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Care and Cautions

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.

Remove the palpation abdominal cover from the simulator at the end of the exercise. Do not leave the palpation cover installed for more than 2 hours.

Do not operate the delivery mechanism without the abdominal cover in place. Keep clear of the birthing mechanism during a delivery exercise.

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 warranted 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.

WARNING

To avoid damage to the simulator, please store and ship it in the clear poly bag provided.

STORAGE

Store NOELLE 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.

CLEANING

Clean NOELLE 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.

NOELLE 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 arterial and vein reservoirs at the end of the simulation session. Doing so will prevent molding or clogging.

POST PARTUM HEMORRHAGE

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.

Always clean and purge the reservoirs at the end of simulation. Do not store the simulator with fluid in the reservoirs or the internal arterial and venous vasculatures.
Do not allow simulated blood to puddle beneath the simulator or to reach the lower back.
Do not allow simulated blood to puddle inside the abdominal cavity.
Remove the uterine assembly and clean thoroughly using diluted soap and water to prevent staining or molding.

**BIRTH CANAL**

Always lubricate the birth canal and the fetus prior to starting a labor scenario.
Always handle the birth canal and the fetus with clean hands.
Prevent items from resting or pressing against the birth canal; indentations will form on the pressure points.
Ballpoint pens, ink, and markers permanently stain the birth canal insert.
Do not wrap the birth canal or any other Gaumard product in newsprint.
Clean the birth canal with a mild solution of soap and water. Then, dust with talcum powder to reduce tackiness. Do not clean with alcohol or aggressive solvents.
After the labor exercise is completed, DO NOT leave birthing baby in contact with the birth canal.

**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.

**EPIDURAL**

Care should be taken against having anything resting or pressing against the lumbar insert when operating the simulator. If this occurs, “dents” or indentations will form on the insert at the pressure points. The indentation may return after the pressure is relieved.
Have trainees wash their hands prior to use. Palpate using the pads of the fingers. Do not palpate using fingernails as this may tear the skin.
Do not press the lumbar insert against soiled surfaces, ink, or newsprint. Do not use iodine or Betadine type solutions; these will most likely permanently stain the simulator.
The use of needles larger than 18 gauge will reduce the lifetime of the insert.

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

Place talcum powder on the insert surface to reduce tackiness. Reapply as needed.

The lubricants and other accessories provided are for use with the accompanying patient simulator only. **The lubricants and other accessories are not suitable for human use or medical treatment/diagnosis and should never be used for such purposes.**

---

**Specifications**

**Height:** 5 feet, 9 inches (175 cm)

**Weight:** 65 lbs. (29 kg)

**Power Supply/Charger**

- Power input: 100-240 VAC, 50/60 Hz, 2 A
- Power output: 13 VDC, 9.2 A

**Capacity of hemorrhage reservoir:** 900 ml

**Simulator connectivity:**

- Wireless: Gaumard USB communication module RF 802.15
- Wired: Gaumard USB communication module (RJ45)

**Virtual monitor connectivity:** Wireless 802.11 (ad-hoc mode)

**Environmental**

- Operating temperature: 45°F to 95°F (7°C to 35°C)
- Storage: 55°F to 85°F (13°C to 29°C)
Getting Started
Terminology

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

UNI - 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.
Overview

- Practice epidural procedures on a spinal cord insert with skin layer, subcutaneous layer, connective tissue, and lumbar vertebrae
- Powerful and intuitive UNI software
- Practice C-Sections using real surgical instruments
- C-Section Abdominal inserts have simulated blood incorporated into the subcutaneous layer
- Built for a perfect fit into birthing stirrups
- New lifelike birth canal simulates human tissue
- Episiotomy repair inserts simulate human tissue that can be sutured closed repeatedly
- One breech and one vertex fetus
- Anatomic landmarks include bilateral ischial spines, coccyx, and pubic bone.
- NOELLE’s new palpation module includes an amniotic sac creating a natural and realistic feel when practicing palpation exercises
- NOELLE’s fetus rotates, dips, and rises in response to commands from a wireless tablet PC.
- Program tongue edema and pharyngeal swelling

OBSTETRICS

- Realistic birth canal with dilating cervix
- Precision programmable fetal delivery system for repeatable teaching exercises including
  - Normal Labor and Birth
  - Instrumented Delivery
  - Shoulder Dystocia
  - Breech Presentation
  - C-Section
  - Delivery system can be programmed for rapid deliveries as well as those taking hours
  - Program fetal descent over time
  - Pause, continue, or accelerate labor at any time
  - Time Fetal monitor interacts with labor scenario
  - Apply maternal and fetal vital signs at specified points during the labor
  - Select descent ONLY during uterine contractions
  - Precise control over both fetal translation and rotation
  - Start delivery at ROA, LOA, LOP or ROP
  - Program internal and external fetal rotations as needed
  - Program dystocia so that each student receives exactly the same scenario
  - Save and share scenarios and results for use later
  - At least 30 obstetric scenarios that can be modified as the instructor requires
  - Ability to quickly and easily create new scenarios as the instructor requires

DYNAMIC PERINATAL MONITOR

- Program Uterine Activity
- Control frequency, duration, and intensity of contractions
- Select resting tone
- Generate additional contractions during the scenario
- Program Fetal Heart Rate
- FHR Baseline
- Select variability
- Control episodic, periodic, and variable changes
- Generate FHR patterns at any time
- Listen to FHR in the External Fetal Monitoring or the Fetal Spinal Electrode Mode
- Review up to 2 hours of recorded fetal tracings
- Save/print fetal tracings for debriefing

FETUS

- Head with fontanelles and sutures
- Head cover for forceps or vacuum augmentation during delivery
- Head flexes as it moves through birth canal
- Suction mouth
- Realistic landmarks
- Jointed arms and legs useful during dystocia and breech exercises
- Umbilicus and placenta; attach placenta to uterine wall, placenta includes retained fragments
- Fetus is attached to delivery mechanism and can be released wirelessly
- Fetus can be manipulated by the student and either released or retained wirelessly

- Ability to change maternal, fetal or delivery conditions during the scenario
- Measure and log force experienced by fetus and cardinal movement with respect to contractions
- Force and shoulder position are graphed in real time with the uterine contraction
- Fetus may be used for external version
- Install fluids for bleeding and urinary catheterization
- Programmable bleeding from birth canal
- Forceps and Vacuum-Assisted Delivery
- Uterine module for PPH
- Postpartum hemorrhage and fundal massage
- Intrapartum Modeling and Trending
- Breech & Vertex Delivery
- Leopold Maneuver
- C-section: using dissectible stomach cover including realistic skin, subcutaneous, fascia, rectus muscle, and peritoneum
- Episiotomy Repair
- Prolapse of the Umbilical cord
- Placenta Previa
Fetal condition and release by command from wireless tablet PC
Programmable fetal heart sounds before, during and following the delivery

MATERNAL AIRWAY
- Program tongue edema and pharyngeal swelling
- Multiple upper airway sounds synchronized with breathing
- Nasal or oral intubation
- Sensors detect depth of intubation
- Head tilt/chin lift
- Jaw thrust
- Simulated suctioning techniques can be practiced
- Bag-Valve-Mask Ventilation
- Placement of conventional airway adjuncts
- Endotracheal intubation using conventional ETT
- Sellick maneuver brings vocal cords into view

MATERNAL BREATHING
- Automatic chest rise is synchronized with respiratory patterns
- Independent left or right lung sounds synchronized with breathing
- Ventilation may be assisted using BVM, ETT, or LMA
- Ventilations are measured and logged
- Chest compressions generate palpable blood pressure wave form and ECG artifacts
- Detection and logging of ventilations and compressions
- Simulated spontaneous breathing
- Variable respiratory rates and inspiratory/expiratory ratios
- Bilateral chest rise and fall
- Normal and abnormal breath sounds
- Anterior auscultation sites

MATERNAL CARDIAC
- ECGs are generated in real time with physiologic variations never repeating textbook patterns
- Heart sounds may be auscultated and are synchronized with ECG
- Optional automatic mode allows to show virtual dynamic ECG rhythms for each of the 12 leads

MATERNAL CIRCULATION
- Measure blood pressure by palpation or auscultation
- Use real BP cuff rather than a “virtual” cuff to measure blood pressure
- Korotkoff sounds audible between systolic and diastolic pressures
- Oxygen saturation detected using real monitors rather than a “virtual” value
- Pulse sites synchronized with BP and heart rate
- Bilateral IV arms with fill/drain sites
- Sub Q and IM injection sites
- Chest compressions are measured and logged
- ECG monitoring using real devices
- Defibrillate, cardiovert and pace using real devices
- Multiple heart sounds
- ECG rhythms are generated in real time
- Heart sounds synchronized with ECG
- Pacing may be practiced anteriorly to avoid having to roll the patient during delivery
- Bilateral carotid, radial, and brachial pulses synchronized with ECG
- Pulses vary with blood pressure, are continuous and synchronized with the ECG even during a paced rhythm

MATERNAL NEURAL RESPONSES
- Programmable blinking, dilation, and eye response to light
- Programmable duration and intensity of convulsions

MATERNAL SPEECH
- Prerecorded sounds
- Standard two way wireless streaming audio

WIRELESS STREAMING AUDIO
- Create and store vocal responses in any language
- Instructor can simulate patient’s voice and listen to caregivers conversation wirelessly
- Be the voice of the simulator and hear responses at distances up to 50 meters

VITAL SIGNS MONITOR
- Controlled via wireless tablet PC
- Both maternal vital signs and fetal heart tones
- Use selected configuration or create your own configuration to mimic the monitors used in your facility
- Customize alarms
- Easy to operate and control
- Change maternal or fetal condition during the scenario
- Share images such as ultrasounds, CT scans, lab results
- Touchscreen control
- Both maternal vital signs and FHT’s can be seen at the same time
- Monitor can be configured by the instructor to suit the scenario
- Display up to 8 numerical parameters
- Display up to 5 real time waveforms in normal mode
- Display up to 12 real time waveforms in advanced mode
MATERNAL ARTICULATION AND MOVEMENT

- Improved hip articulation for McRoberts maneuver
- Seizure/convulsions
- Tremors
- Able to position in knees/elbows position useful during shoulder dystocia
- Realistic rotation of the shoulder and hip joints
- Legs bend at the knees
- Arms bend at the elbow
- Supine or semi-recumbent positions
- Roll to left lateral position
- Put legs in stirrups

OTHER

- Fill bladder and perform Foley catheterization
- Remains fully functional even while in transit
- Soft carrying case

USER INTERFACE

- Sensors track student actions
- Changes in condition and care provided are time stamped and logged
- View the actions of up to 6 care providers using a responsive menu or write narrative
- Generate and share diagnostic lab results
- File sharing
- Links with optional recording and debriefing system integrating the event log with cameras and patient monitor
- Supplied with wireless tablet PC
- 49 preprogrammed scenarios which can be modified by the instructor even during the scenario
- Create your own scenarios add/edit
- Change simulator’s condition during the scenario
- Optional automatic mode/physiologic model
- Optional integrated three camera recording and debriefing solution
Equipment Setup
NOELLE 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 adult patient.

NOELLE is capable of bleeding real fluid through the birth canal. Position NOELLE on the patient bed so hemorrhage fluid flows away from the simulator and into a collection bin. Do not allow fluid to reach NOELLE’s lower back.

LEG ASSEMBLY
To install the lower legs:

1. Remove the fixed bolts from the knee joints using the hexagonal wrench included.

2. Position the lower legs and re-insert the knee joint bolt. Then, secure the knee bolts without over tightening.

POWER SUPPLY
Connect the power adapter labeled “NOELLE Power Supply” to the power input port located on NOELLE’s right side.

Once the battery is fully charged, the simulator can be operated on battery power for up to 2 hours 30 minutes. The battery level is displayed on the UNI status panel. For more information on the battery indicator, go to Working with UNI section.

Operate the simulator with the power supply connected to prevent interruptions during lengthy simulations.

Do not store the simulator with a discharged battery. Re-charge the system at least once every 30 days when not in use. Otherwise, permanent loss of capacity might occur.

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

The NOELLE computer package includes:

- Tablet PC
- Streaming audio headset

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 hook and loop fabric patch. The tablet is now ready to communicate with the simulator wirelessly. For information about the signal strength indicator, go to the Working with UNI section.

USB COMMUNICATION MODULE WIRED
The USB communication module is also equipped with a wired communication port for transmitting the startup and control commands to the simulator. The alternate wired configuration should be used in environments that do not allow wireless communications.

Do not connect the simulator to Ethernet cards, LAN networks, or unauthorized diagnostic equipment. Doing so may cause damage to the system.

To connect the simulator to the Tablet PC using the wired option:
1. Connect the RJ45 cable to the USB communication module
2. Connect the RJ45 cable to the communication port on the simulator’s right side
3. Connect the communication module to an available USB port on the tablet PC.

The tablet is now ready to communicate with the simulator.

**STREAMING AUDIO HEADSET**

The computer system includes a headset that allows the facilitator to speak as NOELLE’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. For more information about the streaming voice feature, go to the digital UNI User Guide under the software Menu/Help/Instruction Manual.

**VIRTUAL MONITOR PC 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. Place the extended monitor screen beside the PC.
3. Connect the power supply to the PC and to the wall outlet.
4. Connect the USB keyboard and mouse receiver to the PC.
5. Connect the extended monitor video cable to the PC.
6. Connect the extended monitor touchscreen USB cable to the USB 2.0 port on the PC.
7. Connect the extended screen power cable to the wall outlet.
8. Turn on the computer.

**Virtual Monitor**

The Gaumard Monitors software displays NOELLE’s simulated vital signs in real time. The extended touchscreen screen displays the uterine activity and the fetal heart rate strip. The interactive monitoring software is preloaded into 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.

Always connect the streaming audio headset before starting the UNI software.
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 the Appendix.

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 UNI control software.

For more information about the Gaumard Monitors software, please refer to the Gaumard Monitors user guide.
Working with UNI
Initializing the Simulator

After reading the manufacturer’s care and caution information, press the power button to turn on the Tablet PC.

The UNI software initializes the simulator. Double click the UNI icon on the tablet’s home screen to start.

The simulator selection menu is shown. Select Noelle and click “Start”.

Notice that the serial numbers entered for each simulator will be saved.

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

The available profiles for each simulator will be displayed when the simulator is selected. For more information about managing and creating new profiles, refer to the digital UNI User Guide under Gear/Help/Instructional Manual.

PROFILES AND OPERATING MODES

The UNI 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.

Access this window by going to the Gear> File> Profile.

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 palette with healthy vital signs.

**Quick Start Noelle** – includes eleven 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 the digital UNI user guide.

The Automatic mode includes the following built-in profiles:

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

**Meds Profile** – This profile includes a library of pre-programmed drugs to be used on simulations.

**Quick Start Noelle Modeling** – includes eight lineal scenarios and one branching scenario allowing instant simulation of a wide range of conditions.

### MANAGING PROFILES

Use the Manage Profile Menu to create a new profile and edit this profile.

In addition, the profile folder location will be shown below the “New Profile” icon. Use the “Map Profiles folder” icon to select the location of the new profile to be created on the server. Select the server location and click “Make New Folder” to create the profile folder.
Assign a name to the folder and click “OK”

The new profile folder location will show up. Then proceed to create a new profile, see instructions detailed below.

Use the “Home” icon to reset to default profiles folder.

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

Click “Rename” or “Delete” to change the name of delete this new profile.

For more information about the UNI software, refer to the digital User Guide under Menu/Help/Instruction Manual
UNI Interface

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

The UNI components and 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.

When the battery icon is depleted, the simulator is set to STAND-BY mode automatically to protect some of the simulator’s internal components.

Internal battery duration is approximately 2 hours.

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 UNI software. Toggle the power button to set the simulator to stand-by mode and then again to resume.
Quick Launch

The UNI interface opens up showing the quick launch page for the scenarios. This page is used to easily access the preprogrammed scenarios saved on each profile.

CLINICAL CONDITION

The scenarios are categorized by clinical condition to the left of this page; i.e. shoulder dystocia, cord prolapse, etc.

Notice that one or more scenario types can be selected at the time and the list of scenarios on the right will display only the scenarios included on the selected categories.

SELECTING THE SCENARIO

Click on one of the scenarios listed to highlight it and the scenario can be started immediately or loaded.

Click on the drop down arrow to the right to read a scenario description.
Clicking “Start Scenario” loads the appropriate scenario and starts it playing without the user having to do anything else with the control computer.

Notice that the position of the fetus should be selected before to click “Start Scenario” as shown below.

Preparing the actual simulator for delivery must be done before activating quick launch scenarios. For complete information refer to the “Working with Simulator” section.

**FAVORITES**

There is also a “Favorites” feature added to the quick launch program. This feature allows users to reduce the number of scenarios highlighted to those within the categories that will be used most frequently.

Enable the “Favorites” feature by clicking the star icon. Then select the categories or scenario types to be stored under this feature.
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.

The Status/Details tab displays the vital signs controls in a list format.

SYSTEMS LIST VIEW

<table>
<thead>
<tr>
<th>STATUS/DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CEPHALIC</strong></td>
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<tr>
<td>Seizure</td>
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<tr>
<td>Eye State</td>
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<tr>
<td>Pupil Dilation</td>
</tr>
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<td>Pupil Reaction</td>
</tr>
<tr>
<td>Pupil Dilation Time</td>
</tr>
<tr>
<td><strong>AIRWAY</strong></td>
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<tr>
<td>Throat Sound(Volume)</td>
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<tr>
<td><strong>BREATHING</strong></td>
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<tr>
<td>Respiratory Pattern</td>
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<tr>
<td>Respiratory Rate</td>
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<tr>
<td>Inspiration Percent</td>
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<tr>
<td>O2 Saturation</td>
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<tr>
<td>ETCO2</td>
</tr>
<tr>
<td>Lung Sounds(Volume)</td>
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<tr>
<td><strong>CARDIAC</strong></td>
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<tr>
<td>EKG</td>
</tr>
<tr>
<td>Heart Rate</td>
</tr>
<tr>
<td>Heart Sound(Volume)</td>
</tr>
<tr>
<td><strong>CIRCULATION</strong></td>
</tr>
<tr>
<td>Blood Pressure</td>
</tr>
<tr>
<td>Korotkoff Sounds</td>
</tr>
</tbody>
</table>

CHANGING VITAL SIGNS

To adjust numerical values click the slider control. (e.g. heart rate, blood pressure, respiratory rate, etc.).

Alternatively, use the keyboard for manual entry and click the green checkmark to confirm the change.

