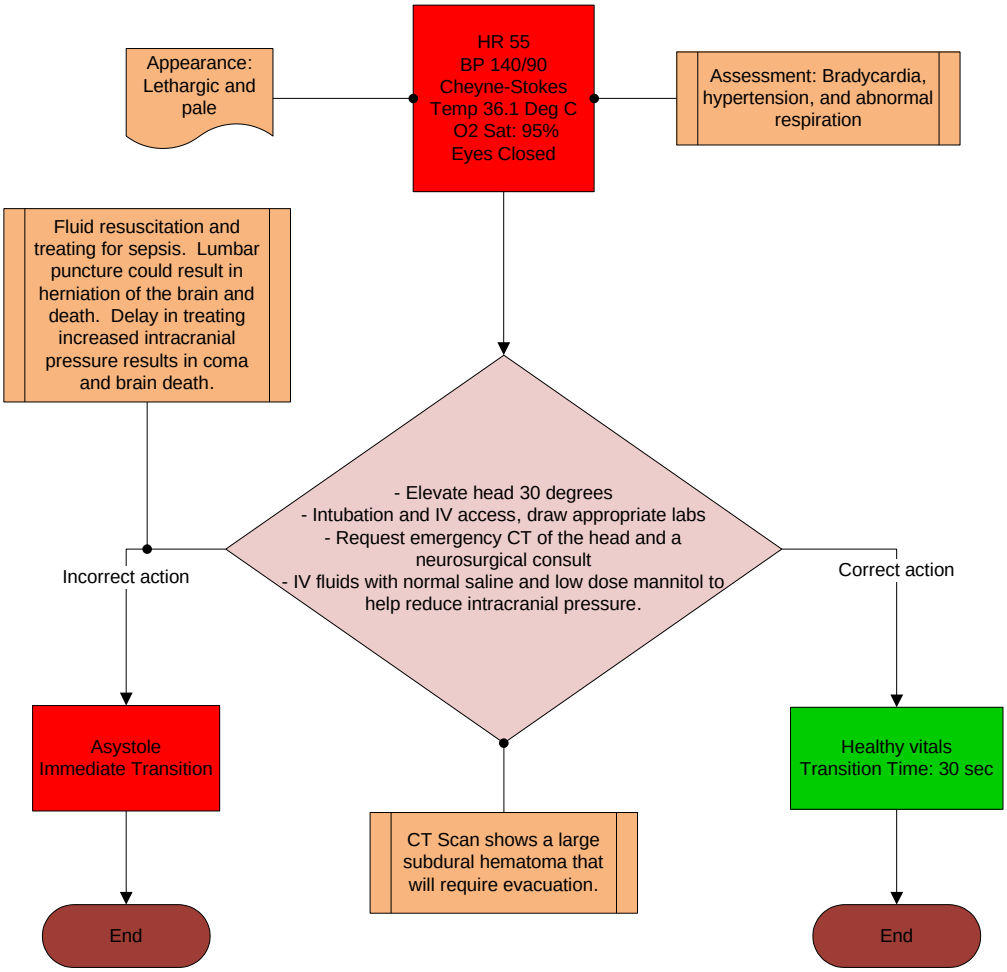


Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Trauma Scenario

# Shaken Baby Syndrome

A young mother returned from her night shift to find her one year would not wake up when she went to check on him. Her boyfriend said he was probably just sleepy because he had cried a lot the night before. She knows something is wrong and takes him to the ED.

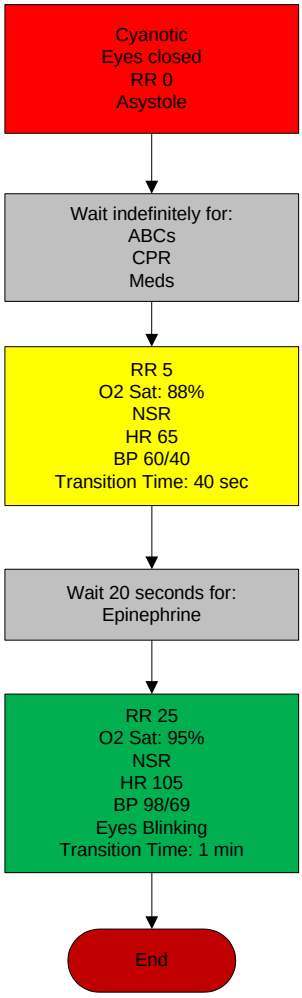


Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Trauma Scenario

## Drowning Boy

A one year old boy falls into the pool and is found floating a couple of minutes later. When the paramedics arrive the child is not breathing, has severe cyanosis and he is in asystole.



