

NOELLE 565 Maternal and Neonatal Birthing Simulator

GAUMARD SCIENTIFIC

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NOELLE combines emergency care with obstetrics for managing complications in pregnancy and childbirth



Instructor controls NOELLE's delivery as well as the fetal monitor, and maternal monitor

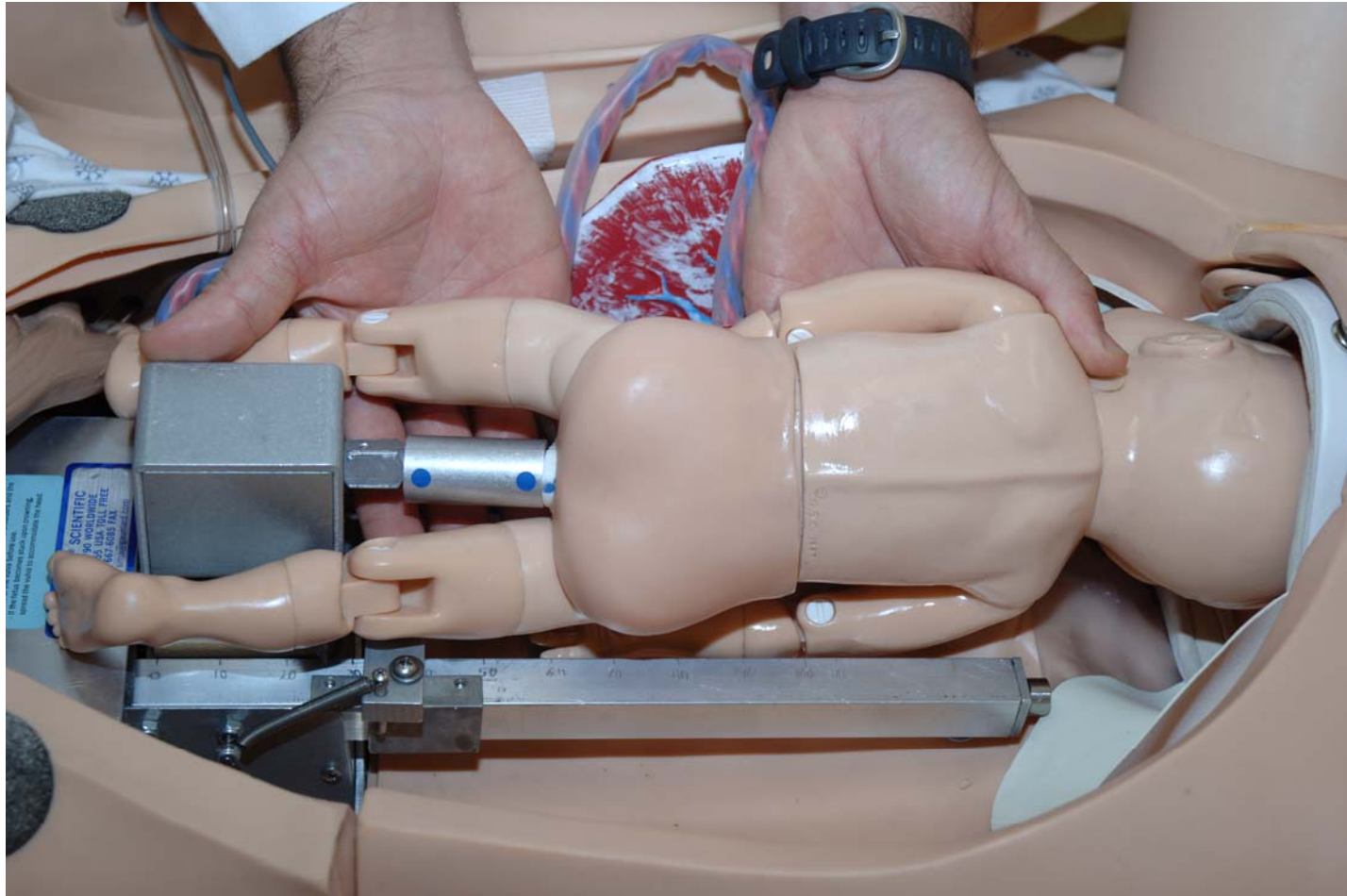


NOELLE includes a computer interactive 40 week newborn and simulated vital signs monitor

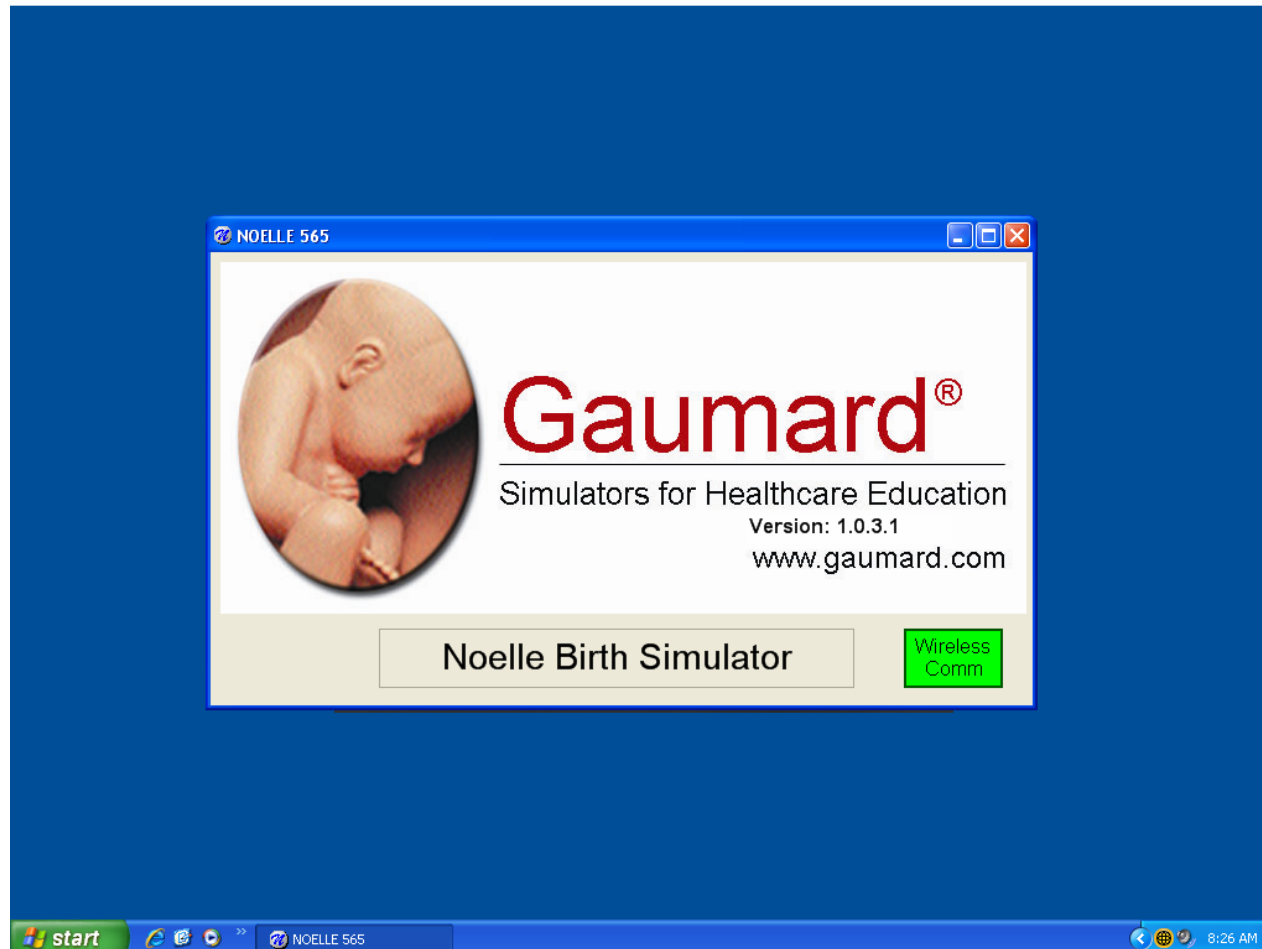


- Fetal monitor converts to the neonatal monitor with a click of the touchscreen
- Instructor may choose physiologic modeling or simple trending
- Color and vital signs respond to hypoxic events and interventions
- Intubate, Umbi, IV, IO
- ECGs

