# Multipurpose Patient and Emergency Care Pediatric Simulator

S157





The Multipurpose Patient Care and CPR Pediatric Simulator 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 13.1.1
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# Care and Cautions

### **Overall Warnings**

Remember that damage caused by misuse is not covered by your warranty. It is critical to understand and comply with the following guidelines:

### **GENERAL**

- · This simulator is constructed of material that approximates skin texture. Therefore, in handling the model, use the same gentle techniques as you would in working with a patient.
- · Ball point pens, ink and markers permanently stain the skin.
- · Do not wrap this or any other Gaumard product in newsprint.
- Do not use alcohol, acetone, Betadine® or any other antiseptic which contains iodine in this or any Gaumard® simulator. These products could damage or stain the skin of the simulator.
- Replacement parts are available from Gaumard Scientific or your Distributor.

### OPERATING CONDITIONS

Operating the simulator outside these ranges may affect performance:

- Operating temperature: 50°-95° F (10°-35° C).
- · Humidity: 5%-95% (non-condensing).

### STORAGE CONDITIONS

- Improper storage may damage the simulator.
- · Keep it stored in the box and/or bag provided.
- · Do not stack or store heavy materials on top
- Storage temperature: 32°- 113° F (0°- 45° C).
- · Humidity: 40%-60% (non-condensing).

### **IV ARM**

- · Treat the simulator with the same precautions that would be used with a real patient. Only use Gaumard's provided simulated blood. Any other simulated blood containing sugar or any additive may cause blockage and/or interruption of the vascular system.
- The use of needles larger than 22 gauge will reduce the lifetime of the lower arms' skin and veins.
- · After cleaning and drying the arm, lightly dust it with talcum powder. This will keep the training arm supple and easy to use.

### **WARNING**

Vein tubing contains 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.

### **CLEANING**

- Clean the skin of the simulator after every training session. The skin should be cleaned with a cloth dampened with diluted liquid dish washing soap and dry thoroughly.
- · Remove all traces of any lubricant.
- · Do not clean with harsh abrasives.
- Do not use povidone iodine on the simulator.
- The simulator is "splash-proof" but not waterproof. Do not submerge or allow water to enter the interior of the simulator.

### Stoma Guidelines, Warnings, and Maintenance

### **USER GUIDELINES**

· Always handle the stomas with clean hands.

### **WARNINGS**

- Do not palpate using fingernails.
- Do not clean with alcohol or aggressive solvents.
- Do not pack any sharp objects with the stomas.
- Do not press the stomas against soiled surfaces, ink, or newsprint. The stoma material is absorbent.

### **MAINTENANCE**

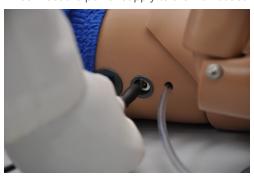
- Prevent items from resting or pressing against the stomas as indentations will form on the pressure points. The stomas may return to the normal shape after the pressure is relieved.
- Place talcum powder on the stoma surface to reduce tackiness. This can be reapplied as needed.
- Clean the stomas using a mild solution of soap and water.
- Apply talcum powder to return the surface to a skin-like feel and appearance.

# **Equipment Set Up**

(Optional)

### **Power Supply**

- 1. Place the simulator on a flat clean surface. Access to electrical power is required.
- 2. Connect the power supply to the power input located on simulator's left side, and then connect the power supply to the wall outlet.



## Omni™ Setup

Omni controls the simulator with the touch of button.

1. Connect the communication cable to the left side of the simulator.



2. Connect the other end of the communication cable to Omni.



A startup screen is shown while Omni is detecting the simulator features.

After the start up screen, Omni will automatically proceed to the main screen.

### **WARNING**

Do not connect Omni to a computer, LAN network or unauthorized diagnostic equipment using the communication cable (Ethernet cable). Doing so will cause serious damage to the equipment.

# Working with the **Simulator**

### Overview

Disclaimer: The section below describes all possible features in the Multipurpose Patient and Emergency Care Pediatric Simulator. Please use the list below to identify which features are standard in your model. The content of this table is subject to change without prior notice. Please contact Gaumard® Scientific for the most current information.

The simulator is an advanced multipurpose simulator equipped with the following features:

· Chest compressions and airway ventilations are measured and logged

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- · Natural obstruction blocks air passage when head is tilt forward
- · Oral and nasal intubation plus suctioning
- · Tracheostomy care
- Use and ET tube or LMA

### **APPEARANCE**

- · Eyes open and close
- · Dilated left pupil
- · Medium skin tone is the standard simulator color; light or dark skin is available at no extra cost

### **BREATHING**

- · Accommodates assisted ventilation
- · Realistic chest rise

### CIRCULATION

- · Intramuscular (IM) Injection Sites on the deltoids and quadriceps
- · Intraosseous infusion site
- · Simulated carotid, brachial, and femoral pulses

### **OPTIONAL CONTROLLER**

· Powerful yet intuitive user controller and interface software

### **SIMULATOR**

- Articulated neck and jaw
- · Easily accessible chest cavity with ribcage and lungs for realism and practice of CPR techniques
- · Female/male genitalia
- · Gastric feeding tube site
- · Interchangeable genitalia
- · Ostomy care
- Palpable and visual landmarks for CPR
- Physical size is 50th percentile of 5 year old
- Realistic mouth, tongue, trachea esophagus
- · Urinary catheterization

### **VENOUS ACCESS**

- Advanced Intravenous Training Arm and Hand
- · Femoral venous access

## **Airway**

### **INTUBATION**

The simulators's airway can be intubated through the left nasal opening, trachea, and mouth using LMA or endotracheal tubes.





