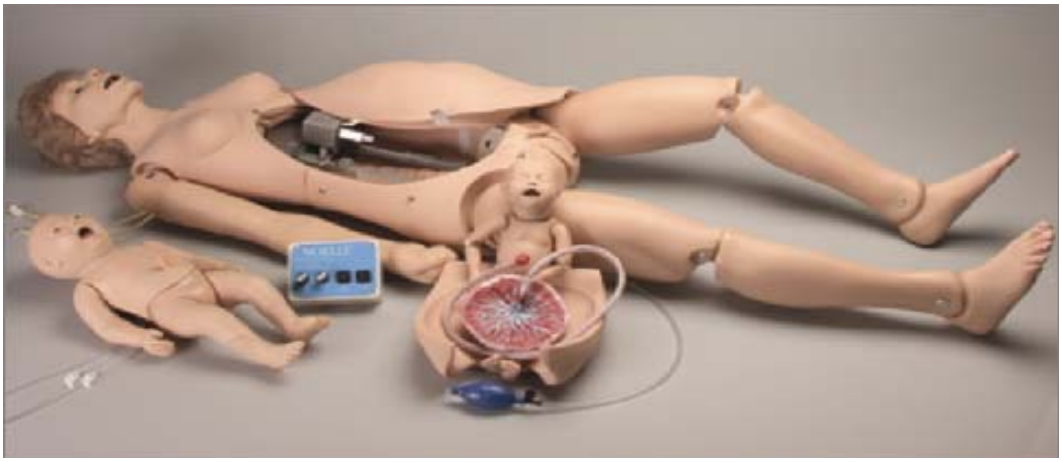
S550 NOELLE

Maternal and Neonatal Simulation System



Teaching Tips

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Contents

Welcome to NOELLE S550 Teaching Tips

Teaching Tips will take you through the nine scenarios discussed in the NOELLE Instructor and Student Guide. These nine scenarios give students training in labor and delivery care and neonatal care. Students will develop an understanding of nursing procedures, responsibilities, and priorities.

Before you begin

The scenarios are designed to assist in:

- Classroom discussions
- Tabletop exercises
- Role-playing in clinical simulations

Each scenario is different:

Alice
Manage a labor and birth as a normal process with good outcomes for the mother and her baby.

Beth
Manage the delivery of the neonate while maintaining a calm and supportive environment with a difficult patient.

Cynthia
Manage a shoulder dystocia delivery which causes the neonate to have a fractured clavicle.

Donna
Manage a precipitous vaginal breech of a premie and then care for both Donna and her 32 week premie.

Elaine
Manage a pregnancy induced hypertension (PIH) labor and delivery and a neonate that requires aggressive neonatal resuscitation.

Francine
Manage a repeat Cesarean Delivery complicated by an active Herpes infection and a neonate that stabilizes after blow-by oxygen.

Gloria
Manage a preterm labor and delivery with cord prolapse which results in fetal death.

Helen
Manage a patient with excessive blood loss before, during, and after delivery and a neonate with extensive resuscitation.

Irene
Manage preterm labor and delivery and a premie that requires aggressive resuscitation.

Alice

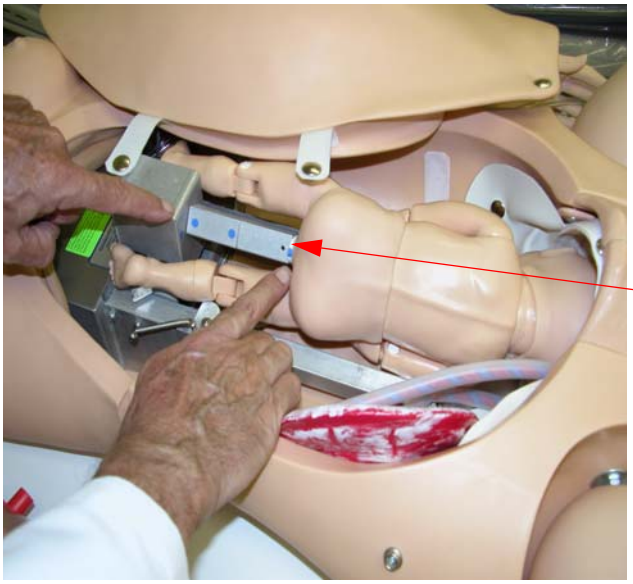
The Alice scenario presents labor and birth as a normal process with good outcomes for the mother and her baby. Alice is a 24 year old gravida 2/1 at 39 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 61-62 in the NOELLE Instructor and Student Guide.

Admission

To get started:

1. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, and the inside of the vulva.

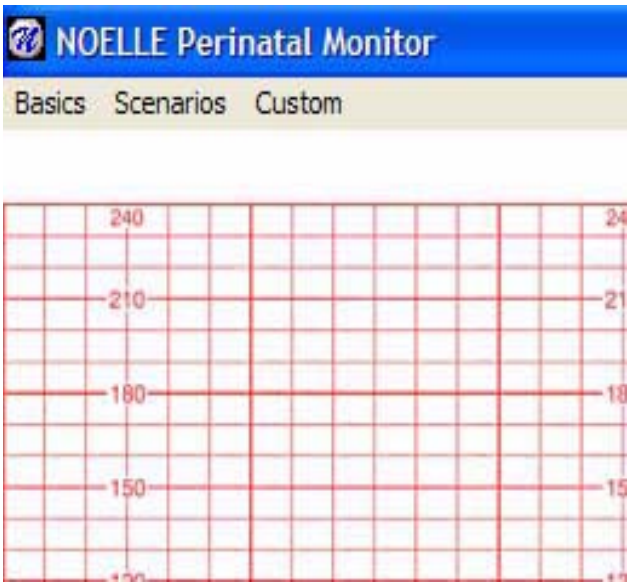


2. Place the fetus in the ROA position with the placenta high in the abdomen, and then line up the blue dots.

3. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed which delivers the fetus in 2-3 minutes.

4. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.

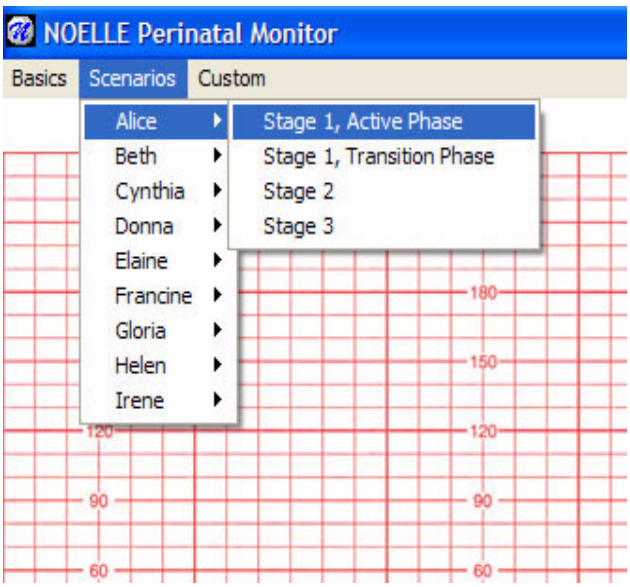


The NOELLE Perinatal Monitor program includes FHTs, vital signs for Alice, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

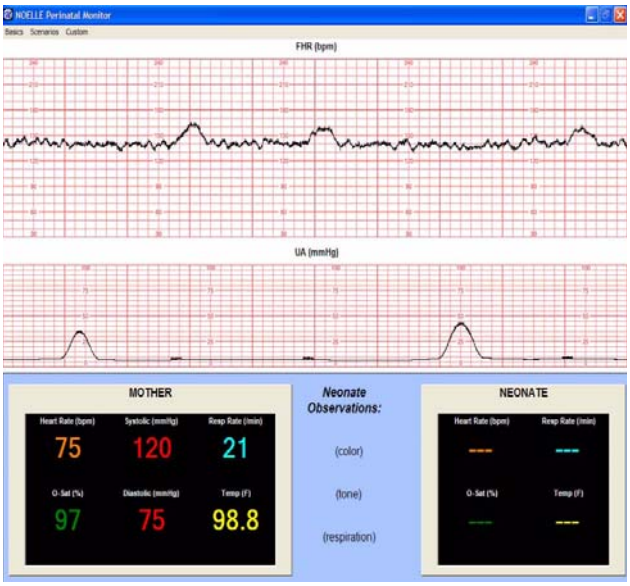
Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

1. Once the program is installed, double-click the  icon on your desktop.



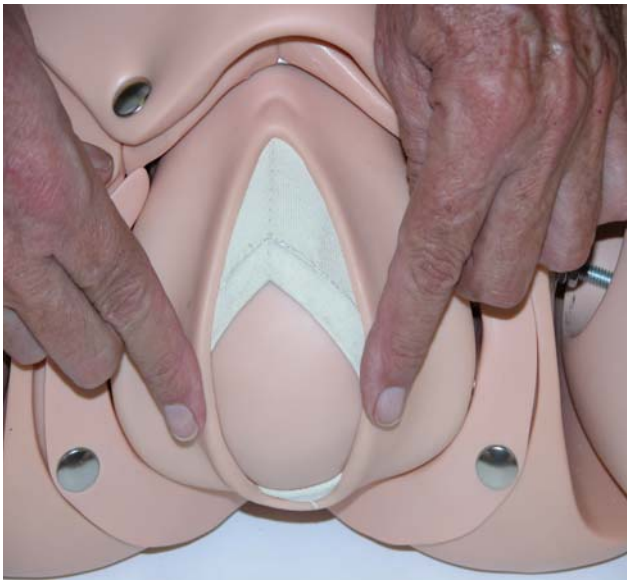
2. From the Scenarios menu, select Alice, and then select Stage 1, Active Phase.



This is Alice's condition on admission. FHTs show the fetal heart rate at 140-145 with accelerations, average FHRV, and no decelerations. Alice's vital signs are WNL.

Labor

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



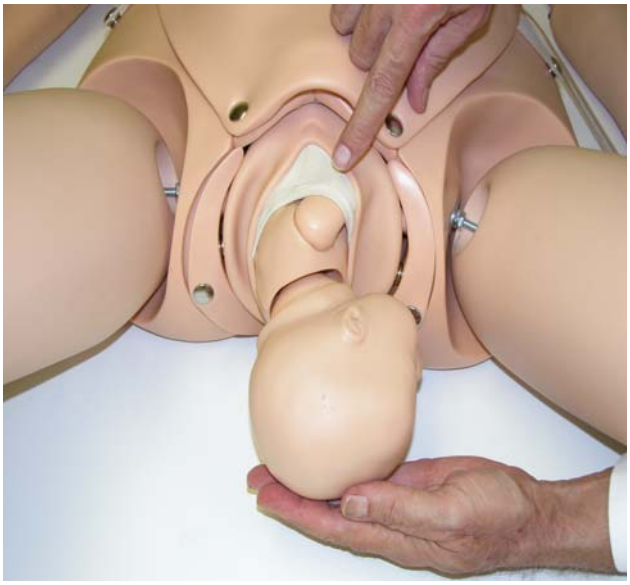
Near crowning, the student may palpate the fontanelles, look for meconium, and prepare to suction the mouth and then the nose.

Note: The delivery mechanism automatically stops near the shoulders if one adapter is used or near the lower torso if two adapters are used.

Alice's labor continues to progress without difficulty. As shown on the Perinatal Monitor, contractions are occurring more rapidly, the FHTs still exhibit accelerations, and Alice's vitals remain WNL.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Alice, and then select Stage 1, Transition Phase.

Delivery



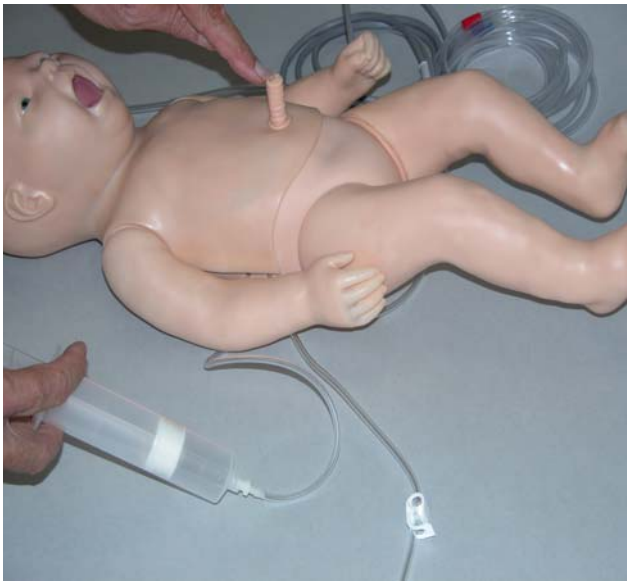
The delivery mechanism rotates the fetus allowing for shoulder presentation. Slight traction can free both the upper and lower shoulders.

The FHTs show early decelerations, contractions have increased, and vitals remain WNL. As Alice's labor progresses, the Instructor may click on successive images for students to interpret.

To follow along, from the Scenarios menu, select Alice, and then select Stage 2.

Note: Each time you click the mouse, random variations of FHTs will be shown.

Neonate

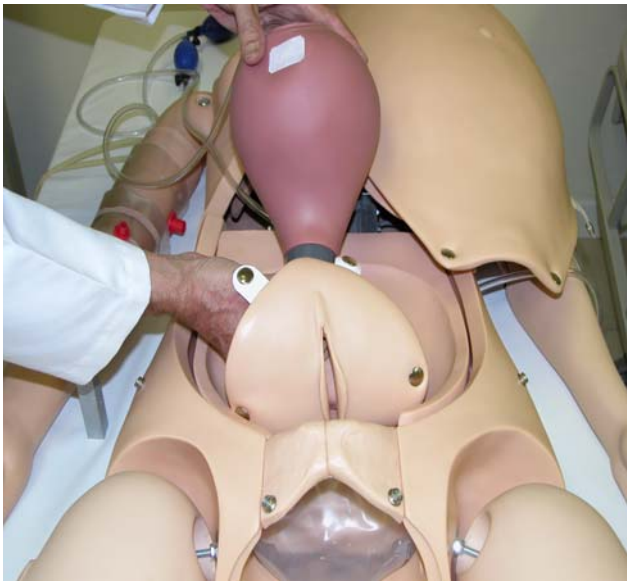


NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse. The 550.100 neonate changes color with resuscitation attempts.

