

# The New NOELLE<sup>®</sup>

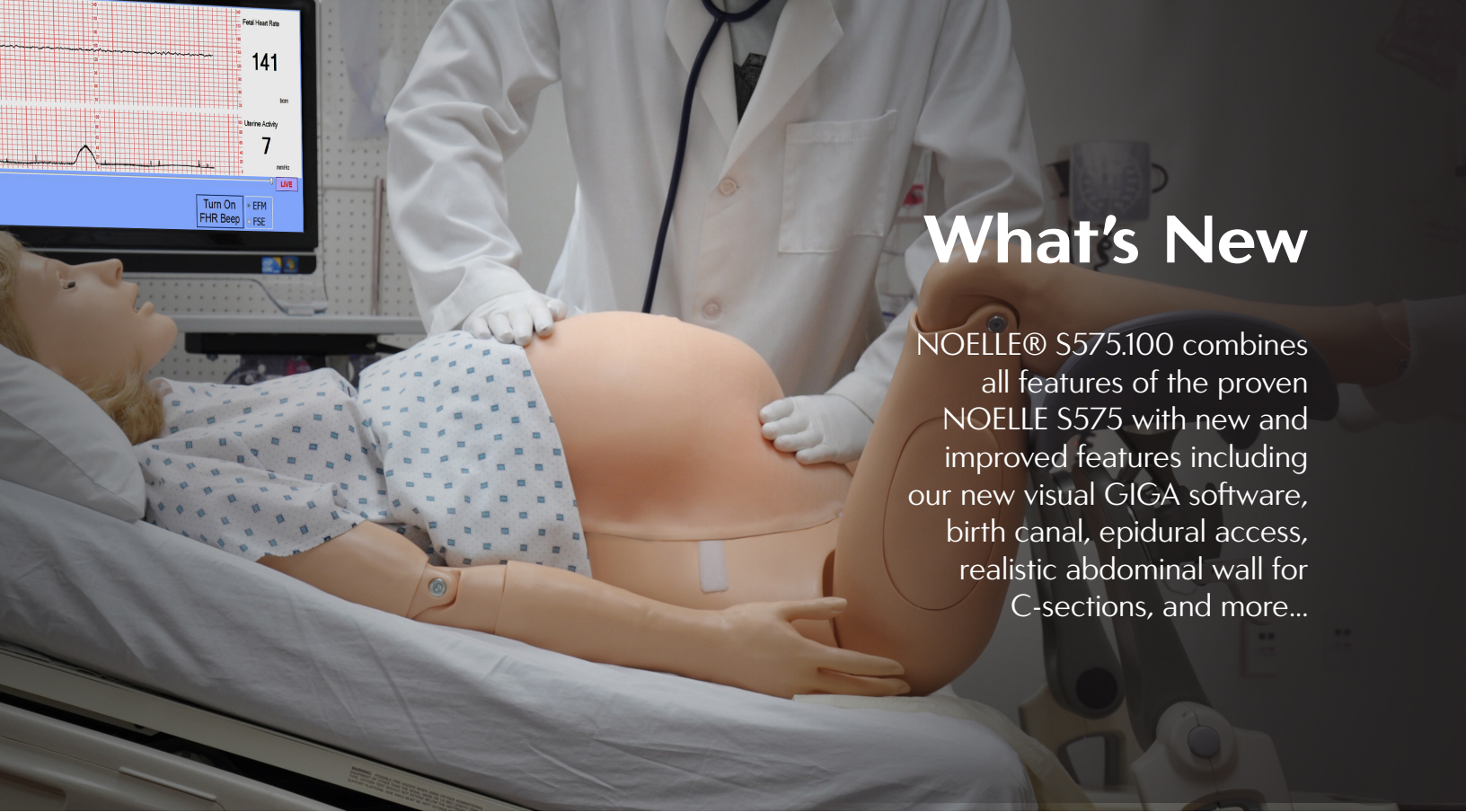
The world's most advanced birthing simulator



**Gaumard<sup>®</sup>**

Simulators for Health Care Education





# What's New

NOELLE® S575.100 combines all features of the proven NOELLE S575 with new and improved features including our new visual GIGA software, birth canal, epidural access, realistic abdominal wall for C-sections, and more...