Procedure	Recommended Device Size		
Intubation (Blade size)	Miller 2 or MAC 3		
LMA	Size 2/2.5		
Nasal Intubation	12 Fr catheter		
Oral Intubation	5.0 or 5.5 ETT no cuff; 10 Fr suction catheter		
Nasogastric Tube	12 Fr catheter		

## **Breathing**

### **PULMONARY VENTILATION**

Ventilate using a BVM and obtain realistic, dual

The simulator blocks air passage when the head is tilted forward. To open the airway of the simulator, its jaw and neck can be manipulated to perform the jaw-trust or head-tilt chin-lift maneuver.





Train CPR with the simulator and obtain feedback information via the Omni controller on the cadence and depth of chest compressions and airway ventilations.

### TRACHEOSTOMY CARE

The simulator is supplied with a tracheostomy opening. Pierce the replaceable trachea and insert a tracheostomy tube with an attached positive pressure device to observe chest rise. Reseal the trachea, with the tape provided, after each exercise.



### TRACHEA REPAIR

1. Unscrew the silver knob located on each side of the simulator and gently disengage the chest skin from the recessive screw.



Lift the chest skin of the simulator to reveal the chest cavity and remove the ribcage.



3. Locate the trachea and detach one side of the white strap located above the trachea.





- 4. Remove the tape enclosing the trachea.
- Use the provided tape to replace the pierced tape and re-seal the trachea.
- 6. Fasten the white strap above trachea and lay the ribcage and chest skin over the torso.
- 7. Attach the chest skin with Velcro and secure with the silver knobs.

### Circulation

### PALPABLE PULSES

The simulator is equipped with bilateral carotid, right brachial, and right femoral pulses. The pulses can be generated manually using the squeeze bulb located on the left side of the simulator.





### IV TRAINING ARM

The right arm is a training tool for infusion, blood collection, intravenous injection, intramuscular injection, TB screening and subcutaneous injection exercises.

The arm and hand contain venous grooves, fitted with soft latex tubes to simulate the consistency of veins. Covering the venous structure is a translucent, pliable vinyl skin that is removable and washable.

The training arm features:

- · An intramuscular injection site in the deltoid
- · Simulated cephalic, basilic, antecubital, radial and ulnar veins
- · Subcutaneous injection areas on the volar side of the forearm and the lateral side of the upper arm

· Two veins in the dorsum of the hand for additional intravenous training techniques

The arm is supplied with:

- · Synthetic blood concentrate
- · Spare arm skin
- · Blood dispensing bag
- · Metal stand
- · Silicone oil
- · Talcum powder

Use the training arm and hand connected to the blood-dispensing bag. Place the dispensing bag onto the provided metal stand or a conventional IV pole.

To simulate a clenched fist or tourniquet, apply pressure to the system using the squeeze bulb connected to the dispensing bag. Release the pressure to simulate collapsed veins. Use the squeeze bulb to change the palpability of the veins.

### FILLING THE TRAINING ARM VASCULATURE USING A SYRINGE

 Place the end of the drainage tube, located near the right arm, into a container and open the adjustable clamp.



- 1 Filling Tube
- 2 Adjustable Clamp
- 3 Drainage Tube
- 2. Fill the dispensing syringe with fluid.

3. Connect the syringe to the filling tube near the right arm and release the fluid.



- 4. Allow fluid to flow through the system and into the drainage container.
- Close the adjustable clamp of the drainage 5. tube.
- Remove the syringe from the filling tube.

### FILLING TRAINING ARM VASCULATURE USING THE BLOOD-DISPENSING BAG

- 1. Place the simulator and provided IV stand on a flat surface.
- 2. Lift the hinged metal stand and support it on the acrylic base.



3. Hang the blood-dispensing bag on the stand.



4. Attach the filling tube to the bottom port of the blood-dispensing bag.



Close the adjustable clamp of the draining tube.



Add water or artificial blood to the blooddispensing bag using the provided funnel or large syringe.



- 7. Place the drainage tube inside a container.
- Open the adjustable clamp to allow fluid to flow through the system and into the drainage container.
- Close the adjustable clamp of the drainage
- 10. Perform intravenous, subcutaneous, and intramuscular procedures.

11. To vary the blood pressure in the vasculature of the arm, attach the tube with squeeze bulb to the upper port of the blood-dispensing bag and depress the squeeze bulb.



- 12. Once the training session is complete, place the drainage tube in a container and open the adjustable clamp. Drain the fluid by raising the blood-dispensing bag above the simulator. Alternatively, fill a syringe with air and connect it to the upper port of the blood-dispensing bag. Depress the syringe to move the remaining fluid from the system.
- 13. Flush the system with water if artificial blood was used to fill the veins.