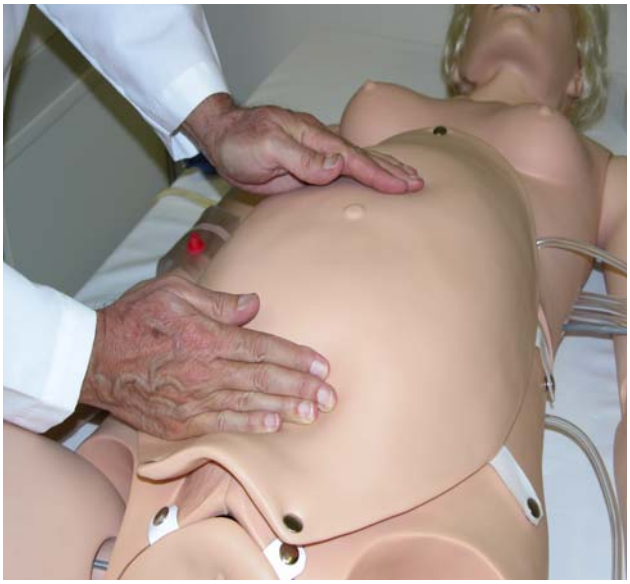
In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

Note: Lubricate the distal end of the ETT prior to intubation.

Postpartum



You may want to install the postpartum kit to demonstrate massage techniques. Practicing these techniques will teach students how to massage a "boggy" uterus.



Once the postpartum kit is installed, practice massaging the "boggy" uterus in order to feel the smaller, harder uterus hidden inside.

Note: As an alternative technique, the student may compress the uterus using a gloved hand inserted into the vagina while the other hand compresses the fundal area.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 61-86 in the NOELLE Instructor and Student Guide.

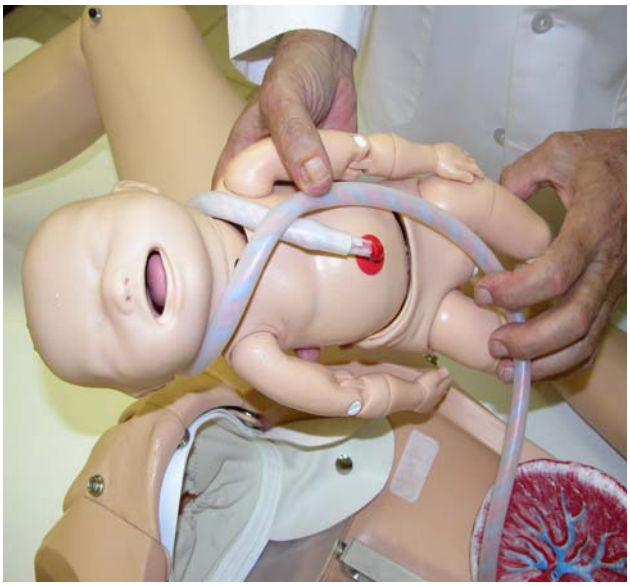
Beth

In the Beth scenario, the challenge for the student will involve maintaining a calm and supportive environment with a difficult patient while managing the delivery of the neonate. Beth is a 16 year old gravida 2/0 (1 elective AB) at 37 weeks.

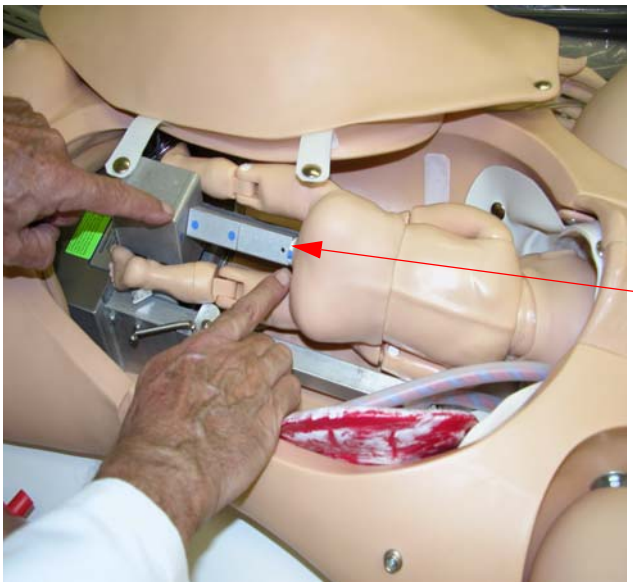
Note: Before starting this scenario, review Introduction and Objectives on pages 87-88 in the NOELLE Instructor and Student Guide.

Admission

To get started:



1. Wrap the umbilical cord once around the neck.
2. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, and the inside of the vulva.

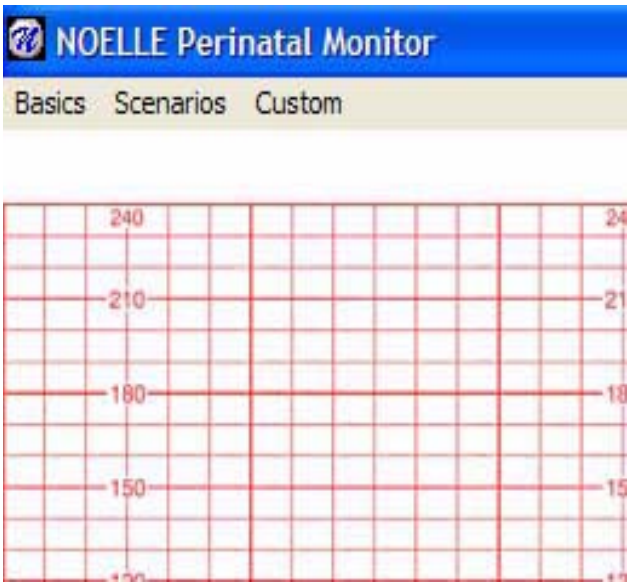


3. Place the fetus in the ROA position with the placenta high in the abdomen, and then line up the blue dots.

4. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed which delivers the fetus in 2-3 minutes.

5. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.

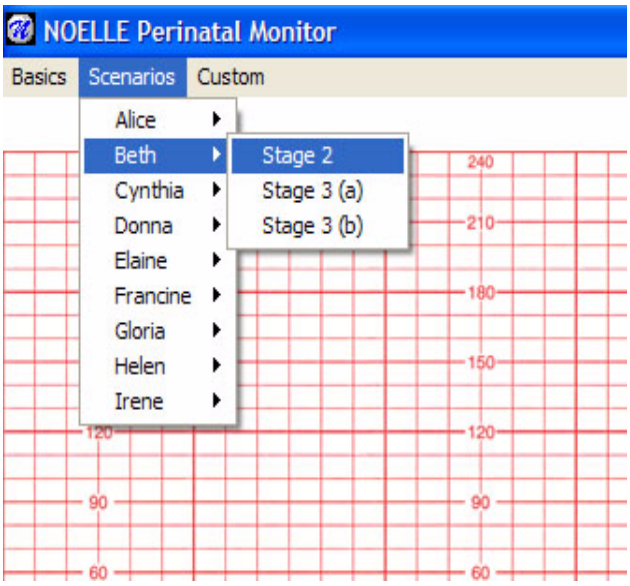


The NOELLE Perinatal Monitor program includes FHTs, vital signs for Beth, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

1. Once the program is installed, double-click the icon on your desktop.

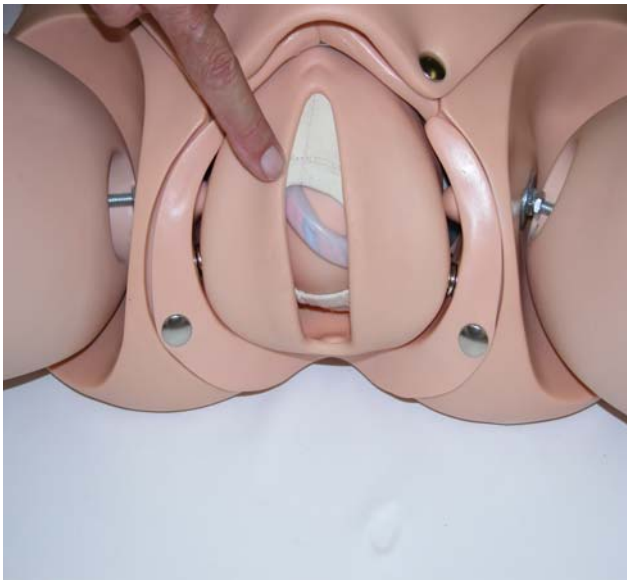


2. From the Scenarios menu, select Beth, and then select Stage 2.

This is Beth's condition on admission. The fetal baseline is 150 with minimal variability and moderate variable decelerations. Beth's vital signs reflect her highly agitated condition.

Labor

As Beth's labor progresses quickly, she is screaming and out of control – role-play is essential in this situation.

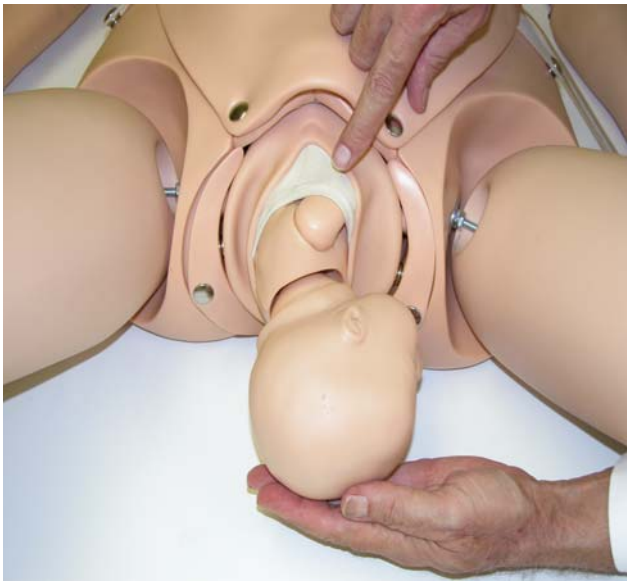


A nuchal cord is evident and must be reduced. Use a gloved hand to move the cord below the fetal head and shoulders.

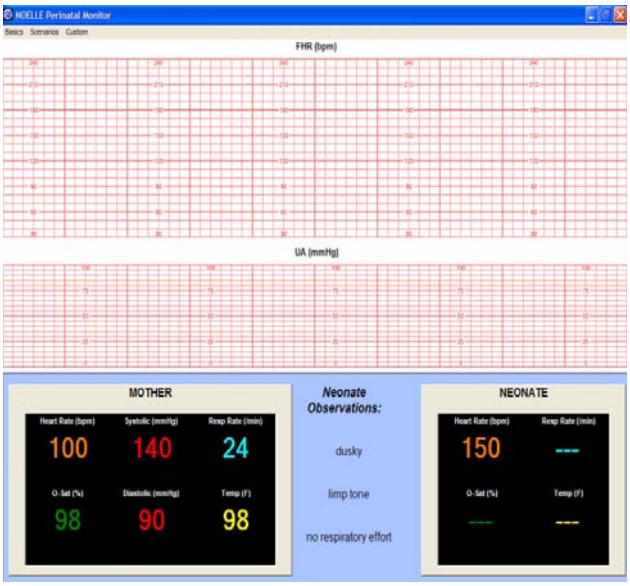
Near crowning, the student may palpate the fontanelles, look for meconium, and prepare to suction the mouth and then the nose.

Note: The delivery mechanism automatically stops near the shoulders if one adapter is used or near the lower torso if two adapters are used.

Delivery



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

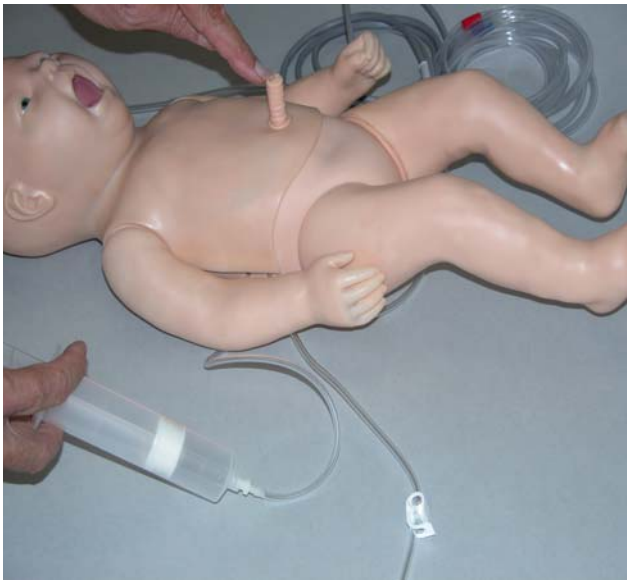


At this point, the neonate female is limp, dusky, and does not cry spontaneously at delivery.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Beth, and then select Stage 3 (a).

Neonate

In this scenario, drying stimulates respiratory effort; however, the neonate female remains hypothermic and tachypneic.