To change patterns, sounds, and rhythms, click on the specific control to display the library (e.g. EKG rhythms, heart and lung sounds, respiratory patterns, etc.)
Click the slider control below the sound library to adjust the volume of the sounds.

APPLYING CHANGES

No changes will be made to the simulator’s condition until the new settings are submitted using the “Apply” panel.

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.

Vital sign parameters can be edited or removed using the edit and remove parameter tabs.

Enable the “instant apply” option and click the control to change the vital sign to a new value without the need to use “Apply” panel. Vital signs undergoing change blink yellow.
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.

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

When the palette is needed, click the Load button to select the palette from the library.
Click the apply option to submit the changes.
Working with NOELLE
Airway

NASAL AND ORAL INTUBATION

Airway management techniques can be practiced on NOELLE including BVM, nasal/oral intubation, and suctioning. Endotracheal tubes, NG tubes and LMA can be used.

Use the Sellick’s maneuver, if needed, to bring the vocal folds into view. Retrograde intubation can also be performed on NOELLE.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Recommended Device Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intubation (Blade size)</td>
<td>Miller 4 or MAC 3.5</td>
</tr>
<tr>
<td>LMA</td>
<td>Size 4</td>
</tr>
<tr>
<td>Nasal Intubation</td>
<td>8 Fr catheter</td>
</tr>
<tr>
<td>Oral Intubation</td>
<td>ETT 7.0 or 7.5 no cuff</td>
</tr>
</tbody>
</table>

Warning:

Do not introduce liquids when performing nasal and oral intubation. Doing so can permanently damage the system.

Always lubricate tubing, airway and nasal opening prior to performing any nasal or oral intubation.

AIRWAY COMPLICATION

Intubation can be made more difficult by turning on pharyngeal swelling and tongue edema.

INTUBATION SENSOR

Once intubated, sensors detect the depth of the intubation tube. The detection notification is displayed on the Log Panel.

AIRWAY SOUNDS

The simulator can generate multiple upper airway sounds synchronized with the breathing rate. Use the software controls to change the type of airway sound.

RESUSCITATION

Ventilation and manual chest compressions are measured and logged. Set the respiratory rate to “0” to display chest rise during ventilation and receive feedback on the CPR window. To learn more about the CPR window, go to the digital UNI User Guide under the software Menu/Help/Instruction Manual.

TEETH

NOELLE is features fixed upper and lower dentures. The tongue may be moved gently from side to side.

Breathing

RESPIRATORY PATTERNS

Use the software controls to set the breathing and inspiration rate. The selectable breathing patterns include Kussmaul’s, Cheyne-Stokes, Biot’s, Apneustic, apnea, and normal.

LUNG SOUNDS

Multiple independent right or left lung sounds are available on NOELLE: normal, none, wheezing, inspiratory squeaks, crackles, rales, asthma, bronchial, emphysema, muscle noise, pleural and rhonchi.

PULMONARY VENTILATION

The airway features nominal landmarks permitting either BVM or intubation exercises, including the use of a LMA. The trachea extends to the bronchi and lungs.

CHEST RISE

Lungs expand normally displaying realistic chest rise. Use the software controls to change the breathing parameters.
**CPR**

Use a normal size adult bag valve mask to ventilate the simulator. Maintain a tight seal around the mouth and nose and set the respiratory rate to 0 to observe realistic chest rise with every ventilation.

Evaluate the provider’s performance in real time using the CPR evaluator window. To learn more about the compression and ventilation performance feedback, go to the digital UNI User Guide under the software Menu/Help/Instruction Manual.

**Warning:** Do not perform mouth to mouth ventilation. Doing so may lead to molding of the airway. The airway itself cannot be sanitized or cleaned.

**Cardiac**

**HEART SOUNDS**

The simulator equipped with several realistic heart sounds synchronized with the heart rate and cardiac rhythm. The heart sounds available include: normal, none, distant, systolic murmur, S3, S4, aortic regurgitation, aortic stenosis, mitral valve prolapse, mitral stenosis, mitral regurgitation and physiological S2 split.

**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.

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.

The simulator’s ECG and defibrillation sites generate LEAD II waveforms detectable using real medical equipment and standard electrodes. Real automated external defibrillators can detect the simulator’s heart rhythm and treat shockable rhythms. To learn more about detecting electrical therapy and programming auto responses, go to the digital UNI User Guide under the software Menu/Help/Instruction Manual.

Defibrillation is allowed only on the large sternum and apex sites circled RED below.

**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 electrical therapy to the ECG sites.

**ECG AND ELECTRICAL THERAPY CHECKLIST AND WARNINGS**

- 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 any and 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.

• 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. Refer to the Care and Cautions section of this UNI for more information.

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

• 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.

• 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.

Cephalic

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.

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

Circulation

BILATERAL PULSES
The simulator’s palpable pulses (carotid, brachial, and radial) are dependent on blood pressure. In addition, distal pulses can be disabled using the software controls to simulate severe hypotension.

PROGRAMMABLE BLOOD PRESSURE
Programmable blood pressure can be measured using any standard sphygmomanometer. Korotkoff sounds are heard between systolic and diastolic pressure readings. Before using the blood pressure feature for the first time, complete the blood pressure calibration process outlined on to the digital UNI User Guide under the software Menu/Help/Instruction Manual.
INSTRUCTIONS FOR USE

1. Place the cuff around the simulator’s upper left arm with the cuff mark at the medial site of the bicep brachii, about an inch (two cm) above the anterior elbow.

   Place the cuff in the same position used during the calibration process for accurate readings.

2. Inflate the BP cuff, and auscultate Korotkoff sounds just as with normal patient.

PROGRAMMING THE SYRINGES

The tagged syringes supplied with the Drug Recognition arm must be associated with a medication type and concentration before they are used for the first time. The syringes remained programmed unless the medication properties are deleted manually using the “Set Med ID” menu.

Warning:

The simulator must be on when introducing fluids into the drug recognition arm. This includes calibration, purging, draining, IV infusion, and injecting fluids into the veins or the filling ports. Introducing fluids into the drug recognition arm while the simulator is off will damage the arm and the simulator. Damage caused by improper use is not covered under warranty.

The drug recognition arm is equipped with a black drain port and a white filling port. Do not reverse the ports while introducing fluids into the system; doing so will damage the system. Do not attempt to fill the IV system without the black drain connector in place. Always leave the black drain port connected during high volume infusions.

To program a tagged syringe with a medication for use with the drug recognition arm:

1. Power on the simulator
2. From the Setup menu, click “Set Med ID”. The Set Med Id option is only available on simulators equipped with the Drug Recognition Arm.

   The Set Medication Identifier dialog box is displayed.
3. Rotate the lower right arm so the palm of the hand is facing up, and place the syringe holder on the simulator’s right wrist as shown below.

4. Place the tagged syringe in the holder. The syringe must be perpendicular to the surface of the forearm as shown in the figure below.

5. Select a drug from the drop-down menu and enter the concentration.

The Syringe Identifier displays “Ready!” when the syringe is ready to be programmed.

6. Click the “Add” button associate the medication to the syringe. Please wait while process is completed.

The syringe is now associated with the medication type and concentration. The medication association is listed in the “Set Medication Identifier” dialog box.

Repeat the “Set Med ID” process to program additional syringes with other medications.

Reuse tagged syringes by reprogramming the associations. To delete a medication associated with a particular syringe, highlight the desired medication from the “Set Med ID” list and click “Delete Selected Medication” button.

Use the labels provided to identify the syringe with the medication name and concentration.
PRIMING THE DRUG RECOGNITION ARM

The drug recognition sensors are active only when fluid is present in the vasculature. Prime the drug recognition arm by filling the forearm vasculature with fluid. This process should be completed before simulation begins.

The drug recognition arm is equipped with a black port for draining and a white port for filling. Do not reverse the ports while introducing fluids into the arm; doing so will damage the system.

Locate the IV Filling kit, which includes the drainage tube (black tip) and filling tube (white tip) and filling syringe.

Warning: 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.

To prime the drug recognition arm for an infusion exercise:
1. Power on the simulator
2. Attach the drain tube to the black output port and place the end of the drain hose inside a container.
3. Place the collection container below the arm level to siphon the fluids in the next step.
4. Fill the filling syringe with water and connect it to the white port.
5. Insert water in the system until fluids exit through the drainage tube and all air bubbles are purged.
6. Disconnect the drain tube and the fill syringe.

The drug recognition arm is now ready for use.

INSTRUCTIONS FOR USE

To inject fluids into the drug recognition (right) arm using a tagged syringe:
1. Power on the simulator and select the Automatic operating mode
2. Fill the preprogrammed syringe with fluid.
3. Inject a vein on the anterior or posterior right forearm while maintaining the syringe near the arm.

The tagged syringe must be close to the arm for the drug recognition module to detect the medication type.

Warning: Maximum amount of fluid injected without draining should not exceed 40 mL and the maximum injection rate is 9999 mL/hr.

CLEANING THE VASCULATURE

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

To clean and purge the drug recognition vasculature:
1. Power on the simulator
2. Fill the filling syringe with distilled water
3. Connect the fill syringe to the white port and the drain tube to the black port
4. Flush the vasculature with distilled water. If the drug recognition arm is not going to be used for a week or more, purge the system with 70% isopropyl alcohol solution.
5. Fill the filling syringe with air and purge the clean water to dry the vasculature.
6. 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.
IV ARM

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

WARNING

The drug recognition arm is equipped with a black drainage port. Reversing the fill and drain connections on a drug recognition arm will damage the system and void the warranty. Please refer to the Drug Recognition section to prime the drug recognition arm for an exercise.

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

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.
Obstetrics

ANATOMICAL LANDMARKS

NOELLE’s realistic pelvis features several anatomical landmarks.

ISCHIAL SPINES

Providers can train on identifying the location of the ischial spines. Feel the ischial spines to estimate the progression of the fetal head, shoulder, buttocks, or feet through the birth canal.

SACRUM

Palpate the sacrum during a vaginal examination to evaluate its shape.

EPIDURAL INSERT

The epidural injection site allows providers to practice the skills required to perform an epidural injection procedure.

The removable epidural insert provides a lifelike representation of an adult spinal segment. The Insert consists of the skin layer, subcutaneous layer, simulated ligamentum flavum, and lumbar vertebrae (L2, L3, L4, and L5). The vertebra is optimized to provide a realistic tactile feedback for the injection process. The skin and subcutaneous layer can be palpated for optimized positioning of the needle between the vertebrae.

The replaceable epidural insert features the following characteristics and functions:

- Simulated tissue layers
- Anatomic landmarks
- Supports needle insertion between vertebrae with lifelike needle resistance
- Simulates the resistance and pressure change felt when traversing the ligamentum flavum and entering the epidural space
- Needle depth detection and software logging
- Realistic tactile feedback

CARE AND CAUTIONS

- Disconnect the power cable from the power port located on the right side of NOELLE before setting the simulator on a lateral right position.
- Do not use iodine or Betadine type solutions; these will most likely permanently stain the simulator.
- The use of needles larger than 18 gauge will reduce the lifetime of the insert.
- Clean the insert with a cloth dampened with diluted liquid dishwashing soap. If medical adhesives remain on the skin, clean with alcohol wipes.
• Apply talcum powder on the insert surface to reduce tackiness. Reapply as needed.

INJECTION DETECTION WITHIN DURAL SPACE

The epidural injection site is equipped with a depth sensor that informs the instructor, via the software log, when the needle is positioned within the dural space. If the needle is inserted too far, traversing the dural space and touching the spinal dura, the software logs “Insertion too deep”.

Warning: Do not inject fluids into the epidural insert. The epidural injection site feature should only be used for training providers in recognizing anatomic landmarks, performing preoperative procedures, inserting and positioning the epidural needle within the epidural space, and simulating the infusion of an analgesic.

INSTRUCTIONS FOR USE

To perform an epidural injection exercise:

1. Turn on the simulator and disconnect the power cord.
2. Position the simulator on a sitting or lateral position.
3. Perform pre-operative procedures as cleaning and draping.
4. Insert epidural needle and simulate infusion of analgesia.

The epidural site supports the use of standard needle and catheter sizes. However, using needles larger than 18 gauge can significantly reduce the lifetime of the insert.

REPLACING THE SPINAL INSERT

To remove the Spinal Cord Insert:

1. Grasp the release tab and pull until the insert slides out of the recess in the torso.

2. When replacing the spinal cord insert, orient it with the skin layer facing outwards and the release tab facing the skin layer.

3. To insert the Spinal Cord Insert, hold the Release Tab, and gently slide the Insert into position on NOELLE so that the four outer walls line up.

4. Continue to push the insert into position so that the outer edge of the skin layer fits snugly in the depression around the recess opening.

Warning: Do not grasp the skin layer directly. Doing so could damage the skin and possibly the underlying layers. Always use the release tab to remove the insert to prevent damage.


**ABDOMINAL COVERS**

The Noelle package includes four separate abdominal covers. Each cover has unique features that enhance the realism of several labor and delivery simulation exercises.

**PALPATION ABDOMINAL COVER**

The palpation abdominal cover features a soft outer skin and a palpable fetus inside an amniotic sack.

Place and secure the palpation cover on the simulator for providers to practice Leopold maneuvers or external cephalic version exercises.

After the exercises are completed, remove the palpation cover and store it in a cool and dry place.

*Warning:* Always remove the cover at the end of the palpation exercises to prevent damage to the simulator. The weight of the palpation cover can add unnecessary stress to NOELLE’s midsection if left installed for more than two hours.

**CONTRACTION ABDOMINAL COVER**

The abdominal contraction cover generates palpable contractions during the labor and delivery scenario. For information on how to install the abdominal cover, go to the digital UNI User Guide under the software Menu/Help/Instruction Manual.

**C-SECTION ABDOMINAL COVER**

The C-section abdominal cover features a soft abdominal insert that reacts like real skin when cut. During a C-section scenario, the cover allows providers to perform a surgical incision on the soft insert to deliver the fetus. For information on how to install the C-section cover, refer to that section below.

**POST PARTUM HEMORRHAGE ABDOMINAL COVER**

The PPH abdominal cover is constructed from soft materials that allow the provider to palpate the boggy uterus and perform fundal massages. For information on how to install the PPH cover, refer to that section below.
Labor and Delivery

Reference the following section to setup NOELLE for a labor and delivery exercise.

CONNECTING THE FETUS

To connect the fetus for a delivery:

1. Lubricate the fetal head, shoulders, and birth canal using the silicone oil provided.

   ![Image 1]

   Warning: Always lubricate the fetus and the birth canal using the Gaumard silicone oil before every delivery. Failure to do so will result in damage to the birthing mechanism and the birth canal.

2. Lubricate the birth canal wall.

3. Lubricate the birth canal.

4. Distribute the lubricant evenly to ensure that there are no dry spots in the birth canal.

   ![Image 2]

5. Attach the umbilicus to the placenta.

   ![Image 3]

6. Lubricate the placenta and place it on the abdominal wall of the simulator.

   ![Image 4]

7. Attach the umbilical cord to the fetus. Route the cord so it does not bind in the mechanism.

   ![Image 5]
For information on how to simulate cord complications, refer to this section below.

**BIRTHING MECHANISM**

The birthing mechanism is a mechanical component inside the abdominal cavity that pushes the fetus through the labor. The birthing arm on the birthing mechanism holds the fetus in place throughout the labor and rotates the fetus to simulate the internal and external rotations.

The fetus is equipped with an internal locking mechanism and a heart tone speaker. While the fetus is locked onto the birthing arm, sensors detect the pull force applied to the fetus by the provider.

To connect the fetus to the birthing arm for a labor and delivery exercise:

1. Power on NOELLE and ensure that the fetus and the birth canal are lubricated.
2. Align the ports on the fetus with the connectors on the birthing arm and connect the fetus to the arm.
3. Once the fetus is connected and locked onto the birthing arm, manually rotate the fetus to one of four initial positions: ROA, ROP, LOP, or LOA.
4. From the UNI labor tab, select the position option that matches the position of the fetus inside the abdomen to synchronize the rotation behavior.
CONTRACTION ABDOMINAL COVER

The contraction abdominal cover is equipped with a pneumatic system that generates palpable contractions. In addition, the cover features a built-in fluid bladder for catheterization exercises.

To install the contraction cover:

1. Connect, turn, and lock the air tube to the air port located near the top of the abdomen cavity.

2. Lubricate the fluid bladder tube (from the abdominal cover) and insert it through the precut urethra port inside the birth canal. To learn more about the urinary catheterization feature, refer to this section below.

3. Fasten the hook-and-loop straps to secure the contraction abdominal cover in place.

LABOR AND DELIVERY SCENARIOS

A labor scenario automates the vitals sign changes for NOELLE and the Fetus that occur during the labor and delivery process. Labor scenarios also control the gradual descent and rotation of the fetus throughout the labor. The Quick Start NOELLE and NOELLE Advanced profiles include several preprogrammed labor scenarios.

To load a labor scenario:

1. Go to the labor tab and click "Load"

The load labor window is displayed

2. Select a labor from the list and click "Load".

The labor is now loaded.

STARTING THE LABOR SCENARIO

Before starting the labor, increase the labor speed to complete the simulated labor in a fraction of the time.

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Always secure the abdominal cavity on the abdomen prior to starting the labor mechanism for safety.

Click “Play” to start the labor scenario.

The green vertical bar on the labor graph moves to the right indicating the labor progress. For more information about the labor graph and the labor stations, go to the Labor section in the UNI software user guide.

COMPLETING THE DELIVERY

The first few centimeters of movement normally take about half the total delivery time. The fetus rotates internally as it moves forward, then after the head is delivered, and again before the shoulders are delivered.

The provider may help the fetal head and shoulders through the vulva just as in real life or turn the fetus into its final position if necessary.

RELEASE MECHANISM

The lock and release mechanism built into the fetus is used to simulate the resistance felt when the fetus is pulled too early during the delivery.

The fetus is released from the birthing arm when the vertical progress bar reaches the end of the labor graph. The release button displays “Releasing…” to indicate that the fetus is unlocking.

DELIVERY

Once the progress line reaches the end of the labor graph, the birthing mechanism will push the fetus until the shoulders are delivered. The mechanical process that simulates the end of stage 2 is transparent to a provider using standard techniques to deliver the fetus.

To prevent adding stress to the birthing arm:

1. After the final push, gently pull the fetus a few inches in line with the birthing arm to disengage the connectors.
2. Once the fetus is disengaged, complete the delivery using standard practices.

Avoid lifting or pulling the fetus upward while it is still engaged to the birthing arm. Doing so could make delivering the fetus difficult even if the fetus latching mechanism is unlocked.
FETAL MONITOR WINDOW

The fetal monitor tab displays feedback data recorded by the precision delivery mechanism sensors. The window provides feedback on pull force, uterine contractions, fetal heart rate, and turtle signs.

