Noelle

Maternal and Neonatal
Computer Interactive Simulation System
With Maternal/Neonatal/Fetal Monitors
## Noelle Preset Labors

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ALICE
Normal Labor and Delivery

_scenario presents labor and birth as a normal process with good outcomes for the mother and baby.

Admission

Alice is a 24-year-old female, weighing 170 pounds (weight gain N/A). Her significant other is Mike.

Her OB history shows a gravida of 2, a term of 1, a preterm of 0, and that she is currently 39 weeks pregnant; she has had 0 spontaneous abortions, 0 elective abortions and 1 living child. She has had prenatal care.

Currently, she is using no medications of any kind. Her medical records show she has no previous history. Her treatment history is N/A.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Align the blue dots on the connector and extension(s).
3. Thoroughly lubricate fetal head and shoulders, the inside of the cervix and the inside of the vulva.

4. Place fetus in ROA position with placenta high in the abdomen.

5. **Never leave the fetus in contact with the cervix between deliveries as damage to the cervix will result.**

6. Start your laptop, open the NOELLE software, and open the scenario labeled "Alice".

7. "Alice" scenario lasts for 30 minutes and has a Delivery Profile shown at center of the screen. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The vertical green line advises how far delivery has progressed. Delivery time, delivery profile, contractions, and FHR patterns can be modified prior to hitting the "Start" key.

8. The user may change any of these variables or create an entirely new scenario. NOELLE’s delivery will proceed from Stage 1 to 2 to 3 without interruption unless you decide to "Pause".
9. The user can check the current vitals for Noelle and the perinatal monitor by observing the status bar on the left side of the software. This status viewer can be changed using the tabs to check what components are connected.

10. While the instructor controls the labor from the laptop, the providers can check the maternal vitals and the perinatal monitor.
Labor

Alice’s labor progresses without difficulty. You may want to pause at any point and ask the students "what-if" questions.

Near crowning, the student may palpate the fontanelles, look for meconium, and prepare to suction the mouth then the nose.

The delivery mechanism automatically stops at the shoulders if one adapter is used or at the lower torso if two adapters are used.
This is the OB screen about 24 minutes after the Admission time. Contractions have become a little stronger, the FHTs still exhibit accelerations, and Alice’s vital signs remain WNL.

**Delivery**
The delivery mechanism rotates the fetus allowing for shoulder presentation. Slight traction can free both the upper and lower shoulders.

Alice is now in Stage 2 of labor with cervical dilation of 10 centimeters. The contractions are much stronger. The data continues to be reassuring. Stage 2 will end when the delivery mechanism reaches the end of its travel and Stage 3 will commence.

Students must manage delivery of the head and torso, as well as the placenta. Teaching points include proper handling as well as clamping and cutting the cord. Following delivery, the role of the birthing baby is concluded and we turn to caring for both Alice as well as Alice's full term newborn.
Postpartum

A number of these scenarios will specify a "boggy" uterus with significant bleeding. You may wish to install our postpartum kit to demonstrate massage techniques to reduce the size of a "boggy" uterus and firm it up thereby reducing/stopping bleeding.
In the NOELLE simulator, massage forces air from between the outer and inner uteri, shrinking the outer uterus, allowing the student to feel the smaller, harder uterus hidden inside.

**Note:** For supplemental readings, turn to pp 39-86 (61-86 1st edition) in the NOELLE Instructor and Student Guide.
ALICIA
Normal Labor and Delivery

Admission

- Alicia is a 24-year-old female, weighing 160 pounds (weight gain N/A). Her significant other is Hal.

- Her OB history shows a gravida of 2, a term of 1, a preterm of 0, and that she is currently 39 weeks pregnant. She has had 0 spontaneous abortions, 0 elective abortions and 1 living child. She has had prenatal care.

- Currently, she is using no medications of any kind. Her medical records show no previous history. Her treatment history includes nothing.

- Alicia has experienced no prenatal complications and has planned for a natural childbirth.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Align the blue dots on the connector and extension(s).
3. Thoroughly lubricate fetal head and shoulders, the inside of the cervix and the inside of the vulva.

4. Place fetus in ROA position with placenta high in the abdomen.

5. **Never leave the fetus in contact with the cervix between deliveries as damage to the cervix will result.**

6. Start your laptop, open the NOELLE software, and open the scenario labeled "Alicia".

![NOELLE Software Interface](image)

7. "Alicia" scenario lasts for 20 minutes and has a Delivery Profile shown at center of the screen. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The vertical green line advises how far delivery has progressed. Delivery time, delivery profile, contractions, and FHR patterns can be modified prior to hitting the "Start" key.

8. The user may change any of these variables or create an entirely new scenario. NOELLE’s delivery will proceed from Stage 1 to 2 to 3 without interruption unless you decide to "Pause".
9. The user can check the current vitals for Noelle and the perinatal monitor by observing the status bar on the left side of the software. This status viewer can be changed using the tabs to check what components are connected.

10. While the instructor controls the labor from the laptop, the providers can check the maternal vitals and the perinatal monitor.
Labor

- Alicia's labor progresses without difficulty. You may want to pause at any point and ask the students "what-if" questions.

- Near crowning, the student may palpate the fontanelles, look for meconium, and prepare to suction the mouth then the nose.

- The delivery mechanism automatically stops at the shoulders if one adapter is used or at the lower torso if two adapters are used.
This is the OB screen about 14 minutes after the Admission time. Contractions have become a little stronger, the FHTs still exhibit accelerations, and Alice’s vital signs remain WNL.

**Delivery**
The delivery mechanism rotates the fetus allowing for shoulder presentation. Slight traction can free both the upper and lower shoulders.

Alicia is now in Stage 2 of labor with cervical dilation of 10 centimeters. The contractions are much stronger. The data continues to be reassuring. Stage 2 will end when the delivery mechanism reaches the end of its travel and Stage 3 will commence.

Students must manage delivery of the head and torso, as well as the placenta. Teaching points include proper handling as well as clamping and cutting the cord. Following delivery, the role of the birthing baby is concluded and we turn to caring for both Alicia as well as Alicia’s full term newborn.
Postpartum

A number of these scenarios will specify a "boggy" uterus with significant bleeding. You may wish to install our postpartum kit to demonstrate massage techniques to reduce the size of a "boggy" uterus and firm it up thereby reducing/stopping bleeding.
In the NOELLE simulator, massage forces air from between the outer and inner uteri, shrinking the outer uterus, allowing the student to feel the smaller, harder uterus hidden inside.

**Note:** For supplemental readings, turn to pp 39-86 (61-86 1st edition) in the NOELLE Instructor and Student Guide.
AMY
Normal Labor and Delivery

Admission

Amy is a 19-year-old female, weighing 160 pounds (weight gain N/A). Her significant other is non-existent. She enters L&D accompanied by her mother.