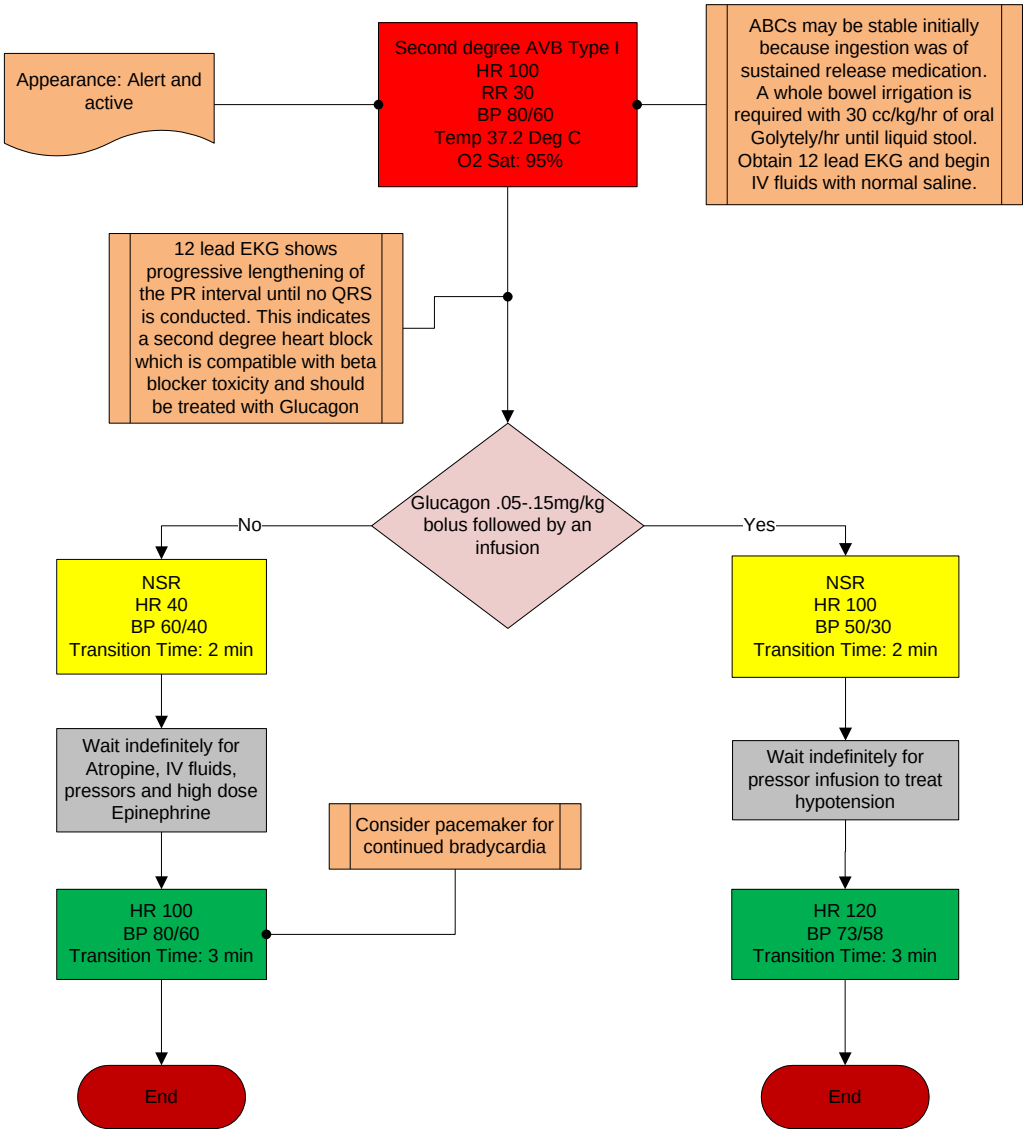
Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Cardiac Scenario

# Second Degree Heart Block

*Mobitz Type I (Wenkebach)*

A one year old child was visiting his grandmother and was found playing in her purse. She noticed her long acting propranolol bottle was opened and he may have ingested at least four pills about one hour ago. She contacted poison control who told her to bring him to the hospital.