Uterine Activity - contractions generated by Noelle. Pulling force should be applied to the baby in synchronisation with uterine contractions.

Peak Force - approximate measurement of how hard the provider is pulling the fetus.

Slider - rewind the strip to see the previous graph data.

Turtle sign - generates turtle signs in sync with the contractions.

RESETTING THE DELIVERY MECHANISM AND RETRIEVING THE PLACENTA

After the delivery is complete, click the reset button to return the delivery mechanism to its initial position.

PLACENTA DELIVERY

During the setup process, the placenta may be positioned so that it requires both modest cord traction and manual removal.

The placenta features two removable placental fragments. These fragments are attached to the body of the placenta with hook and loop fabric. Reverse one or both fragments and attach them to the abdominal wall to cause one or both to remain affixed to the uterine wall after the placenta is retrieved.

Providers should carefully inspect the placenta to make sure it is complete and that no fragments have been retained. If retained fragments are noted, the provider must retrieve them using a gloved hand under appropriate sterile conditions.

Warning: Ensure that the birthing mechanism is completely retracted before allowing the provider to retrieve the placenta. Do not attempt to retrieve the placenta or placenta fragments while the birthing mechanism is moving.

Do not turn off the simulator until the birthing mechanism has retracted to its initial position.
Never store the fetus inside the abdomen or leave the fetus in contact with the birth canal.

SHOULDER DYSTOCIA
NOELLE can simulate various signs of distress consistent with a shoulder dystocia emergency. The birthing mechanism is capable of retracting the fetus with every contraction to simulate an obstruction. As a result, the fetal vital signs display the physiological response to the emergency.

UNI includes several preprogrammed dystocia labor scenarios (e.g. Cynthia, Candice, and Charlotte). In the Cynthia scenario seen below, the shoulder dystocia mode is preconfigured to start at station 9.

Once labor enters the dystocia mode, the labor progress returns to real-time and a turtle sign is displayed with every contraction until the end of the scenario. The contraction frequency is a parameter setting stored in the palette items placed on the timeline.

In the Cynthia labor scenario, palette Cynthia03 is programmed to set the contraction frequency to every two minutes. As seen below, from station 9 at the 24-minute mark, until station 10 at the 30-minute mark, the contraction frequency will trigger approximately three retractions.

RESOLVING SHOULDER DYSTOCIA
NOELLE’s hip joints support the use of dystocia management techniques such as the McRobert’s maneuver, suprapubic pressure, posterior arm sweep, or elbow-knee delivery.

The fetus is not unlocked from the birthing arm automatically at the end of the scenario while the dystocia feature is enabled.

Once the providers perform the maneuvers required, click the “Release” button to unlatch the fetus from the birthing arm.

Alternatively, uncheck the “Shoulder dystocia” option to complete the rest of the scenario similarly to a normal labor.

UMBILICAL CORD PROLAPSE
Simulate umbilical cord prolapse by:
1. Setup the fetus for a delivery
2. Lubricate the placenta and the umbilical cord
3. Place the umbilical cord across the top of the fetal head and the cervix
PLACENTA PREVIA

NOELLE is capable of simulating a placenta previa complication at various grades.

INSTRUCTIONS FOR USE

To setup NOELLE for a placenta previa complication:

1. Setup the fetus for a delivery
2. Lubricate the placenta
3. Place the placenta in the position consistent with the grade of the complication
   
   This is for placement only. Do not birth the fetus with the placenta covering the cervix opening

   
4. Start a labor scenario

5. Load or program a breech delivery scenario
6. Start the labor scenario

BREECH AND FRANK DELIVERY

Noelle is capable of simulating several types of breech presentations.

To setup the fetus for a breech delivery:

1. Remove the head connector cover on the breech delivery fetus
VACUUM-ASSISTED DELIVERY

NOELLE supports vacuum assisted deliveries using a real vacuum extraction device.

INSTRUCTIONS FOR USE

To setup the fetus for a vacuum-assisted delivery exercise:
1. Install the soft head cover on the fetal head
2. Setup the fetus for a normal delivery
3. Start the simulation

Warning: Remove the soft head cover from the fetal head at the end of the labor exercise. Do not leave the soft cover installed on the fetal head or in contact with the simulator for an extended period.

C-SECTION ABDOMINAL COVER

Attach the C-section abdominal cover to perform a C-section delivery. The Labor tab includes several labor scenarios programmed with complications that impede vaginal delivery (e.g. Francine, Irene).

The cesarean abdominal insert is designed to react like real skin when cut, clamped, or sutured.

Each abdominal insert allows for several surgical incisions.

Warning: The use electrosurgical or cauterization tools is not supported. Hot surgical tools may damage the inserts.

INSTRUCTIONS FOR USE

To setup NOELLE for a C-section delivery:
1. Setup NOELLE for delivery
2. Start a C-section labor scenario
3. After it has been determined that a C-section is required, retract (reset) the birthing mechanism and remove the fetus from the motor arm
4. Install the elevation pillow
5. Lubricate the fetus and place it on the elevation pillow
6. Place the cesarean cover on the abdomen and fasten the hook and loop straps
7. Apply silicone oil to the surface of the abdominal insert to reduce friction during the surgical incision.
8. Begin the C-section surgical exercise
**Do not initialize the birthing mechanism while the elevating pillow is in place.**

**REPLACING THE C-SECTION INSERT**

To replace the C-section insert or to change the position of the insert in the surgical window:

1. Position the C-section abdominal cover face down on a clean flat surface.
2. Remove the six nylon screws that hold the C-section insert support.
3. Remove the C-section support.
4. Remove the 6 screws.
5. Remove the C-section insert.
6. Install the new C-section insert in the surgical window and align the screw ports.
7. Insert the six screws through the abdominal cover and the C-section insert.
8. Install the C-section support.
9. Fasten the six screw caps to secure the C-section insert in place.
**Postpartum Activity**

**EPISIOTOMY REPAIR**

NOELLE includes perineal trauma inserts to simulate varying degrees of lacerations. The inserts can be cut or sutured using real surgical instruments.

**INSTRUCTIONS FOR USE**

Apply silicone oil to the surface of the insert to prevent friction between the material and the surgical tool. Use a "000" size suture and small curved needle to suture the laceration.

**EPISIOTOMY INSERT INSTALLATION**

To install an episiotomy insert for simulation:

1. Wrap the episiotomy insert with a clean plastic bag.

2. Align the episiotomy insert with the pubis and tailbone.

3. Slide the insert into position on the pelvis. Make any final positioning adjustments needed and slide the plastic bag out.

4. Secure the insert to the hook and loop fasteners around the circumference of the pelvis.
POSTPARTUM HEMORRHAGE

NOELLE can hemorrhage real fluid from the cervix and the birth canal. In addition, the uterine pressure can be adjusted using the software controls to change the firmness of the fundus.

**Warning:** Always position the simulator so the postpartum hemorrhage fluid flows away from the birth canal and the simulator itself.

Do not allow postpartum hemorrhage fluid to puddle beneath the simulator or reach the lower back.

FILLING THE PPH RESERVOIR

The post-partum hemorrhage fluid reservoir port is located behind the right knee.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Fluid Capacity (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPH reservoir</td>
<td>900 mL</td>
</tr>
</tbody>
</table>

To fill the internal hemorrhage reservoir with simulated blood:

1. In a separate container, mix a solution of Gaumard simulated blood colorant and water.
2. Fill the kit syringe with the simulated blood solution.
3. Connect the kit syringe to the PPH port located behind the right knee and inject simulated blood into the reservoir.

4. Repeat the filling procedure to transfer up to 900 mL of fluid into the PPH reservoir.

**Warning:**

Always position the simulator so the postpartum hemorrhage fluid flows away from the birth canal and the simulator itself.

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

At the end of every simulation, always flush the system with distilled water to prevent clogging.

INSTRUCTIONS FOR USE

To enable the birth canal bleeding manually and start the blood flow, set the hemorrhage control to “ON” and click NOW from the Apply menu. The fluid will exit through the port located inside the birth canal.

INSTALLING THE UTERINE INSERT

To setup NOELLE for uterine bleeding and a fundal massage exercises:

1. Set the uterine pressure to 1% and the contraction intensity to zero.

**Warning:**

Do not install the uterine insert before adjusting uterine pressure and contraction intensity. Doing so may overinflate the uterus and damage the unit.
2. Connect the uterus air hose to the port located near the top of the abdomen.

3. Connect the uterine hemorrhage port to the fluid port located inside the abdomen.

4. Secure the end of the uterus inside the wall of the birth canal.

5. Install the elevating pillow underneath the uterus. Pump the pressure bulb on the elevating pillow to adjust the height of the uterus if needed.

6. Secure the “PPH abdominal cover” in place.

**Warning:** Do not initialize the birthing mechanism while the elevation pillow is installed.

---

**INSTRUCTIONS FOR USE**

To enable the uterine bleeding feature manually and start the blood flow, set the Uterine hemorrhage control to “ON” and click NOW from the Apply menu. The fluid will exit through out of the uterus.

Use the Uterine Pressure control to adjust the firmness of the uterus. Increasing the Uterine Pressure makes the uterus firmer. Uterine pressure maximum value is 100% equivalent to 40mmHg.

![Uterine Pressure control]

**UTERINE HEMORRHAGE**

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<th>Control</th>
<th>Status</th>
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<tr>
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<td>On</td>
</tr>
<tr>
<td>Uterine Hemorrhage</td>
<td>On</td>
</tr>
<tr>
<td>Boggy Uterus</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Warning:** Ensure that there is a tight seal around the end of the uterus inside the birth canal wall to prevent cervix fluid from hemorrhaging inside the abdominal cavity. Do not allow fluid to accumulate inside the abdomen.

---

**CLEANING THE PPH SYSTEM**

Clean PPH reservoir at the end of the simulation session to prevent mold or clogs from forming in the PPH vasculature.

**Always clean the reservoirs at the end of simulation. Do not store the simulator with fluid in the reservoirs.**
To clean and dry the PPH reservoir and vasculature:

1. Power on the simulator and verify the PPH features are off.
2. Fill the filling syringe with distilled water.
3. Fill the PPH reservoir with clean water.
4. Turn on the PPH features to flush the any simulated blood left in the reservoir.
5. Allow the PPH feature to run until all the clean water exits the system.

**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.

**Systemic**

**OXYGEN SATURATION**

Use a real pulse oximeter to read NOELLE’s pulse and oxygen saturation. Before using the oxygen saturation feature for the first time, complete the calibration process outlined on digital UNI User Guide under: Menu/Help/Instruction Manual.

**Co-oximeters that in addition to reading oxygen saturation also read carbon monoxide (SpCO) and methemoglobin (SpMet) are not supported and may provide inaccurate readings.**

**INSTRUCTIONS FOR USE**

To connect an oximeter to Noelle:

1. Start UNI and establish communication with the simulator.
2. Connect the oximeter sensor to the left index finger of the simulator.

**URINARY CATHETERIZATION**

The contraction cover is equipped with an internal fluid bladder that permits catheterization to draw real fluid.

The bladder reservoir has a capacity of 240 mL. Perform catheterization exercises using an 18 Fr catheter lubricated with silicone oil.

**INSTRUCTIONS FOR USE**

To configure NOELLE for urinary catheterization exercise:

1. Connect the fill syringe to the bladder fill port located on the outer edge of the contraction cover.

**INTRAMUSCULAR INJECTION SITES**

IM sites for placement exercises are located on both deltoids and quadriceps.

**Warning:** Do not inject fluids into the IM sites.
2. Fill the bladder with up to 240 mL of water.

3. Lubricate the bladder catheter tube (from abdominal cover) and insert it through the precut urethra opening in the birth canal.
## Factory Preset Labor Scenarios

### Manual Mode Flowcharts

#### QUICK START SCENARIOS

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<td>2</td>
<td>Alicia, Variations on Normal</td>
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<tr>
<td>3</td>
<td>Amy, Variations on Normal</td>
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<td>4</td>
<td>Angelica, Variations on Normal</td>
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<td>5</td>
<td>Beth, Variations on Normal</td>
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<td>6</td>
<td>Cynthia, Shoulder Dystocia</td>
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<td>7</td>
<td>Donna, Breech</td>
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<td>9</td>
<td>Francine, Cesarean Delivery</td>
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<td>10</td>
<td>Gloria, Cord Prolapse</td>
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<td>11</td>
<td>Helen, Hemorrhage</td>
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<td>17</td>
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<td>18</td>
<td>Charlotte, Shoulder Dystocia</td>
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<td>20</td>
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<td>21</td>
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<td>22</td>
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<td>23</td>
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<tr>
<td>Noelle S574/S575/S576.100</td>
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<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Condition</th>
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<td>Gail</td>
<td>Uterine Rupture</td>
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<tr>
<td>27</td>
<td>Heidi</td>
<td>Peripartum Hemorrhage - Previa</td>
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<td>28</td>
<td>Haley</td>
<td>Peripartum Hemorrhage - Previa</td>
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<tr>
<td>29</td>
<td>India</td>
<td>Peripartum Hemorrhage - Abruption</td>
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<td>30</td>
<td>Inez</td>
<td>Peripartum Hemorrhage - Abruption</td>
</tr>
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<td>31</td>
<td>Janie</td>
<td>Peripartum Hemorrhage/PPH</td>
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<td>32</td>
<td>June</td>
<td>Peripartum Hemorrhage/PPH</td>
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<tr>
<td>33</td>
<td>Kelly</td>
<td>Amniotic Fluid Embolism</td>
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<tr>
<td>34</td>
<td>Kimberly</td>
<td>Amniotic Fluid Embolism</td>
</tr>
<tr>
<td>35</td>
<td>Madonna</td>
<td>Preterm Labor</td>
</tr>
<tr>
<td>36</td>
<td>Maria</td>
<td>Preterm Labor</td>
</tr>
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</table>
Alice is a 24 year old female, weighing 170 pounds. Her OB history shows a gravida of 2 and a term of 1. She is currently 39 weeks pregnant and has one living child. She has had prenatal care. She has not been using medications of any kind. Labor duration: 30 minutes.

Alice 1
VS: 37.1-75-21, 120/80
FHR: 140, minimal variability.
CTX: 6/30

Admit patient; Routine labs; notify HCP of admission and status

Alice 2
VS: 37.1-75-21, 120/80
FHR: 140, minimal variability.
CTX: 4/40

Set up delivery table and infant warmer; configure bed for delivery

Alice 3
VS: 37.1-75-23, 120/80
FHR: 140, early decelerations.
CTX: 3/70

NEWBORN ASSESSMENT
Male
Heart Rate: 140
Respiratory effort: Crying

Go to Newborn scenario: Alice's Baby

MATERINAL ASSESSMENT
Alice 4
VS: 37.1-70-19, 120/80

End
Alicia is a 24 year old gravida 2/1 at 39 weeks. She weighs 160 pounds. She has had prenatal care. She has not been using medications of any kind. Labor duration: 20 minutes.

**Alicia 1**
VS: 37.0-80-20, 114/80
FHR: 140, moderate variability, reactive episodic changes
CTX: 3/60
Admit patient; Routine labs; notify HCP of admission and status

**Alicia 2**
VS: 37.0-80-20, 114/80
FHR: 140, moderate variability, reactive episodic changes, *early decelerations*.
CTX: 2/70
Set up delivery table and infant warmer; configure bed for delivery

**Alicia 3**
VS: 37.0-112-24, 114/80
FHR: 140, *Non reactive episodic change*, early decelerations
CTX: 2/70

**NEWBORN ASSESSMENT**
Male
Heart Rate: 140
Respiratory effort: Crying

Speech – “My water broke,” “I’m having contractions,” “Ouch.”

Speech – medium push, long push, “Help me.”

Speech – long push, medium push, long push.

**MATERNAL ASSESSMENT**
Alicia 4
VS: 37.0-88-18, 110/80

Go to Newborn scenario

End
Amy is 19 years and she weighs 160 lbs. Her OB history shows a gravida of 1. She is currently 40 weeks pregnant. She enters LD accompanied by her mother. Labor duration: 30 minutes.

Amy 1
VS: 37.0-88-20, 118/60
FHR: 140, moderate variability, reactive episodic changes
CTX: 8/30

Amy 2
VS: 37.0-88-20, 120/64
FHR: 143, moderate variability, reactive episodic changes.
CTX: 3/50

Amy 3
VS: 37.0-88-20, 120/64
FHR: 140, minimal variability, reactive episodic changes
CTX: 3/60

Amy 4
VS: 37.0-88-20, 116/70
FHR: 136, moderate variability, reactive episodic changes, early decelerations
CTX: 3/60

Amy 5
VS: 37.0-88-20, 116/70
FHR: 140, non reactive episodic changes, early decelerations
CTX: 2/70

NEWBORN ASSESSMENT
Male
Heart Rate: 140
Respiratory effort: Crying

MATERNAL ASSESSMENT
Amy 6
VS: 37.0-84-20, 120/79

Speech – “I haven’t seen a doctor.”

Speech – “I don’t feel good.”

Speech – “My water broke.”

Speech – “This is the worst pain ever,” “Help me,” “I need something for the pain.”

Speech – “I need something for the pain.”

Admit patient; Routine labs; notify HCP of admission and status

Set up delivery table and infant warmer; configure bed for delivery

Go to Newborn scenario

End
Angelica is a 31 year old gravida 5/3 at 41 weeks. She weighs 160 lbs. She has experienced no prenatal complications and has a history of fast labors. Labor duration: 20 minutes.

**Angelica 1**
VS: 37.0-100-24, 122/84
FHR: 151, moderate variability, reactive episodic changes, early decelerations, mild variables
CTX: 3/60

**Angelica 2**
VS: 37.0-100-24, 122/84
FHR: 145, moderate variability, non reactive episodic changes, early decelerations
CTX: 3/70

**Angelica 3**
VS: 37.0-100-24, 122/84
FHR: 151, moderate variability, non reactive episodic changes, early decelerations
CTX: 2/60

**Angelica 4**
VS: 37.0-100-24, 122/84

Speech – baby is coming, bathroom, short push, medium push.

Speech – water broke, medium push, long push.

Speech – baby is coming, bathroom, short push, medium push.

Speech – tear inside, long push.

Speech – water broke, medium push, long push.

**NEWBORN ASSESSMENT**
Female
Heart Rate: 140
Respiratory effort: Crying

**MATERNAL ASSESSMENT**
Angelica 4
VS: 37.0-100-24, 122/84

Admit patient; Routine labs; notify HCP of admission and status

Set up delivery table and infant warmer; configure bed for delivery

Go to Newborn scenario

End
Beth is a 16 year old gravida 2/0 at 37 weeks. She has had one elective abortion. She has had prenatal care. Labor duration: 10 minutes.