Her OB history shows a gravida of 1, a term of 0, a preterm of 0, and that she is currently 40 weeks pregnant; she has had 0 spontaneous abortions, 0 elective abortions and no living children. She has had prenatal care.

Currently, she is using no medications of any kind. Her medical records show she has no previous history. Her treatment history is N/A.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Align the blue dots on the connector and extension(s).
3. Thoroughly lubricate fetal head and shoulders, the inside of the cervix and the inside of the vulva.

4. Place fetus in ROA position with placenta high in the abdomen.

5. **Never leave the fetus in contact with the cervix between deliveries as damage to the cervix will result.**

6. Start your laptop, open the NOELLE software, and open the scenario labeled "Amy".

7. “Amy” scenario lasts for 30 minutes and has a Delivery Profile shown at center of the screen. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The vertical green line advises how far delivery has progressed. Delivery time, delivery profile, contractions, and FHR patterns can be modified prior to hitting the “Start” key.

8. The user may change any of these variables or create an entirely new scenario. NOELLE’s delivery will proceed from Stage 1 to 2 to 3 without interruption unless you decide to “Pause”.
9. The user can check the current vitals for Noelle and the perinatal monitor by observing the status bar on the left side of the software. This status viewer can be changed using the tabs to check what components are connected.

10. While the instructor controls the labor from the laptop, the providers can check the maternal vitals and the perinatal monitor.
Amy's labor progresses without difficulty. You may want to pause at any point and ask the students "what-if" questions.

Near crowning, the student may palpate the fontanelles, look for meconium, and prepare to suction the mouth then the nose.

The delivery mechanism automatically stops at the shoulders if one adapter is used or at the lower torso if two adapters are used.
This is the OB screen about 24 minutes after the Admission time. Contraction have become a little stronger, the FHTs still exhibit accelerations, and Amy’s vital signs remain WNL.

**Delivery**
The delivery mechanism rotates the fetus allowing for shoulder presentation. Slight traction can free both the upper and lower shoulders.

Amy is now in Stage 2 of labor with cervical dilation of 10 centimeters. The contractions are much stronger. The data continues to be reassuring. Stage 2 will end when the delivery mechanism reaches the end of its travel and Stage 3 will commence.

Students must manage delivery of the head and torso, as well as the placenta. Teaching points include proper handling as well as clamping and cutting the cord. Following delivery, the role of the birthing baby is concluded and we turn to caring for both Amy as well as Amy's full term newborn.
Postpartum

A number of these scenarios will specify a "boggy" uterus with significant bleeding. You may wish to install our postpartum kit to demonstrate massage techniques to reduce the size of a "boggy" uterus and firm it up thereby reducing/stopping bleeding.
In the NOELLE simulator, massage forces air from between the outer and inner uteri, shrinking the outer uterus, allowing the student to feel the smaller, harder uterus hidden inside.

**Note:** For supplemental readings, turn to pp 39-86 (61-86 1st edition) in the NOELLE Instructor and Student Guide.
BETH

Variations on normal labor

The challenge for the learner will involve maintaining a calm and supportive environment with a difficult patient while managing the delivery of the baby.

Admission

Beth is a 16-year-old female, weighing 140 pounds (weight gain N/A). Her significant other is Tom.

Her OB history shows a gravida of 2, a term of 0, a preterm of 0, and that she is currently 37 weeks pregnant. She has had 0 spontaneous abortions, 1 elective abortion and no living children. She has had prenatal care.

Currently, she is using no medications of any kind. Her medical records show she has no previous history.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Align the blue dots on the connector and extension(s).
3. Thoroughly lubricate fetal head and shoulders, the inside of the cervix and the inside of the vulva.

4. Wrap the cord once at the neck and place fetus in ROA position.

5. You may wish to slightly inflate the bladder beneath fetal head lifting it anteriorly for palpation exercises.

6. **Never leave the fetus in contact with the cervix between deliveries as damage to the cervix will result.**

7. Start your laptop, open the NOELLE software, and open the scenario labeled "Beth".

8. "Beth" scenario lasts for 10 minutes and has a Delivery Profile shown at center of the screen. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The vertical green line advises how far delivery has progressed. The Labor Control defines contractions and FHT patterns for the four stages of delivery. Delivery time, delivery profile, contractions, and FHR patterns can be modified prior to hitting the "Start" key.

9. The user may change any of these variables or create an entirely new scenario. NOELLE's delivery will proceed from Stage 1 to 2 to 3 without interruption unless you decide to "Pause".
10. The user can check the current vitals for Noelle and the perinatal monitor by observing the status bar on the left side of the software. This status viewer can be changed using the tabs to check what components are connected.

11. While the instructor controls the labor from the laptop, the providers can check the maternal vitals and the perinatal monitor.
Labor

- Beth is screaming and out of control.
- Role-play is essential.
- Beth’s labor progresses quickly.
- A nuchal cord is evident and must be reduced.

- The student may also palpate the fontanelles, look for meconium, and prepare to suction the mouth then the nose.
The delivery mechanism automatically stops at the shoulders if one adapter is used or at the lower torso if two adapters are used.

These are the screens one hour after admission. Contractions are stronger, the FHT pattern should concern the students, and Beth's vital signs are related to her highly agitated condition.
Delivery

The delivery mechanism rotates the fetus allowing for shoulder presentation. Slight traction can free both the upper and lower shoulders.
Beth is now in Stage 2 of labor with cervical dilation of 10 centimeters. The contractions are much stronger now and the variable decelerations are concerning. Stage 2 will end when the delivery mechanism reaches the end of its travel and Stage 3 will commence.

Upon reaching Stage 3 only the maternal and neonatal vital signs are shown. The newborn female is limp, dusky, and does not cry spontaneously at delivery.
Newborn

- Go to the Model Tab to start simulating Cyanosis on the baby.
- Since Beth's baby is limp and dusky we have chosen to have the newborn's color reflect that condition and clicked "Severe Cyanosis".
- The Instructor can select "Improve" or "Deteriorate" on the Model tab, also by supplying oxygen and administering epinephrine the baby can improve faster. For this scenario we did not change any of “Modeled Therapy” parameters.
Once the instructor selects “Deteriorate” the software will prompt the instructor if the ventilation rate done by the providers is low, correct or too high. When the ventilations are correct the baby will respond by decreasing the cyanosis level and improving the vitals signs.
When the instructor feels the vitals on the baby have gone up to a healthy condition, then "Improve" can be selected and the baby will return to a healthy state automatically. Once it reaches a healthy state the model will stop automatically.
In this scenario, drying stimulates respiratory effort; however, she remains hypothermic and tachypneic.

This full-term newborn has a patent umbilical vein for pharmacologic intervention as well as a palpable pulse. Use a Miller 1 blade and 2.5-3.0 mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.
Postpartum

In this scenario immediate postpartum bleeding is heavy and the uterus is “boggy”. You may wish to install our postpartum kit after delivery to demonstrate massage techniques to reduce the size of a “boggy” uterus and firm it up thereby reducing/stopping bleeding.