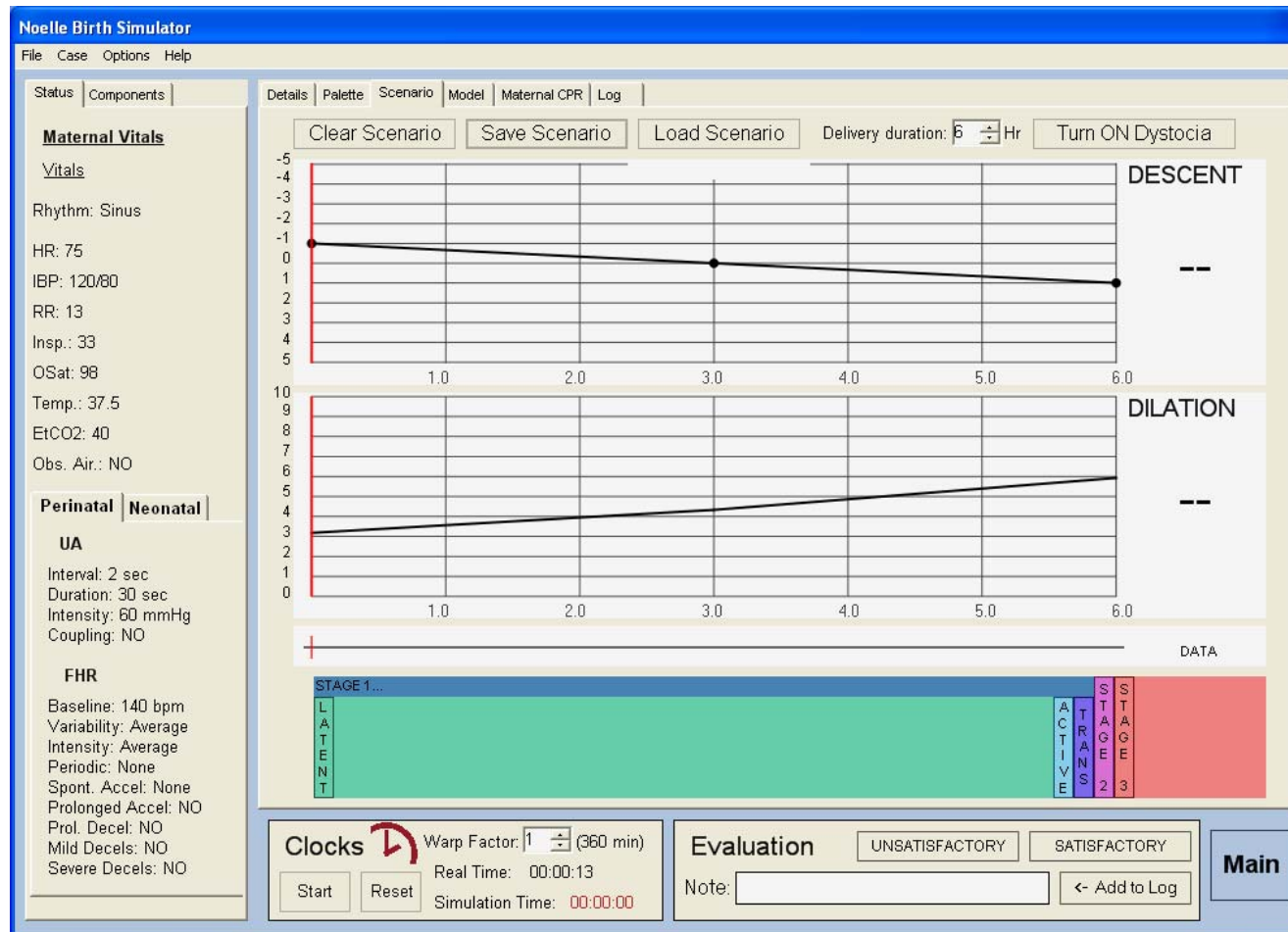
Delivery mechanism provides elements of cardinal movements. ROA positioning shown. LOP and breech also possible. Select our scenarios, modify them, or create your own,



Instructor's laptop controls the NOELLE delivery as well as the fetal monitor and both the maternal and neonatal monitors. The laptop communicates wirelessly with the monitors



The opening screen allows the Instructor to use a preprogrammed scenario, modify those scenarios, or quickly create their own.



Cynthia is a preprogrammed scenario dealing with shoulder dystocia. The NOELLE Guide describes the scenario, provides readings as well as tests and answers.

The screenshot displays the 'Noelle Birth Simulator' software interface. A 'Load Patient' dialog box is open, showing a list of patients on the left and detailed information for 'Cynthia Mod1' on the right. The background interface includes a menu bar (File, Case, Options, Help), a status bar (Status, Components, Details, Palette, Scenario, Model, Maternal CPR, Log), and a main control area with buttons for 'Clear Scenario', 'Save Scenario', 'Load Scenario', 'Delivery duration' (set to 6 Hr), and 'Turn ON Dystocia'. The 'Load Patient' dialog box has a 'Select Patient:' list with names like Alice, Beth, Cynthia, Cynthia Mod1 (selected), Donna, Elaine, Francine, Gloria, Helen, and Irene. Below the list are 'Load', 'Cancel', and 'Delete' buttons. The 'Patient Information' section for Cynthia Mod1 states: 'Cynthia Mod1 is a 31 year old female, weighing 170 pounds. Her companion's name is John. Her OB history shows a para of 1, a gravida of 3, and that she is currently 40 weeks pregnant; she has had 1 spontaneous abortions, 0 elective abortions and 0 stillbirths. She has been currently using no medications of any kind. Her medical records shows she has: no previous hystory. Her treatment history includes: NONE.' The 'Mother Info:' section includes checkboxes for Bleeding, Cephalic Disproportion, Amniotic Fluid Embolism, Uterine Rupture, Cord Presentation, and Fever, along with input fields for Pain (1), Shock, Airway (Adequate), Breathing (Normal), Circulation (Adequate), AVPU (Alert), and Other. The 'Neonate Info:' section includes input fields for FHR Baseline (140), FHR Pattern, and Other. At the bottom of the simulator, there is a 'Clocks' section with a 'Warp Factor' (1) and 'Real Time' (00:04:43) and 'Simulation Time' (00:00:00) displays, a 'Clocks' icon, and 'Start' and 'Reset' buttons. An 'Evaluation' section shows 'UNSATISFACTORY' and 'SATISFACTORY' buttons, a 'Note:' field, and an 'Add to Log' button. A 'Main' button is located in the bottom right corner.