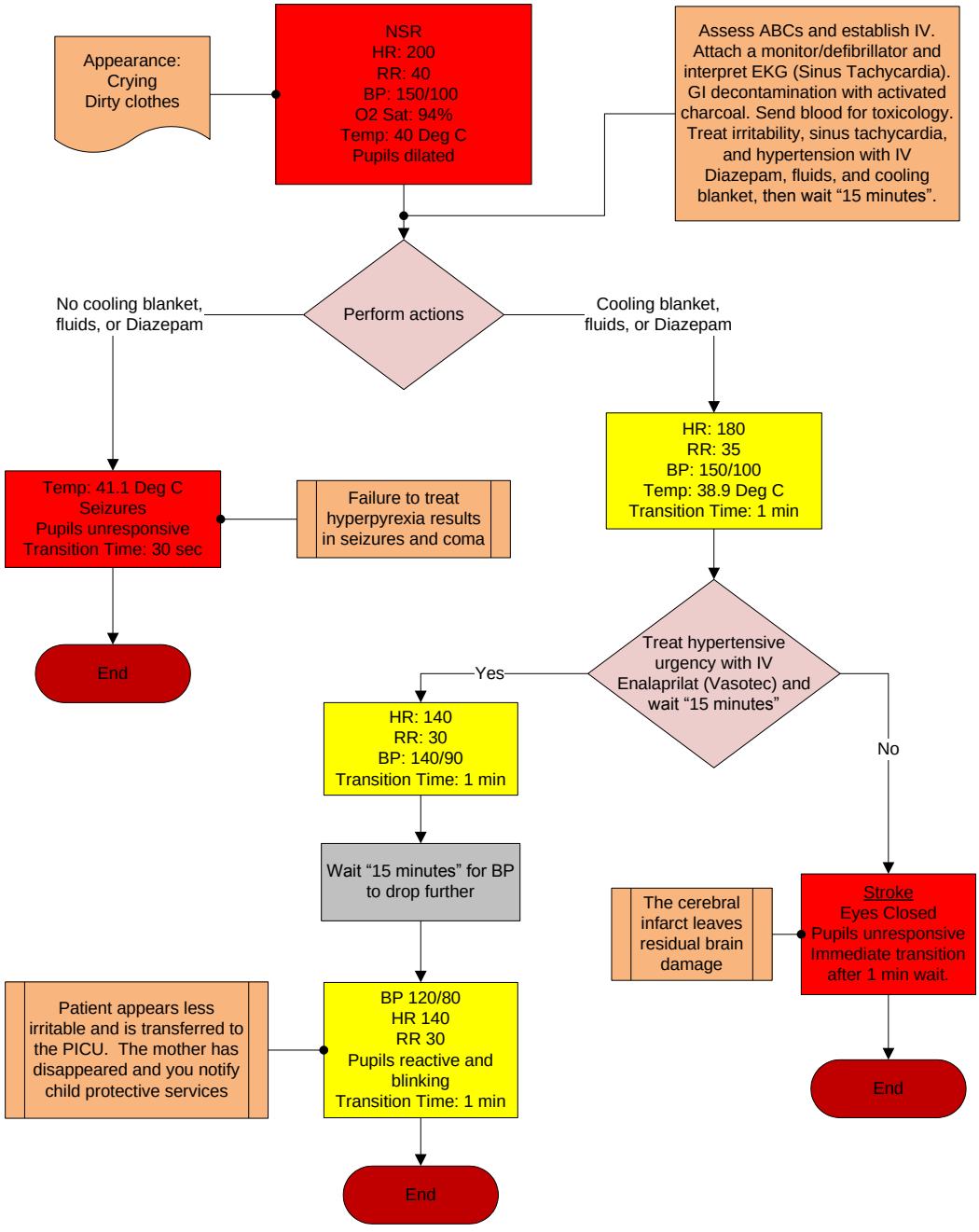


Pediatric HAL® One Year - Cardiac Scenario

# Sinus Tachycardia and Hypertension

*Methamphetamine Ingestion*

A young mother brings her baby to the ED. She says her baby was crawling on the floor and put something in his mouth and swallowed it about an hour ago. You notice the mother is thin, jittery with open sores on her face and arms. You consider the ingestion may be a stimulate.

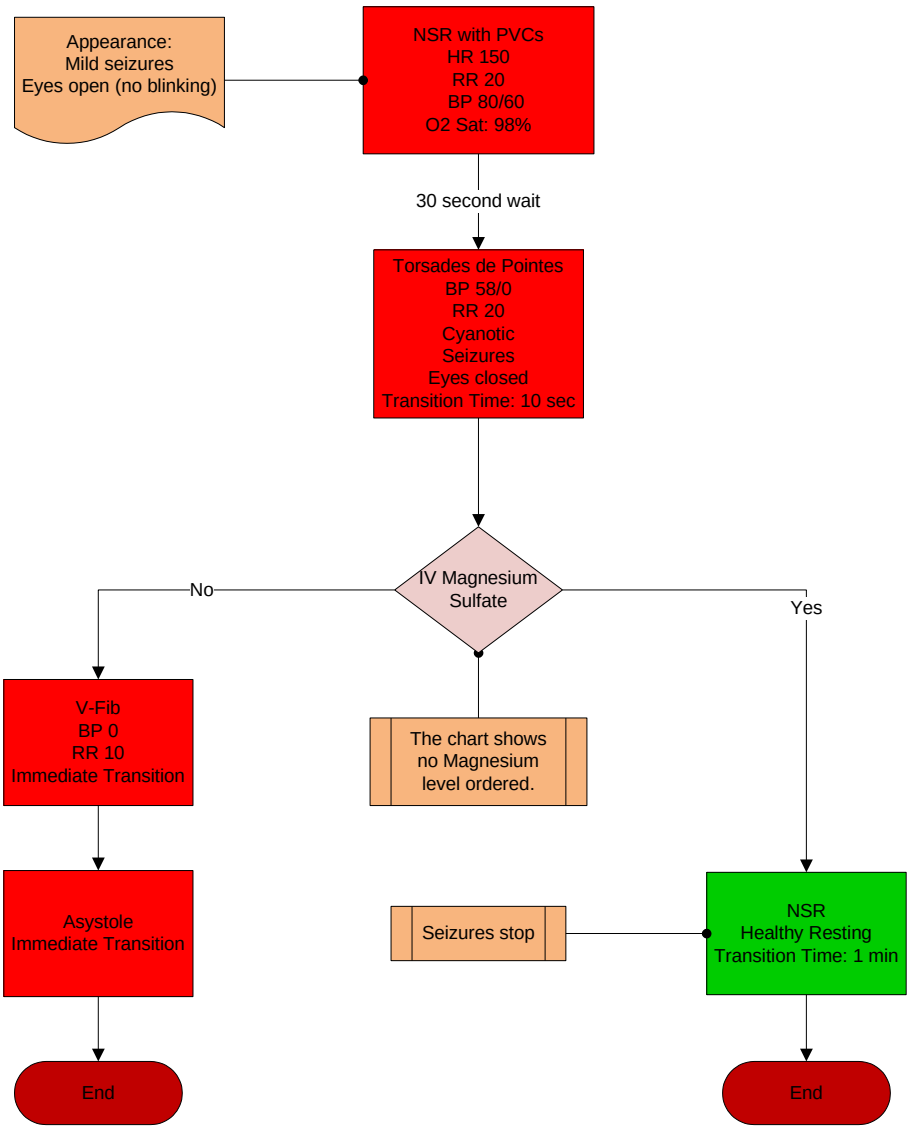


Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Cardiac Scenario

## Congenital Heart Failure

A one year old boy is transferred to your facility with a history of weakness and seizures despite therapeutic levels of anticonvulsants. Normal CT Scan, spinal fluid, and electrolytes.