You may also choose to reduce bleeding by starting an IV and administering Pitocin.
In the NOELLE simulator, massage forces air from between the outer and inner uteri, shrinking the outer uterus, allowing the student to feel the smaller, harder uterus hidden inside.

**Note:** For supplemental readings, discussion questions, tests and answers turn to pp 67-96 (87-107 1st edition) in the NOELLE Instructor and Student Guide.
CYNTHIA
Shoulder Dystocia

Scenario: The challenge for the learner is to be prepared immediately and appropriately to intervene during the intrapartum crises.

Admission

- Cynthia is a 31-year-old female, weighing 170 pounds (weight gain N/A). Her significant other is Marcus.

- Her OB history shows a gravida of 3, a term of 1, a preterm of 0, and that she is currently 41 weeks pregnant; she has had 1 spontaneous abortion, 0 elective abortions and 1 living child (2-year-old boy). She has had no prenatal care.

- Currently, she is using no medications of any kind. Her medical records show she has no previous history.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Use one or two connector extensions and align their blue dots.
3. Place faceskin provided over head since an FSE and vacuum cup will be used.

4. Lubricate fetal head and shoulders, the inside of the cervix, and the inside of the vulva.

5. Place fetus in the ROA position.

6. **Never leave fetus in contact with the cervix between deliveries as damage to the cervix may occur.**

7. Start your laptop, open the NOELLE software, and open the scenario labeled "Cynthia".

8. Cynthia's scenario is a 30 minute delivery with a Delivery Profile shown at center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The Labor Control defines contractions and FHT patterns for the four stages of delivery.

9. Cynthia's scenario is designed for shoulder dystocia, so prior from starting the scenario the instructor must turn on the dystocia mode located on the top right of the scenario tab.

10. You may change any element of this scenario prior to hitting the "start" key. After the mechanism is started you may "pause" at any time or you may change the conditions of either Cynthia or her baby. Save the changes as a new file name to avoid overwriting.
11. While the instructor controls the labor from the laptop, the providers can check the maternal vitals and the perinatal monitor.
Cynthia progresses normally and the fetal baseline remains about 140. Pain meds are administered when dilation is 7-8 cm. AROM reveals clear fluid and an FSE is placed in the fetal scalp.

**Note:** soft facial cover is provided for use with the FSE maneuver.

The Instructor may pause delivery at this point and ask students to deliver the head using a lubricated vacuum cup; applying traction only during contractions.
As a reminder, the Instructor must have placed the faceskin over the head in order for the vacuum cup to "grab". The same applies for the fetal scalp electrode.

The vertical line on the "Delivery Profile Control" has reached the point in Stage 2 where shoulder dystocia gets activated. The warp factor goes automatically to 1, and with each contraction on the perinatal monitor the baby will do a "turtle sign."
This is the OB main screen at the beginning of Stage 2.

With the exception of HR, Cynthia's vital signs are WNL.

Note however that the FHR shows its first significant deceleration with the most recent strong contraction shown by the vertical update line.

Within a few minutes the FHR now shows signs of variable decelerations which are potentially ominous and frequently associated with the kind of cord compression seen in shoulder dystocia.

The student team must now summon help and work quickly to save the life of Cynthia's baby.

To record this life threatening issue the instructor can use (1) a video camera or (2) click on the “Log Tab”, and then select from all of the actions the most indicated one, for example: suprapubic pressure, McRoberts, episotomy, posterior shoulder sweep.

At this time the providers can grab the baby and do a manual extraction or once the instructor sees that the proper maneuvers have been done the shoulder dystocia mode can be set to "Off" and the baby will be delivered once the progress bar reaches Stage 3.
Delivery

The newborn female is limp, with central cyanosis and no respiratory effort.

Newborn

In this scenario, BVM followed by intubation and chest compressions are suggested.

This full term newborn has a patent umbilical vein and palpable pulse. Use a Miller 1 blade and 2.5-3.0 mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.

- You may also discuss indications for a fractured clavicle and brachial nerve damage.
- At this point the students must act to save the life of Cynthia's baby!
Be aware this newborn can be intubated, med lines can be inserted, and even pacing and defibrillation can be performed using the Virtual Instruments supplied with the product.

Go to the Model Tab to start simulating Cyanosis on the baby.

Since Cynthia's baby is limp and dusky we have chosen to have the newborn's color reflect that condition and clicked "Severe Cyanosis".

The Instructor can select "Improve" or "Deteriorate" on the Model tab, also by supplying oxygen and administering epinephrine the baby can improve faster. For this scenario we did not change any of “Modeled Therapy” parameters.
• On this scenario the instructor should select "Deteriorate", and the software will prompt the instructor if the ventilation rate done by the providers is low, correct or to high. When the ventilations are correct the baby will respond by decreasing the cyanosis level and improving the vitals signs.

• When the instructor feels the vitals on the baby have gone up to a healthy condition, then "Improve" can be selected and the baby will return to a healthy state automatically. Once it reaches a healthy state the model will stop automatically.
Postpartum

In this scenario immediate postpartum bleeding is heavy and the uterus is "boggy". Install postpartum kit after delivery to simulate massaging a "boggy" uterus.

To reduce bleeding an IV is started and Pitocin is administered. We suggest instruction in psychosocial support for the mother and her "support system" during and following this shoulder dystocia emergency.
Massage forces air from the outer uterus, shrinking it, allowing the student to feel the smaller, harder uterus hidden inside.

**Note:** For supplemental readings, discussion questions, tests and answers turn to pp 97-124 (109-135 1st edition) in the NOELLE Instructor and Student Guide.
DONNA
Breech Birth

Scenario: The challenge for the learner is to manage a precipitous vaginal breech of a premie, then care for both Donna and her 32 week premie.

Admission

Donna is a 20-year-old female, weighing 180 pounds (weight gain N/A). Her significant other is David.

Her OB history shows a gravida of 4, a term of 2, a preterm of 0, and that she is currently 32 weeks pregnant; she has had 0 spontaneous abortions, 1 elective abortion and 2 living children (3-year-old girl, 2-year-old boy). She has had prenatal care.

Currently, she is using no medications of any kind. Her medical records show she has no previous history.

1. Remove cap from fetal head.

2. Lubricate fetal buttocks and legs as well as the inside of the cervix and vulva.
3. Fold fetal legs first then arms.

4. Place NOELLE in a birthing bed and connect the S 565 in accordance with the Instructions for Use.

5. Use either one or two connector extensions and align their blue dots with the connector.

6. Instructor may choose to remove cervix to ease the task of reducing fetal legs.

7. Insert fetus in the breech position with the nose down or up.
8. Position placenta high or low in the abdomen. Choose whether the placental fragments are delivered or retained.