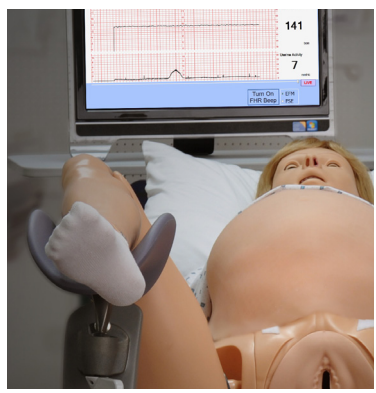
## Realistic fetal palpation

Realistic amniotic sac inside palpation abdominal cover creates a natural and realistic feel when practicing palpation exercises



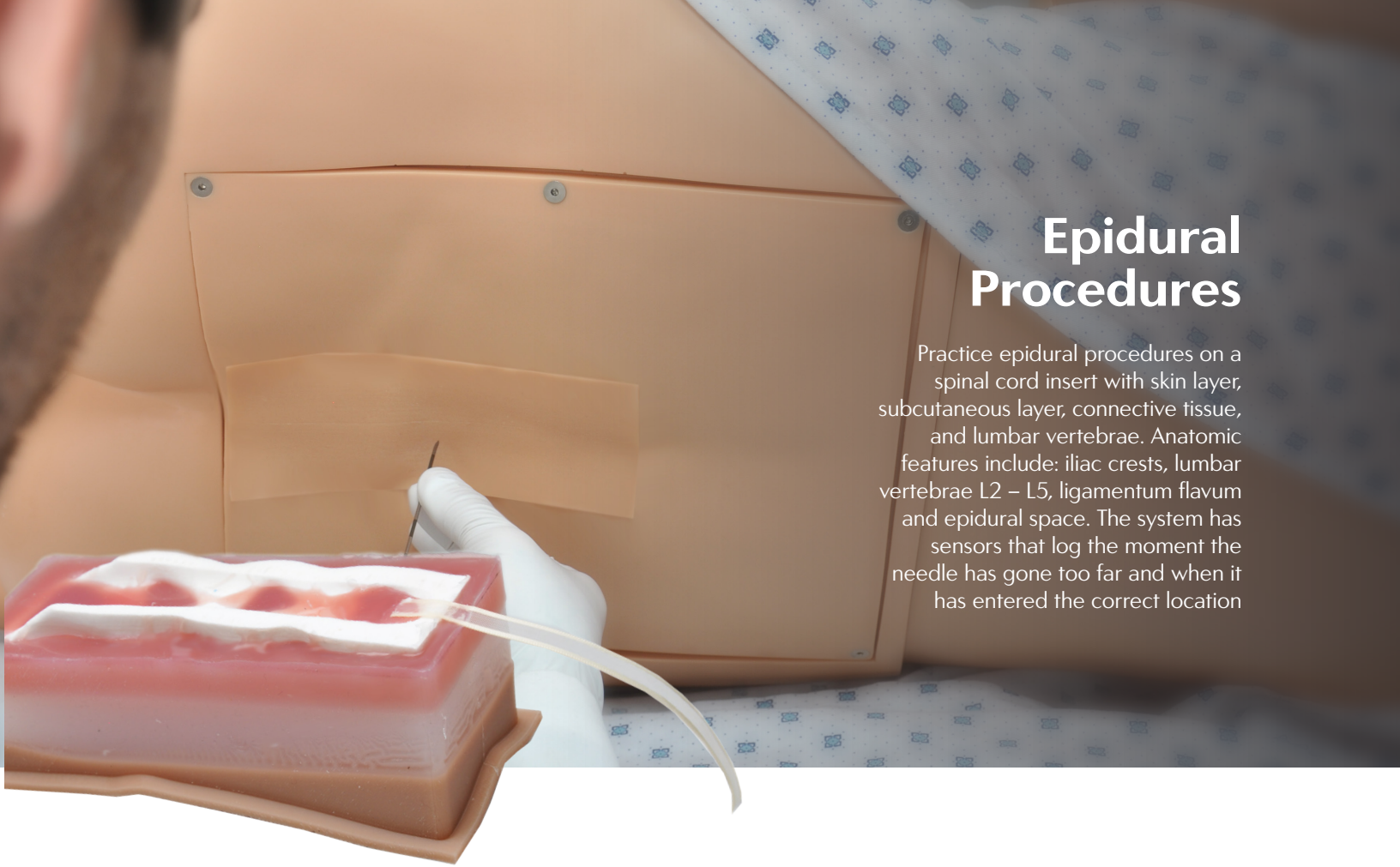
## Multiple birthing positions

In addition to the feet in stirrups position, NOELLE's fully articulating body allows for alternative birthing positions like hands and knees.



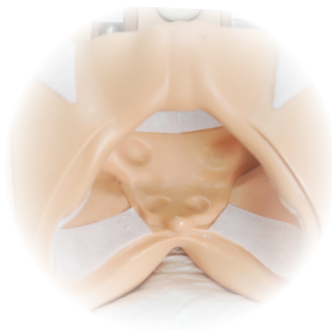
# Epidural Procedures

Practice epidural procedures on a spinal cord insert with skin layer, subcutaneous layer, connective tissue, and lumbar vertebrae. Anatomic features include: iliac crests, lumbar vertebrae L2 – L5, ligamentum flavum and epidural space. The system has sensors that log the moment the needle has gone too far and when it has entered the correct location



## Realistic fetal palpation

NOELLE's new palpation module includes an amniotic sac creating a natural and realistic feel when practicing palpation exercises.



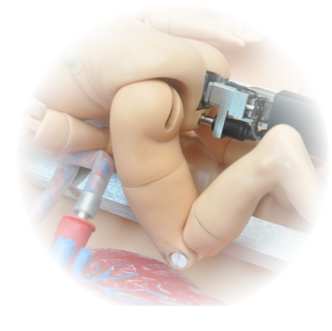
## Pelvic landmarks

Anatomic landmarks include bilateral ischial spines, coccyx and pubic symphysis.