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### INSTRUCTIONS FOR USE

Use cannulas/needles smaller than 22 gauge to extend the life of the venous structure.

The skin and veins are designed to show even minute leakage when an eccentric puncture is performed. A "perfect" stick will show little or no leakage.

For IV simulations, place the end of the drainage tube into a container, and open the adjustable clamp.

### ..... REPLACING THE SKIN OF THE PATIENT TRAINING ARM AND HAND

### **WARNING**

Vein tubing contains latex which may cause allergic reactions. Users allergic or sensitive to latex should avoid contact.

1. Gently roll down the outer skin from the top of the arm. Use silicone or powder to ease the movement.





- Use a heat gun to evenly warm the new replacement skin until the material is pliable.
- 3. Apply a small amount of talcum powder or silicone oil to the arm.
- 4. Insert the new skin onto the arm at the fist and pull up into place.

### CLEANING AND REPAIR OF THE PATIENT TRAINING ARM AND HAND

- · The skin of the training arm can be cleaned with a mild detergent, or soap and water. After drying the arm, lightly dust it with talcum powder. This will keep the training arm supple and easy to use.
- · If blockage persists, flush the veins with water and use the squeeze bulb connected to the dispensing bag to add pressure to the system.

### PREPARING THE ARTIFICIAL BLOOD CONCENTRATE

- 1. Mix all the contents, of supplied bottle with one gallon (3400 cc) of water, to make one gallon of artificial blood concentrate.
- 2. Shake vigorously until mixture is fully dissolved.

### **INTRAOSSEOUS ACCESS**

Setting up an intraosseous access line is an invasive procedure that can be simulated with the simulator.

The intraosseous access features the following:

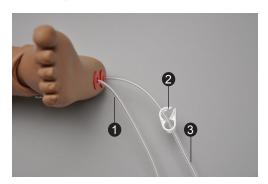
- · Venous access
- Tibial bone in right leg with palpable landmarks; tibial tuberosity, tibia and patella
- · Sudden increase in pressure when the needle enters bone marrow cavity
- · Pull fluid through needle, verifying correct position

The intraosseous access kit includes:

- · Sixteen interchangeable tibia bones with anatomic landmarks
- · Fluid dispensing syringe
- · Synthetic blood concentrate

### FILLING THE RIGHT LEG VASCULATURE

1. Place the end of the drainage tube, located near the right foot, into a container and open the adjustable clamp.



- 1 Filling Tube
- 2 Adjustable Clamp
- 3 Drainage Tube
- 2. Fill the dispensing syringe with fluid.

3. Connect the syringe to the filling tube and release the fluid.



- 4. Allow fluid to flow through the system and into the drainage container.
- Once fluid is seen draining, close the adjustable clamp.

Use 17-16 gauge bone aspiration needle to perform IO exercises.

- 6. Perform IO exercises.
- 7. After 10-20 sticks follow steps 1 5 to dispense more fluid into the system.
- Continue your IO exercises.
- 9. When the training session is completed, open the adjustable clamp and drain the fluid. If needed, use the dispensing syringe full with air to push any remaining fluid out the system. If blood mix is used, flush the system with 2-3 syringes full of clean water.

### REPLACING THE TIBIA BONE

Items needed:

- · Replacement tibia bone
- · Tibia bone skin cover
- · Drainage container
- 1. To replace the tibia bone, place the end of the drainage tube into a container and open the adjustable clamp.
- 2. Drain all the fluids from the system.

### 3. Remove the tibia cover.



4. Pull the tibia bone.



- Insert new tibia.
- Re-attach tibia cover.

### FEMORAL VENOUS ACCESS

Supply simulated blood into the right femoral vein and practice cannulation exercises.



### DIRECTIONS FOR USE

- 1. Follow the instructions listed in the previous section "Filling the Right Leg Vasculature".
- 2. Perform cannulation exercises.

### **Systemic**

### **TEETH AND TONGUE**

The simulator is supplied with normal size teeth and tongue.

### RANGE OF SIMULATED MOVEMENT

- · The arms and legs are soft and rotate within the torso body.
- · The joints are strong and their movements are lifelike and realistic.
- · The simulator bends 30 degrees at the waist.

## **Hospital Care Capabilities**

### **WARNING**

Always apply lubricant to any invasive device prior to usage.

### **INJECTION SITES**

Administer intramuscular and subcutaneous injections on the deltoids and quadriceps. All injection pads are easily removed and replaced.





### BANDAGING

The fingers and toes of the simulator are separated to permit bandaging exercises. The surface of the simulator is smooth and resistant to water, oil, and liniments.

### **NOSE AND THROAT**

The nasal and the oral openings are connected to the stomach reservoir.

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### EYES/OPHTHALMOLOGIC EXERCISES

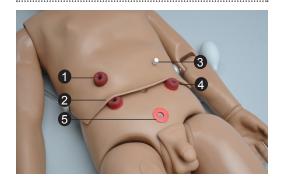
The head has eyes that open and close, permitting the following exercises:

- · Administration of orbital medicines into the conjunctival sac
- · Removal of foreign bodies
- · Eye irrigation

### OSTOMY CARE

The simulator is equipped with four ostomies for care of the small intestines, stomach, bladder, and rectum. Practice stoma care techniques, add fluids in the ostomy, and perform catheterization procedures.