9. Never leave the fetus in contact with the cervix between deliveries as damage to the cervix may result.

10. Start your laptop, open the NOELLE software, and open the scenario labeled "Donna".

11. The "Donna" scenario calls for a 20 minute delivery with a Delivery Profile shown center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor.

12. You may change this scenario prior to hitting the "Start" key. After the mechanism is started you may "Pause" any time or you may change conditions of either Donna or her baby. Save changes as a new file name to avoid overwriting.
This is the OB screen for Donna on admission.

Donna’s labor is at the Transition stage and her vitals are WNL.

The fetal baseline is 150 with average variability and mild variable decelerations are noted.

The physician is stat paged.
Teaching points include a discussion of risk factors with the breech presentation; the management of the prematurity including placenta previa; demonstrating caring and concerned behaviors when dealing with mother and family.

Donna’s delivery proceeds much more rapidly than anyone had expected and a “frank” position is evident.

Teaching points include the Pinard maneuver to convert the fetus from a frank to a footling delivery; fetal and maternal injuries; potential for dysfunctional labor and hemorrhage.
The Pinard "legflip" was used to free one leg and then the other.

Discuss why this delivery should be using gloved hands and why the torso should be wrapped in a towel as the abdomen delivers.

Discuss rotation to deliver the shoulders.

Donna is now in Stage 2.
Contractions are much more intense, vitals remain WNL.

Variable decelerations continue.

Remember that Donna's vital signs or that of her baby can be changed for the present Stage 2 or the future Stage 3.

The dimensions of the fetal head are such that an anterior rotation eases delivery.

Suctioning is accomplished as the face becomes visible over the perineum.

Discuss potential for and management of fetal head deflexion, head entrapment and other injuries associated with a vaginal breech delivery.

Was an episotomy required for this delivery? If so, then following delivery be sure to insert one of the episotomy repair modules so that students can practice repair. Smaller "000" sutures will extend the life of the repair modules.
Upon reaching Stage 3 only the maternal and neonatal vital signs are shown.

The newborn has some flexion and a weak and irregular cry.

What is the condition of the placenta? Is it complete or are fragments retained?

Donna is upset, crying and wondering why her baby is so small. Instruction in psychosocial support is suggested for both Donna and her "support system" gathered near the delivery room.

Students must now care for both Donna and her premie which requires that the students should have anticipated this issue and have decided how to divide themselves into two support groups to provide adequate care at the same time.
In this scenario, BVM using oxygen is likely to be sufficient to pink up Donna’s baby.

The fullterm newborn has a patent umbilical vein and palpable pulse. If you decide to intubate, use a Miller 1 blade and 2.5-3.0mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.

Intubate the baby using a Miller 0 blade and an uncuffed 2.5 mm ETT or just use a well padded BVM. Chest rise will occur at about 20 cm of water pressure.
The Donna scenario calls for the baby to exhibit severe cyanosis. Go to the Model Tab to start simulating Cyanosis on the baby. Students must take quick action to pink her up.

The Instructor may also choose to maintain profound bradycardia in which case students would then be required to intubate, perform CPR and perhaps administer epinephrine in order to resolve the situation.

The Instructor can select "Improve" or "Deteriorate" on the Model tab, also by supplying oxygen and administering epinephrine the baby can improve faster. For this scenario we recommend selecting "Flow on" and selecting an oxygen rate, also administering epinephrine to improve the baby's heart rate.
On this scenario the instructor should select "Deteriorate", and the software will prompt the instructor if the ventilation rate done by the providers is low, correct or too high. When the ventilations are correct the baby will respond by decreasing the cyanosis level and improving the vitals signs.
When the instructor feels the vitals on the baby have gone up to a healthy condition, then "Improve" can be selected and the baby will return to a healthy state automatically. Once it reaches a healthy state the model will stop automatically.
Postpartum

In this scenario immediate postpartum bleeding is WNL and the uterus is "firm". However, the Instructor may install postpartum kit after delivery to simulate massaging a "boggy" uterus.

Massage forces air from the outer uterus, shrinking it, allowing the student to feel the smaller, harder uterus hidden inside.

Note: For supplemental readings, discussion questions, tests and answers turn to pp 125-152 (137-163 1st edition) in the NOELLE Instructor and Student Guide.
ELAINE
Pre-eclampsia

Scenario: The challenge for the learner is to be acutely aware of the potential consequences of this deadly disease. Review Objectives on page 153 of the NOELLE Instructor and Student Guide, second edition (page 165 in the first edition Guide).

Admission

Elaine is a 23-year-old female, weighing 140 pounds (weight gain N/A). Her significant other is Albert.

Her OB history shows a gravida of 1, a term of 0, a preterm of 0, and that she is currently 37 weeks pregnant; she has had 0 spontaneous abortions, 0 elective abortions and 0 living children. She has had prenatal care.

Currently, she is using no medications of any kind. Her medical records show she has no previous history. However, she has a mild frontal headache, 3+ tibial edema and 4+ DTRs with 2 beats of clonus.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Use two connector extensions and align them by their blue dots.
3. Place faceskin provided over head since "premie" forceps or vacuum cup will be used.

4. Lubricate fetal head and shoulders, the inside of the cervix, and the inside of the vulva. Inflate bladder lifting fetal head and shoulders.

5. Place fetus in the ROA position.

6. **Never leave the fetus in contact with the cervix between deliveries as damage to the cervix may result.**

7. Start your laptop, open the NOELLE software, and open the scenario labeled "Elaine".

8. Elaine's scenario is a 40 minute delivery with a Delivery Profile shown at center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The Labor Control defines contractions and FHT patterns for the four stages of delivery.

9. Elaine's scenario is designed for preeclampsia.

10. You may change any element of this scenario prior to hitting the "start" key. After the mechanism is started you may "pause" at any time or you may change the conditions of either Elaine or her baby. Save the changes with a new file name.

11. You may change the shape of the delivery curve by specifying the number of points and then clicking and dragging each point to define exactly how you would like delivery to progress over time. Once delivery has started, the delivery profile should not be changed; however it CAN be stopped even during delivery by clicking "Pause", or "Reset" to allow the mechanism to automatically return to its original position.

12. The Instructor can judge whether the students have attached the electrodes which are supplied with NOELLE to Elaine.
**Labor**

This is the OB screen for Elaine on admission:

Elaine’s labor is at the Latent phase. The fetal baseline is 140 with decreased variability but no decelerations.
Given Elaine’s BP, students should decide to draw blood and send it to the lab. IVs will need to be started, medications ordered and internal monitoring established. An infusion pump using simulated Mag and Pitocin would be useful.

**Transition**

This is the OB screen during transition. Decreased variability continues and mild to moderate late decelerations are noted.

Instructor should relate Elaine’s blood pressure and lab results to meds administration.
Elaine is given oxygen by mask and remains comfortable with epidural anesthesia.

Elaine’s labor progresses. Light meconium is observed. The Instructor may pause delivery at this point and ask students to perform an episotomy and deliver the head using outlet forceps or a lubricated vacuum cup; applying traction only during contractions.