Noelle Birth Simulator

File Case Options Help

Status Components Details Palette Scenario Model Maternal CPR Log

Clear Scenario Save Scenario Load Scenario Delivery duration: 6 Hr Turn ON Dystocia

Load Patient

Select Patient:

- Alice
- Beth
- Cynthia
- Cynthia Mod1**
- Donna
- Elaine
- Francine
- Gloria
- Helen
- Irene

Patient Information

Cynthia Mod1 is a 31 year old female, weighing 170 pounds. Her companion's name is John.

Her OB history shows a para of 1, a gravida of 3, and that she is currently 40 weeks pregnant; she has had 1 spontaneous abortions, 0 elective abortions and 0 stillbirths.

She has been currently using no medications of any kind.

Her medical records shows she has: no previous hystory.

Her treatment history includes: NONE.

Mother Info:

- ☐ Bleeding
- ☐ Cephalic Disproportion
- ☐ Amniotic Fluid Embolism
- ☐ Uterine Rupture
- ☐ Cord Presentation
- ☐ Fever

Pain: 1

Shock:

Airway: Adequate

Breathing: Normal

Circulation: Adequate

AVPU: Alert

Other:

Neonate Info:

FHR Baseline: 140

FHR Pattern:

Other:

Clocks Warp Factor: 1 (360 min) Real Time: 00:04:43 Simulation Time: 00:00:00

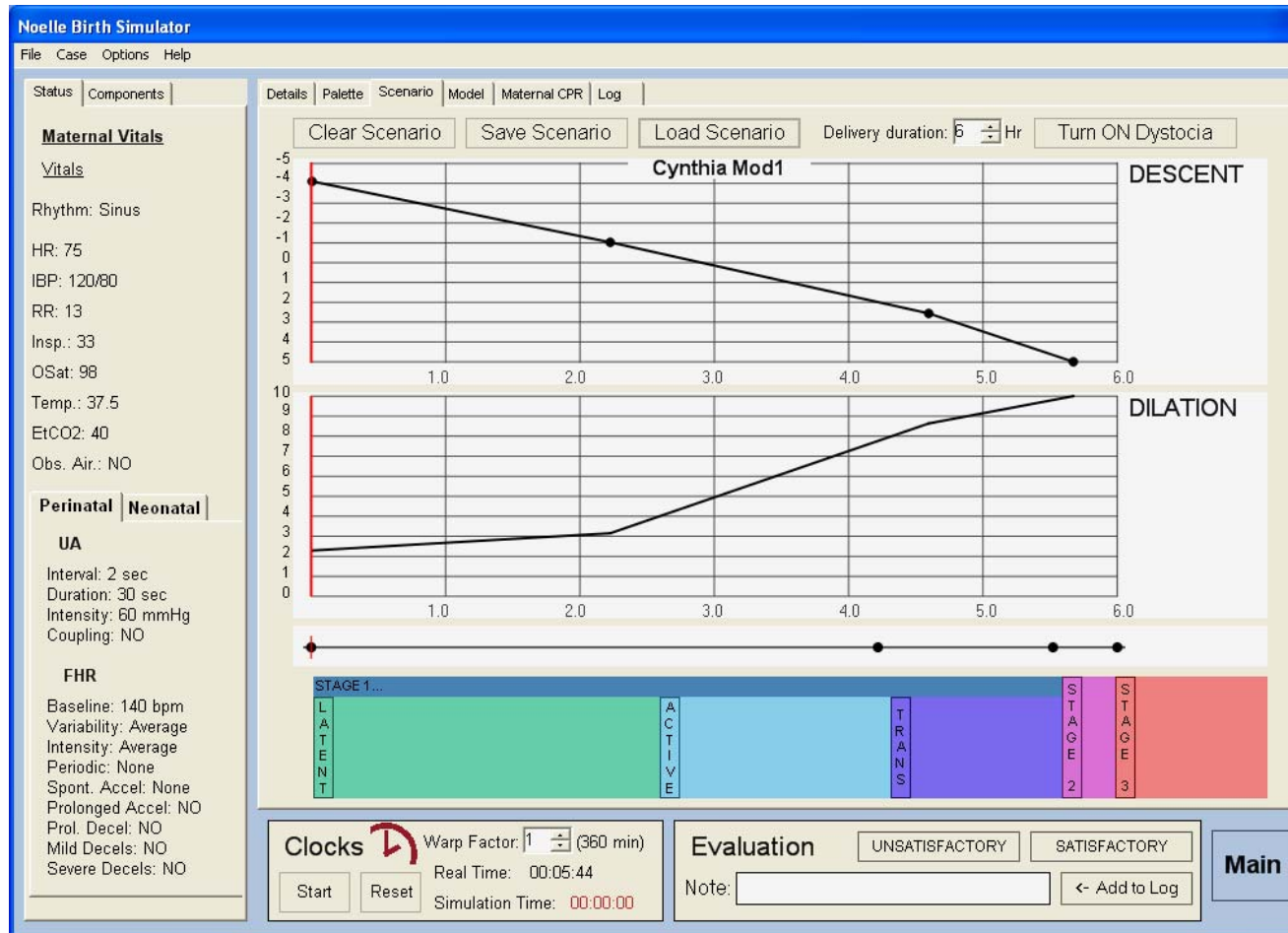
Start Reset

Evaluation UNSATISFACTORY SATISFACTORY

Note: Add to Log

Main

Fetal descent and cervical dilation proceed as shown. At the left note the maternal vital signs as well as the selected elements of the perinatal monitor.



At any time the Instructor may change elements of the maternal vital signs monitor, the perinatal monitor, or the neonatal vital signs monitor

Noelle Birth Simulator
File Case Options Help

Status Components

Maternal Vitals
Vitals
Rhythm: Sinus
HR: 75
IBP: 120/80
RR: 13
Insp.: 33
OSat: 98
Temp.: 37.5
EtCO2: 40
Obs. Air.: NO

Perinatal Neonatal
UA
Interval: 3 sec
Duration: 50 sec
Intensity: 40 mmHg
Coupling: NO
FHR
Baseline: 140 bpm
Variability: Average
Intensity: Average
Periodic: None
Spont. Accel: Reactive
Prolonged Accel: NO
Prol. Decel: NO
Mild Decels: NO
Severe Decels: NO

Details Palette Scenario Model Maternal CPR Log

Clear Palette Save to Palette Update All

Maternal Vital Signs Monitor

Sensors
ECG leads ☒ On ☐ Off
IBP line ☒ On ☐ Off
Resp monitor ☒ On ☐ Off
NIBP cuff ☒ On ☐ Off
Capnography sensor ☒ On ☐ Off
SpO2 probe ☒ On ☐ Off
Thermometer ☒ On ☐ Off
ALL OFF

Vitals
Rhythm: Sinus -> options:
HR: 75
BP: 120 / 80
RR: 13
Inspiration %: 33
OSat %: 98
EtCO2: 40
Temperature: 37
☐ Obstructed Airway

Trend (sec)
Update Maternal Vitals
30
60
90
120

Perinatal Monitor Neonatal Vital Signs Monitor

UA
Sensor ☒ On ☐ Off
Contraction Interval (min): 3
Contraction Duration (sec): 50
Contraction Intensity (mmHg): 40
☐ UA Coupling 60 % Probability 40 % Size

FHR
Sensor ☒ On ☐ Off
Baseline FHR (bpm): 140
FHR Variability: Average
Accel/Decel Intensity: Average
Spontaneous Accels: Reactive (4 i
Periodic Changes: None
☐ Prolonged Accels
☐ Prolonged Decels
☐ Mild Variable Decels
☐ Severe Variable Decels
U decel shape V