**Beth 1**
VS: 37.6-110-26, 130/85
FHR: 151, absent variability, mild variables
CTX: 3/70

**NEWBORN ASSESSMENT**
Female
Heart Rate: 80
Respiratory effort: Not crying

Go to Newborn scenario: Beth's (Donna's) Baby

**MATERNAL ASSESSMENT**
Beth 2
VS: 37.6-100-24, 140/90

Speech – bathroom, blood coming out, baby is coming, bathroom

End
Cynthia is a 31 year old gravida 3/1 at 41 weeks. She weighs 170 lbs. Labor duration: 30 minutes.

**MATERNAL ASSESSMENT**

Cynthia 1
VS: 37.1-75-16, 120/80
FHR: 140, minimal variability, non reactive episodic changes.
CTX: 3/50

Cynthia 2
VS: 37.1-85-20, 120/80
FHR: 140, minimal variability, non reactive episodic changes.
CTX: 3/60

Cynthia 3
VS: 36.7-90-24, 120/80
FHR: 71, non reactive episodic changes, mild variables.
CTX: 2/60

**NEWBORN ASSESSMENT**

Male
Heart Rate: 80
Respiratory effort: Not crying

Go to Newborn scenario: Cynthia's Baby

**MATERIAL ASSESSMENT**

Cynthia 4
VS: 36.7-110-24, 100/70

Perform Suprapubic pressure, McRoberts, Woods and Rubin maneuvers; Alleviate Dystocia with Gaskin maneuver

Admit patient; Routine labs; notify HCP of admission and status. Set up delivery table and infant warmer; configure bed for delivery.

End
Donna is a 20 year old gravida 4/2 at 31 weeks. She weighs 180 lbs. She has had one elective abortion. She has had prenatal care. Labor duration: 20 minutes.

**Donna 1**
- VS: 37.2-80-20, 120/70
- FHR: 151, minimal variability, mild variables
- CTX: 3/65

**Donna 2**
- VS: 37.2-85-20, 120/70
- FHR: 140, minimal variability, mild variables
- CTX: 2/70

**Maternal Assessment**
- Donna 3
  - VS: 37.7-84-22, 120/70

**Newborn Assessment**
- Female
- Heart Rate: 80
- Respiratory effort: Not crying
- Go to Newborn scenario: Beth's (Donna's) Baby

**End**
Elaine is a 23 year old gravida 1/0 at 37 weeks. She weighs 140 lbs. She has had prenatal care. She complains of mind frontal headache. 3+tibial edema and 4+ DTRs with 2 beats clonus are noted. Labor duration: 40 minutes.

NEWBORN ASSESSMENT
Female
Heart Rate: 60
Respiratory effort: No Crying

Go to Newborn scenario: Elaine's Baby

MATERNAL ASSESSMENT
Elaine 5
VS: 36.8-88-18, 140/90
Moderate postpartum bleeding

End
Francine is a 19 year old female gravida 2/1 at 37 weeks. She weighs 145 lbs. She has had prenatal care. She has STD, Herpes. Labor duration: 10 minutes.
Gloria is a 34 years old gravida 1/0 at 25 weeks. She weighs 190 lbs. She has had prenatal care. Labor duration: 10 minutes.

Gloria 1
VS: 36.6-80-25, 123/80
FHR: 60, absent variability.
CTX: 2/20

NEWBORN ASSESSMENT
Male
Heart Rate: 80
Respiratory effort: No Crying

Go to
Newborn scenario:
Gloria's Baby

MATERNAL ASSESSMENT
Gloria 2
VS: 36.6-85-22, 115/75

End
Helen is a 25 year old gravida 1/0 at 35 weeks. She weighs 180 lbs. She has had prenatal care. Labor duration: 30 minutes.

NEWBORN ASSESSMENT
Male
Heart Rate: 30
Respiratory effort: No Crying

Go to Newborn scenario: Helen’s (Irene’s) Baby

MATERNAL ASSESSMENT
Helen 3
VS: 36.6-95-22, 108/69
FHR: 150, minimal variability
CTX: 2/70

End
Irene is a 19 year old gravida 2/0 at 29 weeks. She has had one spontaneous abortion. Labor duration: 45 minutes.

**Newborn Assessment**
- Male
- Heart Rate: 30
- Respiratory effort: No Crying

Go to Newborn scenario: Helen’s (Irene’s) Baby

**Maternal Assessment**
- Irene 6
  - VS: 37.1-82-22, 120/70

End
Alyssa is a 23 yr old primip at term. Her health is generally good and she has experienced no prenatal complications. She wishes to receive no medications and will have the CNM attending her delivery. Labor duration: 30 minutes.

S&S: Comfortable; excited about delivery

Alyssa 1
VS: 37-80-20, 114/80
FHR: 140, mod FHRV, no decels
CTX: 4/45/mod

Admit patient; Routine labs; notify HCP of admission and status

S&S: Becoming more uncomfortable with ctx;

Alyssa 2
VS: 37-100-24, 124/80
FHR: 140, mod FHRV, no decels
CTX: 3/60/strong

Set up delivery table and infant warmer; configure bed for delivery

Alyssa 3
VS: 37-100-24, 124/80
FHR: 140, mod FHRV, early decels
CTX: 3/70/strong

MATERNAL ASSESSMENT
Alyssa 4
VS: 37-100-20, 120/80
Fundus: Firm @ U/U
Bleeding: mod

Routine postpartum assessment; support breast or bottle feeding efforts; promote bonding

Go to: Newborn scenario Healthy Baby A

NEWBORN ASSESSMENT
Female
Heart Rate: >100
Respiratory effort: crying

Alyssa 5
VS: 37-80-20, 110/70
Fundus: Firm @ U/U
Bleeding: light
Transition time: 1 min

END
Angela is a 31 yr old grand multip @ term. She tells the triage nurse that even though she has had few contractions she came in because she has a history of rapid labors. Her general health is good and she has had no problems during this pregnancy. V/E shows the cervix to be paper thin and Angela is admitted to birthing room. Labor duration: 30 minutes.

S&S: Comfortable; excited about delivery

Angela 1
VS: 37.2-80-20, 124/80
FHR: 145, mod FHRV, no decels
CTX: 6/45/mild

Perform V/E; admit patient to BR; initiate continuous EFM

Angela 1 (1)
VS: 37.2-80-22, 124/80
FHR: 145, mod FHRV, no decels
CTX: 4/50/moderate

S&S: feeling pain; Urge to push strong

Angela 2
VS: 37.2-90-24, 130/80
FHR: 145, mod FHRV, early decels
CTX: 3/60/strong

Notify HCP of imminent delivery;

Angela 3
VS: 37.2-100-24, 130/80
FHR: 145, minimal FHRV, early decels
CTX: 3/70/strong

NEWBORN ASSESSMENT
Female
Heart Rate: >100
Respiratory effort: crying

Go to: Newborn scenario Healthy Baby A

MATERNAL ASSESSMENT
Angela 4
VS: 37.4-64-20, 124/70
Fundus: Firm @ U/U
Perineum: intact
Bleeding: mod
Transition time: 1:30 min

END
Becca is a young pregnant teen who is living on the streets. She is a heavy smoker and drug user. She was seen twice in the Adolescent Clinic and referred to Social Services, but she only saw the social worker once and did not go to the follow-up appointment. Labor duration: 18-22 minutes.

**Becca 1**
VS: 37-120-24, 160/90
FHR: 120, absent FHRV, mod variables.
CTX: 2/60/Strong

**Becca 2**
VS: 37-120-24, 160/90
FHR: **100**, absent FHRV, **deep variables**.
CTX: 2/60/Strong

**Becca 2_1**
VS: 37-100-20, 140/80
Fundus: Firm @ U/U
Perineum: Repaired
Bleeding: Light

**Maternal Assessment**

Becca 2
VS: 37-120-24, 160/90
Fundus: Boggy @ 1/U
Bleeding: Heavy

Becca 2_1
VS: 37-100-20, 140/90
Fundus: Firm @ U/U
Perineum: 3rd degree laceration
Bleeding: Moderate

**Newborn Assessment**

Male
Heart rate: <100
Respiratory effort: weak

Go to: Newborn scenario Variations A; Or Newborn scenario Variations branching

S&S: Patient is screaming and uncooperative

S&S: SROM followed by Becca pushing hard

Stat Page anesthesia for sedation; bimanual exploration for retained secundes; collect labs for tox screen

End
Bianca is a 16 yr old @ 38 weeks who shows up in L&D in active labor. She had a previous elective AB as a result of incest at age 13. She now lives with her boyfriend and his mother who are both with her at the hospital. Her prenatal visits have been irregular due to transportation issues. She is leaking light meconium fluid and she vomits as she is undressing. Labor duration: 25 minutes. Scenario duration: 30 minutes.

Bianca is a 16 yr old @ 38 weeks who shows up in L&D in active labor. She had a previous elective AB as a result of incest at age 13. She now lives with her boyfriend and his mother who are both with her at the hospital. Her prenatal visits have been irregular due to transportation issues. She is leaking light meconium fluid and she vomits as she is undressing. Labor duration: 25 minutes. Scenario duration: 30 minutes.

Bianca 1
VS: 37.1-100-24, 134/80
FHR: 145, mod FHRV, variable decels
CTX: 3/60/strong

Bianca 1 (1)
VS: 37.1-100-24, 134/80
FHR: 145, mod FHRV,
no decels
CTX: 3/60/strong
Transition time: 15 sec

Bianca 2
VS: 37.1-100-24, 134/80
FHR: 150,
minima l FHRV, variable decels
CTX: 3/60/strong

Bianca 2 (1)
VS: 37.1-100-24, 134/80
FHR: 155, minimal FHRV, variable decels
CTX: 3/60/strong/Pushing

S&S: Crying with ctx; emesis; fights against V/E; perineal lesion

Attach EFM; Notice variables; turn patient
Wait time: 3:30 min

Repositioning to resolve variables

Check resolution of variables;
Goto labor: Bianca
Wait time: 1:45 min

S&S: Urge to push;
screaming w/ctx

Software switches from scenario to labor tab automatically

Notify OB residents for delivery; set up delivery table

Deliver baby; support head; double clamp and cut tight nuchal cord

Go to page 2
NEWBORN ASSESSMENT
Female
Heart rate: >100
Respiratory effort: weak

Go to: Newborn scenario Variations B

MATERNAL ASSESSMENT
Fundus: Firm @ U/U
Perineum: 2nd degree laceration
Bleeding: Moderate

HCP: Repair 2nd degree laceration; culture labial lesion

Bianca 3
VS: 37-76-18, 125/80
Fundus: Firm @ U/U
Perineum: repaired
Bleeding: light

END
Candice is a 19-year-old multip. She, her boyfriend, and their 3-year-old daughter are homeless living in a car. She has not seen a doctor and believes that she is about 8 months pregnant. Her water broke yesterday and she is leaking moderately thick meconium fluid. An ultrasound is performed to determine position and gestational age. Labor duration: 15 minutes. Full scenario duration: 23-25 minutes.

Candice 1
VS: 37.8-100-20, 110/70
FHR: 135, minimal FHRV; variable decels
CTX: 4/45/mod

Turn patient LLP to resolve variables
Wait time: 2:30 min

Candice 1 (1)
VS: 37.8-100-20, 110/70
FHR: 135, minimal FHRV; no decels
CTX: 4/45/mod

Check that variables have resolved
Wait time: 3 min

Candice 2
VS: 37.8-100-24, 110/70
FHR: 135, minimal FHRV; mod variables
CTX: 3/60/strong

Variables return and are not resolved by position change

Software switches to Labor page automatically

Candice 3
VS: 37.8-120-24, 130/80
FHR: 100, absent FHRV; severe variables
CTX: 3/60/strong

Set up delivery table and infant warmer; prep bed for delivery; assist head to perineum with vacuum extractor

Go to Labor
Candice
Wait time: 2 min

Candice 3
VS: 37.8-120-24, 130/80
FHR: 100, absent FHRV; severe variables
CTX: 3/60/strong

Go to page 2

S&S: Complains of tenderness in abdomen; finds ctx very painful

S&S: Screaming with ctx; Unable to bring head to perineum after 45 min of pushing

Admit to birthing room; administer medication; change position to relieve variables
Noelle S574/S575/S576.100 - Labor Scenario

Candice
Shoulder Dystocia

MATERNAL ASSESSMENT
Candice 5
VS: 38.4-100-24, 110/70
Fundus: firm @U/U
Bleeding: moderate
Transition time: 1 min

Perform Suprapubic pressure, McRoberts, Woods and Rubin maneuvers; Alleviate Dystocia with Gaskin maneuver

NEWBORN ASSESSMENT
Male
Heart rate: <100
Respiratory Effort: none

Go to Newborn scenario Shoulder Dystocia A; OR Newborn scenario Shoulder Dystocia branching

Candice 4
VS: 37.8-120-24, 140/90
FHR: 60, absent FHRV
CTX: 3/70/strong

Tritrate pitocin to maintain uterine contractions; give Tylenol for pain; antibiotic therapy

END
Charlotte is a 31 yr old gravida 3/1 @ 41+ 5/7 weeks. Her physician stripped her membranes yesterday and she began contracting during the night. She is admitted in active labor. Labor duration: 40 minutes.

NEWBORN ASSESSMENT
- Male
- Heart rate: <100
- Respiratory effort: weak

Go to Newborn scenario Shoulder Dystocia B; OR Newborn scenario Shoulder Dystocia branching

MATERNAL ASSESSMENT
- Fundus: Boggy @ U/U
- Perineum: 4th degree laceration
- Bleeding: Moderate/Heavy

Charlotte 4
- VS: 37-100-24; 130/80
- FHR: 120, absent FHRV, late decels
- CTX: 3/70/Pushing
- Bleeding

Apply stiff arm suprapubic pressure; perform McRoberts maneuver; deliver baby

Charlotte 5
- VS: 37.2-88-20; 124/80
- Fundus: Firm @ U/U
- Perineum: repaired
- Bleeding: moderate
- Transition time: 45 sec

END

S&S: comfortable

S&S: Uncomfortable with ctx

S&S: Pain and pushing

S&S: becoming exhausted

Charlotte 1
- VS: 37-80-20, 118/70
- FHR: 140, mod FHRV, no decels
- CTX: 4/45/moderate

Charlotte 2
- VS: 37-90-20, 120/80
- FHR: 140, mod FHRV, no decels
- CTX: 3/60/strong

AROM when dilation is 7-8cm

Descent is slow but baseline remains WNL; Insert IUPC to verify ctx strength

Assist head to perineum with vacuum extractor; cut MLE; declare shoulder dystocia emergency

Charlotte 3
- VS: 37-100-24, 120/80
- FHR: 145, minimal FHRV, early decels
- CTX: 3/60/strong

Transition time: 45 sec

Apply stiff arm suprapubic pressure; perform McRoberts maneuver; deliver baby

Repair lacerations and episiotomy; Titrate pitocin for uterine contraction

Go to Newborn scenario Shoulder Dystocia B; OR Newborn scenario Shoulder Dystocia branching

Charlotte 4 (1)
- VS: 37-100-24, 130/80
- FHR: 110, absent FHRV, late decels
- CTX: 3/70/Pushing
- Bleeding

Charlotte 5
- VS: 37.2-88-20; 124/80
- Fundus: Firm @ U/U
- Perineum: repaired
- Bleeding: moderate
- Transition time: 45 sec

END

S&S: Uncomfortable with ctx

S&S: Pain and pushing

S&S: becoming exhausted

Charlotte 1
- VS: 37-80-20, 118/70
- FHR: 140, mod FHRV, no decels
- CTX: 4/45/moderate

Charlotte 2
- VS: 37-90-20, 120/80
- FHR: 140, mod FHRV, no decels
- CTX: 3/60/strong

AROM when dilation is 7-8cm

Descent is slow but baseline remains WNL; Insert IUPC to verify ctx strength

Assist head to perineum with vacuum extractor; cut MLE; declare shoulder dystocia emergency

Charlotte 3
- VS: 37-100-24, 120/80
- FHR: 145, minimal FHRV, early decels
- CTX: 3/60/strong

Transition time: 45 sec

Apply stiff arm suprapubic pressure; perform McRoberts maneuver; deliver baby

Repair lacerations and episiotomy; Titrate pitocin for uterine contraction

Go to Newborn scenario Shoulder Dystocia B; OR Newborn scenario Shoulder Dystocia branching

Charlotte 4 (1)
- VS: 37-100-24, 130/80
- FHR: 110, absent FHRV, late decels
- CTX: 3/70/Pushing
- Bleeding

Charlotte 5
- VS: 37.2-88-20; 124/80
- Fundus: Firm @ U/U
- Perineum: repaired
- Bleeding: moderate
- Transition time: 45 sec

END
Dana is a 24 yr old multip @ 29 weeks who was admitted because she began contracting. Upon V/E, physician discovers that she is 4-5cm with bulging membranes. She was given Terbutaline subQ and then transported to the regional medical center. Labor duration: 45 minutes.

**NEWBORN ASSESSMENT**
- Sex: male
- Heart rate: >100
- Respiratory effort: slow, irregular

**MATERNAL ASSESSMENT**
- Dana 3
  - VS: 37-84-16, 120/80
  - Fundus: firm @U/U
  - Perineum: intact
  - Bleeding: light
  - Transition time: 1:30 min

**Go to Newborn scenario Breech Baby A**

**END**
Demaris is a young Hispanic teen who has received prenatal care in the Adolescent OB clinic. She kept the pregnancy a secret as long as was possible and did not attend any childbirth classes. Her plan is to return to high school while her mother cares for the baby. The baby’s father will not accept any responsibility and does not wish to be involved. Labor duration: 30 minutes.

**MATERNAL ASSESSMENT**

Demaris 4

VS: 37.1-00-20, 110/70

Fundus: Firm @ U/U

Bleeding: Light

Transition time: 1 min

**NEWBORN ASSESSMENT**

Female

Heart rate > 100

Respiratory effort: crying

Go to Newborn scenario Healthy Baby B
Eleanor is a 19 yr old post-ictal patient being transferred to the ER by EMS. She was found convulsing in the bathroom. According to relatives she is 8½ months pregnant with her first baby. She has been on an IV during transport and her BP is 180/120. Labor duration: 20 minutes.