This is the OB screen during the second stage. FHTs continue to show decreased variability and mild to moderate late decelerations.

Discuss potential changes in the administration of medications.
Fetal descent continues with little active pushing. Students prepare to suction the mouth and then the nose.

Mag and Pitocin are continued per infusion pump. Are quantities ramped up?

**Delivery**

Why must the neonatal team be ready to receive this baby?

**Newborn**

This is the OB screen at the moment after delivery.
The baby is dusky, limp and does not breathe at delivery. Meconium staining is noted at the umbilicus and fingernails. What does this suggest?

In this scenario, inspection of the airway for meconium is the correct response. After removal, intubation is indicated. Use a Miller 1 blade and 2.5-3.0mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.

Since Elaine’s baby is not breathing, the model for cyanosis is started at either mild cyanosis or severe cyanosis depending on what the instructor wants.

Aggressive actions are needed. Delay will only prolong the time needed to resuscitate the neonate.
Oxygen is in use and a “good” ventilation shown. Red is too high; green is good and yellow too low. A history of ventilations supplied to the neonate over time is also shown.

In response to appropriate actions on the part of the students, the Instructor has chosen to increase improvement rate by increasing oxygen supplied.
The oxygen saturation and the balance of the neonate's vital signs have all improved, so the instructor can select "IMPROVE" on the model tab, in order to maintain the neonate in a healthy condition.

Congratulations!
Postpartum

In this scenario immediate postpartum bleeding is moderate and the uterus is "firm" at U/U and no uterine massage would be indicated.

Elaine is crying and very much concerned about her baby.

We suggest instruction in psychosocial support for the mother and her "support system" during and following this emergency.

Note: For supplemental readings, discussion questions, tests and answers, turn to pp 153-180 (165-195 1st edition) in the NOELLE Instructor and Student Guide.
FRANCINE
Caesarean Delivery

Scenario: The challenge for the learner is to manage this repeat C/S complicated by an active Herpes infection.

Admission
➕ Francine is a 19-year-old female, weighing 145 pounds (weight gain N/A). Her significant other is Scott.

➕ Her OB history shows a gravida of 2, a term of 1, a preterm of 0, and that she is currently 27 weeks pregnant; she has had 0 spontaneous abortions, 0 elective abortions and 1 living child (18-month-old boy). She has had prenatal care.

➕ Currently, she is using no medications of any kind. Her medical records show she has an STD (Herpes).

NOTE: Place NOELLE in a birthing bed and DO NOT connect the Motor to the CIM box, since the inflatable cushion will be placed inside the Noelle and the motor should always be in the initial position.

1. Remove the adaptors since the motor will not move the fetus during the C/S.

2. Use the C/S abdominal cover P/N 560.029 shown in the background.
3. Position placenta high or low in the abdomen. Placental fragments may be retained.

4. Place the inflatable cushion onto the birthing mechanism.

5. The squeeze bulb lifts the fetus anteriorly.

6. Lubricate fetus and the inside of the abdominal cover.

7. Fold fetal legs first then arms.
8. Insert fetus nose-down or nose-up.

9. Position the placenta high or low in the abdomen. Choose whether the placental fragments are delivered or retained.

10. Start your laptop, open the NOELLE software, and open the scenario labeled “Francine”.

11. Francine’s scenario is a 10 minute delivery with a Delivery Profile shown at center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor.

12. Francine’s scenario is designed for a cesarean delivery, so you will notice the delivery never reached Stage Two. Once the labor reaches the end of the scenario a message will prompt the instructor if you want to deliver the baby. Do not attempt to deliver the baby since the inflatable cushion is on the way and the MOTOR SHOULD BE DISCONNECTED from the CIM box.

13. You may change any element of this scenario prior to hitting the "start" key. After the mechanism is started you may "pause" at any time or you may change the conditions of either Francine or her baby. Save the changes with a new file name.

14. You may change the shape of the delivery curve by specifying the number of points and then clicking and dragging each point to define exactly how you would like delivery to progress over time. Once delivery has started, the delivery profile should not be changed; however it CAN be stopped even during delivery by clicking "Pause", or "Reset" to allow the mechanism to automatically return to its original position.
This is the OB screen for Francine on admission.

Francine's vitals are WNL.

The fetal baseline is 150 with average variability and there are no decelerations.

Francine is transported to OR accompanied by her mother.
Teaching points include a discussion of indications for C/S; pre-op routines; regional and general anesthesia procedures; procedure for sponge, instruments and sharps count.

We have performed a 12 cm. transverse incision about 5 cm. above the pubic bone and the fetus is located. The incision length relates to the size of the fetal head.

Teaching points include traversing the skin, the fatty tissue, and the uterus.
- Person at the left provides external fundal pressure.
- The person at the right carefully maneuvers the fetus through the incision.

- In this case the Instructor has selected the feet to present first. Teaching point include how to remove the legs quickly yet safely.
The legs and lower torso have been removed.
The upper torso and shoulders now must be addressed.
One shoulder is delivered.
The fetal head is removed; and the placenta is addressed.
Instructor normally reuses the C/S abdominal cover.

Teaching points include safe movement of Francine "post-op" as well as care for the C/S patient; psychosocial support; and the impact of C/S on the neonate.

"Post-op", maternal and neonatal vital signs are shown.

The newborn is well flexed and has a strong cry; but is tachypnea at 60 is noted.

What is the condition of the placenta? Is it complete or are fragments retained?
Newborn

- In this scenario, suctioning and "blow-by" oxygen are sufficient to pink up Francine's baby.

- NOELLE model S565 is supplied with a fullterm newborn having a patent umbilical vein and palpable pulse. If you decide to intubate, Use a Miller 1 blade and 2.5-3.0mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.

- The vital signs of the neonate stabilize rather quickly, so select the “Details tab” and change the neonate vitals to a healthy state and apply them.

Postpartum

In this scenario Francine returns to PACU somewhat groggy but holding her baby.

Initial vital signs are good.

A large clean dressing covers the incision.

The fundus is firm at U/U.

Vaginal bleeding is minimal.

Note: For supplemental readings, discussion questions, tests and answers turn to pp 369-371 and 379-383 (196-220 1st edition) in the NOELLE Instructor and Student Guide.
GLORIA
Cord Prolapse

Scenario: Prolapsed cord emergencies are life or death situations. This scenario presents a disastrous intrapartum complication that results in fetal death.

Admission
Gloria is a 34-year-old female, weighing 190 pounds (weight gain N/A). Her significant other is Peter.

Her OB history shows a gravida of 1, a term of 0, a preterm of 0, and that she is currently 25 weeks pregnant; she has had 0 spontaneous abortions, 0 elective abortions and 0 living children. She has had prenatal care.