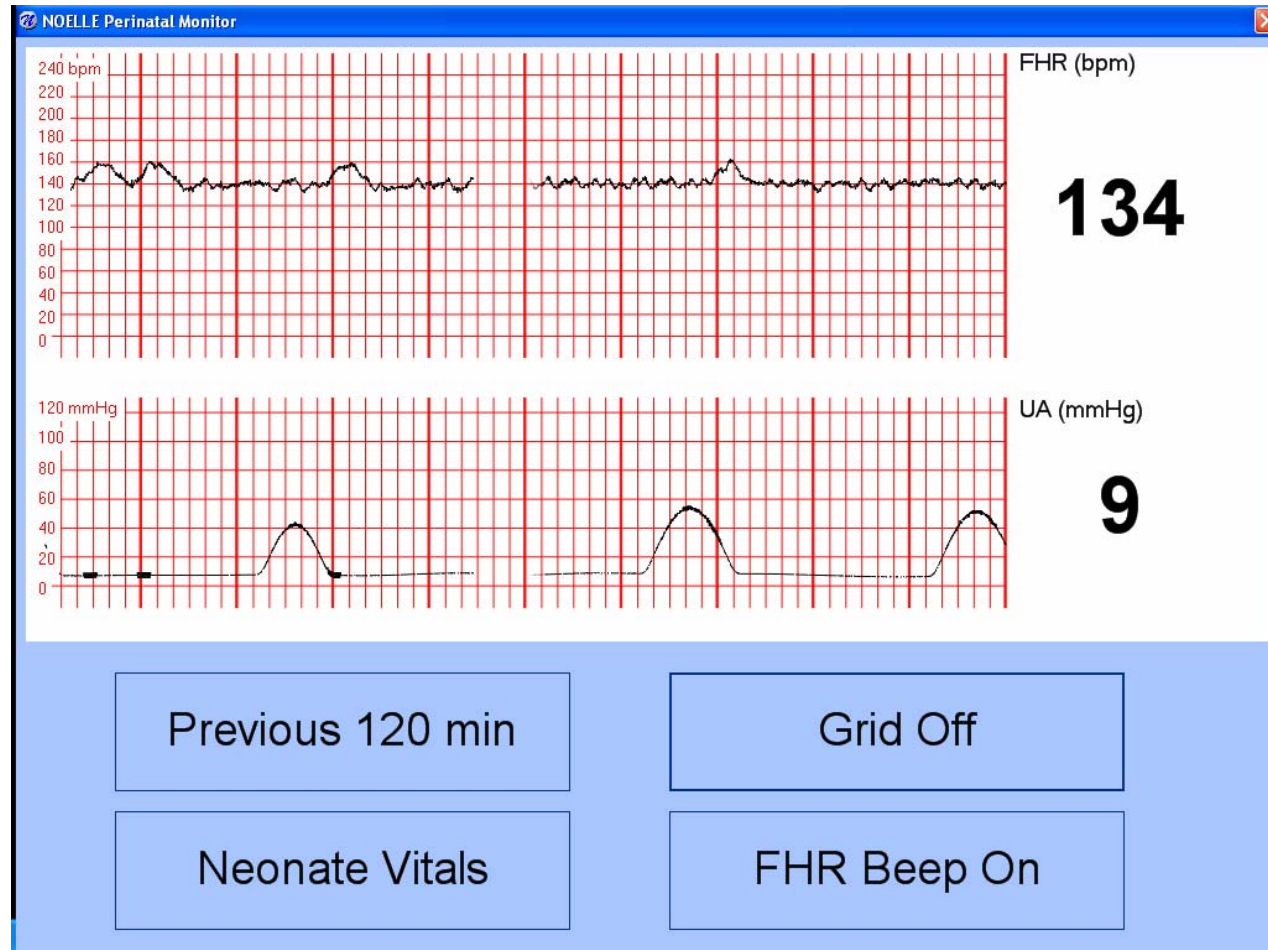
Trace Rate 31 X
Update Perinatal Monitor
Baby is Born

Clocks Warp Factor: 1 (360 min)
Start Reset Real Time: 00:02:12
Simulation Time: 00:00:00

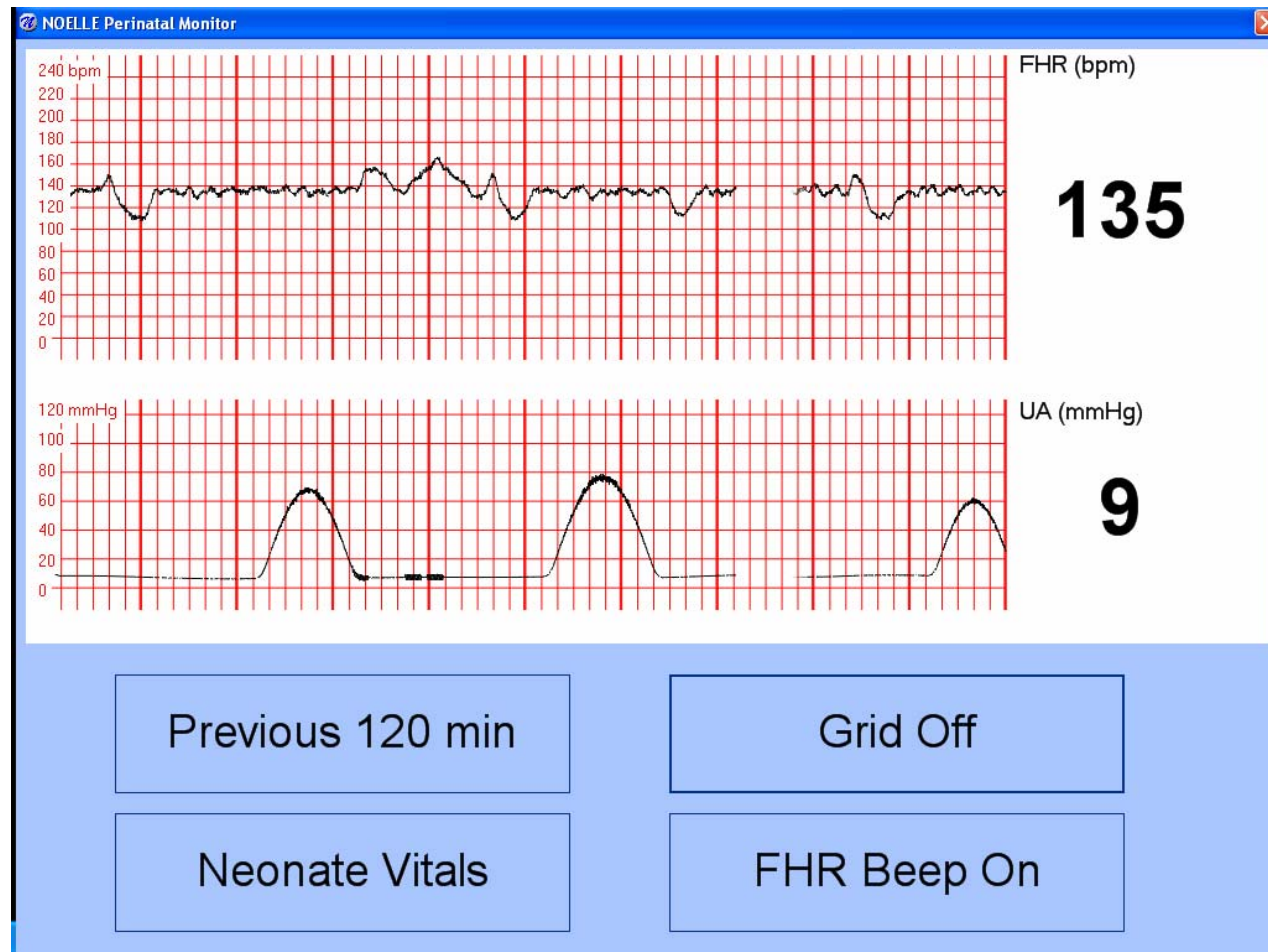
Evaluation UNSATISFACTORY SATISFACTORY
Note: Add to Log