S&S: Responsive only to pain with groans; Vaginal bleeding

S&S: Suffers tonic-clonic seizure; prolonged fetal bradycardia results

Eleanor 1
VS: 38-100-28, 180/120
FHR: 110, absent FHRV, non-reactive, lates
CTX: 5/60/strong

Stat page on-call OB attending; Give Magnesium sulfate bonus

Eleanor 1(1)
VS: 38-100-28, 180/120
FHR: 110, absent FHRV, non-reactive, lates
CTX: 1/80/Tetanic

Eleanor 2
VS: 38-100-0, 170/100
Osat: ? 88%
FHR: ? 95, absent FHRV,
CTX: Tetanic

Eleanor 2(1)
VS: 38-100-0, 170/100
Osat: ? 76%; convulsions: severe
FHR: ? 95, absent FHRV,
CTX: Tetanic

Eleanor 2(2)
VS: 38-100-Cheyne Stokes, 170/100
Osat: ? 80%; convulsions: none
FHR: ? 70, absent FHRV,
CTX: 2/60/strong

Eleanor 2 (3)
VS: 38-100-16, 170/100
Osat: ? 84%
FHR: 60, absent FHRV,
CTX: 2/60/strong

Go to Page 2
Noelle S574-575® - Labor Scenario

Eleanor

Variations on Normal

NEWBORN ASSESSMENT
Male
Heart rate: absent
Respiratory effort: absent

Go to Newborn scenario preeclampsia A;
OR Newborn scenario Preeclampsia branching

MATERNAL ASSESSMENT
Eleanor 4
VS: 38-84-20, 150/90
Osat: 95%
Fundus: Boggy@1/U
Bleeding: heavy

END
Erin is a 28 yr old @ 38 weeks admitted by her physician for preeclampsia. She is started on Magnesium sulfate per protocol, induced with pitocin and her membranes are ruptured. Light meconium staining is noted following AROM. Labor duration: 60 minutes.

Erin 1
VS: 37-88-20, 148/90
FHR: 140, minimal FHRV, non reactive, no decels
CTX: 8/30/mild

Erin 1(1)
VS: 37-88-20, 148/90
FHR: 140, minimal FHRV, non reactive, no decels
CTX: 5/40/moderate

Erin 2
VS: 37-80-18, 140/90
FHR: 140, minimal FHRV, non reactive, no decels
CTX: 3/60/70mmHg; FSE/IUPC

Erin 3
VS: 37-84-20, 150/100
FHR: 145, minimal FHRV, non reactive, late decels
CTX: 3/70/70mmHg; FSE/IUPC

NEWBORN ASSESSMENT
Sex: male
Heart rate: <100
Respiratory effort: slow, irregular

Go to Newborn scenario
Preeclampsia B

MATERNAL ASSESSMENT
Erin 5
VS: 37-80-18, 130/84
Fundus: firm @UU
Perineum: MLE repaired
Bleeding: light/moderate
Transition time: 1 min

Mature an immediate delivery
End
Faye is a 34 yr old gravida 1 @ 25 weeks’ gestation. She began cramping about 3 hours ago and decided to drive herself to the hospital. She began leaking clear fluid on the way. An admitting clerk helps her into a wheelchair and takes her to L&D. Labor duration: 20 minutes.

MATERNAL ASSESSMENT
Male
Heart rate: <40
Respiratory Effort: Absent

S&S: Prolapsed cord is protruding from the vaginal opening; V/E reveals double footling breech partially into vagina

Faye 1
VS: 38.4-100-20, 110/70
FHT: Absent
CTX: Cramping

Admit; place bed in deep trendelenburg position; cover extruded cord with warm NS gauze

Culture placenta and send to lab

MATERNAL ASSESSMENT
Faye 3
VS: 38.4-100-20, 110/70
Fundus: Firm @ U/U
Bleeding: light

Notify Priest for emotional care; document according to facility requirements

Decide whether fetus is viable or not.

END
Frances is admitted into a small town hospital due to regular contractions @ 4 minutes apart and bloody show. She labors without problems for about 4 hours and then the fetus starts to brady down after SROM. A V/E reveals a prolapsed cord in the vagina. Labor duration: 20 minutes. Scenario duration: 22-27 minutes.

Frances 1
VS: 37-88-20, 124/80
FHR: 130, moderate FHRV, reactive, no decels
CTX: 4/45/mild

Frances 2
VS: 37-90-20, 110/70
FHR: 130, moderate FHRV, reactive, no decels
CTX: 3/60/moderate

Frances 2(1)
VS: 37-90-22, 120/76
FHR: 110, moderate FHRV, non reactive, no decels
CTX: 3/60/moderate

Frances 2_1
VS: 37-100-24, 130/80
FHR: 90, minimal FHRV, non reactive, no decels
CTX: 3/60/moderate

Frances 3
VS: 37-100-20, 130/80
FHR: 120, minimal FHRV, non reactive, no decels
CTX: none

S&S: comfortable; barely feeling ctx
Admit; palpate ctx; initiate continuous EFM
S&S: Pain and anxiety following SROM; and terbutaline dose
V/E reveals prolapsed cord; displace fetal head and maintain position; give terbutaline subQ; prep for move to OR
Software switches to scenario tab automatically

Go to Page 2
MATERNAL ASSESSMENT
Frances 3
VS: 37-100-20, 130/80
Fundus: firm @U/U
Perineum: intact
Bleeding: moderate

Perform c-section; delivery infant; repair incision
Wait indefinitely

Frances 4
VS: 37.2-88-20, 110/70
Fundus: firm @U/U
Perineum: intact
Bleeding: light
Transition time: 1:30 min

END
Gabriella is a young Hispanic woman who presents at a small hospital just across the Mexican border. She appears to be in late pregnancy and in active labor. As the nurse helps her to bed she notices a midline abdominal scar. Gabriella has had one previous child in Mexico, but shares no more information. Labor duration: 15 minutes. Scenario duration: 25 minutes.

**Gabriella 1**
- VS: 37-68-20, 100/70
- FHR: 145, mod FHRV, reactive, no decels
- CTX: 3/60/strong

**Gabriella 2**
- VS: 37-88-22, 124/88
- FHR: 150, minimal FHRV, non-reactive, no decels
- CTX: 3/60/strong

**Gabriella 2_1**
- VS: 37-110-32, 90/60
- FHR: 80, absent FHRV
- CTX: Atonic

S&S: Patient feels pain with ctx
Software switches to scenario page automatically

S&S: Vaginal bleeding; extreme Pain; pale, diaphoretic

Turn patient on side; give O2; increas IV rate;
Rush patient to OR; prep for emergency c-section; Notify nursery personnel

Hit emergency button; transfer to ER
Wait time: 3 min

Go to Page 2
Noelle S574-575® - Labor Scenario

Gabriella

Uterine Rupture

NEWBORN ASSESSMENT
Female
Heart rate: <100
Respiratory effort: Minimal

Go to Newborn scenario
Uterine Rupture

Gabriella 3
VS: 37-120-34, 80/50
FHR: 80, absent FHRV
CTX: Atonic

During surgery notice anterior uterine wall dehiscence
Wait time: 2 min

Repair anterior wall dehiscence; close abdomen

MATERIAL ASSESSMENT
Gabriella 3 (1)
VS: 37-100-34, 90/60
Fundus: Firm @ 1/U
Bleeding: moderate

Uterus double sutured and bleeding controlled
Wait time: 3 min

Gabriella 4
VS: 37.6-100-24, 100/70
Fundus: Firm @ 1/U
Bleeding: moderate
Transition time: 1 min

END
Gail is a 29 year old primip at 35 weeks. She was admitted to L&D from the ER after being involved in a car accident. Both she and her husband, Alan, were seriously injured and she is on a backboard wearing a c-collar to stabilize the spine. Her right humerus is fractured and seat belt marks are visible across the abdomen. Labor duration: 18-20 minutes.

**Gail 1**
- VS: 37-100-24, 130/70
- FHR: 120, absent FHRV, non reactive, no decels
- CTX: irritable

Initiate fetal monitoring; wedge blanket under right side; page OB hospitalist to room stat

Establish EFM; await cervical x-ray results
- Wait time: 1:45 min

Remove collar and backboard
- Wait time: 4:00 min

**Gail 1.1**
- VS: 37-120-32 (gasping), 140/70
- FHR: 100, absent FHRV, non reactive, late decels
- CTX: irritable
- Bleeding: on
- Transition Time: 25 sec

Discuss need for C/S with patient; type and screen for 2 units of PRBC

Call for emergency c/s
- Wait time: 40 sec

**Gail 2**
- VS: 37-125-32 (gasping), 115/65
- FHR: 90, absent FHRV, non reactive, no decels
- CTX: irritable
- Bleeding: on
- Transition Time: 30 sec

Tell patient of need for emergency c/s; give Nubain IV push; move patient to OR

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Noelle S574-575® - Labor Scenario
Gail
Uterine Rupture

From Gail Page 1

Prep for c/s
Wait time: 1:30 min

Gail 2(1)
VS: 37-105 (vent), 100/60
FHR: 90, absent FHRV, non reactive, no decels
CTX: irritable
Transition Time: 10 sec

Begin c/s procedure
Wait time: 1 min

Gail 2(2)
VS: 37-90 (vent), 110/68
FHR: 90, absent FHRV, non reactive, no decels
CTX: none
Transition Time: 20 sec

Complications: Hemorrhage; shock; posterior wall uterine rupture

Deliver Baby; repair uterus
Wait indefinitely

MATERNAL ASSESSMENT
Gail 3
VS: 37-100-20, 116/70
Fundus: firm @U/U
Incision: Dressings dry and intact
Bleeding: Moderate
Transition time: 2:00 min

END

Go to Newborn scenario
Uterine Rupture B

NEWBORN ASSESSMENT
Sex: female
Heart rate: <100
Respiratory effort: absent

Physically place Noelle on ventilator

Insert Foley catheter; anesthetize; intubate; mask scrub

Deliver baby and placenta; repair uterus; close and repair incision

Dr. Gail
Heidi is a 25 yr old primip at 35 weeks. She has experienced several mild bleeding episodes during pregnancy and is known to have a low lying placenta. She arrives in L&D complaining of abdominal cramps and has bright red vaginal bleeding. Labor duration: 30 minutes. Labor duration: 35-45 minutes.

Heidi 1
VS: 37-80-18, 110/80
FHR: 140, moderate FHRV, non reactive, no decels
CTX: 4/45/mild
Bleeding: on

Intiatefetal monitoring; begin pad count; obtain real time U/S to confirm low lying placenta

Heidi 1(1)
VS: 37-80-18, 110/80
FHR: 140, moderate FHRV, non reactive, no decels
CTX: 4/55/moderate
Bleeding: off

Rupture membranes; apply FSE; order epidural

Heidi 2
VS: 37-88-20, 120/80
FHR: 145, minimal FHRV, reactive, no decels
CTX: 3/60/strong
Bleeding: off

Notify anesthesia and Nursery of imminent delivery; deliver baby

Heidi 3
VS: 37-100-20, 130/80
FHR: 140, absent FHRV, late decels
CTX: 3/70/strong
Bleeding: on

Software switches to scenario page automatically

Is scenario Branching?

NO

Continued on page 2

YES

Continued on page 3

Software switches to branching scenario page automatically
NEWBORN ASSESSMENT
Sex: male
Heart rate: <100
Respiratory effort: absent

Go to Newborn Hypoxia model

Deliver placenta
Wait time: 1 min

MATERNAL ASSESSMENT
Heidi 3 (1)
VS: 37-100-24, 120/80
Fundus: boggy @U/U
Perineum: 2nd degree laceration
Bleeding: Heavy
Transition time: 30 sec

Sedate and perform bimanual exploration
Wait time: 2:30 min

Examine placenta; sedate patient for bimanual exploration; repair perineum

Heidi 3 (2)
VS: 37-100-24, 110/65
Fundus: firm @U/U
Perineum: repaired
Bleeding: Heavy
Transition time: 15 sec

Give pitocin; fundal massage
Wait time: 1:30 min

Sedate and perform bimanual exploration
Wait time: 2:30 min

Heidi 4
VS: 37-100-20, 120/70
Fundus: firm @U/U
Perineum: repaired
Bleeding: light
Transition time: 2 min

Straight cath to empty bladder; Give Cytotec rectally to control bleeding

END
NEWBORN ASSESSMENT
Sex: male
Heart rate: <100
Respiratory effort: absent

Go to Newborn Hypoxia model

DELIVER and inspect placenta
Wait time: 1 min

MATERNAL ASSESSMENT
Heidi 3 (1)
VS: 37-100-24, 120/80
Fundus: boggy @U/U
Perineum: 2nd degree laceration
Bleeding: Heavy
Transition time: 15 sec

Sedate and perform bimanual exploration
Wait time: 2:30 min

DOES bleeding stop?

Heidi 3 (2)
VS: 37-100-24, 110/65
Fundus: firm @U/U
Perineum: repaired
Bleeding: Heavy
Transition time: 10 sec

Increase pitocin; fundal massage; give Cytotec rectally
Wait time: 1:10 min

Heidi 4 (1)
VS: 37-122-28, 85/50; OSat 94%
Fundus: firm @U/U
Perineum: repaired
Bleeding: moderate
Transition time: 25 sec

DOES bleeding stop?

NO

Heidi 4
VS: 37-100-20, 120/70
Fundus: firm @U/U
Perineum: repaired
Bleeding: light
Transition time: 2 min

YES

Insert Bakri balloon
Wait time: 1 min

END
Haley is a 33yr old G2 @ 35 weeks. Previous U/S revealed a low lying placenta and this is the 5th time in 11 weeks she been admitted for bleeding. This time the bleeding is heavier and is not resolving. Her OB is on the way to the hospital; bimanual palpation shows the uterus to be soft and non-tender. Labor duration: 15 minutes.

- S&S: bright red vaginal bleeding; uterus soft and non-tender
- Haley 1
  - VS: 37-24-88, 110/70
  - FHR: 130, minimal FHRV, non reactive, no decels
  - CTX: none
- Continuous EFM; start pad count; routine labs; request anesthesia consult
- Monitor FHR and Vaginal bleeding
  - Wait time: 3 min
- Haley 2
  - FHR: 130, minimal FHRV, non reactive, no decels
  - CTX: none
  - Transition time: 40 sec
- Bleeding increases and fetal trace becomes a concern
  - Wait time: 2 min
- S&S: increased bleeding; increasingly concerning fetal tracing
- Haley 2(1)
  - FHR: 120, absent FHRV, non reactive, no decels
  - CTX: none
  - Transition time: 0 sec
- Review fetal tracings and inform patient of need for c/s.
- Fetal strip worsens prep for c-section
  - Wait time: 2 min

Goto Haley Page 2
NEWBORN ASSESSMENT
Sex: male
Heart rate: >100
Respiratory effort: slow, irregular

Go to Newborn scenario
Healthy baby B

Deliver baby; inspect placenta and send to lab; move patient to PACU

MATERNAL ASSESSMENT
Haley 3
VS: 37-24-100, 124/88
FHR: 120, absent FHRV, non reactive, no decels
CTX: none

Transition time: 1 min

Requires PRBCs
Wait time: 2:20 min

END

Haley 4
VS: 36.8-18-95, 115/78
FHR: firm @U/U
Perineum: intact
Bleeding: light
Transition time: 1:20 min

Move to OR to deliver baby
Wait indefinitely

Move to OR to deliver baby
Wait indefinitely

Haley 3
VS: 36.8-24-100, 96/66
Fundus: firm @U/U
Perineum: intact
Bleeding: Heavy
Transition time: 1 min

Tritrate pitocin infusion; massage fundus; monitor patients PO progress

Move to OR to deliver baby
Wait indefinitely
India is a 19 yr old gravida 2 @ 37 weeks. She arrives at hospital with her husband who says she fell down the stairs and she has been cramping and bleeding for about an hour. During admitting interview husband answers all the questions and India doesn’t make eye contact. The nurse palpates uterus, initiates fetal monitoring and starts a pad count. Labor duration: 25 minutes.

**NEWBORN ASSESSMENT**
- Sex: male
- Heart rate: >100
- Respiratory effort: slow, irregular

**MATERIAL ASSESSMENT**
- India 4
  - VS: 37-110-24, 150/100
  - FHR: 125, minimal FHRV, non reactive, Late decels
  - CTX: 3/70/strong

**India 1**
- VS: 37-100-20, 144/90
- FHR: 145, minimal FHRV, non reactive, no decels
- CTX: 3/45/mild

**India 2**
- VS: 37-90-20, 130/90
- FHR: 150, minimal FHRV, non reactive, no decels
- CTX: 3/60/mod

**India 2 (1)**
- VS: 37-110-24, 160/110
- FHR: 150, minimal FHRV, non reactive, Late decels
- CTX: 3/60/strong

**India 3**
- VS: 37-110-24, 150/100
- FHR: 125, minimal FHRV, non reactive, Late decels
- CTX: 3/70/strong

**S&S: cramping; back pain; light vaginal bleeding**

**S&S: SROM with meconium staining; extreme pain; Husband does not allow administering of pain killers**

**S&S: Anxiety; moderate bleeding; increased uterine tone**

Palpate uterus; initiate EFM; begin pad count;

Reposition to left side; start O2; give fluid bolus; attempt to give pain meds

Tritrate pitocin; repair perineum; tylenol for pain; routine post partum checks

Go to Newborn scenario: Abruption

End
Inez is a 27 yr old primip @ 35 weeks. She arrives at hospital one evening crying and doubled over in pain. She is admitted to a birthing room and the nurse notices bright red blood on Inez’s panties. She is having very intense and close contractions. Labor duration: 10 minutes. Scenario duration: 18 minutes.

S&S: cramping; bright red bleeding

Inez 1
VS: 37.2-110-30, 160/110
FHR: 110, absent FHRV, non reactive, late decels
CTX: irritability

Admit; obtain treatment consent; turn LLP; place O2 mask; initiate pad count

Inez 2
VS: 37.2-110-28, 160/110
FHR: 100, absent FHRV, non reactive, late decels
CTX: tetanic

Open emergency delivery pack; stat page anesthesia; deliver baby and placenta

Inez 2 (1)
VS: 37.2-110-28, 160/110
FHR: 45, absent FHRV, non reactive, no decels
CTX: 2/70/strong

Reset birthing motor and attach PP uterus
Wait time: 3 min

Goto Inez Page 2
NEWBORN ASSESSMENT
Sex: Female
Heart rate: absent
Respiratory effort: Absent

MATERNAL ASSESSMENT
Inez 3
VS: 37-100-24, 150/90
Fundus: Boggy @ 1/U
Perineum: 3rd degree laceration
Bleeding: Heavy
Transition time: 15 sec

Inspect placenta; administer pit; fundal massage; repair 3rd degree laceration

Administer Pitocin; manage bleeding and massage fundus
Wait time: 3 min

Inspect placenta; administer pit; fundal massage; repair 3rd degree laceration

Inez 3 (1)
VS: 37-90-22, 135/90
Fundus: Firm @ U/U
Perineum: repaired
Bleeding: light to moderate
Transition time: 1:20 min

END
Janie is a 23 yr old G 2 @ 38 weeks. She has experienced several bleeding episodes due to a low lying placenta. She has been counseled about the potential for postpartum hemorrhage. Her religious beliefs prohibit the administration of any blood products. Labor duration: 15 minutes. Scenario duration: 25 minutes.