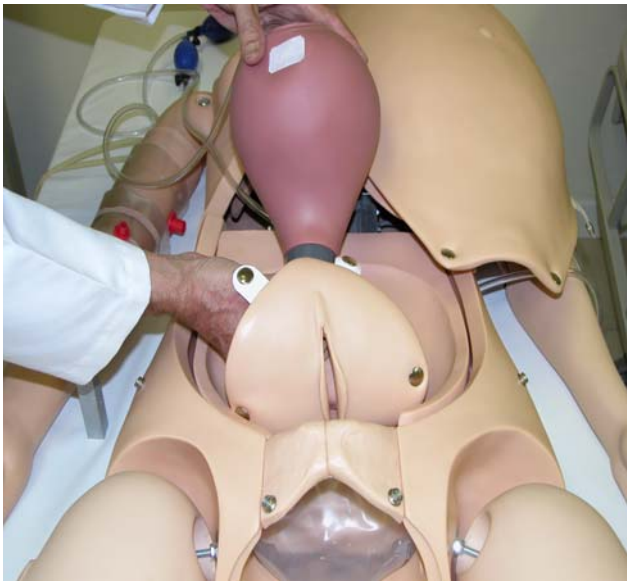


NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse. The 550.100 neonate changes color with resuscitation attempts.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

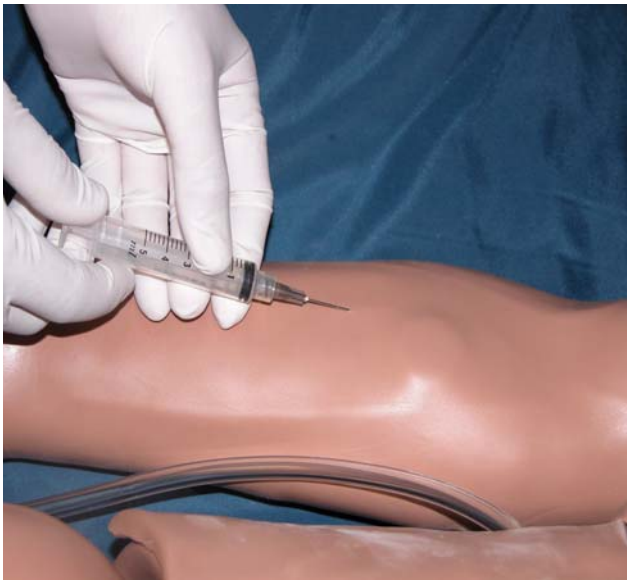
Note: Lubricate the distal end of the ETT prior to intubation.

Postpartum

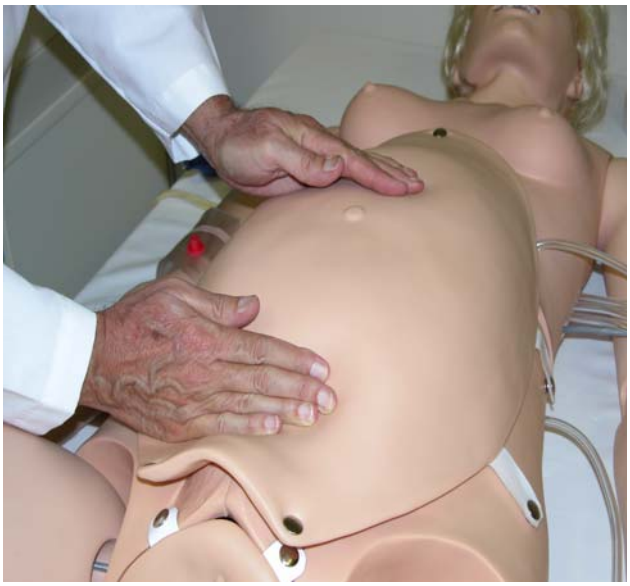


In this scenario, immediate postpartum bleeding is heavy and the uterus is “boggy”.

You may want to install the postpartum kit to demonstrate massage techniques. Practicing these techniques will teach students how to massage a “boggy” uterus.



To aid in reducing the bleeding, the student should get an IV started and administer a drug like Pitocin.



Once the postpartum kit is installed, practice massaging the "boggy" uterus in order to feel the smaller, harder uterus hidden inside.

Note: As an alternative technique, the student may compress the uterus using a gloved hand in the vagina and the other compressing the fundal area.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 87-107 in the NOELLE Instructor and Student Guide.

Cynthia

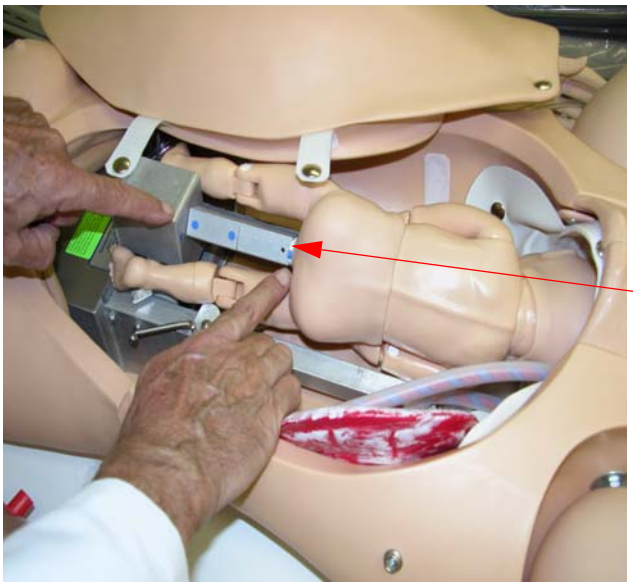
In the Cynthia scenario, the challenge for the student is to be prepared immediately and appropriately to intervene during shoulder dystocia, an intrapartum crises. Cynthia is a 31 year old gravida 3/1 (2yo boy/1 spont AB) at 41 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 109-110 in the NOELLE Instructor and Student Guide.

Admission

To get started:

1. Place the faceskin provided over the fetus' head since a FSE and vacuum cup or forceps will be used.
2. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, and the inside of the vulva.



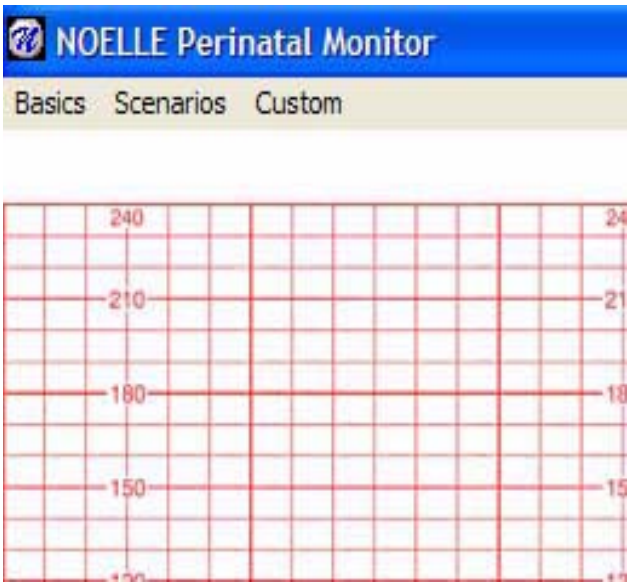
3. Place the fetus in the ROA position with the placenta high in the abdomen, and then line up the blue dots using two extensions.
4. Select birthing speed 5 using the NOELLE Birthing Controller.

Note: Speed 5 is designed to birth the fetal head, retract slightly, move forward once again, and pause for 3 minutes.

5. Select a fetal heart rate.

Note: You may pause the delivery and change the fetal heart rate at any time.

6. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.



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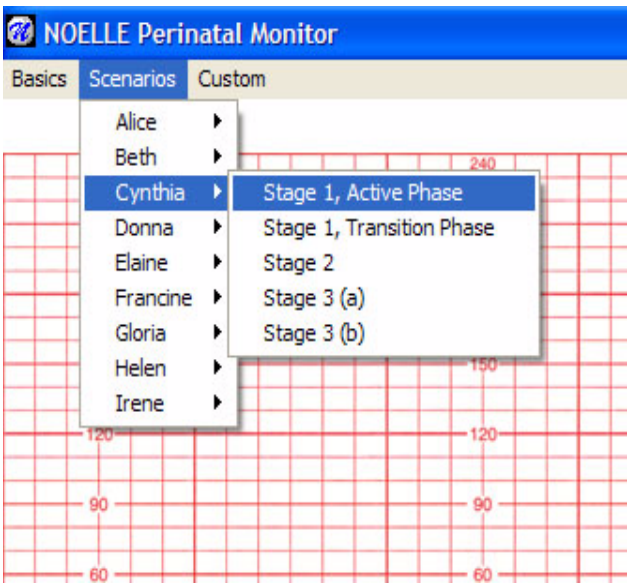
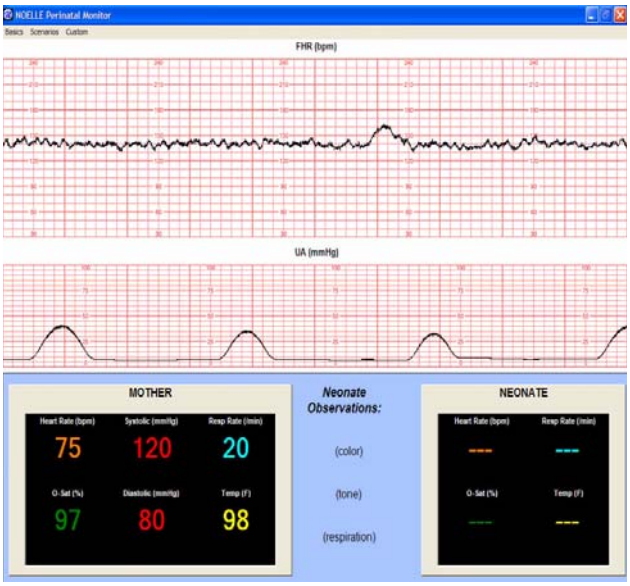


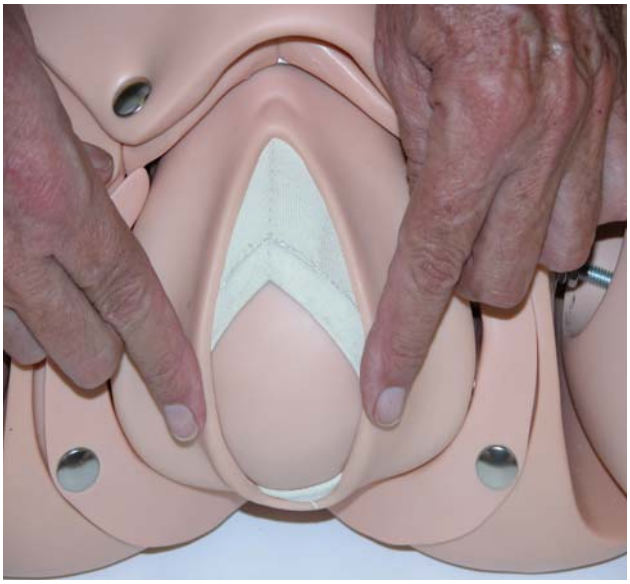
2. From the Scenarios menu, select Cynthia, and then select Stage 1, Active Phase.



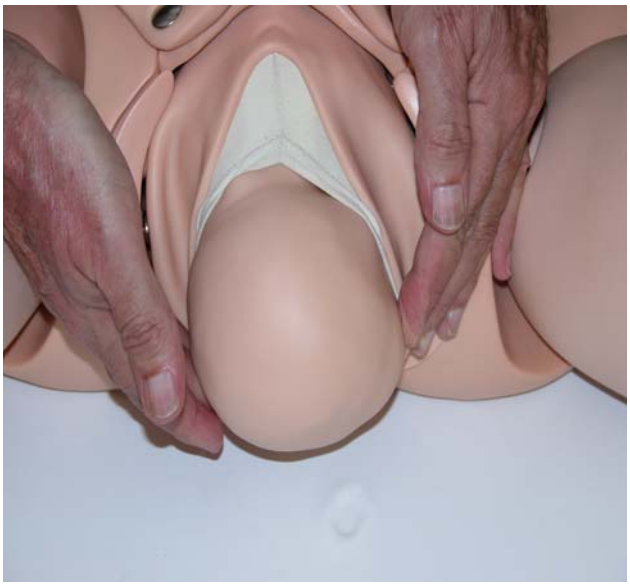
This is Cynthia's condition on admission. Her labor progresses WNL initially. The fetal baseline is 140 with average variability and no decelerations.

Labor

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 a FSE can be screwed into the soft faceskin covering the fetal scalp.



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.

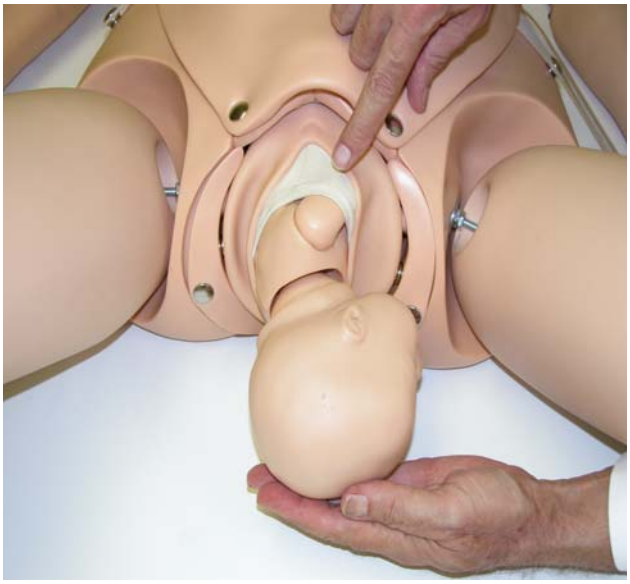


Once the head is delivered, NOELLE will simulate the "turtle sign".

Note: We suggest that you give students no more than three minutes to deliver the neonate using suprapubic pressure, the McRoberts maneuver, an episiotomy, or sweeping of the posterior shoulder.