Main

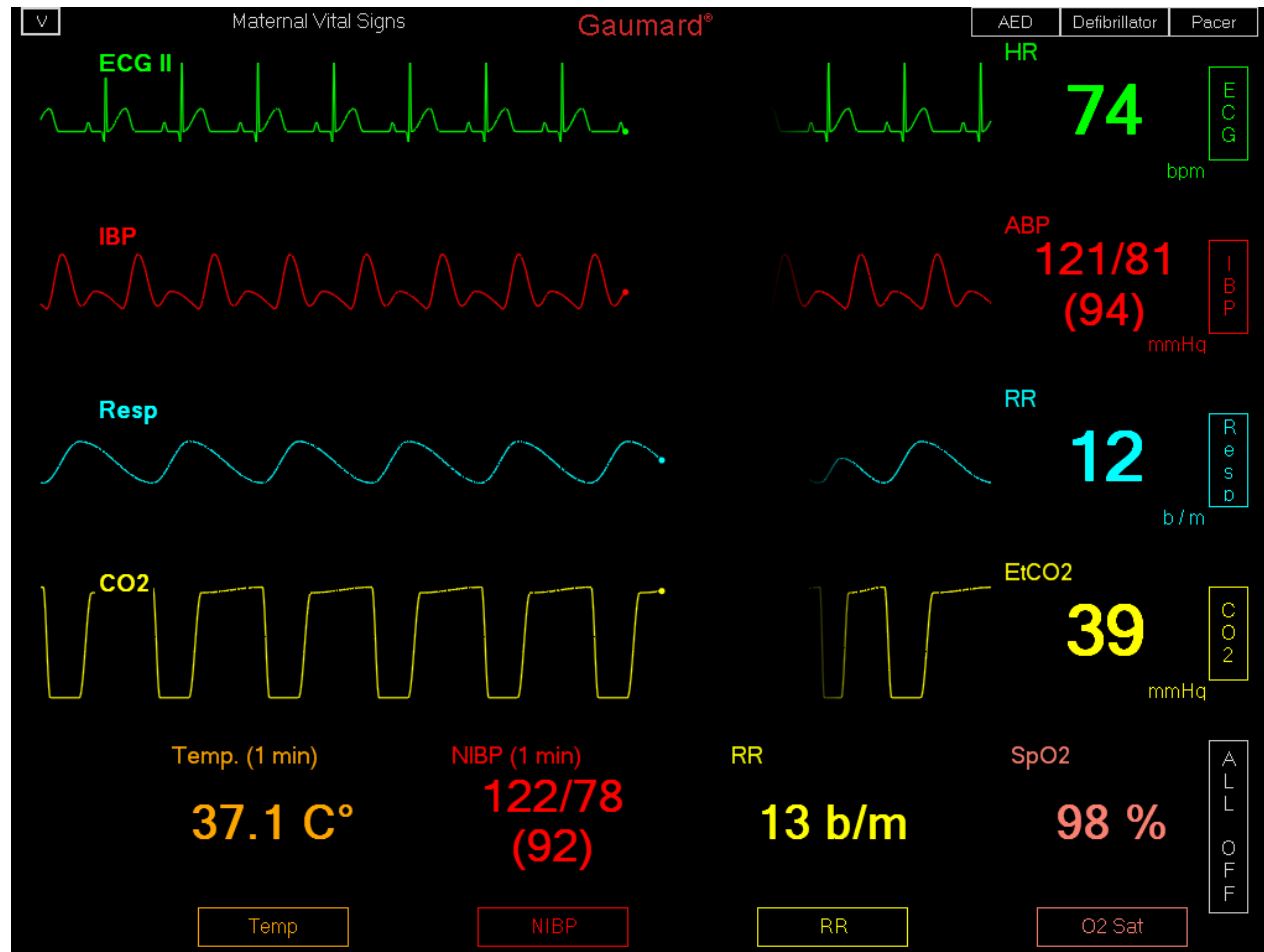
The Cynthia scenario displays the simulated dynamic perinatal monitor in either real time or accelerated time. View up to 120 minutes of history. Change elements of the waveforms as desired.



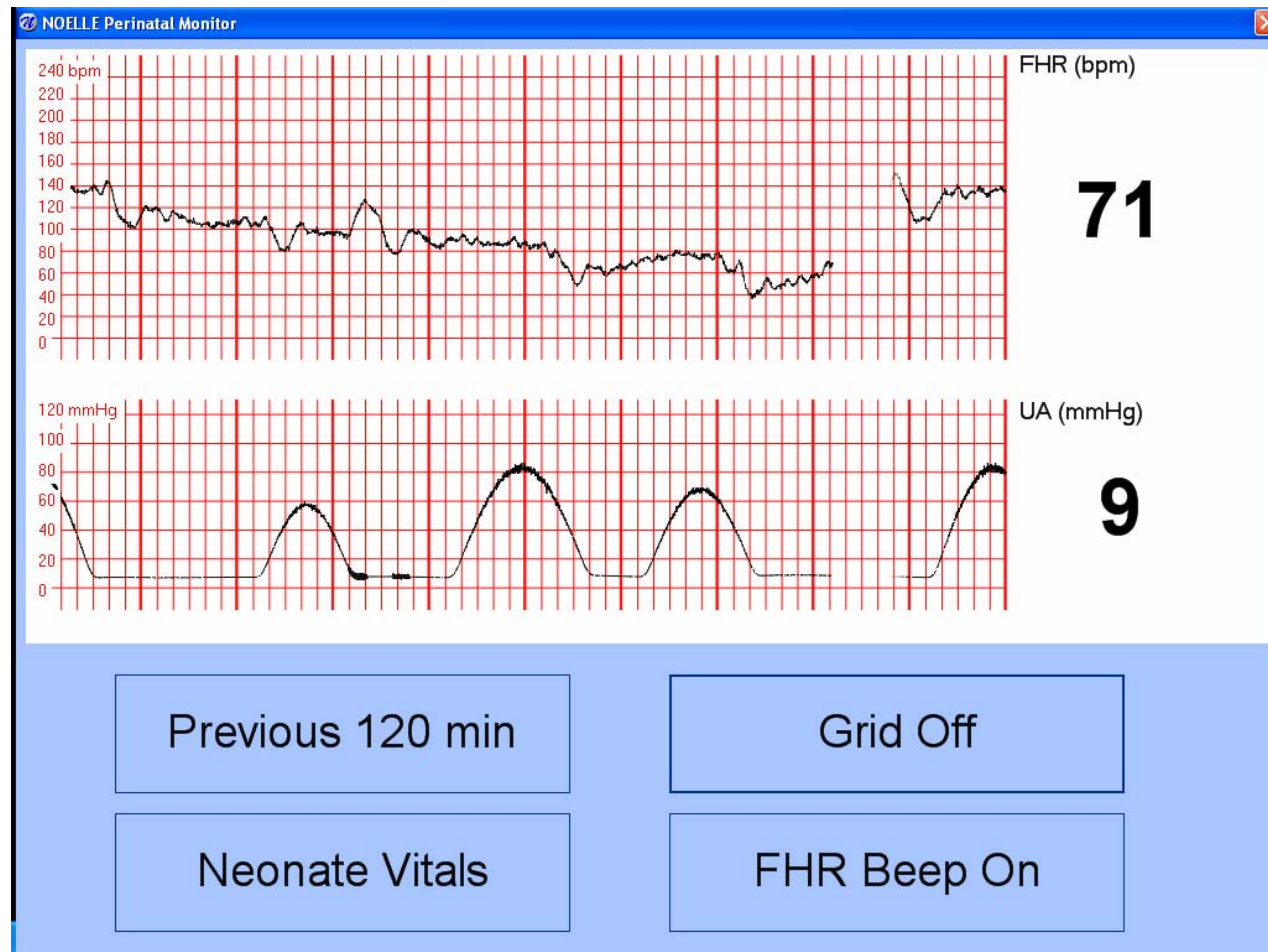
Continuation of the perinatal monitoring trace showing the onset of a concerning situation