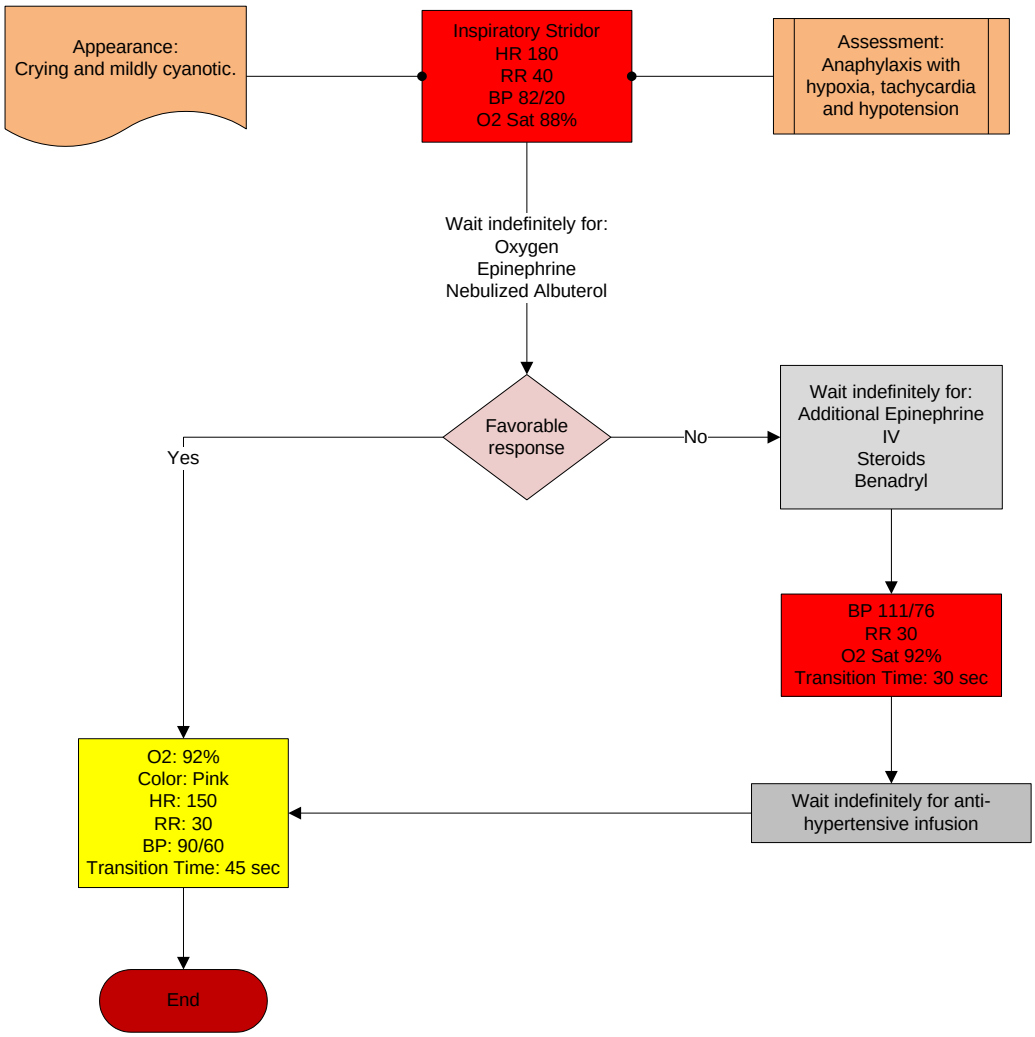


Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Systemic Scenario

# Bee Sting

You are called to a home where a one year old boy was bitten multiple times by angry "Yellow Jackets" thirty minutes ago. When you arrive you see areas of hives around the bites, his lips and eyes are swollen and he has audible stridor.



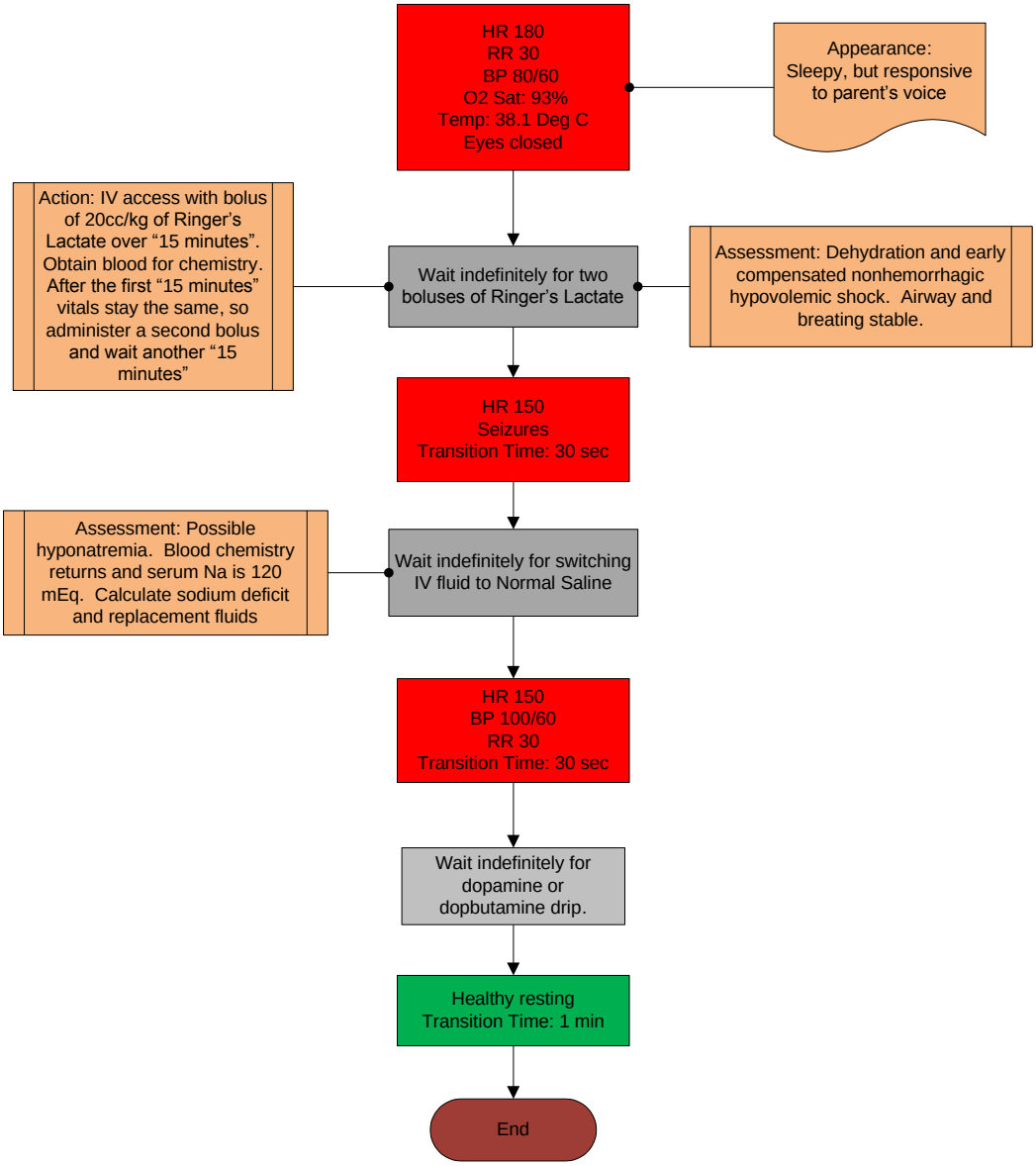
Gaumard®
Simulators for Health Care Education