Currently, she is using no medications of any kind. Her medical records show she has no previous history.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Use one or two extensions and align their blue dots with the connector’s dot.
3. Place the placenta between the fetal head and the cervix. Lubricate fetal head and shoulders, the inside of the cervix, and the inside of the vulva. Then thoroughly lubricate both sides of the placenta.

4. Place fetus in the ROA position.

5. Never leave the fetus in contact with the cervix between deliveries as damage to the cervix may result.

6. Start your laptop, open the NOELLE software, and open the scenario labeled “Gloria”.

7. Gloria's scenario is a 10 minute delivery with a Delivery Profile shown at center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor.

8. Gloria's scenario simulates a cord-prolapse.

9. You may change any element of this scenario prior to hitting the "start" key. After the mechanism is started you may "pause" at any time or you may change the conditions of either Gloria or her baby. Save the changes with a new file name.

10. You may change the shape of the delivery curve by specifying the number of points and then clicking and dragging each point to define exactly how you would like delivery to progress over time. Once delivery has started, the delivery profile should not be changed; however it CAN be stopped even during delivery by clicking "Pause", or "Reset" to allow the mechanism to automatically return to its original position.
11. The OB monitor appears for Gloria during Stage 2 a couple of minutes after admission. The fetal baseline is 60-80 with no variability and no decelerations.

12. Gloria is placed in a deep Trendelenberg position and the physician is stat-paged.

13. The Instructor is advised to discuss fetal malposition, unengaged presenting part, and small fetus as risk factors for cord prolapse.

14. The cord is covered with sterile towels and moistened with N/S.

15. Discuss maternal positional interventions to relieve cord compression and priorities related to the need for emergent C/S under general anesthesia.

16. Ultrasound reveals the fetus is partially into the vagina.
Delivery

- Gloria is moved to a delivery room and a NICU team is summoned.
- Foul smelling placenta delivered intact.
- Gloria delivers almost immediately.

This is the OB monitor during the third stage.

IM Pitocin is administered following delivery of the placenta.
**Newborn**

- Despite the visual evidence the neonate is in severe distress the student team has elected to place the BP and PulseOx cuffs as well as the ECG lead.

- This neonate also has sensors to select the proper placement of the Virtual Instruments located in the CIM box. As discussed earlier these can be enabled or disabled in the same manner as practiced on Gloria a little earlier.
This neonate can change color with resuscitation attempts. The instructor must increase the oxygen saturation using the "Details tab" to a number higher than 80 (OSat 80 = Central Cyanosis; OSat 98 = no cyanosis).

The neonate is pale and flaccid; RR is 6; HR is 20. He is pale and covered in blood.

PPV is started immediately.

Be sure to use a mask that fits well over the mouth and nose.

PPV fails to increase the neonate's HR. Intubation is indicated.
This neonate changes color with resuscitation attempts. Use a Miller 1 blade and 2.5-3.0mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.

Gloria's baby remains in serious trouble.

If the neonate's HR has not increase significantly after both BVM and intubation coupled with chest compressions, the next step is to utilize the patent umbilical vein.

The scenario calls for administration of emergency medications as well as fluid replacement.

This neonate has a patent umbilical vein and a palpable umbilical pulse. The pulse is manually operated to show either a very low rate of 30 to 50; a rate of 70-90; or a normal rate of about 140.
Lubricate the distal end of a standard umbi catheter before insertion.

A resistance will be felt after several centimeters of insertion.

Following BVM, intubation, CPR and administration of medication through the patent umbilicus, the neonate fails to improve.

Despite heroic efforts of the student team, Gloria’s baby fails to recover.

The student team must now learn how to comfort the living.
Postpartum

In this scenario immediate postpartum bleeding is minimal and the uterus is firmly contracted at U/U.

Gloria is moved to a private birthing room for recovery. She is distraught and crying.

We urge the Instructor to emphasize the importance of psychosocial support for Gloria and her "support system" during and following this tragedy. Our supplemental readings will help in this effort.

Note: For supplemental readings, discussion questions, tests and answers turn to pp 181-206 and 385-388 (221-247 1st edition) in the NOELLE Instructor and Student Guide.
HELEN
Hemorrhage

Scenario: The challenge for the learner is to be acutely aware of the potential for excessive blood loss before, during and after delivery. The students will also be challenged to care for both Helen and her baby following delivery.

Admission

✚ Helen is a 25-year-old female weighing 180 pounds (weight gain N/A). Her significant other is Thomas.

✚ Her OB history shows a gravida of 1, a term of 0, a preterm of 0, and that she is currently 35 weeks pregnant; she has had 0 spontaneous abortions, 0 elective abortions and 0 living children. She has had no prenatal care.

✚ Currently, she is using no medications of any kind. Her medical records show she has no previous history.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Use one or two connector extensions and align their blue dots with the connector’s dot.
3. Reverse one or both of the detachable fragments in the placenta. This will cause the fragments to be retained after delivery.

4. Lubricate fetal head and shoulders, the inside of the cervix, and the inside of the vulva. Inflated bladder lifting fetal head and shoulders.

5. Place fetus in the ROA position.

6. **Never leave the fetus in contact with the cervix between deliveries as cervical damage may result.**

7. Start your laptop, open the NOELLE software, and open the scenario labeled "Helen".

![NOELLE software interface](image)

8. Helen's scenario is a 30 minute delivery with a Delivery Profile shown at center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor. The Labor Control defines contractions and FHT patterns for the four stages of delivery.

9. Helen's scenario is designed for hemorrhage.

10. You may change any element of this scenario prior to hitting the "start" key. After the mechanism is started you may "pause" at any time or you may change the conditions of either Helen or her baby. Save the changes with a new file name.

11. You may change the shape of the delivery curve by specifying the number of points and then clicking and dragging each point to define exactly how you would like delivery to progress over time. Once delivery has started, the delivery profile should not be changed; however it CAN be stopped even during delivery by clicking "Pause", or "Reset" to allow the mechanism to automatically return to its original position.
Labor

This is the OB screen for Helen during the active phase at admission. The fetal baseline is 150 with average variability and no decelerations.

The Instructor is advised to have ultrasound imaging available for a low lying placenta and to discuss the implications.

Helen is bleeding on admission. In order to simulate this condition without getting fluid into the birthing mechanism we suggest using the postpartum hemorrhage kit supplied with NOELLE. Bleeding on the order of 500 cc can occur from the cervical os of this kit.

Transition

This is the monitor during transition. Fetal baseline remains 140-150 and the labor pattern increases in intensity.
Helen’s labor progresses. This scenario calls for a midline episotomy to be performed at this point. The Instructor may pause delivery and ask students to perform the episotomy. Delivery is spontaneous at this point.

Second Stage

This is the monitor during the second stage which are WNL.

Fetal descent continues with little active pushing. Students prepare to suction the mouth and then the nose.
Delivery

- Delivery is rapid following the episotomy.
- The placenta delivers but is not intact.
- Sedation is indicated prior to bimanual uterine exploration for the retained fragment(s).