Meanwhile, NOELLE's condition remains quite normal. Of course, the Instructor can change any element of this dynamic monitor immediately or trend toward some new dilemma condition over a selected time period.



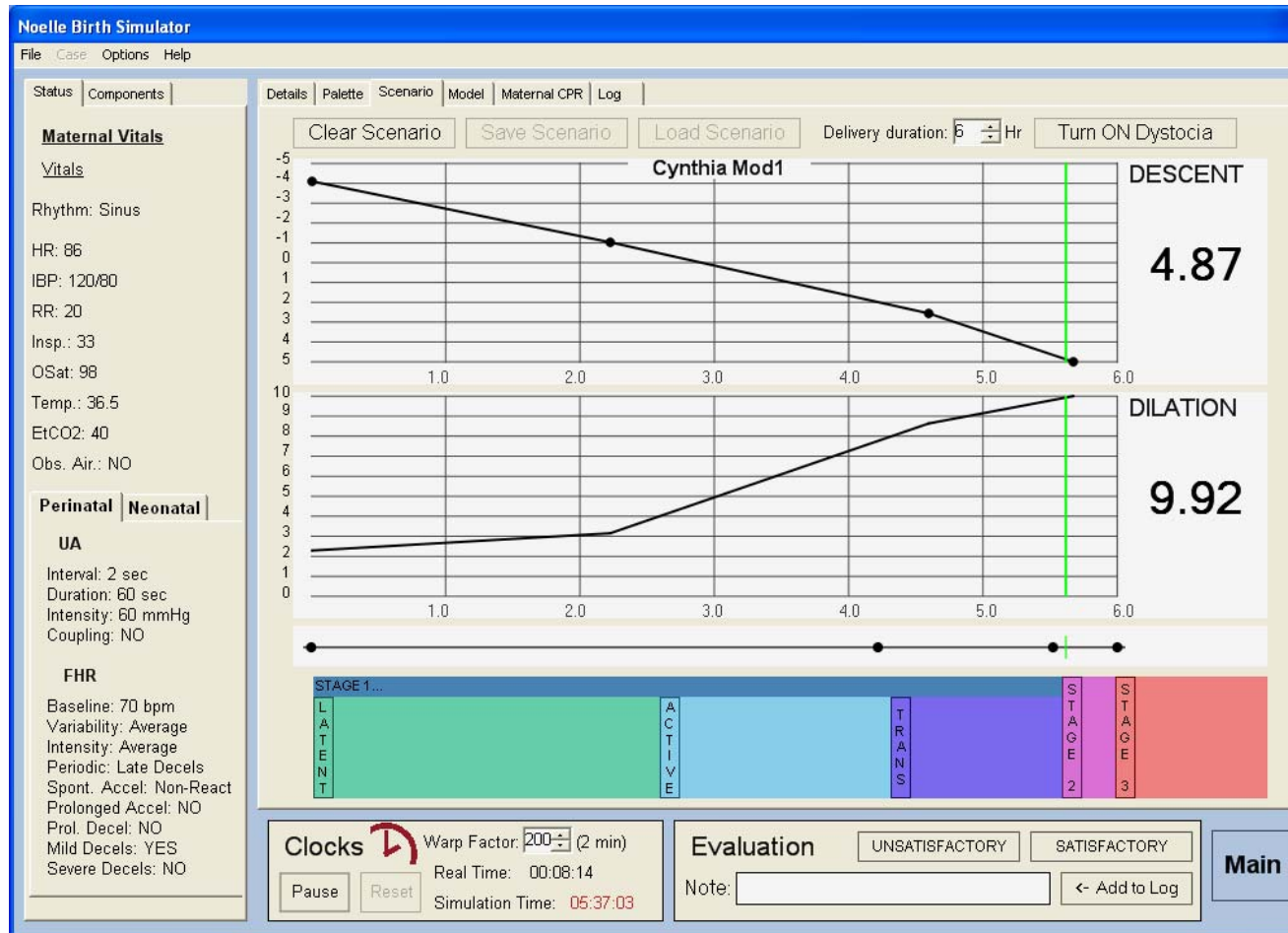
The concerning tracings presented earlier have worsened and a baseline shift from 140 to 70 is shown. Cynthia's baby needs help!



Shoulder dystocia may indicate practice of suprapubic pressure, McRobert's maneuver, and posterior arm sweep.
Cynthia's baby is delivered.



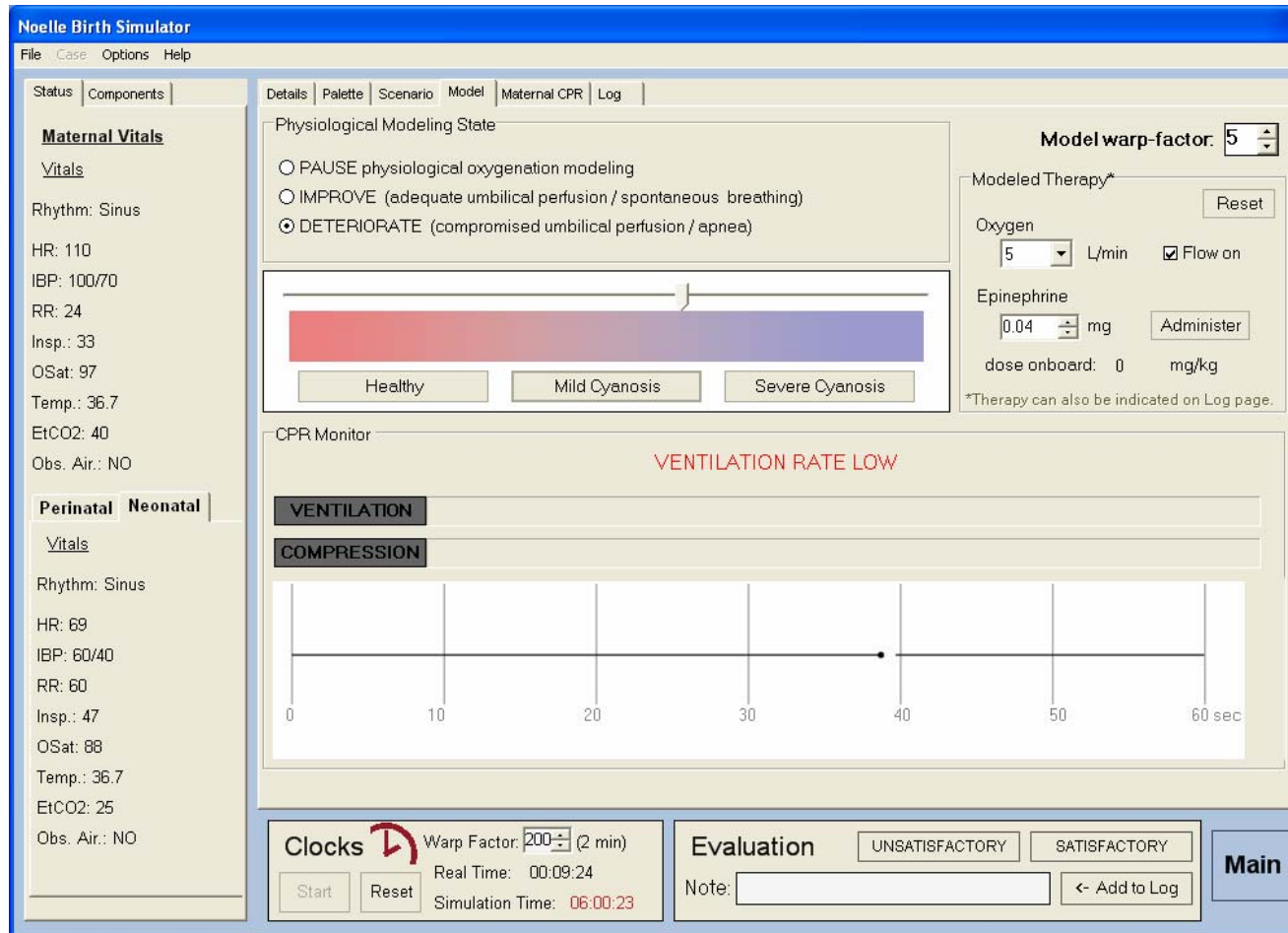
Vertical green line highlights delivery progress. Maternal and perinatal conditions are summarized at the left.