## Contraction stomach

NOELLE's new contraction abdominal cover allows palpation of real time contractions during a scenario. The cover gets firm as the contraction peaks.



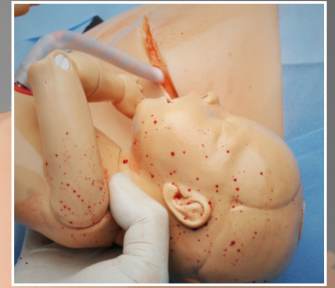
## Precision delivery system

NOELLE's proven delivery mechanism has been refined to create an even more natural and lifelike birthing descent. NOELLE's fetus rotates and moves down the birth canal in response to commands from a wireless tablet PC; it also dips and rises as it traverses the natural sculpted pelvic opening.



# Practice C-Sections using real surgical instruments

Multi-layer abdominal wall with skin, subcutaneous tissue, fascia, muscle, and peritoneum for maximum realism. Abdominal inserts have simulated blood incorporated into the subcutaneous layer. Use real surgical instruments for incision, dissection, and suturing.



## Perfect fit into stirrups

NOELLE fits perfectly into birthing stirrups; her flexible hip-joints provide the flexibility and resistance you expect.



## Lifelike birth canal

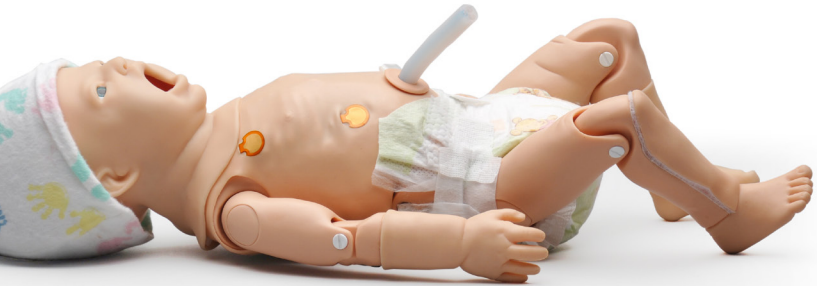
New lifelike birth canal simulates human tissue. Birth canals are removable and are designed to withstand more than 75 deliveries.