Noelle 1
VS: 37.2-84-20, 110/70
FHR: 145, moderate FHRV, reactive, no decels
CTX: 4/45/moderate

Carefully monitor EFM; give Procardia as tocolytic

Noelle 2
VS 37-84-20, 110/70
FHR: 145, moderate FHRV, reactive, no decels
CTX: 3/60/moderate

S&S: Pain and anxiety following SROM

Noelle 3
VS 37-100-20, 110/70
FHR: 145, moderate FHRV, reactive, early decels
CTX: 3/70/strong

SROM and ctx breakthrough; V/E reveals double footling breech at perineum

Reset delivery motor and insert postpartum uterus
Wait time: 3 min

NEWBORN ASSESSMENT
Sex: male
Heart rate: >100
Respiratory effort: slow, irregular

Go to Newborn scenario of your choice.

MATERNAL ASSESSMENT
Janie 4
VS 37-100-22, 110/74
Fundus: firm @U/U
Perineum: 4° degree laceration
Bleeding: Heavy
Transition time: 30 sec

Goto Janie
Page 2
Janie
Peripartum Hemorrhage/ PPH

Massage fundus to stem bleeding
Wait time: 1 min

Janie 4 (1)
VS: 36.8-110-26, 88/50 Osat: 90%
Fundus: firm @U/U
Perineum: 4th degree laceration
Bleeding: Heavy
Transition time: 0 min

Administer hemabate 250mcg IM
stat
Wait time: 2 min

Administer Lomotil 2 tabs for nausea
Wait time: 35 sec

Janie 4 (2)
VS: 36.8-110-20, 90/60 Osat: 96%
Fundus: firm @U/U
Perineum: repaired
Bleeding: light
Transition time: 1 min

END
June is a 31 yr old multip about to have her 5th baby. She has had a normal pregnancy and she is planning natural childbirth. She enters the hospital in active labor. The family is very excited as they know this baby is a boy. Labor duration: 15 minutes. Scenario duration: 22-25 minutes.

June 1
VS: 37-88-20, 130/70
FHR: 140, mod FHRV, reactive, no decels
CTX: 3/60/strong

June 2
VS: 37-82-24, 120/80
FHR: 140, mod FHRV, reactive, no decels
CTX: 3/60/strong

June 3
VS: 37-100-24, 120/80
FHR: 140, mod FHRV, reactive, early decels
CTX: 3/70/strong

June 3_1
VS: 37-120-24, 120/80
Baby delivered
Hemorrhage: on

S&S: Abdominal and low back pain with ctx
S&S: Patient looking pale; early signs of hemorrhage

Software switches to scenario page automatically
Go to Page 2
MATERNAL ASSESSMENT
June 3_1 (1)
VS: 37-120-24, 80/50
Fundus: boggy @ 2/U
Bleeding: heavy
Transition time: 10 sec

MATERNAL ASSESSMENT
June 3_1 (2)
VS: 37-120-24, 80/50
Fundus: firming up
Bleeding: moderate
Transition time: 45 sec

MATERNAL ASSESSMENT
June 4
VS: 37-100-20, 110/70
Fundus: firm @ U/U
Bleeding: light
Transition time: 1 min

NEWBORN ASSESSMENT
Male
Heart rate: >100
Respiratory effort: Crying

Massage fundus; page anesthesia for stat sedation; bimanual exploration and massage;

Discontinue massage as the uterus begins to firm up following Cytotec dosing

Place PPH kit inside Noelle simulator
Wait indefinitely

Increase Pitocin; give Methergine; straight cath; administer Cytotec rectally
Transition time: 3 min

Go to Newborn scenario Normal A

End
Kelly is a 34 yr old gravida 5/2 @ 38 weeks. She is scheduled for induction as her last baby weighed almost 10lbs and she experienced a severe shoulder dystocia with that delivery. She has gained 43lbs with this pregnancy and her GTT is borderline. Labor duration: 25 minutes. Scenario duration: 35-40 minutes.

Kelly 1
VS: 37-84-20, 130/70
FHR: 145, mod FHRV, reactive, no decels
CTX: 7/30/mild

Kelly 2
VS: 37-100-24, 136/80
FHR: 145, mod FHRV, reactive, mild variables
CTX: 3/60/mod

Turn patient LLP to resolve variables; put O2 mask on patient; discontinue Pitocin;

Kelly 2_1
VS: 37-120-28, 90/60
Osat: 94%
FHR: 130 absent FHRV, mod variables
CTX: 3/60/mod
Transition time: 20 sec

Give SQ Terbutaline to reduce ctx;

Kelly 2_1 (1)
VS: 37-120-28, 80/50
Osat: 86%
FHR: 90 absent FHRV, late decels
CTX: atony

Rush to OR for emergency c-section; Intubate; ventilate; stat page anesthesia and NICU personnel

Kelly 3
VS: 37-120-gasping, 80/50
Osat: 78%
Laryngospasm: on FHR:90 absent FHRV
CTX: atony

Software switches to scenario page automatically

Go to Page 2
**Noelle S574-575® - Labor Scenario**

**Kelly**

Amniotic Fluid Embolism

**NEWBORN ASSESSMENT**
- Female
- Heart rate: absent
- Respiratory effort: none

Go to Newborn scenario

**Embolism Baby A** or **Embolism A Branching**

**Go to Kelly Page 1**

**Perform emergency C-section**
- Wait time: 3 min

**MATERNAL ASSESSMENT**
- Kelly 3_1
  - VS: v4b
  - Osat 42%

**Electrical defibrilation**
- Wait time: 1 min

**Kelly 3_1 (1)**
- Asystole

**FULL resuscitation**
- Wait indefinitely

**Kelly 3_2**
- VS: 37-100-20(vent), 90/50
- Fundus: firm @ 1/U
- Bleeding: heavy
- Transition time: 1 min

**Give blood products for DIC management; stabilize patient; transfer to ICU**

**Kelly 4**
- VS: 38-88-20(vent), 100/70
- Fundus: firm @ U/U
- Bleeding: moderate
- Transition time: 45 sec

END
Kimberly is a 27 yr old multip @ 42 weeks. She began having contractions at home and now they are becoming stronger. She is excited to be finally going into labor. By the time the nurse completes admission Kimberly is requesting pain meds as her labor is progressing quickly. Labor duration: 25 minutes. Scenario duration: 30 minutes.

Kimberly 1
VS: 37.4-88-20, 134/80
FHR: 145, moderate FHRV, reactive, no decels
CTX: 3/60/strong
S&S: pain with ctx; Happy to be in labor
Follow standard admitting procedures; notify HCP of admission and status; initiate continuous EFM

Kimberly 2
VS: 37.4-92-24, 134/90
FHR: 140, moderate FHRV, reactive, early decels
CTX: 3/70/strong
SROM (clear); notify HCP of imminent delivery

Kimberly 2_1
VS: 37.4-140-Cheyne-stokes, 100/60
O/SAT: 92%; laryngospasm: on
FHR: 60, absent FHRV
CTX: Tetanic
Check pulse; call for help;

Kimberly 2_1(1)
VS: 37.4-140-Apnea, 80/50
O/SAT: 84%; laryngospasm: on
FHR: 50, absent FHRV
CTX: Tetanic
Initiate CPR: ventilate w/BVM; Intubate; prep for emergency c-section

Kimberly 2_1(2)
VS: 37.4-Asystole
O/SAT: 78%; laryngospasm: on
FHR: 40, absent FHRV
CTX: none

S&S: Sudden onset of gasping that progresses to apnea
S&S: profound cyanosis; becomes unresponsive
Go to page 2
NEWBORN ASSESSMENT
- Sex: female
- Heart rate: absent
- Respiratory effort: absent

Go to Newborn scenario Embolism Baby A or Embolism A branching

MATERNAL ASSESSMENT
- Kimberly 4
- VS: none
- Mother pronounced dead

Continue CPR; perform perimortem c-section; obtain cord blood; send placenta to lab

Deliver baby perimortem c/s Wait time: 3 min

Begin CPR Wait time: 4 min

Kimberly 3
- VS: 37.4-Asystole
- O/SAT: 75%; laryngospasm: off

END

Go to Newborn scenario Embolism Baby A or Embolism A branching
Madonna is a 41 yr old multip @ 31 weeks. She has experienced difficult pregnancies and has one Downs Syndrome baby. She has had several episodes of preterm contractions that resolved with LLP bed rest. This time the bed rest and oral hydration are not resolving the contractions; in fact, they seem to be getting worse. Labor duration: 35 minutes.

S&S: Patient is anxious and shaky; she says her heart is racing

S&S: Patient is anxious and shaky; Palpitations, tachycardia and PVCs result from second dose of SQ Terbutaline

S&S: no adverse reaction to Procardia

END
Maria is a 30 yr old multip @ 27 weeks. She has an 11 yr old and has been trying for more children. She has had 2 miscarriages in the last 4 years and she lost both due to an incompetent cervix. This time a McDonalds suture was placed @ 14 weeks. Labor duration: 15 minutes.

Maria 1
VS: 37-80-20, 130/80
FHR: 150, minimal FHRV, reactive, no decels
CTX: 6/40/mild

* S&S: contractions; uncomfortable; anxious

Monitor toco; prep patient for effects of terbutaline; give terbutaline

Give IV bolus; apply EFM
Wait time: 5 min

Maria 2
VS: 37-88-24, 110/70
FHR: 150, moderate FHRV, reactive, no decels
CTX: none

* S&S: comfortable

Perform SSE; order magnesium sulfate; monitor for signs of magnesium sulfate toxicity

Ctx subside; administer mag sulfate skip forward 24 hrs
Wait indefinitely

Maria 2.1
VS: 36.2-64-12, 80/60
FHR: 135, absent FHRV, non reactive, no decels
CTX: none

* S&S: lethargic; decreased DTRs; slurred speech

Call for help stat page physician
Wait indefinitely

Check serum magnesium level; give 1 gm calcium gluconate IVP

Maria 3
VS: 36.8-75-18, 100/70
FHR: 135, minimal FHRV, non reactive, no decels
CTX: none

Transition time: 2 min

* Continue to monitor patient

END
### Automatic Mode Flowcharts

**QUICK START NOELLE MODELING**

Values in parenthesis indicate vitals controlled by the Automatic Mode feature. Values in bold, signify changes in the values throughout the stages.

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<td>Normal Labor</td>
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<td>Becca</td>
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<td>Variations on Normal</td>
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<td>20</td>
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<td>25</td>
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<td>Preterm Labor</td>
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<table>
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<tr>
<th>Scenario Name</th>
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<td>NOELLE®</td>
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<thead>
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<td>34</td>
<td>Preterm Labor</td>
</tr>
</tbody>
</table>
Alyssa is a 23 yr old primip at term. Her health is generally good and she has experienced no prenatal complications. She wishes to receive no medications and will have the CNM attending her delivery. Labor duration: 30 minutes.

**NEWBORN ASSESSMENT**
Female
Heart Rate: >100
Respiratory effort: crying

Go to: Newborn scenario Healthy Baby

**MATERNAL ASSESSMENT**
Alyssa 4
VS: [37-100]-20, 120/80
Fundus: Firm @ U/U
Bleeding: Off
Hemorrhage: on

Routine postpartum assessment; support breast or bottle feeding efforts; promote bonding

Alyssa 5
VS: [37-80]-20, 110/70
Fundus: Firm @ U/U
Bleeding: Off
Transition time: 1 min
FHR operating mode: Birth
Hemorrhage: off

END
Becca is a young pregnant teen who is living on the streets. She is a heavy smoker and drug user. She was seen twice in the Adolescent Clinic and referred to Social Services, but she only saw the social worker once and did not go to the follow-up appointment. Labor duration: 18-22 minutes.

**Becca 1**
- VS: [37-120-24], [160/90]
- FHR: 120, absent FHRV, mod variables.
- CTX: 2/8/0/Strong

**Becca 2**
- VS: [37-120-24], [160/90]
- FHR: 100, absent FHRV, deep variables.
- CTX: 2/8/0/Strong
- Fetal O2 Poor, Cord Compression: Severe, Hemorrhage On
  - Prep for precipitous delivery; support fetal head to prevent explosive delivery; check for nuchal cord if possible; check for intact placenta at delivery

**NEWBORN ASSESSMENT**
- Male
- Heart rate: <100
- Respiratory effort: weak

**MATERNAL ASSESSMENT**
- Becca 2
  - VS: [37-120-24], [160/90]
  - Fundus: Boggy @ 11U
  - Perineum: 3rd degree laceration
  - Bleeding: Heavy

**Program switches to scenario tab automatically**

- Instructor to reset birthing motor; sedate for bimanual exploration
  - Wait time: 2:40 min

**Stat Page for anesthesia for sedation, bimanual exploration for retained sequeues; collect tabs for tox screen**

**Becca 2.1**
- VS: (37)-100-24, 140/90
- Fundus: Firm @ 11U
- Bleeding: Moderate

**Use of Bimanual uterine massage and pitocin to maintain contractions**

**Becca 3**
- VS: [37]-130-20, [130/80]
- Fundus: Firm @ 11U
- Perineum: Repaired
- Bleeding: light (off)
- Hemorrhage: off

**Remove placental fragments**
- Wait indefinitely

**End**
Candice is a 19 r old multip. She, her boyfriend and their 3 yr daughter are homeless living in a car. She has not seen a doctor and believes that she is about 8 months pregnant. Her water broke yesterday and she is leaking moderately thick meconium fluid. An ultrasound is performed to determine position and gestational age. Labor duration: 15 minutes. Full scenario duration: 23-25 minutes.

Candice 1
VS: 37.8-100-[20], 110/70
FHR: 135, minimal FHRV; variable decels
CTX: 4/45/mod
Fetal O2: Poor, Cord Compression Slight

Candice 1(1)
VS: 37.8-100-[20], 110/70
FHR: 135, minimal FHRV; no decels
CTX: 4/45/mod
Cord compression: None

Candice 2
VS: [37.8]-[100]-24, 110/70
FHR: 135, minimal FHRV; mod variables
CTX: 3/60/strong
Fetal movement: none, Fetal O2: [poor], Cord Compression: Severe

Candice 3
VS: [37.8]-120-[24], 130/80
FHR: 100, absent FHRV; severe variables
CTX: 3/60/strong
Fetal movement: none, Fetal O2: [poor], Cord Compression: Severe

S&S: Complains of tenderness in abdomen; finds ctx very painful

S&S: Screaming with ctx; Unable to bring head to perineum after 45 min of pushing

Admit to birthing room; administer medication; change position to relieve variables

Set up delivery table and infant warmer; prep bed for delivery; assist head to perineum with vacuum extractor

Go to Labor
Candice
Wait time: 2 min

Software switches to Labor page automatically

Go to page 2
Noelle S574/S575® - Labor Scenario

Candice
Shoulder Dystocia
Automatic Mode

MATERNAL ASSESSMENT
Candice 4
VS: [37.8-120-24], 140/90
FHR: [60], [absent] FHRV
CTX: 3/70/strong
Fetal movement: none, Fetal O2: very poor,
Cord Compression: Severe
Hemorrhage: on

TEMPERATURE: 101.1 F
Hemorrhage: on

NEWBORN ASSESSMENT
Male
Heart rate: <100
Respiratory Effort: none

Go to Newborn scenario Shoulder Dystocia A;
OR Newborn scenario Shoulder Dystocia branching

Perform Suprapublic pressure,
McRoberts, Woods and Rubin maneuvers; Alleviate Dystocia
with Gaskin maneuver

Titrating pitocin to maintain
uterine contractions; give
Tylenol for pain; antibiotic
therapy

END

From Candice Page 1

Candice 5
VS: [38.4]-100-[24], 110/70
Fundus: firm @ U/U
Bleeding: Light
Transition time: 1 min
FHR Operating mode: Born
Temperature: 101.1 F
Hemorrhage: on

Fetal movement: none, Fetal O2: very poor,
Cord Compression: Severe
Hemorrhage: on

Candice 4
VS: [37.8-120-24], 140/90
FHR: [60], [absent] FHRV
CTX: 3/70/strong
Fetal movement: none, Fetal O2: very poor,
Cord Compression: Severe
Hemorrhage: on
Demaris is a young Hispanic teen who has received prenatal care in the Adolescent OB clinic. She kept the pregnancy a secret as long as was possible and did not attend any childbirth classes. Her plan is to return to high school while her mother cares for the baby. The baby’s father will not accept any responsibility and does not wish to be involved. Labor duration: 30 minutes.

Demaris 1
VS: [37.1-100-24], 116/70
FHR: [145], [mod] reactive, no decels.
CTX: 4/45/Mod

Demaris 2
VS: [37.1-100-24], 120/80
FHR: [145], [mod] FHRV, reactive, mild variables
CTX: 3/60/Strong (FSE)
Cord Compression: Slight

Demaris 3
VS: [37.1-100-24], 134/90
FHR: [145], [minimal] FHRV, non-reactive, moderate variables
CTX: 3/70/Strong (FSE)
Fetal movement: None, Fetal O2 Level: Poor, Cord Compression: Slight, Hemorrhage: On

Attempt to get patient consent for c/s; transfer patient to OR for delivery; insert FSE on fetal buttocks

MATERNAL ASSESSMENT
Demaris 4
VS: [37.1-88-24], 110/70
Fundus: Firm @ U/U
Bleeding: Light
Transition time: 1 min
FHR operating mode: Birth
Hemorrhage: off

NEWBORN ASSESSMENT
Female
Heart rate >100
Respiratory effort: crying

Go to Newborn scenario Healthy Baby B

Admit patient; Routine labs; notify HCP of admission and status; Order real time U/S to determine fetal position

S&S: Agitated, uncooperative; FHTs are above the umbilicus
S&S: Patient and mother vehemently refuse to consent to C/S; AROM
Eleanor is a 19 yr old post-ictal patient being transferred to the ER by EMS. She was found convulsing in the bathroom. According to relatives she is 8½ months pregnant with her first baby. She has been on an IV during transport and her BP is 180/120. Labor duration: 20 minutes.
MATERNAL ASSESSMENT
Eleanor 4
VS: [38]-84-20, 150/90
Osat: 95%
Fundus: Boggy@1/U
Bleeding: heavy
Temperature: 101.8
FHR operating mode: Birth

NEWBORN ASSESSMENT
Male
Heart rate: absent
Respiratory effort: absent

Go to Newborn scenario preeclampsia A; OR Newborn scenario Preeclampsia branching

FROM ELEANOR PAGE 1

Eleanor 3
VS: [38]-120-24, [170/100]
Osat: ? 93%
FHR: [60], absent FHRV,
CTX: 2/60/strong
Fetal movement: none, Fetal O2: very poor

END
Faye is a 34 yr old gravida 1 @ 25 weeks’ gestation. She began cramping about 3 hours ago and decided to drive herself to the hospital. She began leaking clear fluid on the way. An admitting clerk helps her into a wheel chair and takes her to L&D. Labor duration: 20 minutes.