Newborn

- This is the OB screen a moment after delivery. The Neonate's vital are shown at the right.
- Instructor can change Helen's vital signs anytime by accessing the "Details Tab" and selecting vital signs to reflect, for example, postpartum bleeding/shock.
The Neonate’s cyanosis can be controlled by changing the oxygen saturation (OSat 80 = Central Cyanosis; OSat 98 = no cyanosis).

Note from the Components tab that the BP/pulseOx and the ECG leads were attached to the conductive Velcro patches on the baby.

This scenario calls for the baby to be pale and flaccid. RR is 20 and HR is 58. He is covered in a "cheesy" vernix and blood.

PPV is started immediately.
Be sure to use a mask that fits well over the mouth and nose.

PPV fails to increase the neonate's HR. Intubation is indicated. This neonate has a patent umbilical vein and palpable pulse. The newborn also changes color with resuscitation attempts. Use a Miller 1 blade and 2.5-3.0mm ETT when intubating.

Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.
The Instructor has chosen to slightly improve the neonate's condition in response to the actions of the student team.

Helen's vitals have deteriorated; excessive bleeding has resulted in shock. In addition her baby remains in serious trouble.

If the neonate's HR has not increased significantly after both BVM and intubation coupled with chest compressions, the next step is to utilize the patent umbilical vein.

The scenario calls for administration of emergency medications as well as fluid replacement.

The neonate has a patent umbilical vein and palpable umbilical pulse. The pulse is manually operated to show either a very low rate of 30 to 50; a rate of 70-90; or a normal rate of about 140.

Lubricate the distal end of a standard umbilical catheter before insertion.
A resistance will be felt after several centimeters of insertion.

The Instructor has decided to reward the efforts of the student team and has brought the neonate’s vital signs to near normal.
Following resuscitation efforts and the administration of medication, the neonate’s HR has increased to 100 and the RR is 60. Things are improving!

The cumulative effect of the team’s efforts have saved the baby! How is Helen?
Postpartum

In this scenario, Helen's immediate postpartum bleeding is heavy and contains clots. To simulate postpartum bleeding proceed as follows:

PPH kit consists of the uterus and perineum at the left and the water or blood supply at the right. The squeeze bulb is used to increase the flow of blood. The blood can be routed to either the cervical os or the edge of the distended postpartum cervix that looks like a “duck-bill”.
Retract the birthing mechanism, insert the elevating pillow, then insert the PPH kit from the INSIDE.

- The squeeze bulb at the left inflates or deflates the large uterus.
- The squeeze bulb at the center inflates or deflates the elevating pillow.
- The squeeze bulb at the right increases pressure on the simulated blood in the bag causing the rate of bleeding to increase.

To simulate shock we have changed Helen's vital signs just after delivery to reflect a dramatic increase in HR and have dropped her BP. Your student team must quickly address this life threatening situation at the same time they are attending her baby!
The Details tab shows Helen is in real trouble.

The uterus is displaced at 1/U, is boggy, and is bleeding. The Instructor should place the uterus in the 1/U position, increase the pressure in the large uterus until it becomes "boggy", then increases the pressure of the blood to cause the desired amount of bleeding.
Other Important Considerations:

- The Instructor will determine how this scenario is concluded. We suggest that Helen and her baby recover.

- For advanced classes the Instructor may wish to have Helen's "shocky" condition deteriorate into a series of dysrhythmias which can be addressed using the Maternal Virtual Instruments supplied with this system.

- Again, for the advanced classes the Instructor may cause Helen's baby to deteriorate into a series of dysrhythmias which can be addressed using the Neonatal Virtual Instruments.

- We suggest instruction in psychosocial support for the mother and her "support system" during and following this emergency.

**Note:** For supplemental readings, discussion questions, tests and answers turn to pp 235-284 (248-278 1st edition) in the NOELLE Instructor and Student Guide.
IRENE

Preterm Labor

Scenario: Preterm labor is one of the most significant problems facing OB professionals. Should delivery be delayed or allowed to continue? The primip requires aggressive care.

Admission

 outra. Irene is a 19-year-old female, weighing 135 pounds (weight gain N/A). Her significant other is Peter.

 outra. Her OB history shows a gravida of 2, a term of 0, a preterm of 0, and that she is currently 29 weeks pregnant; she has had 1 spontaneous abortion, 0 elective abortions and 0 living children. She has had prenatal care.

 outra. Currently, she is using no medications of any kind. Her medical records show she has no previous history.

1. Place NOELLE in a birthing bed and connect the S565 in accordance with the Instructions for Use.

2. Use either one or two connector extensions and align their blue dots with the connector’s dot.
3. Select the ROA position for "nose down" delivery; LOP for "nose up" delivery.

4. Place the placenta high or low in the uterine cavity.

5. Lubricate fetal head and shoulders, the inside of the cervix, and the inside of the vulva. Inflate bladder lifting fetal head and shoulders.

6. **Never leave the fetus in contact with the cervix between deliveries as damage to the cervix may result.**

7. Start your laptop, open the NOELLE software, and open the scenario labeled "Irene".

8. Irene's scenario is a 45 minute delivery with a Delivery Profile shown at center screen. The vertical green line advises how far delivery has progressed. By using the warp factor located on the bottom next to the clocks, the delivery can be accelerated at any time during the labor.

9. Irene's scenario is designed for pre-term labor.

10. You may change any element of this scenario prior to hitting the "start" key. After the mechanism is started you may "pause" at any time or you may change the conditions of either Irene or her baby. Save the changes with a new file name.

11. You may change the shape of the delivery curve by specifying the number of points and then clicking and dragging each point to define exactly how you would like delivery to progress over time. Once delivery has started, the delivery profile should not be changed; however it CAN be stopped even during delivery by clicking "Pause", or "Reset" to allow the mechanism to automatically return to its original position.
Labor

- This is the OB screen for Irene during the latent stage at admission. The fetal baseline is 150 with uterine irritability and a regular contraction pattern.

- Perform internal exam and a ferning test; will a cerclage be placed?

- The Instructor is also advised to discuss the most common risk factors associated with the onset of preterm labor.

- Will progress toward a spontaneous premature delivery be allowed to continue ... or are medications appropriate? Which ones and why? Should the cerclage be removed?

- Discuss the various monitoring techniques for both NOELLE and her baby and why they are so important.

- This is the OB screen during the active stage.
Which medications have been administered and why?

This is the OB screen during the transition stage.

It has been determined that this delivery will be allowed to continue.

This is the OB screen during the 2nd stage.
Spontaneous delivery occurs and NICU personnel receive the baby.

Oxytocin is added to the mainline IV and the uterus firmly contracts.

This is the OB screen during the third stage following delivery.