## Episiotomy repair

NOELLE's episiotomy repair inserts simulate human tissue that can be sutured repeatedly. Inserts have been redesigned for maximum realism, in both look and feel.

# Neonates



## Tetherless Newborn

with S575.100

40 week **tetherless** newborn with breathing, pulses, color and vital signs that are responsive to hypoxic events and interventions. Also includes trending, crying, convulsions, oral and nasal intubation, airway sounds and extra tablet PC for control.



## Tetherless Premie

with S576.100

30 week **tetherless** premature neonate with breathing, pulses, color and vital signs that are responsive to hypoxic events and interventions. Weighs less than 1400 grams and also includes trending, crying, convulsions, oral and nasal intubation, airway sounds and extra tablet PC for control.

## Two Birthing Fetuses

Birthing fetus with fontanelles and sutures, realistic landmarks, jointed arms and legs, umbilicus, and placenta. Fetal heart sounds audible before, during and after delivery.



## Vertex fetus



New vertex fetus has a smooth head (no connection port) making vacuum deliveries more realistic

## Breech fetus



NOELLE's new breech fetus has a smooth bottom (no connection port) for maximum realism

# Most advanced NOELLE<sup>®</sup> ever

NOELLE S575.100 comes standard with multiple new features while also keeping all the best features of NOELLE S575, making it the most advanced birthing simulator in the world



## Normal Delivery

Fetus descends and rotates internally as it moves down birth canal.



## Assisted Delivery

New fetal head skin for use with most vacuum devices and forceps.



## Shoulder Dystocia

Specify exactly when the "turtle sign" will occur and how long you allow students to deal with this dilemma.



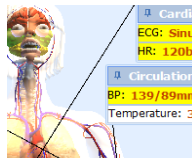
## Breech Delivery

Practice vaginal breech deliveries and free the legs using Pinard maneuver.



## Placenta

Position placenta. Simulate placenta previa. Placenta features detachable fragments.



## Trend Vitals

Trend vital signs; or use our automatic mode which is responsive to hypoxic events and maternal well-being.



## Postpartum Activity

Use the postpartum uterus and program PPH, perform a fundal massage, and insert and inflate a Bakri Balloon. Use the Episiotomy insert to practice episiotomy repair. 1.5 lt. blood reservoir and programmable bleeding levels.



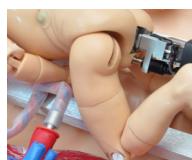
## Tetherless

Both NOELLE and newborn are fully functional in transit like a real human



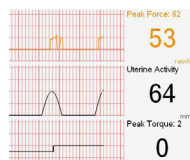
## Neural Responses

Programmable blinking, dilation, and response to light. Also program convulsions.



## Repeatable control

NOELLE is perfect for competency based programs since each delivery can be precisely controlled while devices track student actions.



## Measurable activity

Measure and log force experienced by fetus and cardinal movement with respect to contractions. Alerts signal potential fetal damage.



## Use Real devices

Use your real equipment such as a real Osat monitor, BP cuff, defibrillators or external cardiac pacemakers.