Faye 1
VS: [38.4-100-20], 110/70
FHT: Absent
CTX: Cramping

MATERNAL ASSESSMENT
Male
Heart rate: <40
Respiratory Effort: Absent

Culture placenta and send to lab

Decide whether fetus is viable or continue to Faye baby scenario on Newborn.

Admit; place bed in deep trendelenburg position; cover extruded cord with warm NS gauze

MATERNAL ASSESSMENT
Faye 3
VS: [38.4-100-20], 110/70
Fundus: Firm @ UU
Bleeding: light
FHR operating mode: Birth

Notify Priest for emotional care; document according to facility requirements

END
Frances is admitted into a small town hospital due to regular contractions @ 4 minutes apart and bloody show. She labors without problems for about 4 hours and then the fetus starts to brady down after SROM. A V/E reveals a prolapsed coed in the vagina. Labor duration: 20 minutes. Scenario duration: 22-27 minutes.

Frances 1
VS: [37]-88-[20], 124/80
FHR: 130, [moderate] FHRV, reactive, no decels
CTX: 4/45/mild

Frances 2
VS: [37]-90-[20], 110/70
FHR: [130], [moderate] FHRV, reactive, [no] decels
CTX: 3/60/moderate

Frances 2(1)
VS: [37]-90-22, 120/76
FHR: 110, [moderate] FHRV, non reactive, [no] decels
CTX: 3/60/moderate

Frances 2_1
VS: 37-100-24, 130/80
FHR: 90, [minimal] FHRV, non reactive, [no] decels
CTX: 3/60/moderate

Frances 3
VS: 37-100-[20], [130/80]
FHR: 120, [minimal] FHRV, non reactive, [no] decels
CTX: none, FHR operating mode: Birth

Go to Page 2
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MATERNAL ASSESSMENT
Frances 3
VS: [37]-[100]-[20], [130/80]
Fundus: firm @U/U
Perineum: intact
Bleeding: moderate
FHR operating mode: Birth

Go to Newborn scenario
Healthy Baby B

Perform c-section; delivery infant; repair incision
Wait indefinitely

Frances 4
VS: [37.2]-88-20, 110/70
Fundus: firm @U/U
Perineum: intact
Bleeding: light
Transition time: 1:30 min
FHR operating mode: Birth

END
Gabriella is a young Hispanic woman who presents at a small hospital just across the Mexican border. She appears to be in late pregnancy and in active labor. As the nurse helps her to bed she notices a midline abdominal scar. Gabriella has had one previous child in Mexico, but shares no more information. Labor duration: 15 minutes. Scenario duration: 25 minutes.

Gabriella 1
VS: [37-68] (20), 100/70
FHR: [145], mod FHRV, reactive, no decels
CTX: 3/60/strong

Gabriella 2
VS: 37-[88]-22, 124/88
FHR: [150], minimal FHRV, non-reactive, no decels
CTX: 3/60/strong, Fetal O2: poor, Cord Compression: none
Hemorrhage: on, Uterine Rupture: on

Gabriella 2.1
VS: [37-110-32], [90/60]
FHR: [80], absent FHRV
CTX: Atonic
Fetal O2 level: Very poor,
Hemorrhaging: on, Uterine Rupture: on

Go to Page 2

Software switches to scenario page automatically

S&S: Patient feels pain with ctx

S&S: Vaginal bleeding; extreme Pain; pale, diaphoretic

Turn patient on side; give O2; increase IV rate;
Rush patient to OR; prep for emergency c-section; Notify nursery personnel

Hit emergency button; transfer to ER
Wait time: 3 min

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Noelle S574-575° - Labor Scenario

**Gabriella**
Uterine Rupture
Automatic Mode

**NEWBORN ASSESSMENT**
Female
Heart rate: <100
Respiratory effort: Minimal

Go to Newborn scenario
Uterine Rupture

**MATERNAL ASSESSMENT**
Gabriella 3 (1)
VS: [37]-100-34, 90/60
Fundus: Firm @ 1/U
Bleeding: moderate

During surgery notice anterior uterine wall dehiscence
Wait time: 2 min

Repair anterior wall dehiscence; close abdomen

Uterus double sutured and bleeding controlled
Wait time: 3 min

Gabriella 4
VS: 37.6-100-24, 100/70
Fundus: Firm @ 1/U
Bleeding: moderate
Transition time: 1 min
FHR Operating mode: Born

END
June is a 31 yr old multip about to have her 5th baby. She has had a normal pregnancy and she is planning natural childbirth. She enters the hospital in active labor. The family is very excited as they know this baby is a boy. Labor duration: 15 minutes. Scenario duration: 22-25 minutes.

June 1
VS: 37-88-20, 130/70
FHR: 140, mod FHRV, reactive, no decels
CTX: 3/60/strong

June 2
VS: [37]-82-24, 120/80
FHR: [140], [mod] FHRV, reactive, no decels
CTX: 3/60/strong

June 3
VS: [37]-100-24, [120/80]
FHR: [140], [mod] FHRV, reactive, early decels
CTX: 3/70/strong
Head compression: on

S&S: Abdominal and low back pain with ctx

June 3_1
VS: [37-120-24], [120/80]
Baby delivered
Hemorrhage: on

S&S: Patient looking pale, early signs of hemorrhage

Software switches to scenario page automatically

Go to Page 2

Go to Page 2
Noelle S574-575 - Labor Scenario

**June**

Peripartum Hemorrhage/PPH

**Automatic Mode**

---

**MATERNAL ASSESSMENT**

June 3

VS: [37-120-24], [80/50]

Fundus: boggy @ 2/U

Bleeding: heavy

Transition time: 10 sec

Hemorrhage: on

---

**MATERNAL ASSESSMENT**

June 4

VS: 37-100-20, 110/70

Fundus: firm @U/U

Bleeding: light

Transition time: 1 min

Hemorrhage: off

---

**NEWBORN ASSESSMENT**

Male

Heart rate: >100

Respiratory effort: Crying

---

Increase Pitocin; give Methergine; straight cath; administer Cytotec rectally

Transition time: 3 min

---

Massage fundus; page anesthesia for stat sedation; bimanual exploration and massage;

---

Discontinue massage as the uterus begins to firm up following Cytotec dosing

---

Place PPH kit inside Noelle simulator

Wait indefinitely

---

Go to Newborn scenario

Healthy Baby A

---

Noelle S574-575® - Labor Scenario

MATERNAL ASSESSMENT

June 3_1 (1)

VS: [37-120-24], [80/50]

Fundus: boggy @ 2/U

Bleeding: heavy

Transition time: 10 sec

Hemorrhage: on

---

MATERNAL ASSESSMENT

June 3_1 (2)

VS: 37-120-24, 80/50

Fundus: firming up

Bleeding: moderate

Transition time: 45 sec

Hemorrhage: on

FHR operating mode: Birth

---

Go to Newborn scenario

Healthy Baby A
Kelly is a 34 yr old gravida 5/2 @ 38 weeks. She is scheduled for induction as her last baby weighed almost 10lbs and she experienced a severe shoulder dystocia with that delivery. She has gained 43lbs with this pregnancy and her GTT is borderline. Labor duration: 25 minutes. Scenario duration: 35-40 minutes.

Kelly 1
VS: 37-84-20, 130/70
FHR: 145, mod FHRV, reactive, no decels
CTX: 7/30/mild

Kelly 2
VS: [37]-100-24, 136/80
FHR: [145], [mod] FHRV, reactive, mild variables
CTX: 3/60/mod
Cord compression: Slight

Kelly 2_1
VS: 37-120-28, 90/60
Osat: 94%
FHR: [130], [absent] FHRV, mod variables
CTX: 3/60/mod
Transition time: 20 sec
Fetal movement: None, Fetal O2: Poor, Cord Compression: Severe

Kelly 2_1 (1)
VS: 37-120-28, 80/50
Osat: 86%
FHR: [90], [absent] FHRV, late decels
CTX: atony
Fetal movement: None, Fetal O2: Very poor, Cord Compression: none

Kelly 3
VS: 37-120-Cheyne-Stokes, 90/50
Osat: 78%
FHR: 60, [absent] FHRV
CTX: atony
Fetal movement: None, Fetal O2: Very poor, Cord Compression: none

S&S: sudden onset of pain following ROM; asks for epidural

S&S: Patient says she is having trouble breathing; vomits; suddenly becomes non-responsive

Rush to OR for emergency c-section; Intubate; ventilate; stat page anesthesia and NICU personnel

Turn patient LLP to resolve variables; put O2 mask on patient; discontinue Pitocin;

Give SQ Terbutaline to reduce ctx;

Software switches to scenario page automatically

Go to Page 2
NEWBORN ASSESSMENT
Female
Heart rate: absent
Respiratory effort: none

Go to Newborn scenario
Emboli
d Baby A or Emboli
d A Branching

MATERIAL ASSESSMENT
Kelly 3.1
VS: vfib
Osat 82%
FHR operating mode: Birth

Perform emergency
C-section
Wait time: 3 min

Electrical defibrilation
Wait time: 1 min

Kelly 3.1 (1)
Asystole

Full resuscitation
Wait indefinitely

Kelly 3.2
VS: 37-100-20(vent), 90/50
Fundus: firm @ 1/U
Bleeding: heavy
Transition time: 1 min

Give blood products for DIC management; stabilize patient; transfer to ICU

Kelly 4
VS: 38-88-20(vent), 100/70
Fundus: firm @ U/U
Bleeding: moderate
Transition time: 45 sec

END
Madonna is a 41 yr old multip @ 31 weeks. She has experienced difficult pregnancies and has one Downs Syndrome baby. She has had several episodes of preterm contractions that resolved with LLP bed rest. This time the bed rest and oral hydration are not resolving the contractions; in fact, they seem to be getting worse. Labor duration: 35 minutes.

**Madonna 1**
- VS: [37]-72-18, 110/80
- FHR: 150, mod FHRV, non-reactive, no decels
- CTX: 3/45/mod
- Transition time: 1:20 min
- Fetal Movement: none

**S&S: Patient is anxious and shaky; she says her heart is racing**

**Madonna 1.1**
- VS: [37]-120-24, 100/70
- FHR: 150, mod FHRV, non-reactive, no decels
- CTX: None
- Transition time: 1:20 min
- Fetal Movement: none

**Perform SSE to determine cervical status; give Terbutaline SQ for tocolysis**

**S&S: Palpitations, tachycardia and PVCs result from second dose of SQ Terbutaline**

**Madonna 2**
- VS: [37]-90-20, 100/70
- FHR: 150, mod FHRV, non-reactive, no decels
- CTX: 3/45/mod
- Transition time: 45 sec
- Fetal Movement: none

**Give second dose of SQ Terbutaline for cessation of breakthrough ctx**

**Madonna 2.1**
- VS: [37]-130-28, 90/60
- FHR: 150, mod FHRV, non-reactive, no decels
- CTX: None
- Transition time: 1:20 min
- Fetal Movement: none

**Reassure patient about effects of beta-mimetic drugs**

**Madonna 3**
- VS: [37]-100-20, 100/70
- FHR: 150, mod FHRV, non-reactive, no decels
- CTX: 3/45/mod
- Transition time: 1 min
- Fetal Movement: none

**Discontinue Terbutaline; give 300ml IV bolus; replace tocolytic drug with Procardia**

**Madonna 4**
- VS: [37]-90-20, 100/80
- FHR: 150, mod FHRV, non-reactive, no decels
- CTX: None
- Transition time: 40 sec
- Fetal Movement: none

**S&S: no adverse reaction to Procardia**

**END**
Maria is a 30 yr old multip @ 27 weeks. She has an 11 yr old and has been trying for more children. She has had 2 miscarriages in the last 4 years and she lost both due to an incompetent cervix. This time a McDonalds suture was placed @ 14 weeks. Labor duration: 15 minutes.

Maria 1
VS: [37]-80-[20], 130/80
FHR: [150], minimal FHRV, reactive, no decels
CTX: 6/40/mild

S&S: contractions; uncomfortable; anxious

Give IV bolus; apply EFM
Wait time: 5 min

Maria 2
VS: [37]-88-24, 110/70
FHR: [150], moderate FHRV, reactive, [no] decels
CTX: none
Transition time: 1 min

S&S: comfortable

Ctx subsides; administer mag sulfate skip forward 24 hrs
Wait indefinitely

Maria 2_1
VS: [36.2]-64-12, 80/50
FHR: [135], absent FHRV, non reactive, [no] decels
CTX: none

S&S: lethargic; decreased DTRs; slurred speech

Call for help stat page physician
Wait indefinitely

Maria 3
VS: [36.8]-75-18, 100/70
FHR: [135], minimal FHRV, non reactive, [no] decels
CTX: none
Transition time: 2 min

Continue to monitor patient

END
More about Scenarios

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. 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 therefore be applied to a wide range of scenarios. The key is to include only 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 available setting on the Status/Details panel. Remember that only the settings you specify will cause a change in NOELLE, and all other settings will remain constant. Therefore, by starting with a complete state, NOELLE's condition will always be the same when the scenario starts, regardless of what she 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. They usually do not, 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 a scenario should be created with the assumption that the providers will perform correctly. As long as they do, the scenario can be allowed to continue.

Naturally, preparation must be made for what might happen to NOELLE 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 Status/Details panel.