### **OSTOMY CONNECTIONS**



- 1 Ostomy 1
- 2 Ostomy 2
- 3 Gastrostomy
- 4 Colostomy
- **5** Suprapubic

### OSTOMY 1 AND 2

The ostomies on the right side of the torso connect to an internal reservoir simulating a portion of the intestine. The stoma on Ostomy 1 is fixed to the chest skin of the simulator. Gently remove the stoma on Ostomy 2 to add or drain fluids.

### GASTROSTOMY

Insert the provided stopper to the gastrostomy prior to adding fluids through the nose or mouth. The gastrostomy connects directly to the stomach reservoir.

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### COLOSTOMY

Add fluids directly to the colostomy opening and practice enema procedures.

### SUPRAPUBIC STOMA

Use this stoma to fill the bladder for catheterization procedures.

### FILLING THE INTERNAL RESERVOIRS

- 1. If connected, gently remove the stoma insert. Note that the upper right stoma is fixed to the skin of the simulator and cannot be detached. Follow the instructions listed in the Care and Cautions section on how to handle the stomas inserts.
- 2. Use the provided funnel or large syringe to dispense fluid.





3. Distill the fluid into the reservoir. Check the internal reservoir capacity table for the maximum volume of each reservoir.

### DRAINING THE INTERNAL RESERVOIRS

1. Locate the internal reservoirs drainage tube and connect to the dispensing syringe.



- 2. If connected, gently remove the stoma insert from ostomy. Note that the upper right stoma is fixed to the skin of the simulator and cannot be detach. Follow the instructions listed in the Care and Cautions section on how to handle the stomas.
- Insert the drainage tube in the opening.
- Extract fluids using the syringe.

### INTERNAL RESERVOIRS MAXIMUM CAPACITY

Tank	Capacity
Stomach	200 ml
Bladder (Suprapubic Stoma)	350 ml
Rectum (Colostomy)	500 ml
Ostomy 1 and 2	100 ml

### NASOGASTRIC AND OROGASTRIC **EXERCISES**

Nasal and oral openings are connected to the stomach reservoir. Insert an appropriately sized catheter to demonstrate tube feeding and gastric

Clean the reservoir by introducing a solution of soap and water, or a mild detergent with a large syringe.

The stomach is provided with an opening for gastrostomy.

### ENEMA ADMINISTRATION

Add fluids to the internal reservoir through the colostomy port. Practice enema administration with the simulator facing to the side. Use an anal nozzle of small diameter to perform the procedure.

### **URINARY SYSTEM**

Add fluids to the internal reservoir through the suprapubic port. Withdraw fluids from the bladder after inserting a catheter through the urethra.

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### MALE AND FEMALE GENITALIA

The female and male genitalia are molded of soft vinyl. The male organ attachment simulates the external genitalia with scrotum. The vaginal passage is closed at the introitus.

Male and female catheterization may be practiced.

### REMOVING THE MALE GENITALIA

Gently remove the male genitalia insert by detaching the inferior and superior Velcro fastener.



# Omni™ Code Blue®

## (Optional)

### Using Omni™ Code Blue

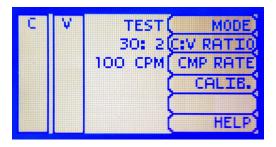
Code Blue® is a CPR training tool incorporated in the Omni controller. It was designed to help teach CPR by monitoring cadence and depth of cardiac compressions and airway ventilations in real time.

### WARNING

Do not perform mouth to mouth ventilation since the simulator can be difficult to clean afterwards.

### MAIN SCREEN

The Omni main screen is divided into three sections which are, listed from left to right, the Feedback Graphics, Current Settings, and Navigation Menus. Pressing each button will display the menu item in detail.



### FEEDBACK GRAPHICS

Monitor and evaluate depth and cadence of compressions and ventilations in real time.

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### **CURRENT SETTINGS**

The current settings are listed on the middle of the screen. The settings will reflect the information saved during a previous session.

### CODE BLUE NAVIGATION MENUS

Edit the simulator settings using the navigation menus. Select a menu item by pressing the soft key buttons located on the right side of the controller. Each menu has additional submenus or toggle selection. Use the submenus to decrease, increase, accept, or cancel values. Use the toggle selection to switch between available options in the menu.

The Code Blue menus are:

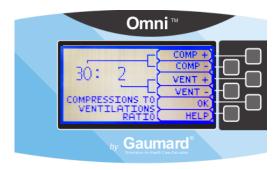
- · CPR operational mode: TEST or COACH mode
- · C:V Ratio: customize the compression to ventilation ratio to match correct guidelines
- Compression/Ventilation Rate: adjust the number of compressions and ventilations per
- · Calib: calibrate the pressure sensor in the simulator
- · Help: universal help menu

### MODE MENU

Toggle between COACH and TEST modes. The COACH mode generates audible tones to coach CPR ratio. A high-pitched beep signals the care provider to perform a compression and a low pitched-beep signals a ventilation. Toggle to the TEST mode to perform CPR without the audible cues.