# Monitoring

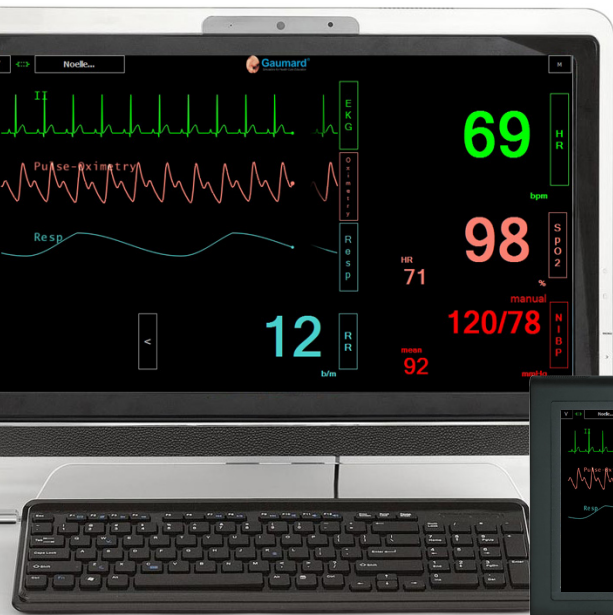
NOELLE's touchscreen vital signs and perinatal monitors provide students with feedback provided in real clinical settings

## Vital Signs for NOELLE® and newborn

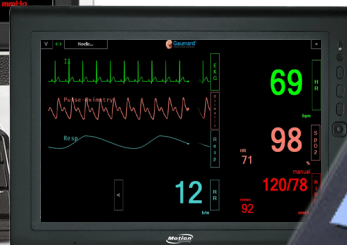
- Includes 20 inch "all-in-one" touchscreen virtual monitor AND a 17 inch touchscreen monitor
- Customize each trace independently; users can set alarms, and time scales.
- Display up to 12 numeric values including HR, ABP, CVP, PAWP, NIRP, CCO, SpO2, SvO2, RR, EtCO2, temperature, and time
- Select up to 12 dynamic waveforms including ECG Lead I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6, AVP, CVP, PAWP, pulse, CCO, SvO2, respiration, capnography.
- Share images such as x-rays, CT scans, lab results, or even multimedia presentations as the scenario progresses

## Perinatal Monitor

Dynamic Perinatal Monitors display uterine activity and fetal heart tones



Standard 20 inch "all-in-one" touchscreen monitor to display vital signs



Optional 12" Touch Screen Tablet to display vital signs



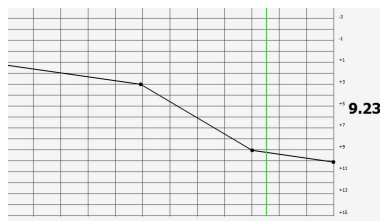
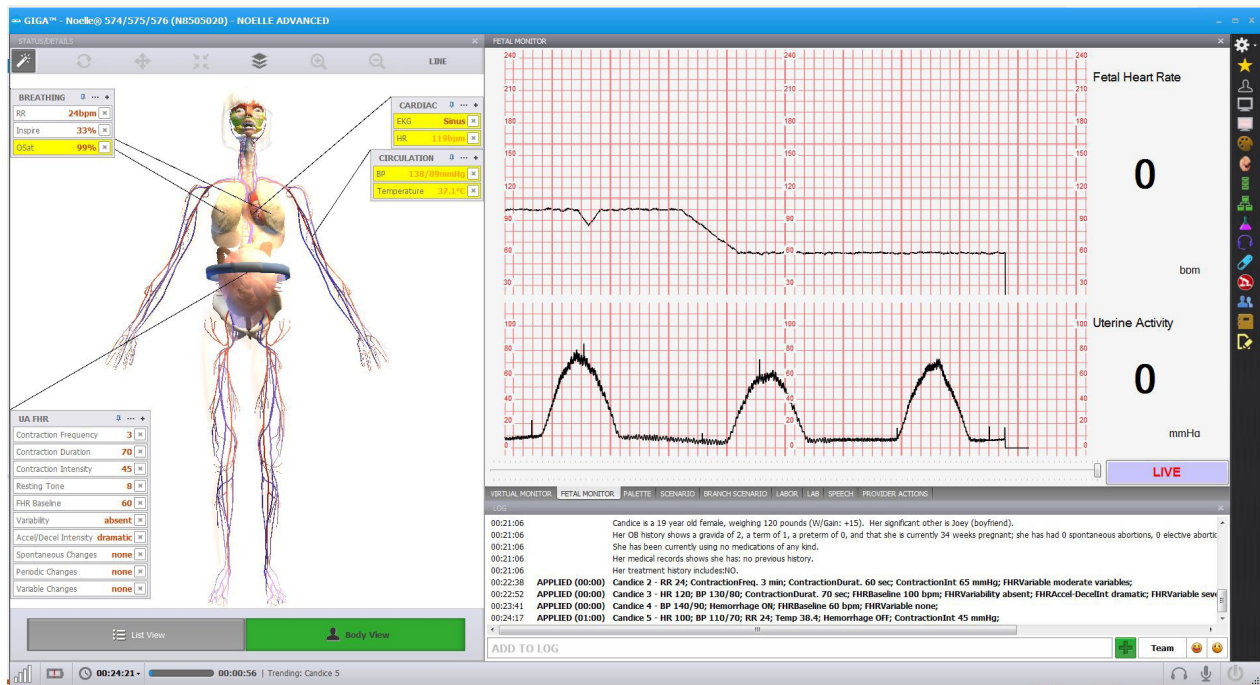
# Powerful yet Intuitive