Delivery completed



Following delivery the neonate can present with normal, peripheral or central cyanosis. The neonate is responsive to PPV, CPR and EPI. Ventilations and chest compressions are monitored and recorded.



Instructor may also elect to model NOELLE's condition, that of her fetus and neonate using this convenient display.

Noelle Birth Simulator
File Case Options Help

Status Components

Maternal Vitals
Vitals
Rhythm: Sinus
HR: 110
IBP: 100/70
RR: 24
Insp.: 33
OSat: 97
Temp.: 36.7
EtCO2: 40
Obs. Air.: NO

Perinatal Neonatal
Vitals
Rhythm: Sinus
HR: 69
IBP: 60/40
RR: 0
Insp.: 0
OSat: 80
Temp.: 36.7
EtCO2: 25
Obs. Air.: NO

Details Palette Scenario Model Maternal CPR Log

Clear Palette Save to Palette Update All

Maternal Vital Signs Monitor

Sensors
ECG leads ☒ On ☐ Off
IBP line ☒ On ☐ Off
Resp monitor ☒ On ☐ Off
NIBP cuff ☒ On ☐ Off
Capnography sensor ☒ On ☐ Off
SpO2 probe ☒ On ☐ Off
Thermometer ☒ On ☐ Off
ALL OFF

Vitals
Rhythm: Sinus -> options:
HR: 75
BP: 120 / 80
RR: 13
Inspiration %: 33
OSat %: 98
EtCO2: 40
Temperature: 37
☐ Obstructed Airway

Trend (sec)
Update Maternal Vitals
30
60
90
120

Perinatal Monitor Neonatal Vital Signs Monitor

UA
Sensor ☐ On ☒ Off
Contraction Interval (min) 3
Contraction Duration (sec) 50
Contraction Intensity (mmHg) 40
☐ UA Coupling 60 % Probability 40 % Size

FHR
Sensor ☐ On ☒ Off
Baseline FHR (bpm) 140
FHR Variability Average
Accel/Decel Intensity Average
Spontaneous Accels Non-reactive
Periodic Changes None
None
Uniform accelerations
Early decelerations
Late decelerations

☐ Prolonged Accels
☐ Prolonged Decels
☐ Mild Variable Decels
☐ Severe Variable Decels
U decel shape V

Trace Rate 1 X
Update Perinatal Monitor
Baby is Born

Clocks Warp Factor: 200 (2 min)
Start Reset Real Time: 00:10:39 Simulation Time: 06:00:23

Evaluation UNSATISFACTORY SATISFACTORY
Note: Add to Log

Main

The logging feature allows the Instructor to track the actions of up to six care providers. Actions are time stamped as shown.