Neonate is dried and stimulated to breathe. Her heart rate is 140; however respirations are only 28; discuss APGAR scores; note slight flexion and weak cry.
Newborn

Using the “Model tab” select "Mild Cyanosis", but do not set the model to deteriorate since you want the students to start doing PPV, but the vitals will not respond to ventilations yet.

**PPV is started immediately.**

**Be sure to use a mask that fits well over the mouth and nose.**
PPV fails to increase the neonate's HR. The NOELLE 565 is supplied with a full term newborn that changes color with resuscitation attempts.

To intubate, select a Miller 1 blade and 2.5-3.0mm ETT. Lubricate the distal end of the ETT prior to intubation. Chest rises at approx 25 cm water pressure.

Irene’s baby is intubated, a dose of surfactant is given and ventilations are initialized. Set the model to "DETERIORATE" so that it responds to the ventilations.

Once the baby responds well set the model to "IMPROVE" to bring the baby to a healthy condition.

Postpartum

In this scenario the patient suffers no cervical, vaginal or perinatal lacerations.

The uterus remains firmly contracted and the patient is stable but very concerned about her baby.

Students should be advised how to professionally address Irene’s concerns.

Note: For supplemental readings, discussion questions, tests and answers turn to pp 317-352 (279-311 1st edition) in the NOELLE Instructor and Student Guide.
APPENDIX

Modifying and Creating Labors and Scenarios

Modifying a labor or scenario involves moving, inserting or deleting palette item(s) from the timeline below the curve in the Labor tab, or arranging them in the list displayed on the Scenario tab. The following steps guide the user through creating two palette items to be inserted into the existing “Alice” scenario. Creating these palette items in a way that maintains the consistency of the scenario requires a brief background on the scenario to be modified. This information is accessible from the Scenario Quick Reference section of the Help menu.

 créer palette items:

1. Start the Noelle 565 software and navigate to the Details tab on the top left of the screen.

2. From the Details tab, on the UA/FHR page, change the vitals to match the expected settings for a particular point in the scenario. In this case, we have lowered the FHR to 120 and added Moderate Variability, while keeping the other values intact.
3. Save the palette item by clicking on the “Save to Palette” button on the top of the window:

4. Enter a name for the palette item; an optional description may also be entered. Click “Save” when ready.

5. In the next palette item we will be lowering the FHR to 90 bpm and changing the Variability to "Marked". We will also be changing the maternal heart rhythm to "Atrial Tachycardia" with a heart rate of 85 bpm. Because the "Lower FHR" item just completed is still loaded its name shows in the top left of the page. It is not necessary to clear the palette to change the vital signs, in this case we will save the changes as a new palette item.
6. Once the values are changed in the “Details” tab, save the item to the palette with a name and description.

7. The palette items are ready; they can be accessed in the “Palette tab”, or added to a labor or a scenario.
To modify an existing labor, click the “Load Labor” button at the top of the Labor tab.

1. In this case we will be modifying the “Alice” labor. Select Alice from the patient list and click Load. The labor will be loaded into the main window.

2. In order to modify the descent curve, the user may click and drag the existing points, or add new points by right-clicking the curve and clicking on “Add Point”. These points provide straight segments of varying slopes to reflect changes in the speed of descent and dilation.
3. To add the palette items created previously into the labor, right-click on the timeline under the dilation curve at the specific point where you would like to add the palette item.
4. Select the appropriate palette item from the list, set a transition time and click “Add”.

5. The step above may be repeated to add all the necessary palette items.

6. Palette items may be dragged along the line in the labor to change the time at which they occur. Palette items may be rearranged in a scenario by highlighting and using the up/down “Move” arrows in the right sidebar.

7. Double-clicking on a palette item brings up a window displaying the vital signs within the item:

8. Once all the palette items have been inserted on the timeline, verify them by double-clicking on each one.

9. A palette item may be removed from the labor timeline by right-clicking on it and selecting “Remove Palette Item”. Existing palette items may not be modified at the timeline. Right-click as above to remove and replace unwanted palette items. Palette items may be modified from the Details page.

Palette items may be removed from a scenario by loading the scenario, clicking on the palette item and clicking the “Remove” button.
10. To save the labor, click on the “Save Labor” button at the top of the window. This displays a “Save Labor Scenario...” dialog box where the patient name can be entered, along with other optional information relevant to the labor.

Enhance your modified labor scenario by completing the details in these tabs:
11. There is also the option of including a post-partum scenario:

Access the scenario tab to create a scenario following the instructions below, and select it from the “Post Partum Scenario” drop-down list when saving a labor.
12. As a precaution, the Noelle S565 software does not permit overwriting the factory-loaded labors; a new name must be selected if the labor modified was one of the nine pre-packaged labors.

![A scenario name called ALICE already exists. Do you want to replace it?](image)

13. Once the labor is saved, it is ready to run.

**Note:** To run a postpartum scenario, modify the neonatal vital signs in the Details tab and add the palette item at the end of the delivery timeline.
To create a new Noelle labor or scenario

To create a new labor, follow the steps above to create palette items, insert existing palette items into an existing labor and/or edit the labor curve of an existing labor.

Clicking on “Add to scenario…” will start a new scenario.

1. Right-click the Descent curve and select “Add Point” to add points to the labor curve. The points may also be dragged to modify the shape of the descent curve.

2. To add palette items to a labor, right-click on the timeline under the curve and select “Add Palette Item”. To add palette items to a scenario, click on “Add to scenario…” again and select from the list.

3. Repeat this step for any additional palette items in either a labor or a scenario.

4. To save:
   - …the labor, click on the “Save Labor” button at the top of the window. This displays a “Save Labor Scenario…” dialog box where the patient name can be entered, along with other information.
   - …the scenario, click on “Save Scenario” at the top of the window. The “Save Scenario” dialog box will request a name for the scenario and an optional description.

Once the labor or scenario is saved, it is ready to run.

Note: To run a postpartum scenario, select the scenario name in the drop-down list for “Post Partum Scenario” in the “Save Labor Scenario…” dialog box.
Copying scenarios between computers

Noelle 565 Directory Structure
Advanced users may find it helpful to understand the Noelle 565 directory structure. With direct file manipulation, one can easily move palette items and scenarios between computers.

Palette Items
To copy Palette items from one computer to another open the palette folder in Windows Explorer and copy the desired palette files on a jump drive or any storing media, then copy those palette files to the same palette folder on the other computer where the Noelle 565 is installed.

Scenarios
To copy labors and scenarios from one computer to another, go into the profiles folder, select the profile under which the labor or scenario was created, and copy the desired folders (e.g. Alice, Cynthia, etc.) onto a USB jump drive or any portable media.

Next, copy those folders to the same profiles folder on the other computer where the Noelle 565 is installed. Each individual folder will include the palette items for this specific labor or scenario and all the information for the labor. Labors and scenarios all form folders containing their palette items.

NEVER manipulate files or folders while the Noelle software is running, or modify or delete '*.dll,' '*.scn,' or '*.sys' files.