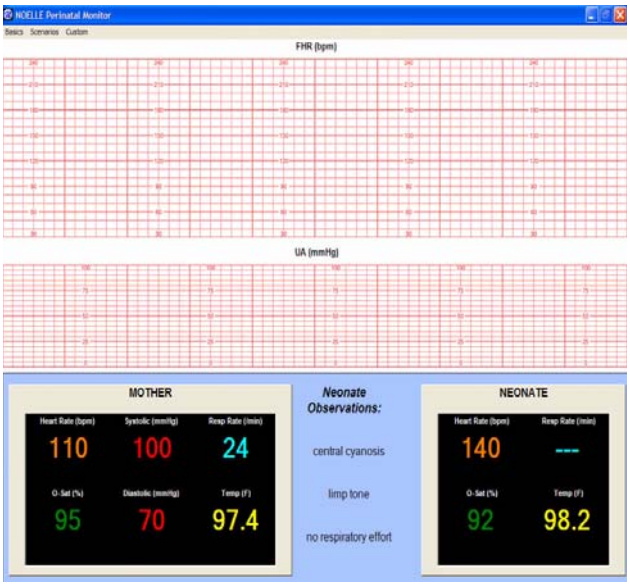
Note: The Instructor may want to prevent delivery until completely satisfied with the students' actions. In order to do this, place a tether around the torso of the fetus and hold it firmly.

Delivery



If students have not delivered the neonate within three minutes, the Birthing Controller will restart and the delivery mechanism will deliver the fetus. If this occurs, the students have taken too long and should try again.

As in other scenarios, the delivery mechanism rotates the fetus allowing for shoulder presentation. Slight traction can free both the upper and lower shoulders.

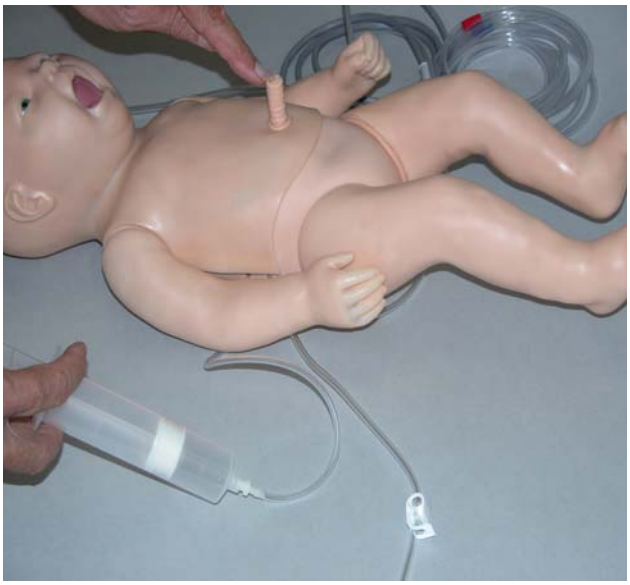


At this point, the neonate female is limp, with central cyanosis, and no respiratory effort. The neonate's oxygen saturation is only 92.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Cynthia, and then select Stage 3 (a).

Neonate

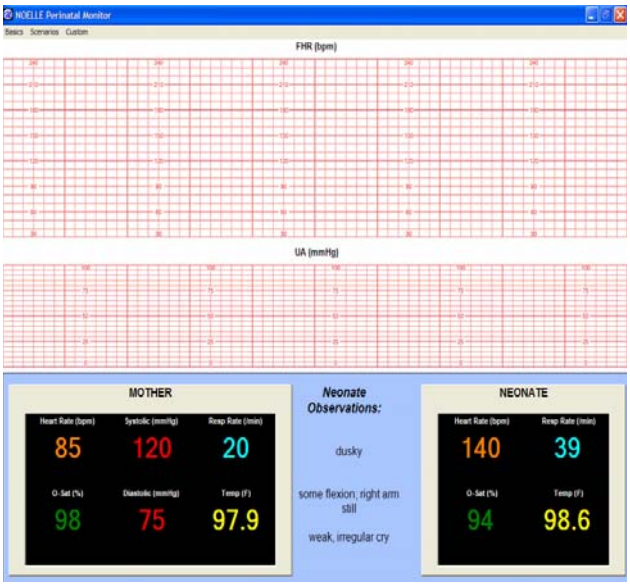
At this point, BVM followed by intubation and chest compressions are suggested.



NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse. The 550.100 neonate changes color with resuscitation attempts.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

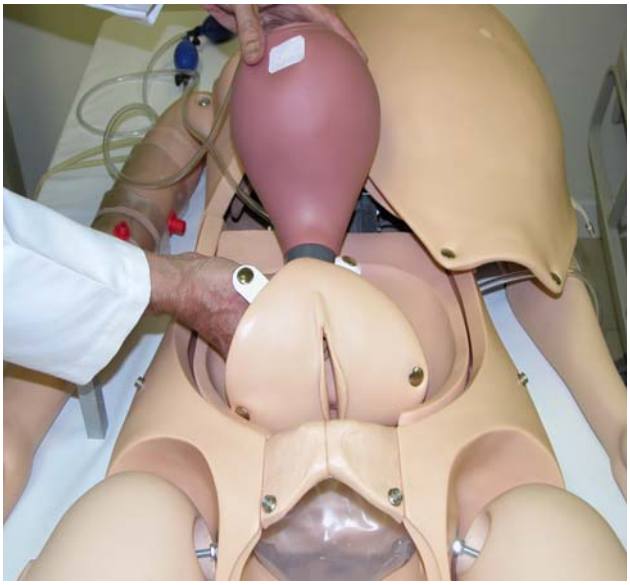
Note: Lubricate the distal end of the ETT prior to intubation.



Resuscitation attempts prove successful.

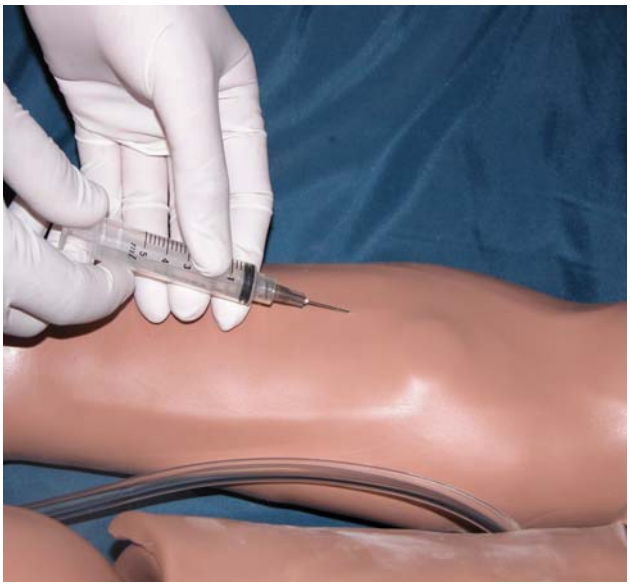
To follow along, from the Scenarios menu, select Cynthia, and then select Stage 3 (b).

Postpartum



In this scenario, immediate postpartum bleeding is heavy and the uterus is "boggy".

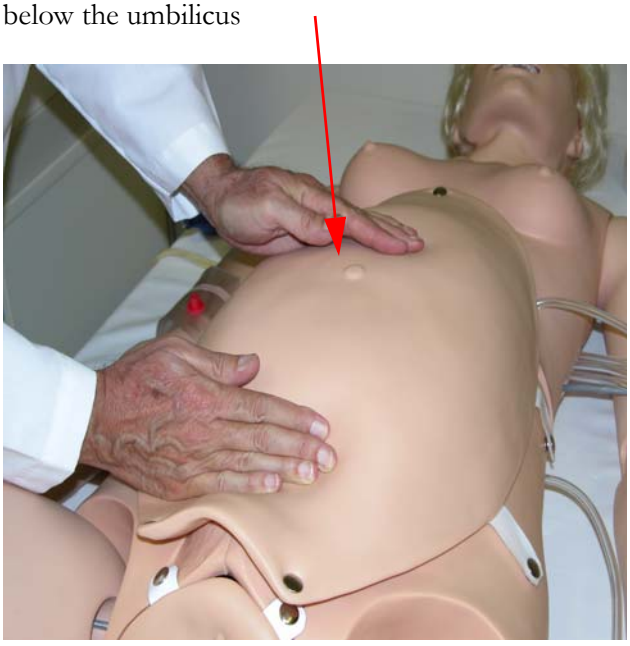
You may want to install the postpartum kit to demonstrate massage techniques. Practicing these techniques will teach students how to massage a "boggy" uterus.



To aid in reducing the bleeding, the student should get an IV started and administer a drug like Pitocin.

At this point in the scenario, we suggest instruction in psychosocial support for the mother and her "support system" during and following this shoulder dystocia emergency.

After delivery, the fundus is usually 1 cm above or below the umbilicus



Once the postpartum kit is installed, practice massaging the "boggy" uterus in order to feel the smaller, harder uterus hidden inside.

As an alternative technique, the student may insert their right hand into the vagina, place their left hand on the fundas, and then massage the uterus between the left and right hands.

By practicing these techniques, students will learn that vigorous massage is required to shrink the outer uterus, allowing them to feel the small, firm uterus hidden inside.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 109-135 in the NOELLE Instructor and Student Guide.

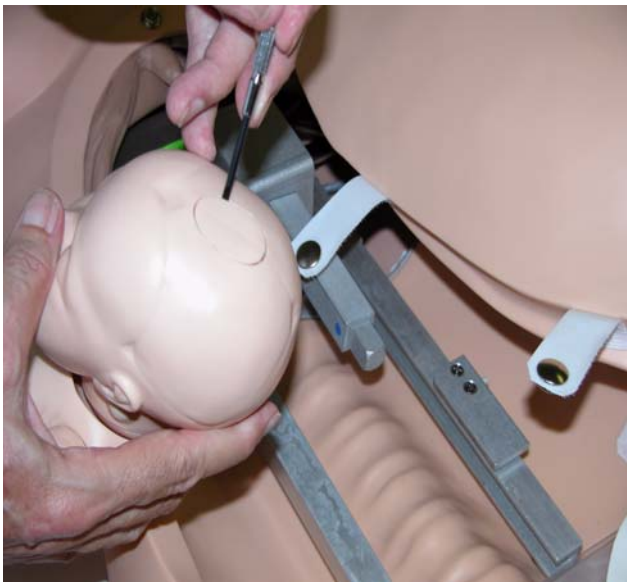
Donna

In the Donna scenario, the challenge for the student is to manage a precipitous vaginal breech of a premie, and then care for both Donna and her 32 week premie. Donna is a 20 year old gravida 4/2 (3yo girl, 2yo boy/1 elect AB).

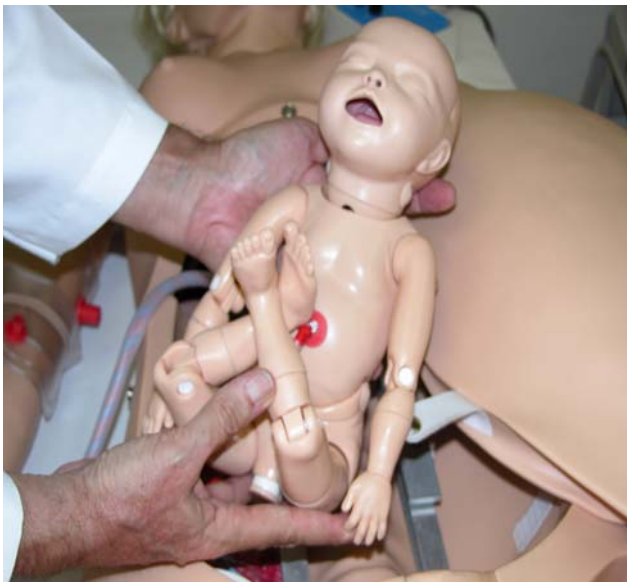
Note: Before starting this scenario, review Introduction and Objectives on pages 137-138 in the NOELLE Instructor and Student Guide.

Admission

To get started:

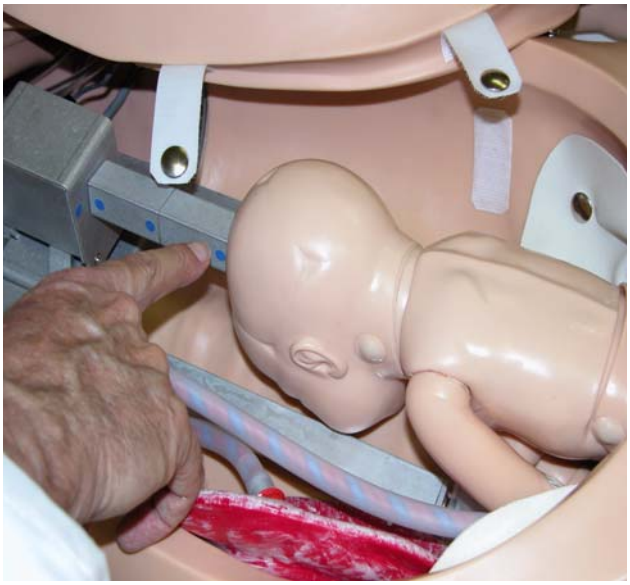


1. Remove the cap from the fetal head.
2. Thoroughly lubricate the fetal buttocks and legs, the inside of the cervix, and the inside of the vulva.



3. After lubricating the buttocks and legs you can either fold the fetal legs and then the arms; or the arms and then the legs.

Note: Folding the arms first makes the Pinard maneuver a little easier.



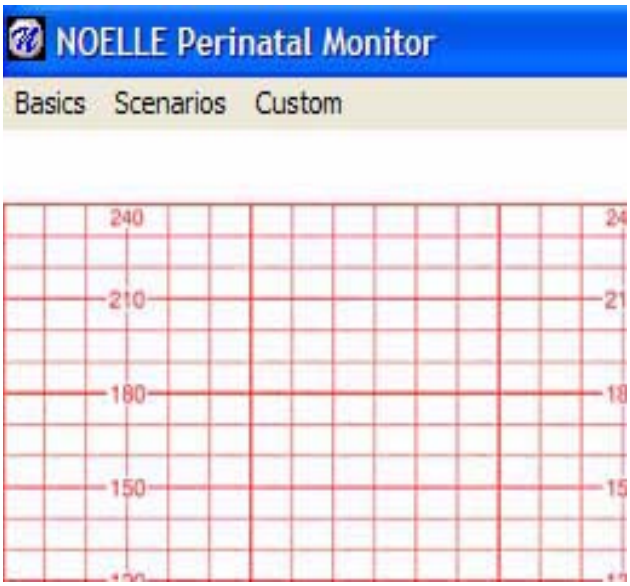
4. Insert the fetus nose up or down in the breech position, and then line up the blue dots using two extensions.