Noelle Birth Simulator

File Case Options Help

Status Components

Maternal Vitals

Vitals

Rhythm: Sinus

HR: 110

IBP: 100/70

RR: 24

Insp.: 33

OSat: 97

Temp.: 36.7

EtCO2: 40

Obs. Air.: NO

Perinatal Neonatal

Vitals

Rhythm: Sinus

HR: 46

IBP: 34/14

RR: 0

Insp.: 0

OSat: 80

Temp.: 36.7

EtCO2: 25

Obs. Air.: NO

Details Palette Scenario Model Maternal CPR Log

Session Title: Gaumard Demo Facilitator: Peter

Providers: Add TEAM John David

Log Options
☒ CPR ☒ Sensors

☒ Mother ☐ Neonate

Emergency Reported

Difficulty Breathing

Shock

Vaginal Bleeding

Unconscious

Convulsion

Fever

Abdominal Pain

Basic

Assess Responsiveness

Call for Assistance

Suprapubic Pressure

McRoberts Maneuver

Posterior Arm Sweep

Anterior Arm Sweep

Airway

Determine Patency

Open Airway

Intubate

Intubation Check

Ventilate

Extubate

Breathing

Assess Breathing

Pallor

Wheezing / Rales

O2 Device

O2 Flow

Chest Tube

Circulation

Cyanosis

Check Pulses

Obtain BP

Attach Electrodes

Interpret Rhythm

Establish IV

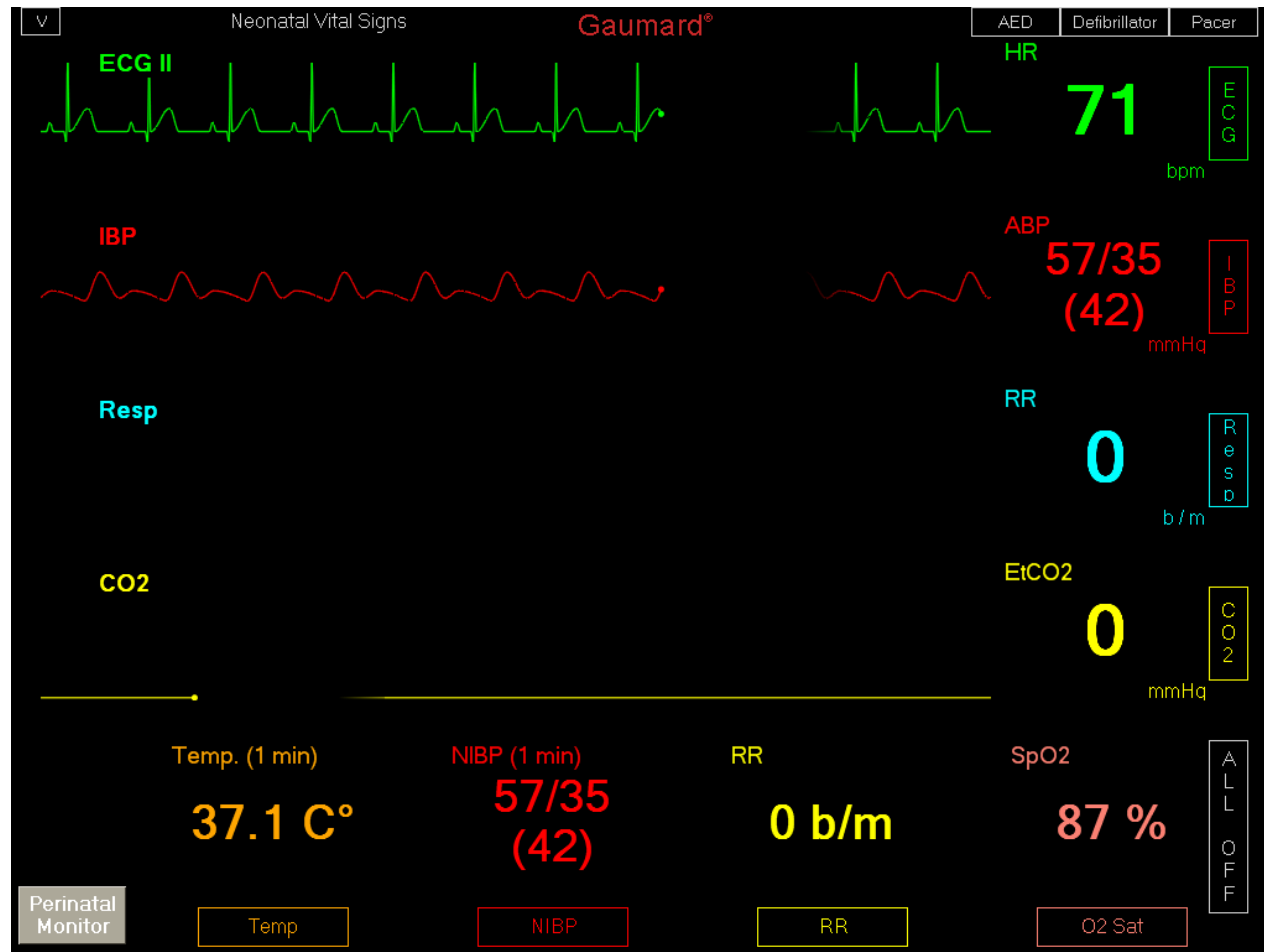
06:00:23 (00:12:01) [John] Action (Call for Assistance): Cynthia Mod1
06:00:23 (00:12:06) [David] Action (Suprapubic Pressure): Cynthia Mod1
06:00:23 (00:12:09) [David] Evaluation (Care Provided): SATISFACTORY
06:00:23 (00:12:13) [John] Action (McRoberts Maneuver): Cynthia Mod1
06:00:23 (00:12:23) [David] Action (Obtain BP): Cynthia Mod1
06:00:23 (00:12:36) [John] Action (Posterior Arm Sweep): Cynthia Mod1

Clocks Warp Factor: 200 (2 min)
Start Reset Real Time: 00:13:04 Simulation Time: 06:00:23

Evaluation UNSATISFACTORY SATISFACTORY
Note: Add to Log

Main

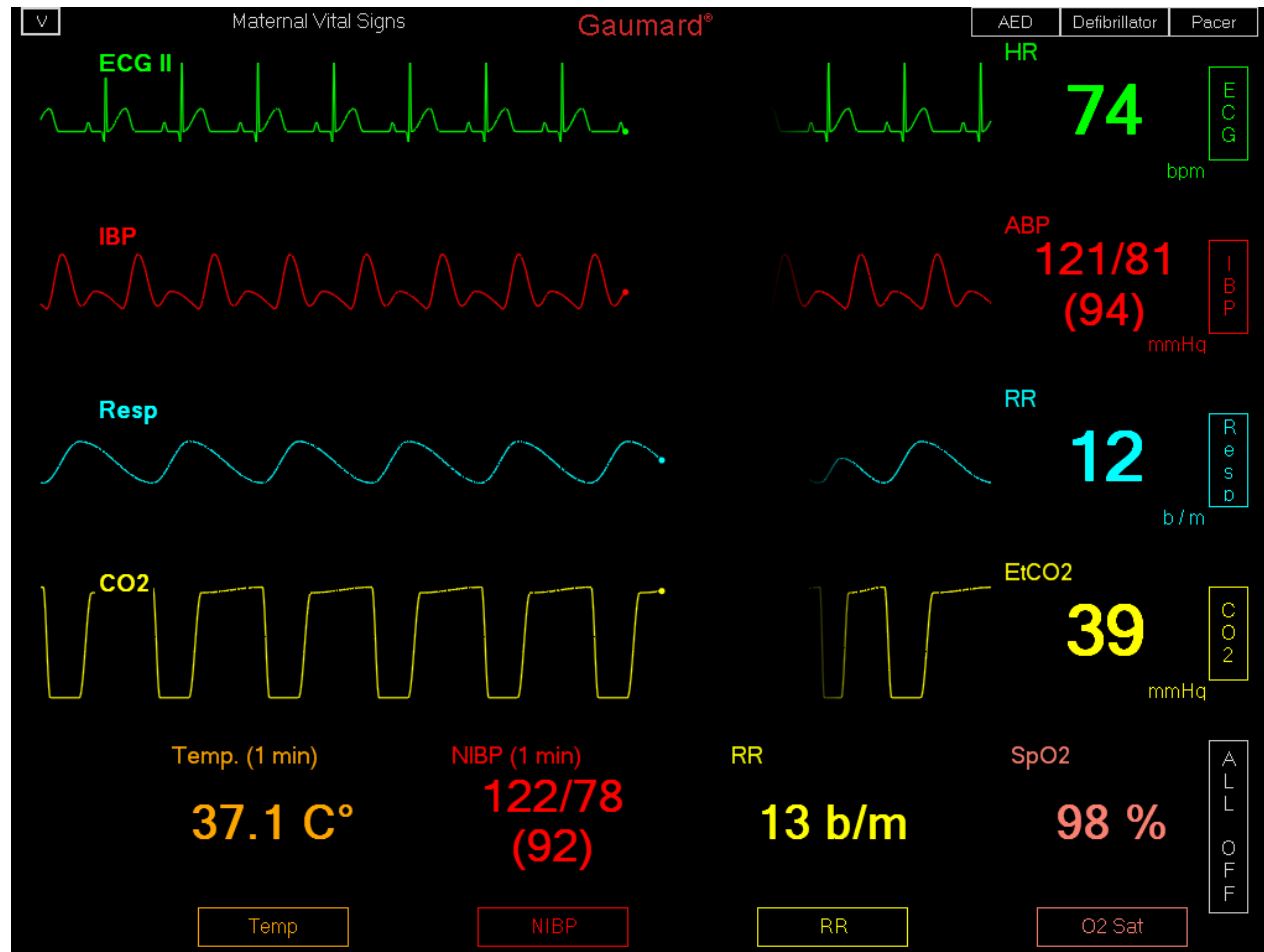
Cynthia's baby is in trouble!



PPV did not cause HR to increase and CPR is in progress. Color and vital signs respond consistent with the length of the hypoxic event which may have begun inutero.



While the resuscitation effort is proceeding, Cynthia remains well; however, the Instructor may, for example, increase her HR and decrease her BP over a time period to simulate PPH. Both the maternal and neonatal teams must work to save lives.



NOELLE supplied with numerous accessories including “C” section cover, episiotomy repair, and postpartum hemorrhage modules



Additional information

- Contact Gaumard Scientific
- USA 800.882.6655
- Worldwide 305.971.3790
- www.gaumard.com