GIGA™ Software

Our intuitive and powerful software offers ease of use and the flexibility required by the most demanding users. Basic view provides windows for the 3D model of the simulator, a completely configurable vital signs monitor, activities log, perinatal monitor and labor curve.







### 3D Controls

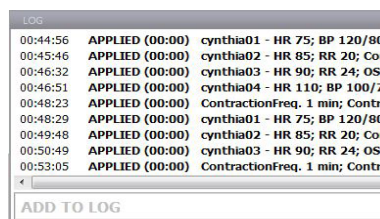
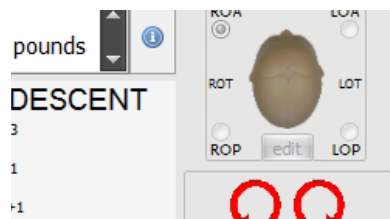
3D image can be rotated or enlarged; the skin removed and physiologic parameters accessed to change any elements of a powerful physiologic engine.

### Labor Control & Descent Curve

Define labor variables such as: labor duration, delivery position, contraction response, and much more. Descent Curve graph defines the position of the fetal head relative to the ischial spines.

### Perinatal Monitor

Easy instructor access to the dynamic Perinatal Monitor right from the tablet PC.



### Rotate baby

Precise control over both fetal translation and rotation. Start delivery at ROA, LOA, LOP or ROP

### Events log

Changes in condition and care provided are time stamped and logged

### Fetal control

Practice precise control over both fetal translation and rotation

## NOELLE

### New Features

- Powerful and intuitive GIGA software
- Practice epidural procedures on a spinal cord insert with skin layer, subcutaneous layer, connective tissue, and lumbar vertebrae
- 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
  - 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
- 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
- Shoulder Dystocia
- 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

### 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

### Two Birthing Fetuses

- Vertex fetus has a smooth head (no connection port) making vacuum deliveries more realistic
- Breech fetus has a smooth bottom (no connection port) for maximum realism
- 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
- Fetuses are attached to delivery mechanism and can be released wirelessly
- Can be manipulated by the student and either released or retained wirelessly
- 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 ETTs
- 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 physiological 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
- SubQ 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

- Pre recorded 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 FHTs 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 pre programmed 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

**Newborn**

**Advanced Newborn**

- Choice of 30 week Premie or 40 week Term
- Term newborn 50th percentile in size
- Wireless and tetherless so that simulator can be controlled and intervention documented even in transit
- Supplied with tablet PC for ease of movement

**Newborn Airway**

- Realistic airway
- BVM/ET/LMA
- Sellick maneuver
- Multiple upper airway sounds synchronized with breathing
- Oral or nasal intubation
- Sensors detect depth of intubation
- Suctioning techniques can be practiced
- Program blockage of right lung, left lung and both lungs
- Head tilt/chin lift
- Jaw thrust
- Realistic chest rise and fall