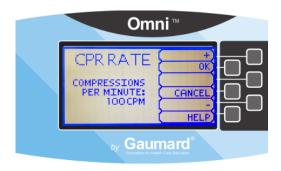
### C:V RATIO MENU (COMPRESSION TO **VENTILATION RATIO)**

Adjust the compression to ventilation ratio using the + and - buttons. Press OK to save the changes and return to previous screen. The default value for the C:V Ratio is 30 compressions to 2 ventilations.



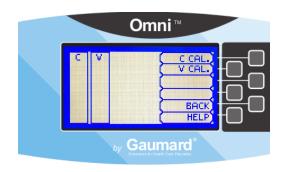
### COMPRESSION / VENTILATION RATE MENU

The default value for the compression rate is 100 compressions per minute. Adjust rate using the '+' and '-' buttons. Press OK to save the changes and return to previous screen. The Compression rate range is 50 - 150 CPM. The Ventilation rate limits are 2-60 VPM.



### CALIBRATION MENU

Press CALIB. to access additional menu selections.

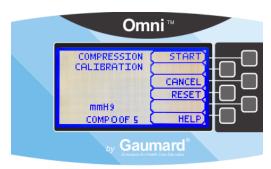


### CALIBRATING CHEST COMPRESSIONS

The simulator is pre-calibrated to current CPR guidelines at time of manufacture. If the CPR guidelines change, calibrate the sensors inside the simulator using this option.

Calibrating chest compressions:

- 1. Select C CAL.
- 2. Press START to begin the calibration procedure.



- 3. Omni will ask you to perform several correct chest compressions. The facilitator should follow the text cue on the screen to perform just one compression at a time until finished. When Omni is ready to proceed it will display COMPRESS.
- 4. Perform a correct compression.
- 5. Follow the text cue on the screen to perform the remaining four compressions. When the calibration is complete Omni will display DONE.
- 6. Press SAVE.

### CALIBRATING AIRWAY VENTILATIONS

Set the standard against which ventilation will be evaluated during training.

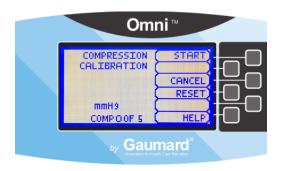
Calibrating airway ventilations:

- 1. Select V CAL.
- 2. Press START to begin the calibration procedure.
- 3. Omni will ask you to perform a number of correct airway ventilations. The facilitator should follow the text cue on the screen to perform just one ventilation at a time, until finished.
- 4. When Omni is ready to calibrate it will display VENTILATE.
- 5. Perform a ventilation.
- 6. Follow the text cue on the screen to perform the remaining four ventilations. When the calibration is complete Omni will display DONE.
- 7. Press SAVE.

### RESETTING OMNI'S PRESSURE SENSOR

It is recommended that the Omni's pressure sensor is reset at altitudes greater than 1000 ft. to avoid inaccurate compressions and ventilations readings. Perform the sensor reset procedure only as part of the initial calibration process.

1. Select RESET within the compression or ventilation calibration menu.



After resetting the sensor, Omni will display DONE.

### 2. Select SAVE to finish.



### **HELP**

The help window provides access to global settings such as backlight time and Omni/ Simulator serial number.



### **BACK**

Return to previous screen.

### **BACKLIGHT**

The default value for Omni's backlight timer is 10 minutes. After 10 minutes the backlight will turn off.

To increase the backlight duration, adjust the backlight timer with the plus or minus sign. Press OK to accept the changes.



### SERIAL NUMBER

View Omni and Simulator serial number. Press OK to return to the HELP menu.



### **CPRLink™**

CRPLink is an application that enables monitoring and logging of compressions and ventilations, performed in real time by the user, on a PC.

This software aims to provide additional testing and teaching tools for CPR using an interface to display a waveform graph of the compressions and ventilations.

### CPRLINK MINIMUM SYSTEM REQUIREMENTS

- · Operating System: Windows XP or Windows 7
- Computer and processor: 1 gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor
- Memory: 1 gigabyte (GB) RAM (32-bit) or 2 GB RAM (64-bit)
- · Hard disk: 3 gigabyte (GB) available disk space
- · Install media: CD/DVD Drive
- I/O Ports: USB port

### SETUP

### CPRLINK SOFTWARE INSTALLATION

If installing the CPRLink software for the first time, follow the instructions listed below:

- 1. Insert the CPRLink installation CD in your PC.
- 2. Follow the instructions on your screen.

In case the auto run is disabled, open My Computer. In the My Computer window, open the drive that contains the CPRLink CD. Double-click on CPRLink and locate the setup file "RunMeFirst". Double-click on "RunMeFirst" to start the installation.

If installing the application on a Windows 7 computer, run the program as administrator. Right click the CPRLink icon and select Properties. Select the Compatibility tab and check mark the option "Run this program as an administration". Click on Apply and then OK to close the window.

### **EQUIPMENT SET UP**

1. Connect the power supply to the power input on the simulator, and then connect the power supply to the wall outlet.

.....

- 2. Connect the communication cable to the simulator and to Omni.
- 3. Connect the USB cable to Omni and to the USB port of your PC.

Omni will display a heart icon on the lower left side of the screen when a connection with the PC has been established.



### **WARNING**

Do not start the CPRLink application until Omni is connected to the PC.