Pediatric HAL® One Year - Systemic Scenario

# Hypovolemic Shock

*Hyponatremic Seizures*

A one year old boy presents to the ED with a three day history of vomiting and watery diarrhea with out blood or mucous. He attends daycare and a note was sent home about two other children with rotovirus diarrhea. He was given Pedialyte the first day and his vomiting and diarrhea decreased on the second day. Today, however his diarrhea is constant and he has refused to drink. His urine output is unclear because of the diarrhea in the diapers. During your assessment he has a thirty second period of tremors.



# Troubleshooting

| Symptom | Possible Cause | Solution |
|---|---|---|
| Communication never gets established or is lost<br>(**blinking communication indicator is consistently red**) | Battery connectors in the manikin are reversed | Make sure to connect red wire to red terminal, and black to black |
| | Battery is discharged | Make sure battery is charged. |
| | Computer is too far away from simulator | Get simulator closer to computer |
| | Trying to communicate with a different simulator | Make sure to select the right simulator when opening the software.<br>In a multiple simulator environment, make sure to enter the right Serial Number |
| | Starting more than one simulator with its own tablet | Select different channels for each of the simulators, and then turn them on one at a time, meaning: Wait until a link has been established between the tablet and the simulator (the yellow window goes away).<br>Only after that, start running the GaumardUI software in the second tablet, and so on for the rest of the simulators. To do so, go to menu Setup → Options → Environment → Select "Auto change to channel: #" (# = number from 1 – 11). |
| | All others | Close the GaumardUI software and unplug the RF module for at least 5 seconds, then plug it back in.<br>Disconnect one terminal from the battery and reconnect after 5 seconds.<br>Restart the software and wait for initialization |
| Simulator doesn't run for the time specified on the manual | Battery not charged properly | Make sure that LED indicator on battery charger goes through the sequence described in its label, usually red or orange after plugging it, and then green when charge is completed.<br>If LED does not go through label's indications, then:<br>▪ Check plug connection making sure it is all the way in.<br>▪ Make sure you are using the appropriate charger, labeled with its simulator name |
| Simulator doesn't respond to any command even that blinking communication indicator is consistently green | The computer is properly communicating with a simulator, but not necessarily the one you intend to control | If you have more than one manikin in your facility, make sure that your computer is properly set-up to control the manikin that you wish to control. Go to Options... on the Setup pull-down menu and check the Environment preferences |

| Symptom | Possible Cause | Solution |
|---|---|---|
| Commands are taking longer than usual to take effect or simulator is not reporting every action (**blinking communication indicator is consistently yellow**) | Distance between computer and manikin is reaching its limit<br>*or*<br>there are too many obstructions between (walls, etc) | Get simulator closer to computer or move away from obstructions |
| | There's too much RF interference either from another Gaumard tetherless simulator in the vicinity or an RF radiator. | Try changing the RF channel by going to the menu for Setup → Options → Environment → Select "Auto change to channel: #" (# = number from 1 – 11). |
| GaumardUI has set the power mode to STAND-BY automatically | The battery on the manikin is depleted | Plug charger for all others including |
| "RF module not found" message is displayed when GaumardUI is started | RF module not connected | Connect the RF module to any USB port. |
| | RF module not identified by the computer | Close the software and try disconnecting the RF module for at least five seconds, then plug it back in and restart the software |
| Chest compressions are not properly detected or not detected at all | Is the communication indicator panel consistently yellow? | See solution above in section making reference to "**blinking communication indicator is consistently yellow"** |
| | Is the respiratory rate set to "0 / min"? Chest compressions are only detected when the respiratory rate is set to 0 per minute (0 / min). Otherwise they are ignored | Set respiration rate to zero |
| | All others | See "Calibration Wizard" section inside User's Manual |
| Artificial ventilations are not properly detected or not detected at all | Is the communication indicator panel consistently yellow? | See solution above in section making reference to "**blinking communication indicator is consistently yellow"** |
| | All others | See "Calibration Wizard" section inside User's Manual |
| Simulator's chest does not rise with artificial ventilation (e.g. BVM) | Simulator not running | In some simulators, the trachea is disconnected from the lungs when they are not on. |
| | Disable lung/s | Enable the lungs from "Detail" page on the GaumardUI software |
| Low chest rise (or no chest rise at all) while breathing | Wrong settings or disabled lungs | Make sure lungs are enabled and both respiration rate and inspiration percent are different than "0". Try changing the respiration rate to a different value, and if still nothing happens, try turning the manikin off and restarting everything to make sure the internal air compressor gets its initial settings |
| Loss of brachial pulse | Brachial pulses disabled | Make sure to enable brachial pulse on "Details" tab page |