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

As 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.
## Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication with the simulator cannot be established or signal strength is weak</td>
<td>Battery is discharged</td>
<td>Reconnect NOELLE to the AC adapter to charge the battery. If the battery is completely discharged, connect the AC adapter and wait 20 before turning the simulator back on. Keep the AC adapter connected to the simulator during simulation to prevent interruptions.</td>
</tr>
<tr>
<td>Controling computer is too far away from simulator</td>
<td>Minimize the distance between simulator and the tablet.</td>
<td></td>
</tr>
<tr>
<td>Interference caused by physical obstructions</td>
<td>Maintain line of sight with the simulator and direct the RF module towards the simulator</td>
<td></td>
</tr>
<tr>
<td>Attempting to communicate with a different simulator</td>
<td>Configure UNI to connect to the simulator by serial number. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual)</td>
<td></td>
</tr>
<tr>
<td>Controlling multiple simulators from a single controlling PC</td>
<td>Assign different communication channels for each of the simulators to prevent cross talk (Refer to digital UNI User Guide under Menu/Help/Instruction Manual)</td>
<td></td>
</tr>
<tr>
<td>RF module is not detected by the controlling PC</td>
<td>Restart the controlling PC</td>
<td></td>
</tr>
<tr>
<td>AC adapter is damaged</td>
<td>Verify the power adapter LED to ensure the adapter is working. Disconnect the power adapter from the wall and the simulator and inspect the connector for damage or broken pins.</td>
<td></td>
</tr>
<tr>
<td>Simulator does not run on internal battery power</td>
<td>Battery is not charged</td>
<td>Ensure the AC adapter is connected to NOELLE and a working power outlet. Keep the AC adapter connected to the simulator during simulation to prevent interruptions. Use only the AC adapter labeled with the simulator’s name. Do not use universal power adapters.</td>
</tr>
<tr>
<td>Simulator doesn’t respond to any command although signal strength is excellent</td>
<td>UNI has established communication with a different simulator</td>
<td>Configure UNI to connect to the simulator by serial number. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual)</td>
</tr>
<tr>
<td>Simulator does not power or communication is never established (wired connectivity only)</td>
<td>Data cable is not connected.</td>
<td>Verify connection of the Ethernet cable and USB module to the computer’s USB port.</td>
</tr>
<tr>
<td>USB communication Module is not connected</td>
<td>Wrong serial number entered in the options menu</td>
<td>From the menu bar, enter the simulator’s serial number in the Setup&gt; Options&gt; Environment tab</td>
</tr>
<tr>
<td>Power supply is disconnected</td>
<td>Connect the power supply to the simulator and restart the UNI software</td>
<td></td>
</tr>
<tr>
<td>Intubation is falsely detected</td>
<td>Intubation sensor requires recalibration</td>
<td>Remove any adjuncts from the airway and complete the reset procedure outlined (Refer to digital UNI User Guide under Menu/Help/Instruction Manual).</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Artificial ventilations are not properly detected or not detected at all</td>
<td>Respiratory rate is not set to zero</td>
<td>Set the respiratory rate to zero</td>
</tr>
<tr>
<td></td>
<td>Ventilations are not calibrated</td>
<td>See “Calibration Wizard” (Refer to digital UNI User Guide under Menu/Help/Instruction Manual).</td>
</tr>
<tr>
<td>Chest does not rise with artificial ventilation (e.g. BVM)</td>
<td>Simulator not running</td>
<td>Turn the simulator on</td>
</tr>
<tr>
<td></td>
<td>Respiratory rate is not set to zero</td>
<td>Set the respiratory rate to zero</td>
</tr>
<tr>
<td></td>
<td>Air is escaping between the mask and the simulator’s skin</td>
<td>Maintain a tight seal between the BVM mask and the simulator</td>
</tr>
<tr>
<td>Low chest rise (or no chest rise at all) while breathing</td>
<td>Respiratory pattern is set to apnea</td>
<td>Change the respiratory pattern to a healthy pattern</td>
</tr>
<tr>
<td></td>
<td>Inspiratory percentage is set to a low value</td>
<td>Set Respiration Rate to 13, and Inspiratory Time to 33%</td>
</tr>
<tr>
<td>Pupils are reacting erratically</td>
<td>Eyes are not calibrated for the current environment</td>
<td>Recalibrate the pupil dilation for the current ambient light. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual) for more information on the pupil dilation procedure.</td>
</tr>
<tr>
<td>Fetus is disengaged prematurely</td>
<td>The force sensor is detecting more than 35 pounds of pull force, and it is unlocking the fetus to prevent damage to the system.</td>
<td>For information on how to calibrate the force sensor, (Refer to digital UNI User Guide under Menu/Help/Instruction Manual)</td>
</tr>
<tr>
<td>Fetus does not release automatically</td>
<td>Delivery progress line has not reached the end of the labor scenario.</td>
<td>The fetus is locked onto the birthing arm until the progress line reaches the end of the delivery. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to learn more about the descent curve and the labor graph. See the shoulder dystocia section below for additional troubleshooting.</td>
</tr>
<tr>
<td></td>
<td>Fetus does not disengage smoothly</td>
<td>After the final push, gently pull the fetus a few inches in line with the birthing arm to disengage the connectors. Once the fetus is disengaged, complete the delivery using standard practices.</td>
</tr>
<tr>
<td></td>
<td>Birthing mechanism is not in synch with the rotation commands</td>
<td>Before starting a delivery, select the fetal position on the labor tab that matches the initial position of the fetus inside the simulator. Synchronizing the starting position allows the UNI to control the rotation of the fetus in to the final stage of the delivery accurately. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to learn more about the labor rotation settings.</td>
</tr>
<tr>
<td></td>
<td>Dystocia is “ON”</td>
<td>The fetus is not released automatically at the end of the labor when the shoulder dystocia feature is enabled. Disable the shoulder dystocia and click “release” to disengage the fetus.</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Insufficient lubrication</td>
<td></td>
<td>Lubricate the entire fetus, cervix, and the birth canal. Insufficient lubrication may result in damage to the equipment and prevent the fetus from sliding through the birth canal.</td>
</tr>
<tr>
<td>Delivery mechanism does not return to the starting position when “reset” is clicked at the end of the labor scenario</td>
<td>Motor is “disoriented”</td>
<td>Recalibrate the starting position of the birthing mechanism. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to complete the reset labor motor procedure.</td>
</tr>
<tr>
<td>Chest compressions are not detected</td>
<td>Heart rhythm is set to sinus</td>
<td>Set the heart rhythm to a critical heart rhythm</td>
</tr>
<tr>
<td></td>
<td>Compression sensor is not calibrated</td>
<td>Calibrate the chest compressor using the UNI calibration menu (Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to complete the reset labor motor procedure.</td>
</tr>
<tr>
<td>No left radial pulse</td>
<td>Radial pulses are disabled</td>
<td>Enable the radial pulses using the details controls</td>
</tr>
<tr>
<td></td>
<td>Blood pressure values are require calibration</td>
<td>(Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to recalibrate the blood pressure</td>
</tr>
<tr>
<td>Medication is not being recognized by the UNI software</td>
<td>Syringe is not programmed with a medication</td>
<td>(Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to program a tagged syringe with a medication.</td>
</tr>
<tr>
<td></td>
<td>UNI is operating in the Manual Mode</td>
<td>Switch to the Automatic mode to enable the drug recognition system</td>
</tr>
<tr>
<td></td>
<td>Tagged syringe is not detected by the drug recognition proximity sensor</td>
<td>This could happen when injecting the cephalic vein close to the hand and having the syringe sideways to the plane of the forearm.</td>
</tr>
<tr>
<td>Volume injected is not registered by the UNI software accurately</td>
<td>Drug recognition arm requires calibration</td>
<td>(Refer to digital UNI User Guide under Menu/Help/Instruction Manual) to calibrate the IV medication infusion</td>
</tr>
<tr>
<td></td>
<td>Fluid is being injected too fast</td>
<td>Inject fluid into the arm slowly. Use a 22 g needle to control the rate and maximize the life of the arm materials. The maximum injection rate is 9999 ml/hr.</td>
</tr>
<tr>
<td></td>
<td>Not reading the syringe ID</td>
<td>The tagged syringe is too far from the arm sensor. The system will register less volume injected if the tagged syringe is not detected.</td>
</tr>
<tr>
<td></td>
<td>Fluids are being injected through the fill ports</td>
<td>Injecting fluids using the fill ports will report lower volumes. Use a syringe to inject the veins directly for greater accuracy.</td>
</tr>
<tr>
<td></td>
<td>Fluid reservoir is full</td>
<td>The arm’s internal reservoir is 40 cc. Attach the drain port to allow excess fluid to drain.</td>
</tr>
<tr>
<td>Preprogrammed scenarios are not available</td>
<td></td>
<td>Load the “Quick Start NOELLE” profile. To switch between profiles without exiting the software, Click File&gt;Profile on the menu bar.</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>The simulator’s audible features (heart, lung, Korotkoff, etc.) are low or cannot be heard at all</td>
<td>Audio feature volume is set to mute or low</td>
<td>Adjust the volume levels on the status panel</td>
</tr>
<tr>
<td>Streaming audio quality is poor or echo</td>
<td>Headset is disconnected</td>
<td>Close UNI and connect the MIC and Headphone jacks into the designated ports on the laptop. Restart the software.</td>
</tr>
<tr>
<td></td>
<td>Headset connectors are connected to the wrong ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Headset is not recognized by UNI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Headset is not set as default input device.</td>
<td>Close the software and connect the MIC and Headphone jacks into the designated ports on the laptop. Then, set the headset as the default device on the laptop’s audio manager software. (tablet)</td>
</tr>
<tr>
<td></td>
<td>Faulty headset</td>
<td>Test using a headset know to work with other equipment</td>
</tr>
<tr>
<td></td>
<td>Microphone gain is set to high</td>
<td>Lower the gain on the Streaming Voice Control window</td>
</tr>
<tr>
<td>Vital signs are flat lined or not updating</td>
<td>PC and virtual monitor are not connected to the wireless network</td>
<td>Tablet only - Exit the UNI software and the Gaumard Monitors software and connect to the GaumardNet network. Restart the Gaumard softwares.</td>
</tr>
<tr>
<td></td>
<td>UNI is not broadcasting the vital signs information.</td>
<td>Tablet only - From the Gaumard menu bar, go to Monitors&gt;Configuration. Set the adapter to &quot;Wireless network connection&quot;. Verify the controller IP and port number match the settings on the Gaumard monitor’s “Comm Setup” menu.</td>
</tr>
<tr>
<td></td>
<td>USB communication module is not connected</td>
<td>PRO+ only - From the Gaumard menu bar, go to Monitors&gt;Configuration. Set the adapter to “Local Area Connection”. Verify the controller IP and port number match the settings on the Gaumard monitor’s “Comm Setup” menu.</td>
</tr>
<tr>
<td></td>
<td>Virtual monitor option is not activated</td>
<td>Connect the Communication module to the control computer and restart the software.</td>
</tr>
<tr>
<td></td>
<td>On the menu bar, click Setup&gt;Options&gt; Environment tab and set the connection mode to FIXED, then enter the simulator’s serial number and save the settings. Return to the Options menu and select the “Add-ons” tab. Checkmark “Use virtual monitors” and enter the activation code. Finally, restart the software.</td>
<td></td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sensors are off</td>
<td>On the UNI menu bar, go to Monitors&gt; Sensors&gt; and</td>
<td>click “All on”</td>
</tr>
<tr>
<td>Oximeter reading does not coincide with value set on the UNI software</td>
<td>Monitor sensor is placed on the wrong finger</td>
<td>Place the sensor on the left index finger</td>
</tr>
<tr>
<td></td>
<td>Oxygen saturation feature is not calibrated to work with the specific device currently in use</td>
<td>Follow the instructions to calibrate the simulator to work with the oxygen saturation monitor and sensor currently in use. (Refer to digital UNI User Guide under Menu/Help/Instruction Manual)</td>
</tr>
<tr>
<td></td>
<td>The simulator can only be calibrated to work with one oxygen saturation monitor and sensor at a time. Oxygen saturation monitors that detect carbon monoxide and/or methemoglobin are not supported.</td>
<td></td>
</tr>
<tr>
<td>PRO+ cameras are not detected in the camera setup menu</td>
<td>The wireless camera’s power supply is not connected to a power outlet</td>
<td>Connect the camera to the power supply and restart the PRO+ PC</td>
</tr>
<tr>
<td></td>
<td>The PRO+ internal wireless antenna is off</td>
<td>Set the PC’s wireless capability switch to the “On” position.</td>
</tr>
<tr>
<td></td>
<td>The wireless network name has been changed</td>
<td>On the PRO+ wireless network properties, change the wireless name back to the factory default.</td>
</tr>
<tr>
<td>Camera is detected in the camera setup but there is no feed on the main window</td>
<td>Main view distribution is not configured</td>
<td>Click the “Main view” setup icon, and select the active video and monitor feeds.</td>
</tr>
<tr>
<td>Events are not listed on the PRO+ event panel during the scenario</td>
<td>RF Module is not connected</td>
<td>Connect the RF module and restart the software</td>
</tr>
<tr>
<td></td>
<td>PRO+ is not recording</td>
<td>On the UNI menu bar, go click File&gt; New Session to start a new scenario</td>
</tr>
<tr>
<td>Dashboard screen is unreachable or not found</td>
<td>The PRO+ wireless antenna is off</td>
<td>Set the PC’s wireless capability switch to ON.</td>
</tr>
<tr>
<td></td>
<td>Virtual monitor PC is not connected to the PRO+ PC wireless network</td>
<td>From the Virtual monitor PC wireless menu, search and connect to the PRO+ network.</td>
</tr>
</tbody>
</table>
Wireless Network
(Without USB Router)

For Windows XP and Windows 7
UNI 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.

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 UNI and the Gaumard Monitors software.

UNI NETWORK CONFIGURATION

Complete the next steps using the “Controller - Create Ad-Hoc Wireless Network” tool built into UNI software.

1. From the menu bar, go to the Gear>Help>“Create ad-hoc Wireless Network”
   The “Controller - Create Ad-hoc Wireless Network” window is displayed
2. Click “Clear previous network settings”
3. 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.
4. 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.
5. Click “Set Dynamic IP”. to set the wireless network dynamic.
6. Click “Apply Wireless Network Settings” to save the settings.
7. Exit the UNI software
8. In the case of Windows 7 computers, navigate to Wireless Network Connection icon on the right lower corner of the desktop to select “Open Network and Sharing Center”.

9. Select “Manage Wireless Networks” and make sure that only GaumardNet is listed as shown below.

   Notice that steps 8 and 9 only applies for a Windows 7 computer.

10. Restart the computer.

---

**GAUMARD MONITORS NETWORK CONFIGURATION**

After the UNI 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. Click “Set Dynamic IP” to set the wireless network dynamic.

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 UNI control software.
3. On the UNI menu bar, click the Gear> Monitors> Configuration. The “Virtual Monitor Setup” window is displayed.

4. Set the adapter to “Wireless network connection”

5. Verify the network status and network name, then click “Connect” to begin transmitting the vital signs information.
6. Write down the “IP address” and “Port number”.
7. Start the Gaumard Monitors software on the virtual monitor PC.
8. Click the “V” menu near the top left corner, and then select “Comm Setup”. The “TCP Comm Setup” window is displayed.
9. Click “Show IP” to display the IP address.

10. Confirm that the IP address matches the IP address of the UNI
11. Click “Connect”

To connect both computers using a local internet network, follow the steps below:

1. Verify that both computers have applied “Set Wireless Network Dynamic”. Refer to UNI and Gaumard Monitors network configuration sections for instructions.
2. Disconnect both computers to the GaumardNet network and connect them to the local network manually using Windows® wireless connection menu.
3. Repeat the same steps listed above to connect the UNI software to the Gaumard Monitors software.

Wireless Network Instructions (With USB Router)

For Windows 8

These first steps of the instructions will apply to customers receiving the router as an upgrade. If you received the Gaumard Monitor computer with the router already attached, please proceed to step number 4:

1. Add Velcro to TPLINK router and VM

2. Connect Router to USB power supply (Computer can be packaged with router connected)

3. Open the Wireless Network Connection on the Monitor Computer and connect to the default network, which name will be (GaumardSimulatorSerialNumber)
   
   a. (example) GaumardN0000001

4. Open the Wireless Network Connection on the simulator control computer and connect to the same network name (GaumardN0000001)

CONFIGURE THE VITAL SIGNS BROADCAST

Complete next steps to configure the transmission of the vital signs information, after the wireless connection is established between both computers.

1. Verify that both computers are connected to the GaumardV0000001 network using Windows® wireless connection menu. If the computers are not connected, select the network name and click “Connect” manually.

2. Start the UNI control software on the control computer

3. On the UNI menu bar, click the Gear> Monitors>Configuration

4. The simulator “Virtual Monitor Setup” window is displayed now
5. Set the adapter to "Wireless network connection" or WiFi
6. Verify that the IP Type is set to automatic
7. Write down the "IP Address" and "Port number"
8. Click "Connect" to broadcast an outgoing connection
9. Start the Gaumard Monitors software on the virtual monitor PC
10. Click the "V" menu near the top left corner, and then select "Comm Setup".
11. The "Comm Setup" window is displayed.
12. Click "Show IP" to display the IP Address
13. Enter the IP Address from the UNI software and verify the port number
14. Click "Connect" to accept the incoming connection
# Consumable Items and Replacement Parts

Contact Gaumard Scientific for a complete list of consumables and replacement parts and their prices. 
C=Consumables; R=Replacements; A=Accessories; U=Upgrades; M=Replace in Miami Factory ONLY

**Toll-free in the USA:** (800) 882-6655 | **Worldwide:** 01 (305) 971-3790 | **Fax:** (305) 667-6085

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S575.100.001</td>
<td>A/C Virtual Monitor</td>
<td>R</td>
<td>A/C Powered 17” Touch Screen monitor and desktop</td>
</tr>
<tr>
<td>S575.100.002</td>
<td>D/C Virtual Monitor</td>
<td>R</td>
<td>D/C Powered 12” Touch Screen Mobile Monitor with stylus</td>
</tr>
<tr>
<td>S575.100.004L.L</td>
<td>Lower Left Arm Skin Cover</td>
<td>M</td>
<td>Lower left arm skin cover; light color</td>
</tr>
<tr>
<td>S575.100.004R.L</td>
<td>Lower Right Arm Skin Cover</td>
<td>M</td>
<td>Lower right arm skin cover; light color</td>
</tr>
<tr>
<td>S575.100.007.L</td>
<td>C-Section Abdominal Cover</td>
<td>C</td>
<td>NOELLE stomach cover for C-Section Exercises; light color</td>
</tr>
<tr>
<td>S575.100.008L.L</td>
<td>Abdominal Cover</td>
<td>R</td>
<td>NOELLE light stomach cover with contraction and urinary reservoir</td>
</tr>
<tr>
<td>S575.100.011</td>
<td>Battery Charger</td>
<td>R</td>
<td>Battery charger with label</td>
</tr>
<tr>
<td>S575.100.013</td>
<td>Birthing Mechanism</td>
<td>R</td>
<td>Automatic Birthing Mechanism</td>
</tr>
<tr>
<td>S575.100.016.L</td>
<td>Birth canal</td>
<td>C</td>
<td>Light color</td>
</tr>
<tr>
<td>S575.100.019</td>
<td>Placenta</td>
<td>R</td>
<td>Placenta</td>
</tr>
<tr>
<td>S575.100.020</td>
<td>Umbilical Cord Set</td>
<td>R</td>
<td>Umbilical cords with clamp</td>
</tr>
<tr>
<td>S575.100.023L.L</td>
<td>Lower Left Arm</td>
<td>C</td>
<td>Lower left IV arm; light color</td>
</tr>
<tr>
<td>S575.100.023R.L</td>
<td>Lower Right Arm</td>
<td>C</td>
<td>Lower right IV arm; light color</td>
</tr>
<tr>
<td>S575.100.030.L</td>
<td>Postpartum Perineal Insert</td>
<td>R</td>
<td>Light color</td>
</tr>
<tr>
<td>S575.100.031</td>
<td>Manual Boggy Uterus</td>
<td>R</td>
<td>Boggy Uterus for manual PPH</td>
</tr>
<tr>
<td>S575.100.032</td>
<td>Automatic Boggy Uterus</td>
<td>R</td>
<td>Boggy Uterus for automatic PPH</td>
</tr>
<tr>
<td>S575.100.033</td>
<td>Episiotomy Trainer Set</td>
<td>R</td>
<td>Episiotomy Trainer set with vulva insert</td>
</tr>
<tr>
<td>S575.100.040.L</td>
<td>Articulating baby</td>
<td>R</td>
<td>Articulating Fetus; light color</td>
</tr>
<tr>
<td>S575.100.048</td>
<td>Adult IV Injection Kit</td>
<td>A</td>
<td>Fluid dispensing syringe with filling tube</td>
</tr>
<tr>
<td>S575.100.060</td>
<td>Simulator Transport Case</td>
<td>R</td>
<td>Soft storage and transport case with wheels</td>
</tr>
<tr>
<td>S575.100.061</td>
<td>Simulator Transport Case</td>
<td>A</td>
<td>Hard storage and transport case with wheels</td>
</tr>
<tr>
<td>S575.100.080</td>
<td>Simulated Blood Concentrate</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Item ID</td>
<td>Name</td>
<td>Type</td>
<td>Description</td>
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</tr>
<tr>
<td>S575.100.081</td>
<td>Silicone Oil</td>
<td>R</td>
<td>Oil-based Silicone lubricant</td>
</tr>
<tr>
<td>S575.100.087</td>
<td>Wireless Streaming Audio Headset</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>S575.100.200</td>
<td>Audio &amp; Video Recording System</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>S575.100.206</td>
<td>RF Module</td>
<td>R</td>
<td>Radio Frequency Module with USB connector</td>
</tr>
<tr>
<td>S575.100.300.U</td>
<td>Wireless Streaming Audio Upgrade</td>
<td>U</td>
<td>Wireless streaming audio upgrade</td>
</tr>
<tr>
<td>S575.100.400R.U.L</td>
<td>Automatic Drug Recognition System</td>
<td>U</td>
<td>Automatic drug recognition feature (includes physiologic model)</td>
</tr>
<tr>
<td>S575.100.401R.L</td>
<td>Automatic Drug Recognition Arm</td>
<td>R</td>
<td>Automatic drug recognition right arm replacement; light color</td>
</tr>
<tr>
<td>S575.100.600</td>
<td>Automatic Physiologic Control</td>
<td>A</td>
<td>Physiologic modeling feature for NOELLE</td>
</tr>
<tr>
<td>S575.100.EXW</td>
<td>Two Year Extended Warranty</td>
<td>A</td>
<td>Extended warranty for years Two AND Three</td>
</tr>
<tr>
<td>S575.100.INST</td>
<td>In-Service Training</td>
<td>A</td>
<td>Day of in-service training and installation</td>
</tr>
</tbody>
</table>
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 properly 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 Us

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.

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