**Newborn Breathing**

- Automatic chest rise synchronized with respiratory patterns
- Select independent left or right lung sounds synchronized with breathing
- Assisted ventilation with conventional devices
- Ventilations are measured and logged
- Chest compressions generate palpable blood pressure wave form, and ECG artifacts
- Detect and log ventilations and compressions
- Simulated spontaneous breathing
- Variable respiratory rates and inspiratory/ expiratory ratios
- Bilateral and Unilateral chest rise and fall
- Respiratory sounds include both normal lungs as well as stridor and grunting
- Anterior auscultation sites

**Newborn Cardiac**

- ECGs generated in real time with physiologic variations in rhythm never repeating textbook patterns
- Multiple heart sounds, rates and rhythms are synchronized with ECG
- Optional automatic mode enables view of dynamic ECG rhythms shown on any of 12 leads

**Newborn Circulation**

- Color responds to hypoxic events and interventions
- Programmable to comply with current or future CPR standards
- Measure blood pressure
- Virtual oxygen saturation
- Fontanelle, brachial and umbilical pulses are synchronized with heart rate and ECG
- IV arm with fill/drain sites
- SubQ and IM injection sites
- Chest compressions are measured and logged
- ECG monitoring using real devices
- Multiple heart sounds
- ECGs are generated in real time
- Heart sounds synchronized with ECG
- ECG rhythm monitoring
- Umbilicus may be used for "cut-down" procedure
- Umbilicus has pulse and patent arteries and vein
- Pulse strength varies with BP
- Intraosseous access

**Newborn Speech**

- Vigorous cry is synchronized with breathing

**Newborn Vital Signs Monitor**

- Controlled via wireless tablet PC
- Display neonatal vital signs in real time
- Use selected configuration or create your own configuration to mimic the monitors used at your facility
- Customize alarms
- Easy to operate and control
- Modify newborn's condition during the scenario
- Share images such as ultrasounds, CT scan, lab results
- Newborn heart tones
- Touchscreen control
- Display up to 8 numeric values
- Select up to 5 real time waveforms in normal mode
- Select up to 12 real time waveforms in advanced mode
- Display pre-ductal and post-ductal oxygen saturation
- Display blood glucose level

**Newborn Articulation and Movement**

- Seizure/convulsions\*\*
- Programmable arm movement and posture responds to hypoxic events and interventions\*\*
- Realistic rotation of the shoulder and hip joints
- Legs bend at the knees
- Arms bend at the elbow
- Remains fully functional even in transit

**NOELLE and birthing fetuses**

**S574.100** |

**NOELLE w/ Newborn HAL**

**S575.100** |

**NOELLE w/ Premie HAL**

**S576.100** |

Patented; other patents pending

**Optional Add-Ons\***

**Additional 12" Touch Screen Tablet to display vital signs**

**S575.100.002** |

**Pro+ recording and debriefing system**

- Control both simulation and recording simultaneously using one PC
- Capture multiple video, audio, and patient monitors, as well as simulator log file for debriefing
- Use in a fixed simulation laboratory or at a mobile location
- Two wireless and one wired camera

**S575.100.211** |

**Maternal Automatic Mode**

- Interactive maternal / fetal/ neonatal model
- Intuitive interface and automaticity makes simulation easy
- Links maternal conditions with that of her fetus; fetal condition changes in real time on monitor
- Fetal conditions determine newborn's initial APGAR score
- Intuitive interface and automaticity makes simulation easy
- Vital signs are generated in real time
- Drug library with medications
- Use of medications change conditions in real time mimicking real clinical situations

**S575.100.600** |

**Maternal Drug Recognition System (includes Automatic Mode)**

- Identifies drug type and volume injected into veins of the right hand and forearm
- Supplied with 100 syringes having wireless tags
- Use drugs from library or choose to model other drugs using software template
- Physiologic models update simulated vital signs monitors
- Additional packs of 20 syringes with tags available
- 22ga needle recommended; larger needles will decrease venous life
- Supplied with easily replaceable veins

**S575.100.400** |

\*\* Feature not available with Premie HAL



**Gaumard**<sup>®</sup>  
Simulators for Health Care Education

Leadership Through Innovation<sup>®</sup>