| Symptom | Possible Cause | Solution |
|---|---|---|
| Pre-built scenarios don't show up | | Select "Quick Start Scenarios" when starting the software.<br><br>Should user forget to do so, there's no need to shut down the software and open it again in order to load the pre-built scenarios. Go to "File/Profile" menu and then select "Modeled Scenarios" |
| A sound is absent or is not heard at desired volume level | Volume not set to user's criterion. | Every sound has a volume control. Play with the volume control to get it to the desired level. |

# Wireless Network

GIGA generates the vital signs information displayed on the virtual monitor PC. The information is transmitted through a wireless ad-hoc connection between the two computers in real time.

The wireless settings are configured at the factory, so no additional configuration is required. Please reference the troubleshooting section to resolve common connectivity issue before attempting to reconfigure the network.

Use the “Create an ad-hoc Wireless network” tool to configure the wireless ad-hoc link between the two computers. Then, configure the connection between GIGA and the Gaumard Monitors software.

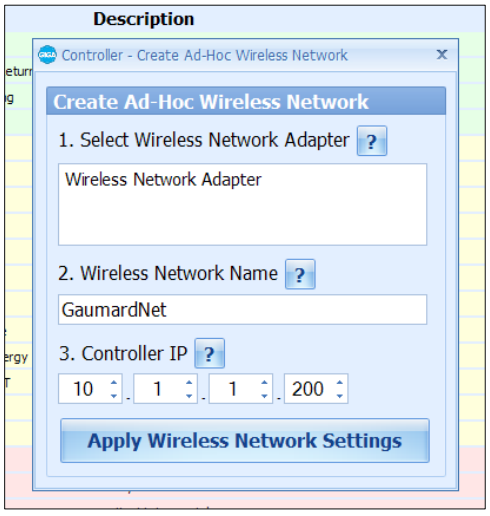
## GIGA NETWORK CONFIGURATION

Complete the next steps using the “Controller - Create Ad-Hoc Wireless Network” tool built in to GIGA software.

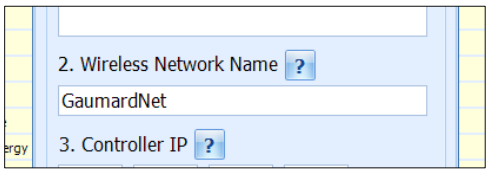
1. From the menu bar, go to Help > “Create ad-hoc Wireless Network”

   The “Controller - Create Ad-hoc Wireless Network” window is displayed

2. Select the “Wireless Network Adapter”. If the wireless adapter is not listed, first enable the adapter using the Windows® network menu and then return to this window.

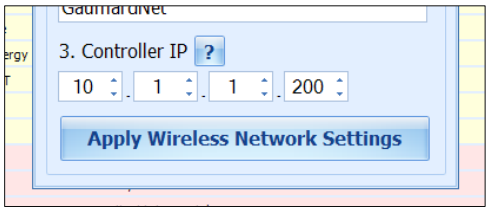



3. Enter a wireless network name (case sensitive). Use the same wireless network name to configure the Gaumard Monitors PC. “GaumardNet” is the required name for Windows® 7 computers.



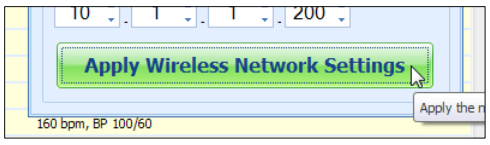

4. Set the “Controller IP”.

   On each control PC and virtual monitor PC, enter the same values for the first three IP fields and a set unique value for the last field. The suggested address is for the **Controller IP** is **10.1.1.200**




5. Click “Apply Wireless Network Settings” to save the settings.

6. Restart the computer.

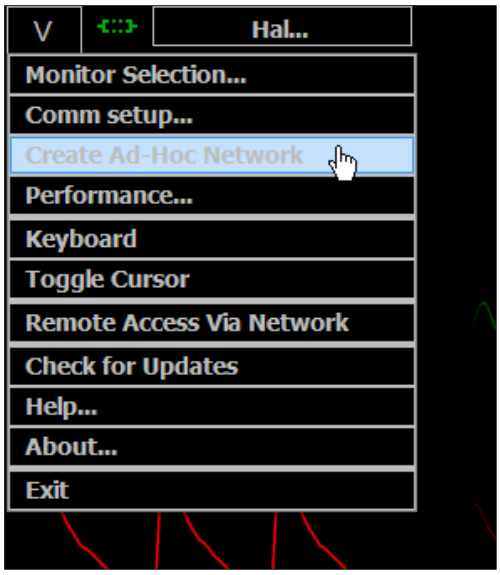



## GAUMARD MONITORS NETWORK CONFIGURATION

After the GIGA control computer is configured, complete the next steps using the “Create an ad-hoc network tool” included in Gaumard Monitors software.