### STARTING CPRLINK

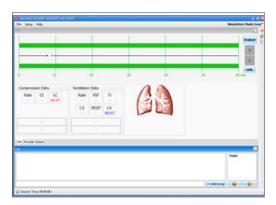
Double click on the CPRLink icon on the desktop of your PC.



### **CPR SCREEN**

The CPRLink main screen contains the drop-down menus used to save and clear session logs, change the application options, and access the program's help.

The main screen also contains the controls used to evaluate compressions and ventilations.



Open the CPR evaluator by clicking on the shortcut icon located on the upper right side of the application.



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.

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#### VENTILATION DATA

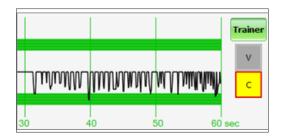
- Rate: ventilation rate in real time.
- · PIP: Peak Inspiratory Pressure
- · Ti: time inspiration
- I:E: Inspiratory : Expiratory ratio
- PEEP: Positive End Expiratory Pressure
- · LV (Last Ventilation): time elapsed since the last ventilation performed

### TRAINER

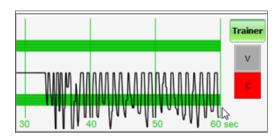
The CPRLink application generates visual and audible cues of the compression to ventilation ratio programmed in the CPR Options menu. When the Trainer button is clicked, the V (ventilations) and C (compressions) box borders blink to indicate the correct reference CPR rate. A high-pitched beep signals the care provider to perform a compression and a low pitched-beep signals a ventilation.

### PERFORMANCE EXAMPLES

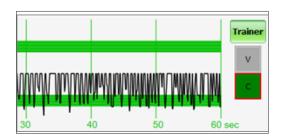
Compressions are too shallow. Most waveform peaks do not reach the green zone. Compression indicator is yellow.



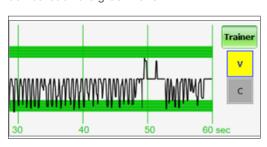
Compressions are too deep. Waveforms peaks mostly exceed the green zone. Compression indicator is red.



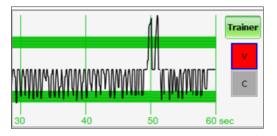
Compressions performed correctly. are Waveform peaks are mostly inside the green zone.



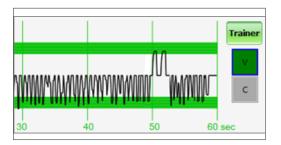
Ventilations are too shallow. Waveform peaks do not reach the green zone.



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

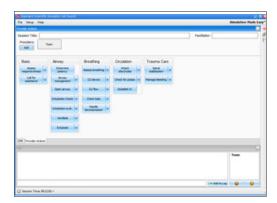


Ventilation was performed correctly. Waveform peak is inside the green zone.



### PROVIDER ACTIONS SCREEN

The provider actions screen allows the facilitator to keep track of every event during a session. It automatically creates an entry whenever a detected event occurs. Also, the facilitator can log provider actions with a simple click.



Open the provider actions screen by clicking on the shortcut icon located on the upper right side of the application.

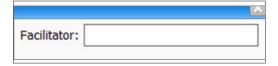


The Provider Actions screen consists of four different areas (from top to bottom): session info, team logging buttons, provider action buttons, and text log.

### SESSION INFO

The header section consists of the 'Session Title' and 'Facilitator' fields at the top of the Team Logging section. Type the session title and facilitator name directly into the note field. It serves as assisting with record keeping purposes when a report is saved or printed.



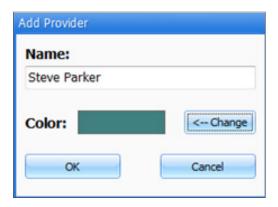


### TEAM LOGGING

The Team Logging feature allows the facilitator to designate which member of the team performed a particular action. The Team Logging section is right above the Provider Actions section.

First, the facilitator should add all providers in the team, one by one, by clicking the Add button and filling out the Add Provider dialog box.





A colored button is inserted on the Team Logging region for the provider just added. There can be up to six different providers, each with a corresponding button. Every time one of the provider buttons is clicked, that person becomes the active provider. To indicate the active provider, the vertical bars on each side of the Log page will match the color chosen for that person.



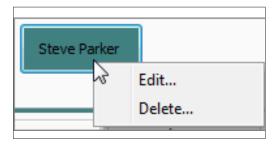
On the Log Page image, for example, the provider "Steve" is the active provider, so the vertical bars are teal colored. While there is an active provider, every time a Provider Action or Evaluation log entry is created it will have the name of the provider as follows:

"00:07:41 [Steve Parker] Action (Ventilate): BVM"

To deselect the active provider and return to general logging, click the Team button and the vertical bars will return to neutral color.



All provider buttons can be edited or deleted by right-clicking them and selecting an option from the menu.

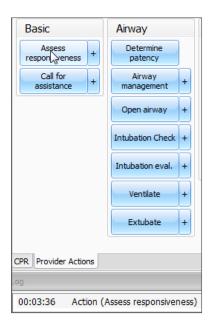


### PROVIDER ACTIONS

This section refers to the collection of buttons in the middle of the page. It allows the facilitator to accurately keep track of provider actions. The buttons are grouped into 6 groups: Basic, Airway, Breathing, Circulation, and Trauma Care. Anytime the facilitator clicks one of the buttons, a time-stamped log entry is generated with that particular action.