Note: The Instructor may choose to remove the cervix to ease the task of birthing the fetal legs using the Pinard maneuver.

5. Be sure to position the placenta high or low in the abdomen and to choose whether the placental fragments will be delivered or retained.

6. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed which delivers the fetus in 2-3 minutes.

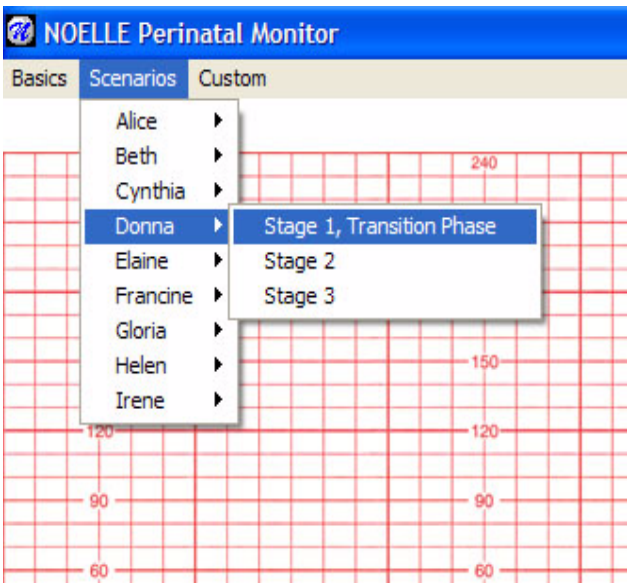


The NOELLE Perinatal Monitor program includes FHTs, vital signs for Donna, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

1. Once the program is installed, double-click the  icon on your desktop.



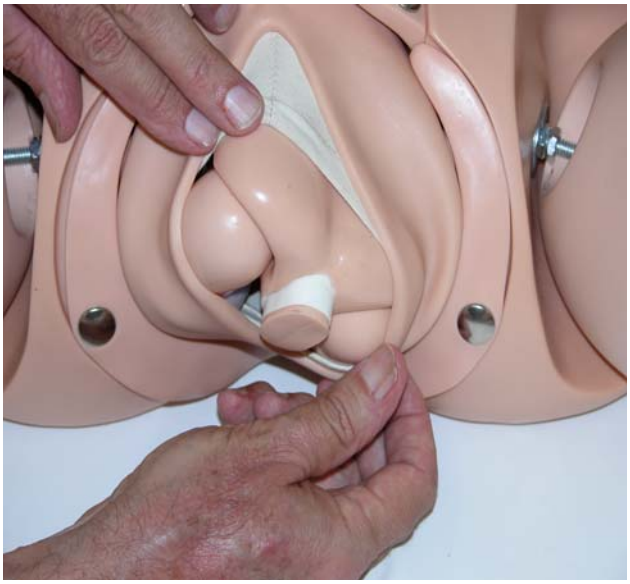
2. From the Scenarios menu, select Donna, and then select Stage 1, Transition Phase.

This is Donna's condition on admission. Her labor is in the Transition Phase and her vitals are WNL. The fetal baseline is 150 with average variability and mild variable decelerations.

At this point in the scenario, the physician should be stat paged.

The Instructor may now want to start a discussion about the risk factors of a breech presentation, the management of prematurity including placenta previa, and the demonstration of caring and concerned behaviors when dealing with the mother and the family.

Labor



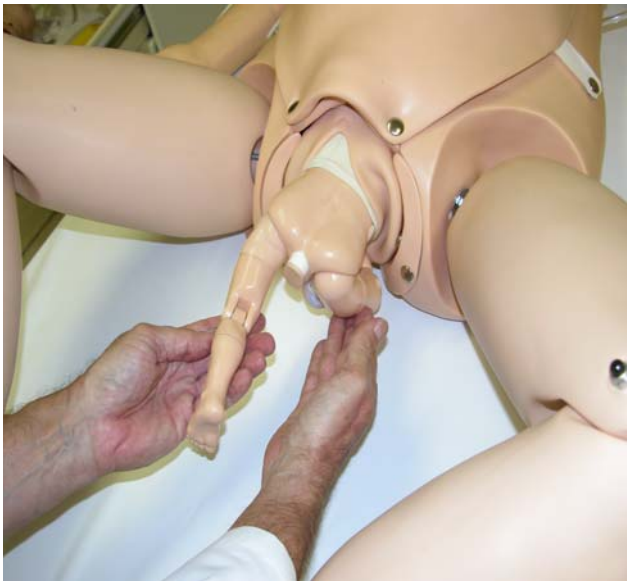
Donna's delivery proceeds much more rapidly than anyone had expected and a frank position is evident.

The Instructor may want to discuss and have students practice the Pinard maneuver to convert the fetus from a frank position to a footling delivery.

Possible fetal and maternal injuries and the potential for dysfunctional labor and hemorrhage should also be discussed.

This is Donna's condition in Stage 2. Contractions are much more intense and vitals remain WNL. Variable deceleration continues.

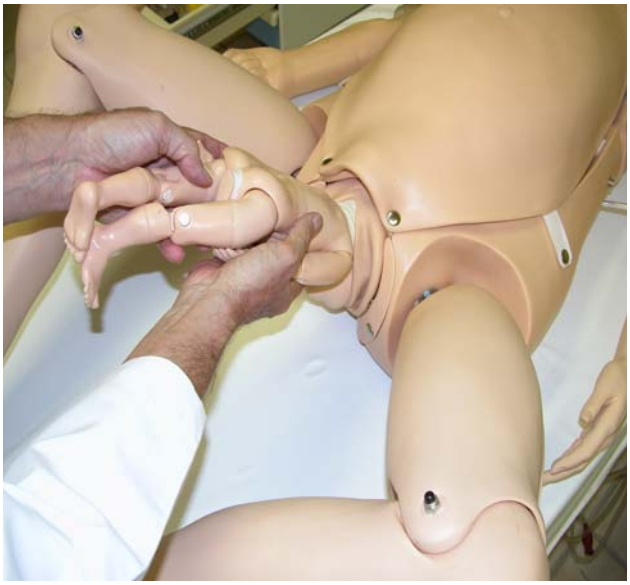
To follow along using the Perinatal Monitor, from the Scenarios menu, select Donna, and then select Stage 2.



As shown, the Pinard "legflip" was used to free one leg and then the other.

Note: The Instructor may want to discuss why this delivery should be done using gloved hands, why the torso should be wrapped in a towel as the legs and lower torso deliver, and how rotation of the fetus can deliver the shoulders.

Delivery



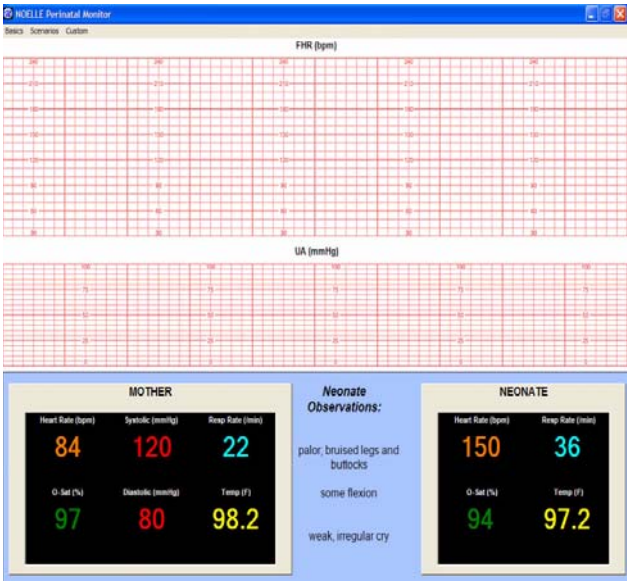
Note: The dimensions of the fetal head are such that an anterior rotation eases delivery.

After the face becomes visible over the perineum, suctioning of the mouth and then the nose is simulated.

At this point, the following issues may be discussed - potential for and management of fetal head deflexion, head entrapment, and other injuries associated with a vaginal breech delivery.

After the delivery, determine whether an episiotomy is required. To practice repair, insert one of the episiotomy repair modules supplied with NOELLE.

Note: Smaller "000" sutures will extend the life of the repair modules.



At this point, the neonate has some flexion and a weak and irregular cry.

To follow along, from the Scenarios menu, select Donna, and then select Stage 3.

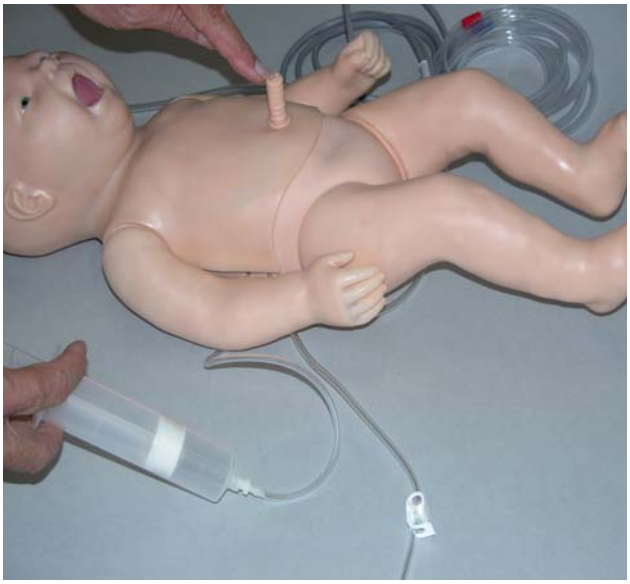
Once the neonate has been delivered, discuss the condition of the placenta - is it complete or are there fragments retained?

Donna is upset, crying, and wondering why her baby is so small. At this point in the scenario, we suggest instruction in psychosocial support for the mother and her "support system".

Students must now care for both Donna and her PREMIE. This 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.

Neonate

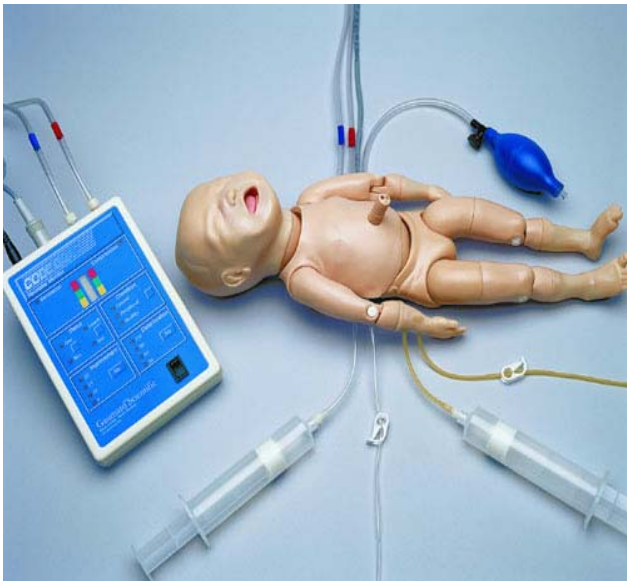
In this scenario, BVM using oxygen is likely to be sufficient to pink up Donna's baby.



NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse. The 550.100 neonate changes color with resuscitation attempts.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

Note: Lubricate the distal end of the ETT prior to intubation.



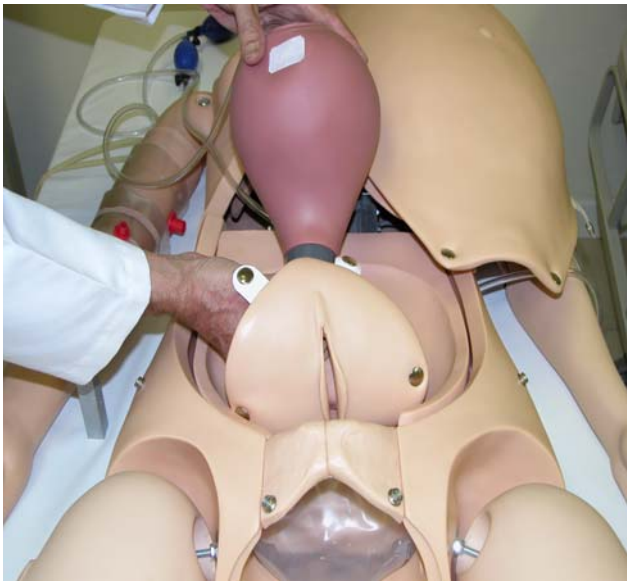
The Instructor may want to use the PEDI BLUE full term neonate supplied with the S550.100 or the optional S108 PREMIE BLUE resuscitation neonate shown here.

The PREMIE BLUE simulates a 28-32 week neonate with patent umbilicus, intubatable airway, IV arm, and IO leg.

You may want to practice intubating PREMIE BLUE using a Miller 0 blade and an uncuffed 2.5 mm ETT or just use a well padded BVM. The chest will rise at approximately 20 cm of water pressure.

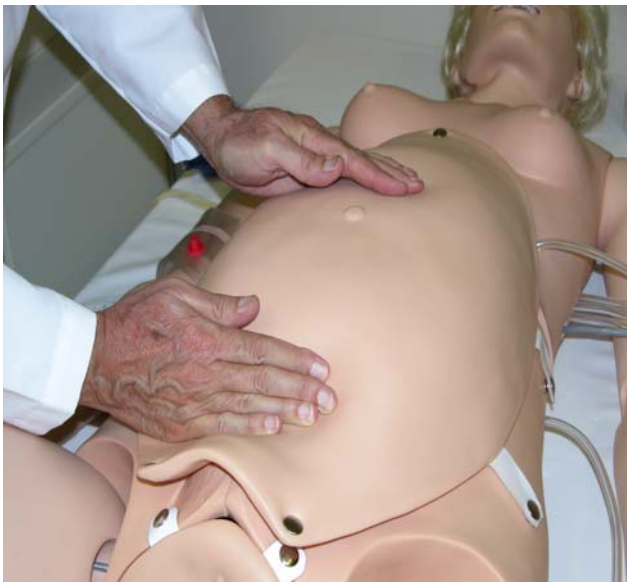
As before, the full term is intubated using a Miller 1 blade and an uncuffed 3.0 mm ETT.