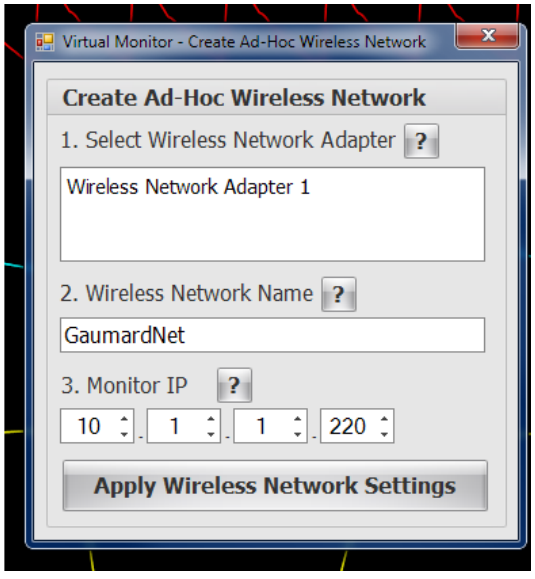
1. On the virtual monitor computer, click the Gaumard Monitors icon to start the vital signs software.

2. Click the V menu near the top left corner and select “Create Ad-Hoc Network”.

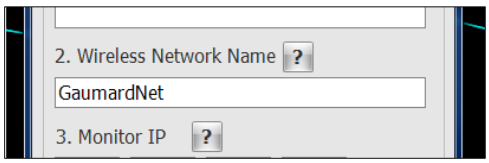



The “Virtual Monitor - Create ad-hoc Wireless Network” window is displayed.

3. Select “Wireless Network Adapter”. If the wireless adapter is not listed, first enable the adapter using the Windows® network menu and then return to this window.

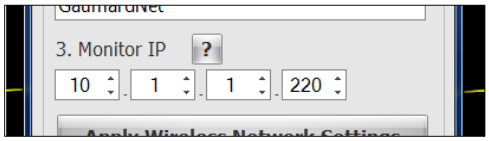



4. Enter a wireless network name (case sensitive). Use the same name entered in the controller computer. “GaumardNet” is the required name for Windows® 7 computers.



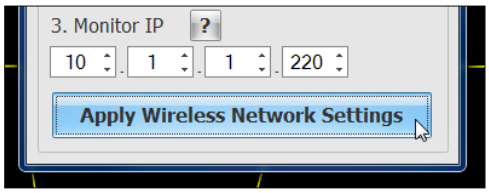

5. Set the “Monitor IP”.

   On each control PC and virtual monitor PC, enter the same values for the first three IP fields and a set unique value for the last field. The suggested address is for the **Monitor IP** is **10.1.1.220**




6. Click “Apply Wireless Network Settings” to save the settings.

7. Restart the computer.




## CONFIGURE THE VITAL SIGNS BROADCAST

After the wireless ad-hoc link is established between both computers, complete next steps to configure the transmission of the vital signs information.

1. Verify that both computers are connected to the GaumardNet network using Windows® wireless connection menu. If the computers are not connected, select the “GaumardNet” network and click “Connect” manually.

2. Start the GIGA control software.
3. On the GIGA menu bar, click Monitors> Configuration.

   The “HAL Virtual Monitor Setup” window is displayed.
4. Set the adapter to “Wireless network connection” and click “Connect” to begin transmitting the vital signs information. Write down the “controller IP” and “Port number”.
5. Start the Gaumard Monitors software on the virtual monitor PC.
6. Click the “V” menu near the top left corner, and then select “Comm Setup”.

   The “TCP Comm Setup” window is displayed.
7. Enter the “Controller IP” and “Port number” displayed on the GIGA “Virtual Monitor Setup” window.

Click “Connect” to accept the incoming connection.

# Spare Parts List

Contact Gaumard Scientific for a complete list of consumables and replacement parts and their prices.

| S3005 Part ID | Name | Type | Description |
|---|---|---|---|
| S3005.001 | A/C Virtual Monitor | A | A/C Powered 17" Touch Screen monitor and desktop |
| S3005.002 | D/C Virtual Monitor | A | D/C Powered 12" Touch Screen Mobile Monitor with stylus |
| S3005.010 | Battery | C | Rechargeable battery |
| S3005.011 | Battery Charger | R | 100-240 V AC battery charger with label |
| S3005.013 | Power cord | R | |
| S3005.029R.L | I/O Leg Skin Cover | C | Light color skin cover for right leg tibia bone |
| S3005.031 | I/O Tibia bones | C | I/O leg tibia reservoir bones |
| S3005.053L.D | Upper LEFT Arm | M | Dark color upper left arm assembly with tethered BP with adaptor |
| S3005.053R.L | Upper RIGHT Arm | M | Light color upper right arm assembly with tethered BP with adaptor |
| S3005.081 | Silicone Oil | C | Oil-based silicone lubricant |
| S3005.200 | Audio & Video Recording System | A | |
| S3005.206 | RF Module | R | Radio Frequency Module with USB connector |
| S3005.223L.L | Lower Left Arm Reveining | M | Lower left IV arm reveining, light color |
| S3005.223R.L | Lower Right Arm Reveining | M | Lower right IV arm reveining, light color |
| S3005.300 | Wireless Streaming Audio | A | Wireless streaming audio feature |
| S3005.300.U | Wireless Streaming Audio Upgrade | U | |
| S3005.DEMO | Adult PEDIATRIC 5YO Demo Unit | | |
| S3005.EXW | Two Year Extended Warranty | A | Extended warranty for years Two **AND** Three |
| S3005.INST | In-Service Training | A | Day of in-service training and installation |