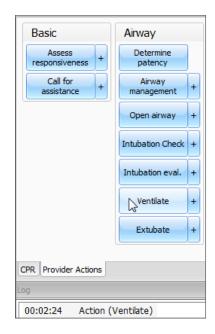
For example, if the 'Assess responsiveness' button is clicked when the session clock reads 00:03:36, the following entry is automatically generated: "00:03:36 Action (Assess Responsiveness)"



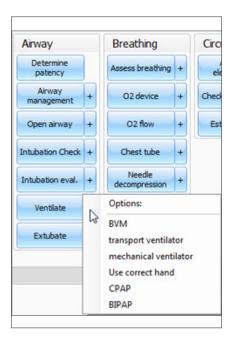
### SPECIAL BUTTON

The special button adds additional functionality to the provider actions section. The button, ' + ', allows the facilitator to be more specific on the provider action he/she wishes to log. For example, if the button 'Ventilate' is clicked, the following entry is created: "00:02:24 Action (Ventilate)"

.....

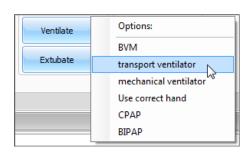


On the other hand, if the '+' button next to 'Ventilate' is clicked, a list of additional options appears.



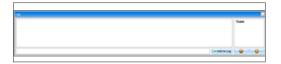
The facilitator can be more specific and choose, for example, 'transport ventilator'... and the following entry is added:

"00:01:28 Action (Ventilate): transport ventilator"

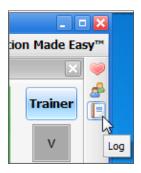


### TEXT LOG

This is the large panel at the bottom of the Log Page, containing all the time-stamped text entries. Every event on a session is reflected as an entry in the Text Log.



Open the Text Log by clicking on the shortcut icon located on the upper right side of the application.



The different types of entries are classified as Actions, Detected Events, Evaluations, and Notes.

Text Log is subdivided in four different functions:

### **ACTIONS**

Actions refer to those performed by one of the providers in the session. The facilitator can quickly log actions from the Provider Actions section and make the entry more specific using the Team Logging feature. The following is an example of an Action entry:

"00:07:24 Action (Assess responsiveness)"

### DETECTED EVENTS

Each time one of the various sensors in the The simulator detects a provider action, it is automatically logged as a 'Detected' entry. These actions include artificial ventilations and chest compressions. The following example shows an entry after a provider administrates a chest compression:

"00:05:36 Detected (chest compression): too weak"

•

### **EVALUATIONS**

The facilitator adds evaluations by clicking on the 'Satisfactory' or 'Unsatisfactory' buttons next to Text Log.



The facilitator can evaluate individual providers with a single click.



For example, if provider Steve Parker did a correct procedure, the Evaluation entry would be:

00:36:01 [Steve Parker] Evaluation (Care Provided): Satisfactory

\_\_\_\_\_

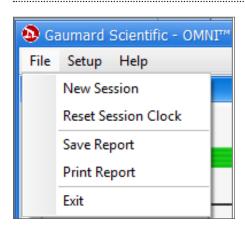
### **NOTES**

Notes can be entered directly in the Text Log. The following is an example of a Note entry:

"00:51:09 [Steve Parker] Note: provider took too long to assess patient."

### **CPR LINK MENUS**

### **FILE**



### **NEW SESSION**

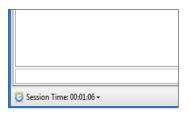
Clicking New Session in the file menu will:

- · Start a new simulation session
- · Clear out log page

· Restart the session clock



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



You can also start a new session by clicking on the session clock drop down menu, located at the bottom of the Log box, and selecting New Session.



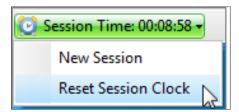
### RESET SESSION CLOCK

Clicking on Reset Session Clock resets the clock back to zero.

••••••

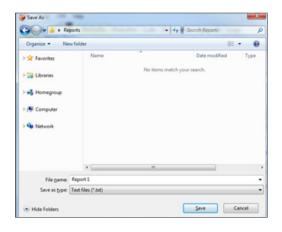


Reset the session Clock by clicking on the session clock drop down menu, located at the bottom of the Log box, and selecting Reset Session Clock.



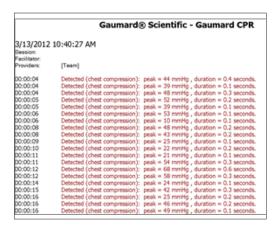
### SAVE REPORT

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".

A sample report is below:



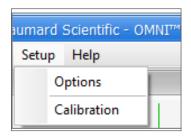
### PRINT REPORT

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.

### **EXIT**

You can exit the application at any time by going to File, Exit or by clicking on the red "x" button at the top right corner of the CPRLink.

### SET UP



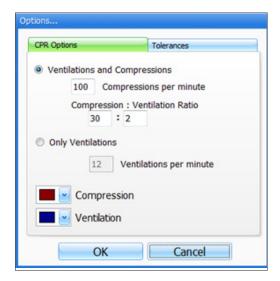
### **OPTIONS**

The Options window contains the parameters accessible to the user for configuration.