Postpartum



In this scenario, immediate postpartum bleeding is WNL and the uterus is "firm".

You may want to install the postpartum kit to demonstrate massage techniques. Practicing these techniques will teach students how to massage a "boggy" uterus and cause the uterus to decrease in size and become firm in tone.



Once the postpartum kit is installed, practice massaging the "boggy" uterus area in order to feel the smaller, harder uterus hidden inside.

Massage can be conducted as shown; or, the right hand can be gloved and the uterus massaged through the vagina.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 137-163 in the NOELLE Instructor and Student Guide.

Elaine

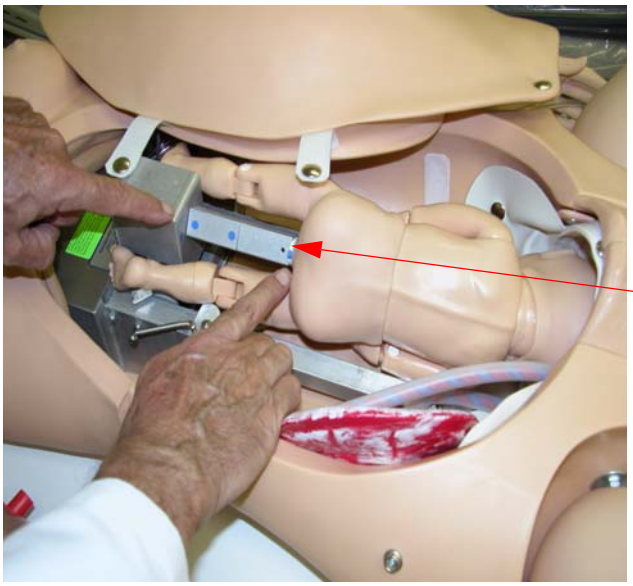
In the Elaine scenario, the challenge for the student is to be acutely aware of the potential consequences of this deadly disease - Preeclampsia. Elaine is a 23 year old gravida 1/0 at 37 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 165-167 in the NOELLE Instructor and Student Guide.

Admission

To get started:

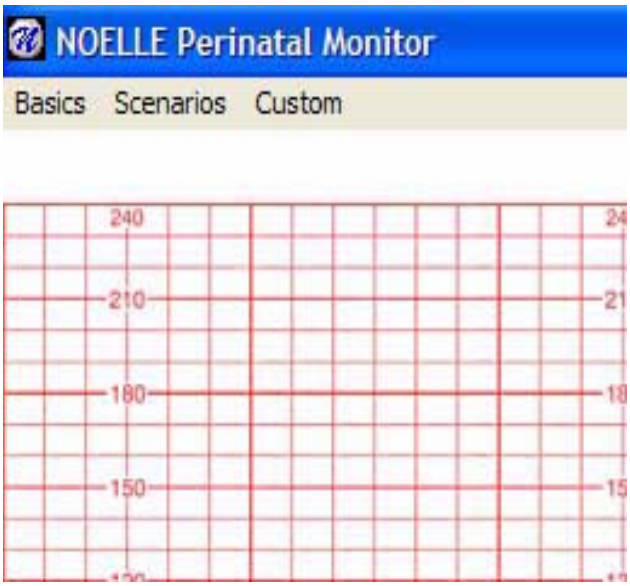
1. Place the faceskin provided over the fetus' head since premie forceps or a vacuum cup will be used.
2. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, and the inside of the vulva.



3. Place the fetus in the ROA position with the placenta high in the abdomen, and then line up the blue dots using two extensions.
4. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed and delivers the fetus in 2-3 minutes.

5. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.

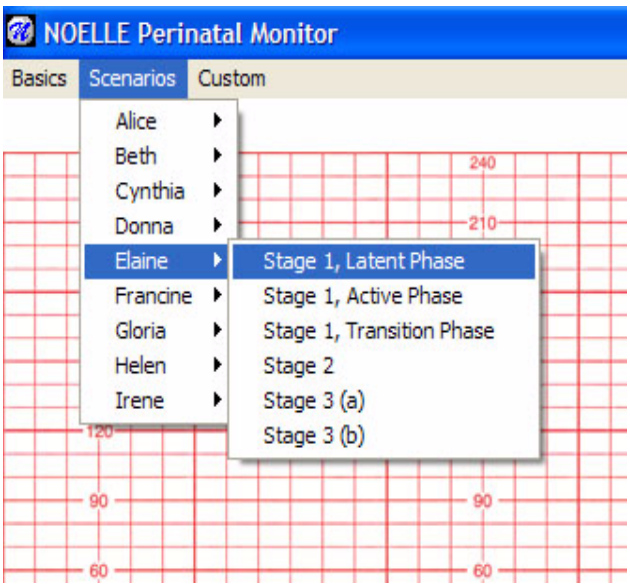


The NOELLE Perinatal Monitor program includes FHTs, vital signs for Elaine, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

1. Once the program is installed, double-click the  icon on your desktop.



2. From the Scenarios menu, select Elaine, and then select Stage 1, Latent Phase.

This is Elaine's condition in the Latent Phase. The fetal baseline is 140 with decreased variability but no decelerations. Note the vital signs.

In order to give students the opportunity to draw blood and report the results, take a look at page 166 in the NOELLE Instructor and Student Guide for lab results.

Given Elaine's vitals and lab work, students should decide what to do. IVs need to be placed, medications ordered, and internal monitoring established. An infusion pump using simulated Mag and Pitocin will be useful.

Elaine is in the Active Phase. She says she is not having visual changes or epigastric pain but her headache has improved with meds given earlier.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Elaine, and then select Stage 1, Active Phase.

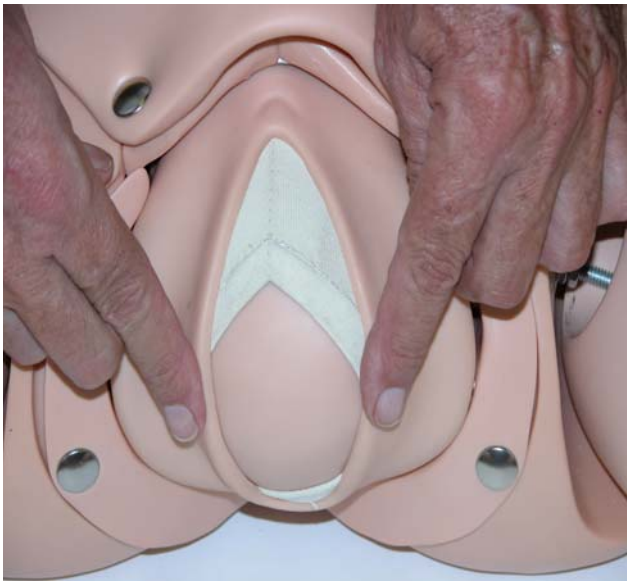
Transition

Elaine is in the Transition Phase. Decreased variability continues and mild to moderate late decelerations.

To follow along, from the Scenarios menu, select Elaine, and then select Stage 1, Transition Phase.

The 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 episiotomy and deliver the head using outlet forceps or a lubricated vacuum cup; applying traction only during contractions.

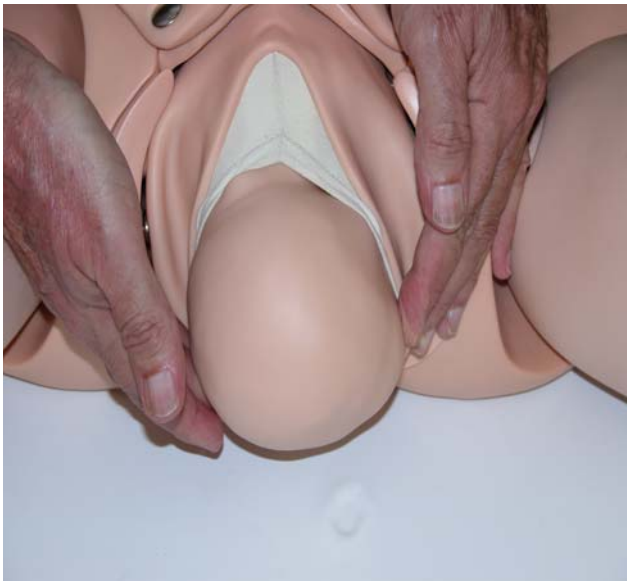
Note: If instrumental delivery will be performed, lubricate the fetal faceskin and slip it over the head. This allows the forceps or vacuum cup to seal properly on the fetal skull.

Note: If an episiotomy is performed, insert one of the repair modules supplied with NOELLE so that students may practice repair.

Elaine is in Stage 2. FHTs continue to show decreased variability and mild to moderate late decelerations.

Note: Discuss potential changes in the administration of medications.

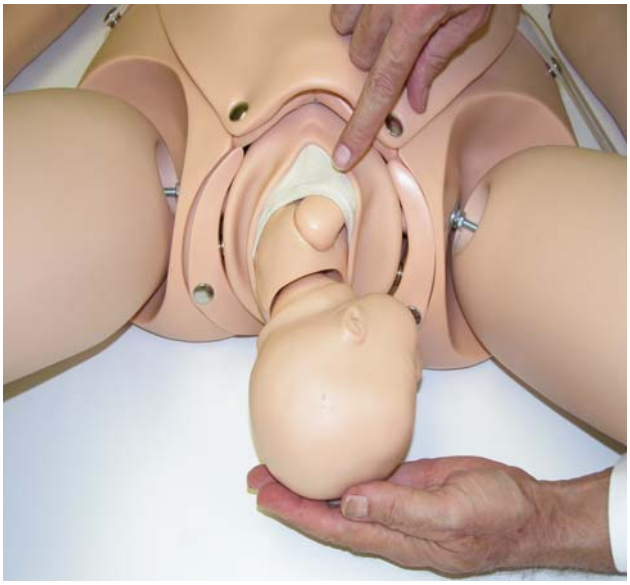
To follow along, from the Scenarios menu, select Elaine, and then select Stage 2.



As the fetal descent continues with little active pushing, students should prepare to suction the mouth and then the nose.

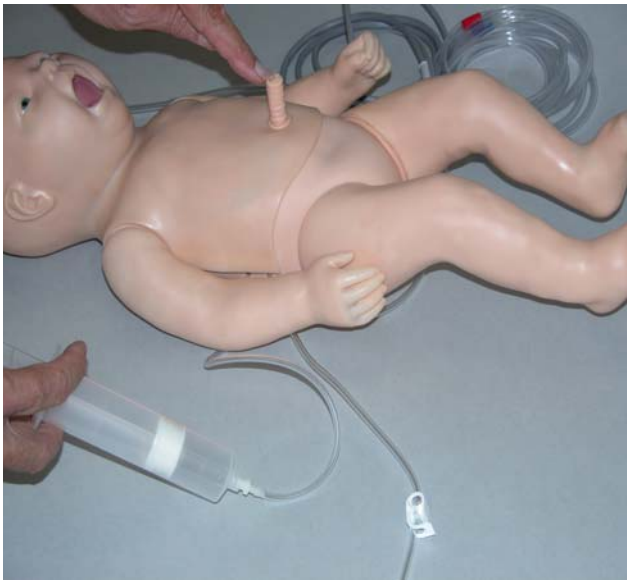
Mag and Pitocin should continue per infusion pump. Ask students if quantities are ramped up.

Delivery



As the delivery continues, the Instructor may want to ask students why the neonatal team must be ready to receive this neonate.

Neonate



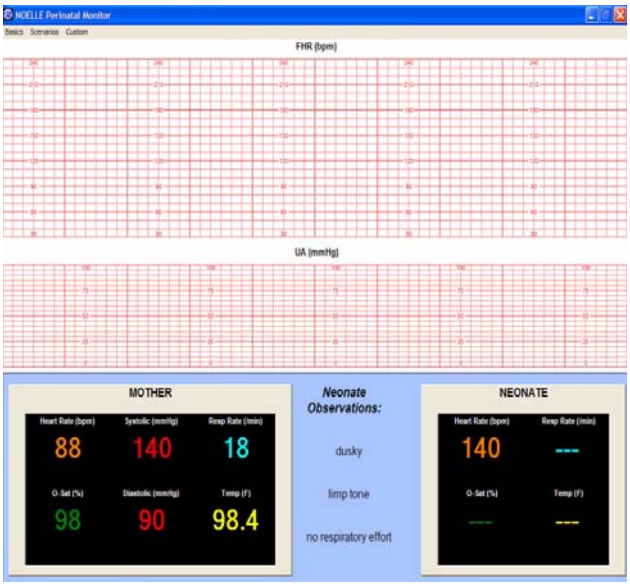
The neonate is dusky, limp, and does not breathe at delivery. Meconium staining is noted at the umbilicus and fingernails. Ask students what this may suggest.

In this scenario, inspection of the airway for meconium is the correct response. After removal, intubation is indicated.

NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse. The 550.100 neonate changes color with resuscitation attempts.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

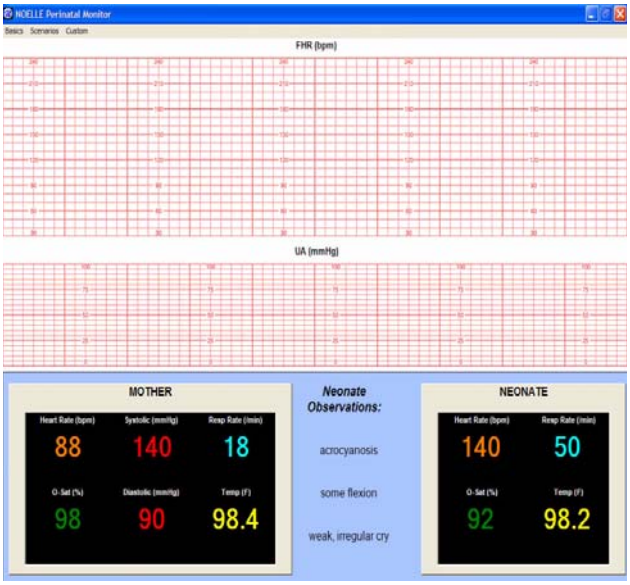
Note: Lubricate the distal end of the ETT prior to intubation.