| S3004 Part ID | Name | Type | Description |
|---|---|---|---|
| S3004.001 | A/C Virtual Monitor | A | A/C Powered 17" Touch Screen monitor and desktop |
| S3004.002 | D/C Virtual Monitor | A | D/C Powered 12" Touch Screen Mobile Monitor with stylus |
| S3004.010 | Battery | C | Rechargeable battery |
| S3004.011 | Battery Charger | R | 100-240 V AC battery charger with label |
| S3004.013 | Power cord | R | |
| S3004.029R.L | I/O Leg Skin Cover | C | Light color skin cover for right leg tibia bone |
| S3004.031 | I/O Tibia bones | C | I/O leg tibia reservoir bones |
| S3004.053L.D | Upper LEFT Arm | M | Dark color upper left arm assembly with tethered BP with adaptor |
| S3004.053R.L | Upper RIGHT Arm | M | Light color upper right arm assembly with tethered BP with adaptor |
| S3004.081 | Silicone Oil | C | Oil-based silicone lubricant |
| S3004.200 | Audio & Video Recording System | A | |
| S3004.206 | RF Module | R | Radio Frequency Module with USB connector |
| S3004.223L.L | Lower Left Arm Reveining | M | Lower left IV arm reveining, light color |
| S3004.223R.L | Lower Right Arm Reveining | M | Lower right IV arm reveining, light color |
| S3004.300 | Wireless Streaming Audio | A | Wireless streaming audio feature |
| S3004.300.U | Wireless Streaming Audio Upgrade | U | |
| S3004.EXW | Two Year Extended Warranty | A | Extended warranty for years Two AND Three |
| S3004.INST | In-Service Training | A | Day of in-service training and installation |

# Warranty

**EXCLUSIVE ONE-YEAR LIMITED WARRANTY**

Gaumard warrants that if the accompanying Gaumard product proves to be defective in material or workmanship within one year from the date on which the product is shipped from Gaumard to the customer, Gaumard will, at Gaumard's option, repair or replace the Gaumard product.

This limited warranty covers all defects in material and workmanship in the Gaumard product, except:

1. Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;
2. Damage resulting from failure to properly maintain the Gaumard product in accordance with Gaumard product instructions, including failure to property clean the Gaumard product; and
3. Damage resulting from a repair or attempted repair of the Gaumard product by anyone other than Gaumard or a Gaumard representative.

**This one-year limited warranty is the sole and exclusive warranty provided by Gaumard for the accompanying Gaumard product, and Gaumard hereby explicitly disclaims the implied warranties of merchantability, satisfactory quality, and fitness for a particular purpose.** Except for the limited obligations specifically set forth in this one-year limited warranty, Gaumard will not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory regardless of whether Gaumard has been advised of the possibilities of such damages. Some jurisdictions do not allow disclaimers of implied warranties or the exclusion or limitation of consequential damages, so the above disclaimers and exclusions may not apply and the first purchaser may have other legal rights.

**This limited warranty applies only to the first purchaser of the product and is not transferable.** Any subsequent purchasers or users of the product acquire the product "as is" and this limited warranty does not apply.

**This limited warranty applies only to the products manufactured and produced by Gaumard.** This limited warranty does not apply to any products provided along with the Gaumard product that are manufactured by third-parties. For example, third-party products such as computers (desktop, laptop, tablet, or handheld) and monitors (standard or touch-screen) are not covered by this limited warranty. Gaumard does not provide any warranty, express or implied, with respect to any third-party products. Defects in third-party products are covered exclusively by the warranty, if any, provided by the third-party.

Any waiver or amendment of this warranty must be in writing and signed by an officer of Gaumard.

In the event of a perceived defect in material or workmanship of the Gaumard product, the first purchaser must:

1. Contact Gaumard and request authorization to return the Gaumard product. Do NOT return the Gaumard product to Gaumard without prior authorization.
2. Upon receiving authorization from Gaumard, send the Gaumard product along with copies of (1) the original bill of sale or receipt and (2) this limited warranty document to Gaumard at 14700 SW 136 Street, Miami, FL, 33196-5691 USA.
3. If the necessary repairs to the Gaumard product are covered by this limited warranty, then the first purchaser will pay only the incidental expenses associated with the repair, including any shipping, handling, and related costs for sending the product to Gaumard and for sending the product back to the first purchaser. However, if the repairs are not covered by this limited warranty, then the first purchaser will be liable for all repair costs in addition to costs of shipping and handling.

## EXTENDED WARRANTY

In addition to the standard one year of coverage, the following support plans are available:

- Two-Year Extension (covers second and third years)

Call for pricing (USA only)

# Contact

**On the web**
www.Gaumard.com

**Technical Support**
support@gaumard.com

**Sales and Customer Service** sales@gaumard.com

**Phone:**

**Toll-free in the USA:** (800) 882-6655

**Worldwide:** 01 (305) 971-3790

**Fax:** (305) 667-6085

Before contacting Tech Support **you must**:

1. Have the simulator's Serial Number (located in the left leg under the IM site)
2. Be next to the simulator if troubleshooting is needed

**Gaumard Scientific**

**14700 SW 136 Street**

**Miami, FL 33196-5691 USA**

**Office hours: Monday-Friday, 8:30am - 4:30pm EST (GMT-5, -4 Summer Time)**

Always dispose of this product and its components in compliance with local laws and regulations.