### **CPR OPTIONS**

- · Select the number of desired compressions per minute.
- · Specify the compression/ventilation ratio
- · Select number of ventilations per minute (if the 'Only Ventilations' option is selected).

CPRLink will retain the options, tolerances and calibration data last entered.

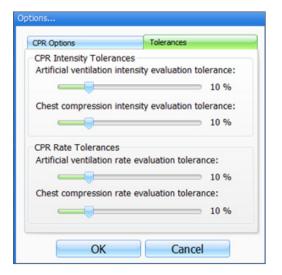


### **TOLERANCES**

Select the tolerance and intensity of both chest compressions and ventilations. These parameters change the percentage deviation permitted while evaluating a compression or ventilation.

Intensity Tolerances: if the user has calibrated the software, these tolerances represent permissible deviation from the compressions or ventilations entered during the calibration procedure; otherwise the program uses default sensor values.

Rate Tolerances: the rate tolerance parameter sets the permissible deviation from the selected compression set. For example, if the user sets the Compression Rate at 100 compressions / minute and the Compression Rate Tolerance at 10 %, any compression frequency between 90 and 110 compressions per minute will be considered correct.



### **CALIBRATION**

This tool allows you to easily calibrate the sensors inside the simulator. First choose which function you would like to calibrate: chest compressions or artificial ventilations.

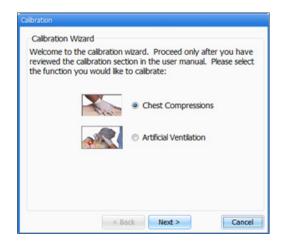


The procedures for each specific calibration are described in the sections below.

### CHEST COMPRESSIONS/ARTIFICIAL **VENTILATIONS**

This tool allows you to calibrate the chest compressions and the artificial ventilations to your specific criteria. That is, you will be telling the system what a correct chest compression is and/or what a correct artificial ventilation is. Providers will be evaluated by the system based on this criteria.

The chest compressions and ventilations are calibrated in the same way. After making a selection, this dialog box is displayed:



Click next to proceed with the calibration.

The application will now ask you to perform a number of "correct" chest compressions or artificial ventilations, depending on which was selected.

Click on Start to proceed.



The facilitator should follow the text cue on the screen to perform just one compression or ventilation at a time, until prompted for successive compressions/ventilations.

For example, if calibrating chest compressions:

The wizard prompts you with a "#1".

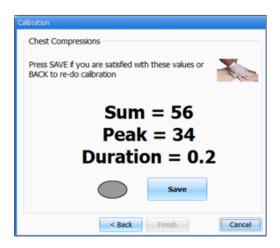


1. Perform one correct chest compression. A green filled oval indicates that the chest compression was successfully recorded.

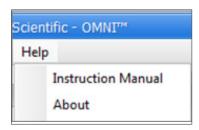
The wizard prompts you with "#2".

- 2. Perform a second correct chest compression. A green filled oval indicates that the chest compression was successfully recorded.
- 3. Continue the process.

At the end of the calibrating session, the wizard shows the average peak, depth, and duration values for the procedure.



### **HELP**



### INSTRUCTIONAL MANUAL

Open the instructional manual.

### **ABOUT**

Click to view the version of the software.



# **Appendix**

## **Troubleshooting**

### **GENERAL TROUBLESHOOTING GUIDE**

Use the following table to find causes and solutions to a number of possible problems.

Symptom	Possible Cause	Solution
Omni io not turning on	Power supply not connected to simulator	Connect the power supply cable to the simulator and the other end to a power source
Omni is not turning on	Communication cable not connected to Omni or the simulator	Connect the communication cable to the simulator and to Omni.
I lost communication with the simulator	Corrupted connection	Reboot Omni by unplugging the communication cable and reconnecting after a few seconds
Communication never gets	Data cable is not connected	Ensure the Ethernet cable is plugged into Omni and the simulator
established or is lost		Verify the power cable is connected to the simulator
Omni is not detecting any compression or ventilations	System is not calibrated	Calibrate compressions and ventilations using Omni
Omni detects compressions but no ventilations	Module in the simulator is disconnected	Contact technical support to troubleshoot problem
Omni takes too long to boot up A	A system restore is required	Unplug the communication cable from Omni.
		2. Press and hold down the two outer keys, located on the right side of the controller, while reconnecting the communication cable.
		3. Once a "Please Wait" message appears on the screen, release the two outer keys.
		Wait for the main screen to load and continue with simulations.

### 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:

Damage resulting from accident, misuse, abuse, neglect, or unintended use of the Gaumard product;

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

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 <u>not</u> 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 <u>not</u> 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:

Contact Gaumard and request authorization to return the Gaumard product. Do <u>NOT</u> return the Gaumard product to Gaumard without prior authorization.

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.

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 <u>not</u> 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 Us**

E-mail Technical Support: support@gaumard.com

Before contacting Tech Support you must:

1. Have the simulator's Serial Number

2. Be next to the simulator if troubleshooting is needed.

E-mail 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

Post: 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)

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