Elaine's blood pressure has decreased to 140/90 following delivery.

Students must now care for both the mother and the neonate in two dedicated teams.

To follow along, from the Scenarios menu, select Elaine, and then select Stage 3 (a).



The neonate's vitals have improved but the oxygen saturation remains low.

The Instructor may want to ask students what remains to be accomplished.

To follow along, from the Scenarios menu, select Elaine, and then select Stage 3 (b).

Postpartum

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

Elaine is crying and very much concerned about her baby. At this point in the scenario, we suggest instruction in psychosocial support for the mother and her "support system" during and following this preeclamptic emergency.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 165-195 in the NOELLE Instructor and Student Guide.

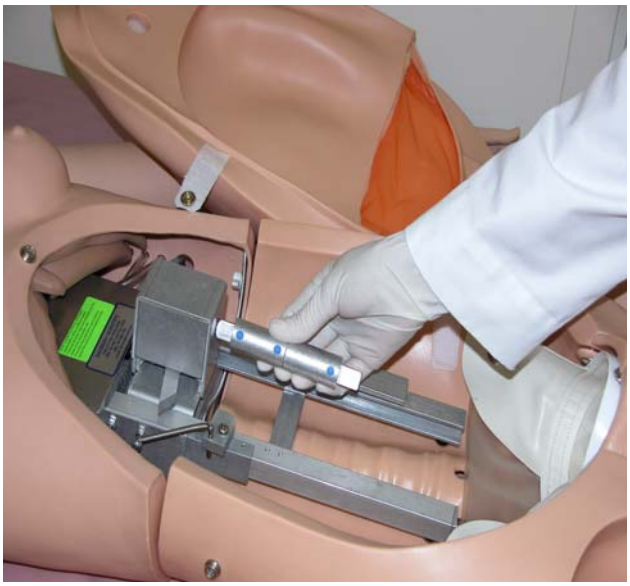
Francine

In the Francine scenario, the challenge for the student is to manage a Cesarean Delivery complicated by an active Herpes infection. Francine is a 19 year old gravida 2/1 (18 mo boy) at 37 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 196-197 in the NOELLE Instructor and Student Guide.

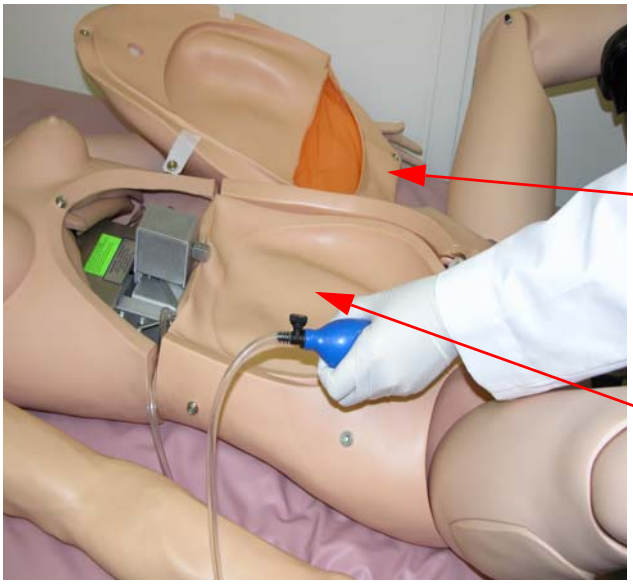
Admission

To get started:



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

Caution: For this scenario, the motor must be turned off.



2. Use the optional C/S abdominal cover, P/N 560.029.

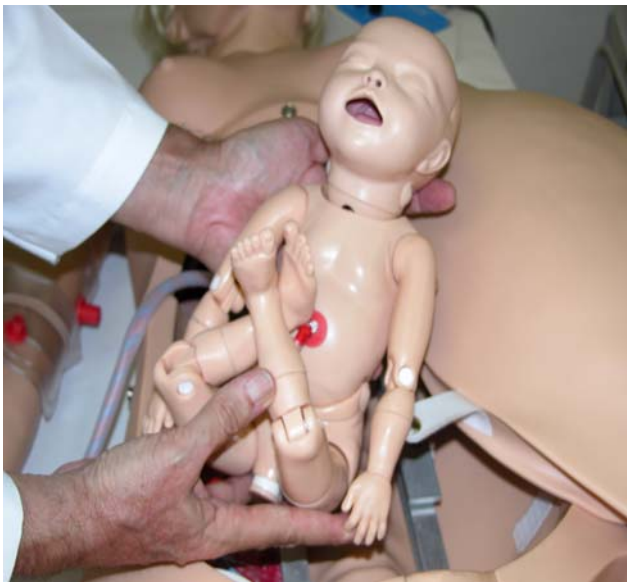
Optional C/S abdominal cover

3. Place the inflatable cushion onto the birthing mechanism.

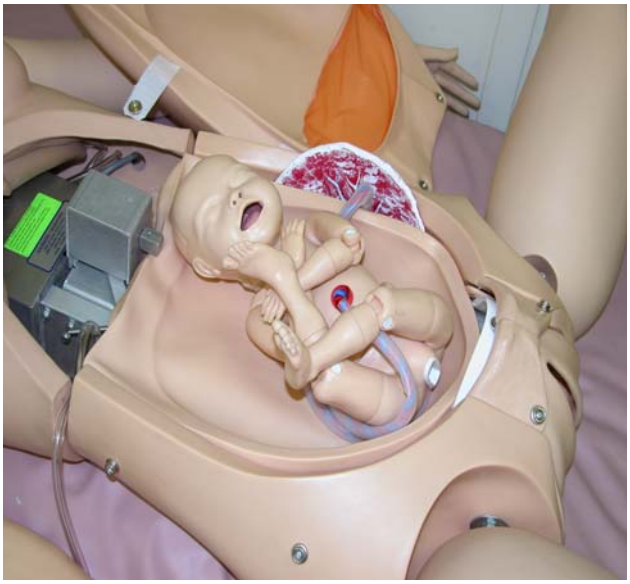
Inflatable cushion

Note: The squeeze bulb may be used to lift the fetus anteriorly.

4. Thoroughly lubricate the fetus, the inflatable cushion, and the inside of the abdominal cover.

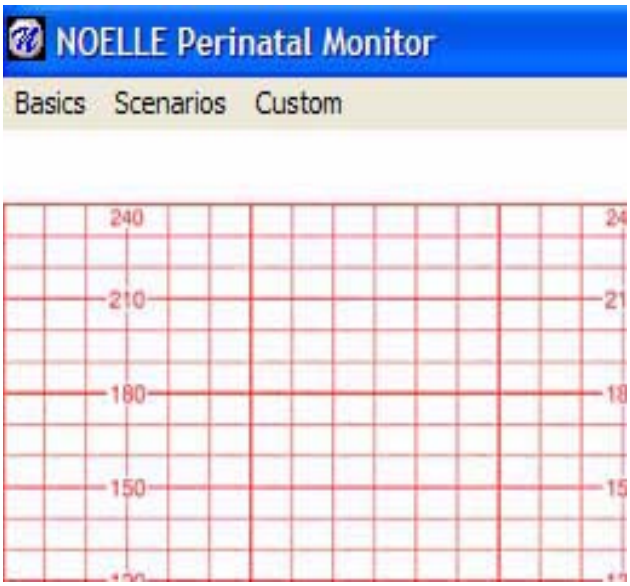


5. After lubricating, fold the fetal legs and then the arms.



6. Insert the fetus nose up or down in the breech position.

Note: Be sure to position the placenta high or low in the abdomen and choose whether the placental fragments will be retained.



The NOELLE Perinatal Monitor program includes FHTs, vital signs for Francine, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

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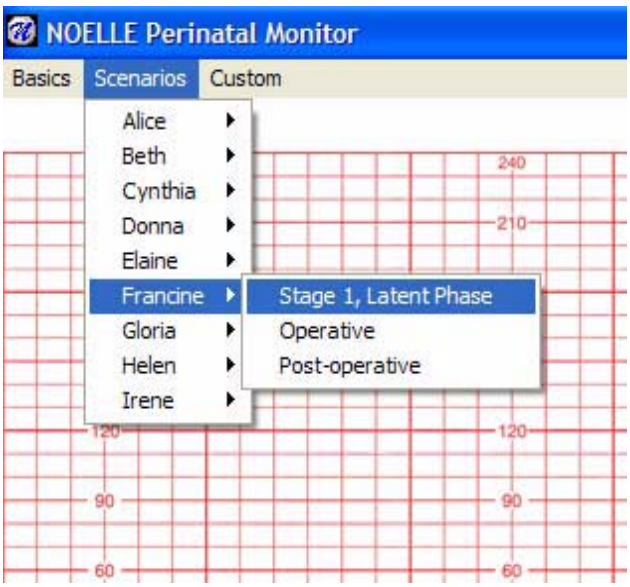
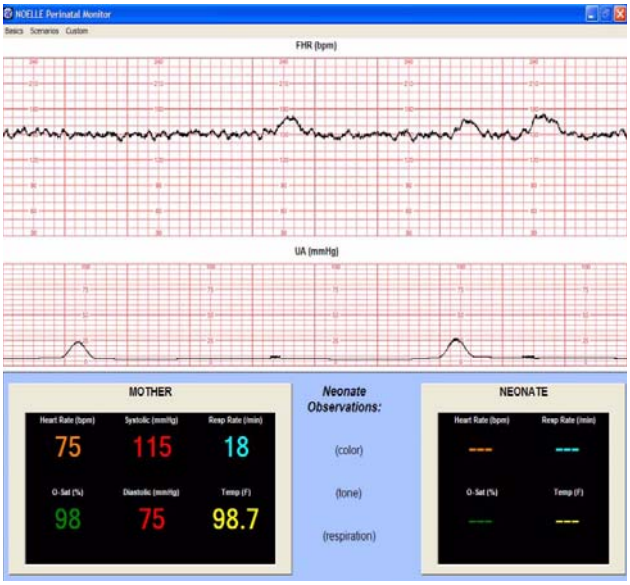


2. From the Scenarios menu, select Francine, and then select Stage 1, Latent Phase.

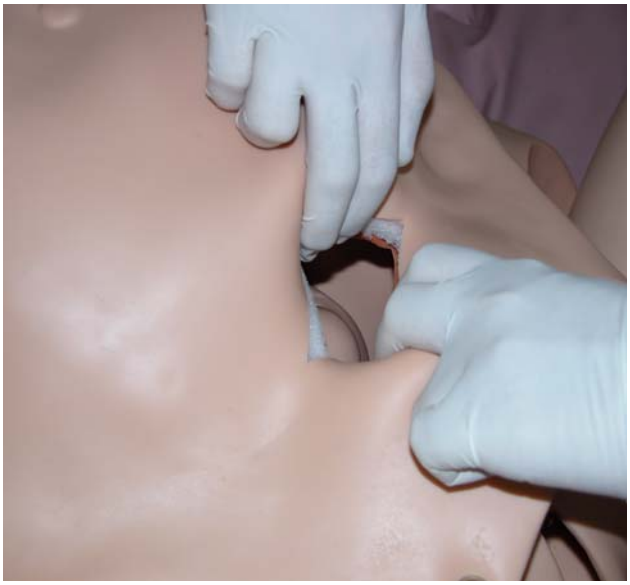
Labor



This is Francine's condition on admission. Her labor is in the Latent Phase and her vitals are WNL. The fetal baseline is 150 with average variability and there are no decelerations.

Francine is transported to the operating room (OR) accompanied by her mother.

At this point, the Instructor may want to start a discussion about the indications of a C/S; pre-op routines; regional and general anesthesia procedures; and, procedures for sponge, instruments, and sharps count.

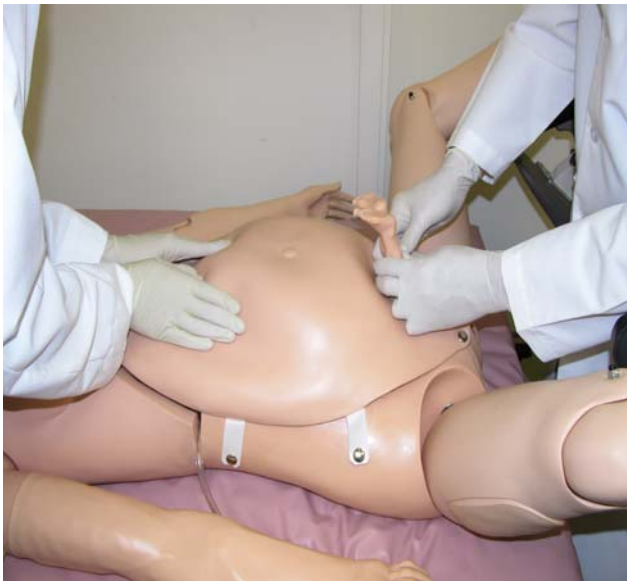


A 12 cm transverse incision about 5 cm above the pubic bone has been performed; the fetus is located.

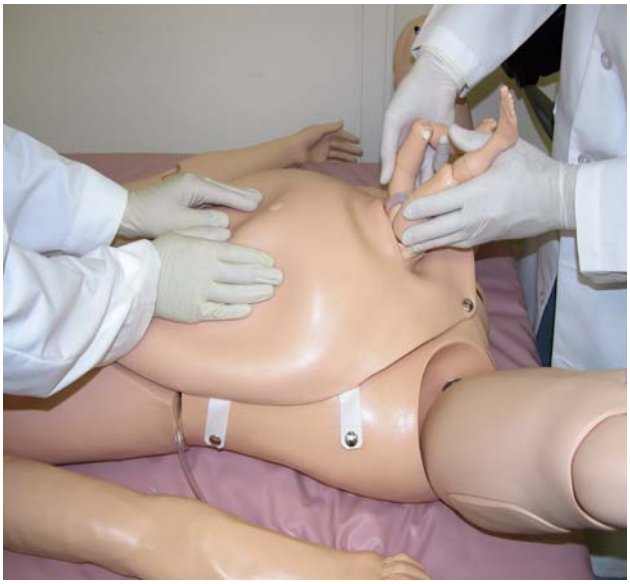
Note: The incision length made relates to the size of the fetal head.

Teaching points include traversing the skin, the fatty tissue, and the uterus.

Delivery

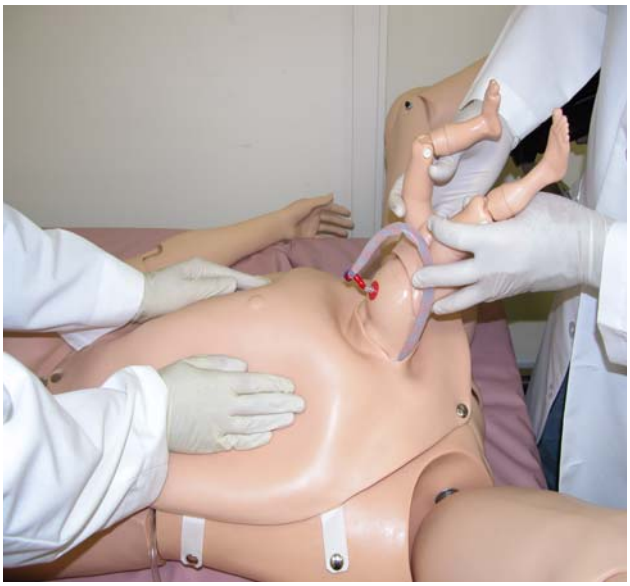


As shown, the student at the left provides external fundal pressure and the student at the right carefully delivers the fetus through the incision.

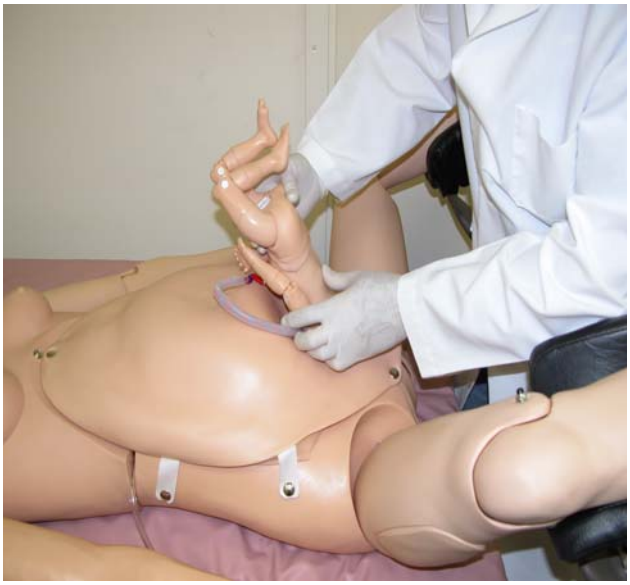


In this case, the feet present first.

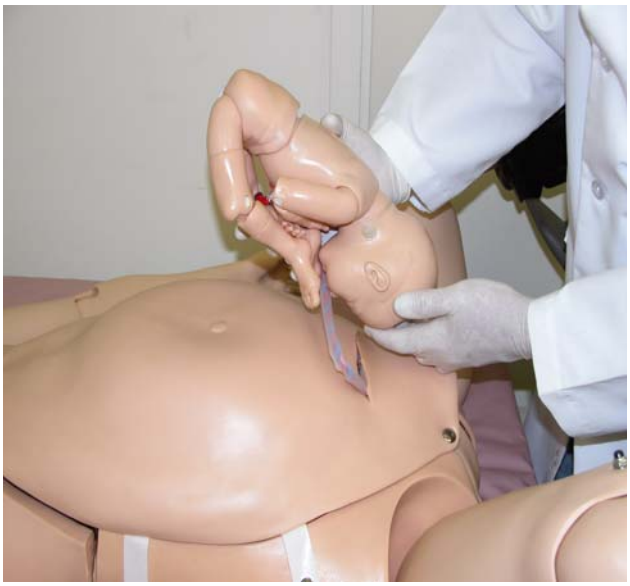
The Instructor may want to discuss how to remove the legs quickly and safely.



The legs and lower torso of the fetus have been removed. The upper torso and shoulders now must be addressed.



After the legs, lower torso, and upper torso have been delivered, the shoulders are then delivered.

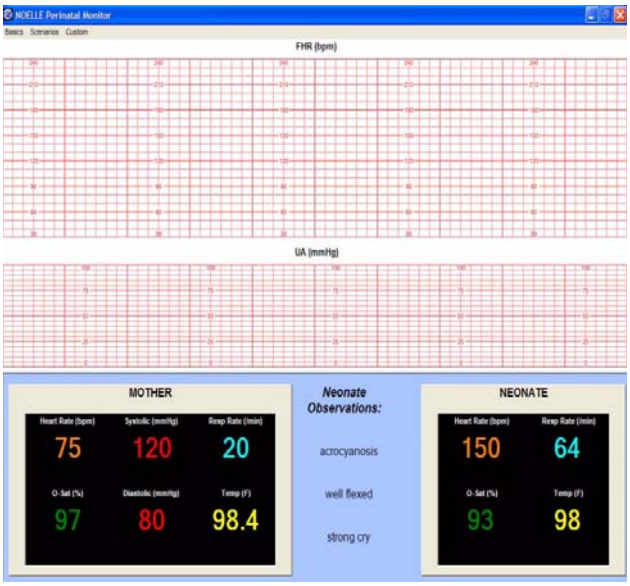


The fetal head is birthed and now removal of the placenta needs to be addressed.

Once the placenta is removed, inspect it for retained fragments. What is the condition of the placenta? Is it complete or are fragments retained?

At this time, the Instructor normally reuses the C/S abdominal cover for other scenarios.

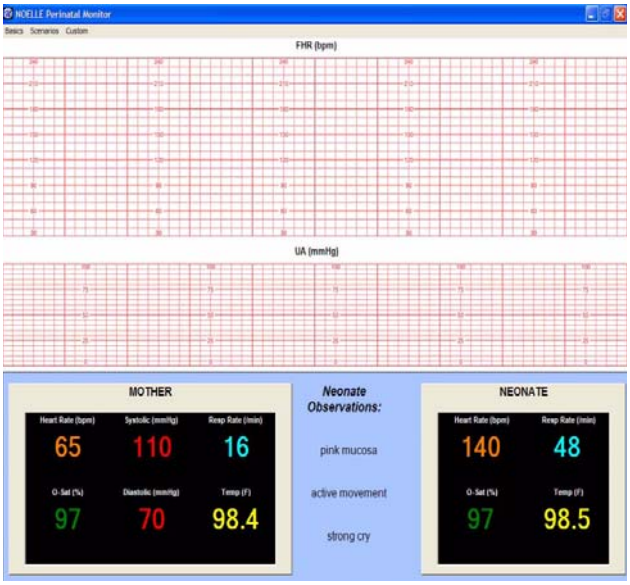
Once the students have performed the C/S, the Instructor may want to start a discussion on how to move Francine safely "post-op", practice care for the C/S patient, and the impact of a C/S on the neonate. It is also recommended for the students to practice psychosocial support.



The neonate is well flexed and has a strong cry but tachypnea at 64 is noted.

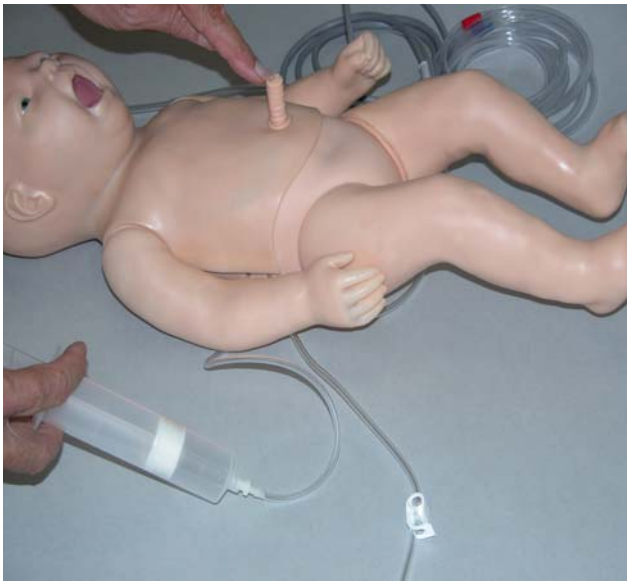
To follow along using the Perinatal Monitor, from the Scenarios menu, select Francine, and then select Operative.

Neonate



To follow along, from the Scenarios menu, select Francine, and then select Post-operative.

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



NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse. The 550.100 neonate changes color with resuscitation attempts.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

Note: Lubricate the distal end of the ETT prior to intubation.

Postpartum

In this scenario, Francine returns to PACU 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.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 196-220 in the NOELLE Instructor and Student Guide.

Gloria

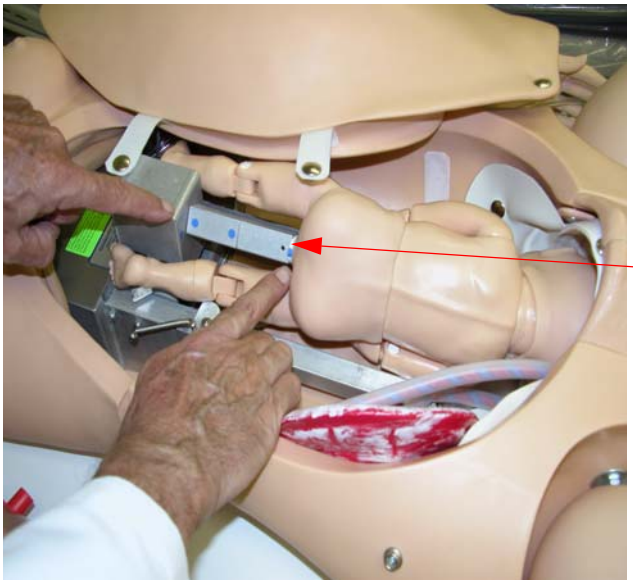
Prolapsed cord emergencies are life or death situations. The Gloria scenario presents a disastrous intrapartum complication which results in fetal death. Gloria is a 34 year old gravida 1/0 at 25 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 221-222 of the NOELLE Instructor and Student Guide.

Admission

To get started:

1. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, the inside of the vulva, and both sides of the placenta.



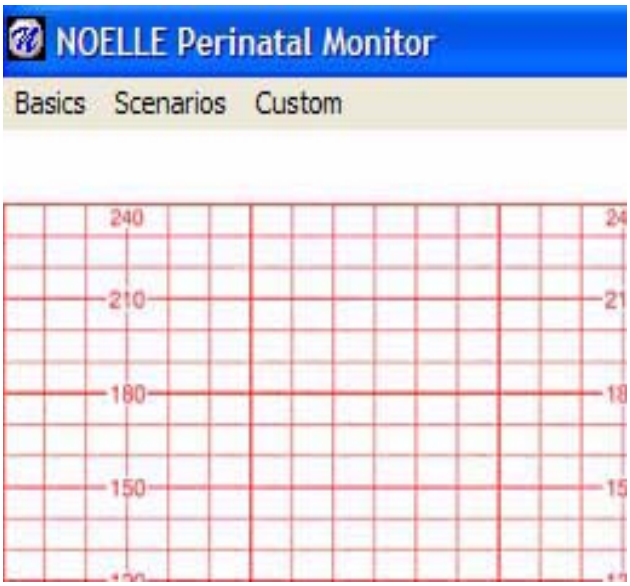
2. Place the fetus in the ROA position, and then line up the blue dots using two extensions.

3. Place the placenta between the fetal head and the cervix.

4. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed which delivers the fetus in 2-3 minutes.

5. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.



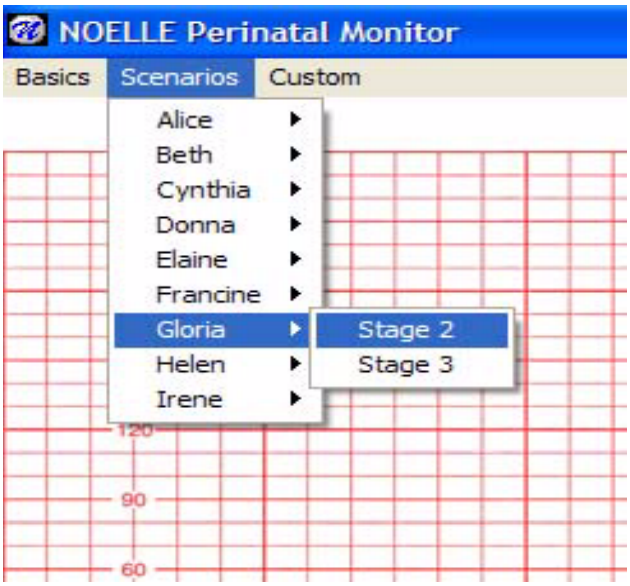
The NOELLE Perinatal Monitor program includes FHTs, vital signs for Gloria, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

Labor

To use the Perinatal Monitor program:

1. Once the program is installed, double-click the icon on your desktop.



2. From the Scenarios menu, select Gloria, and then select Stage 2.

This is Gloria's condition in Stage 2 on admission. The fetal baseline is 60-80 with no variability and no decelerations.

Before Gloria goes into delivery:

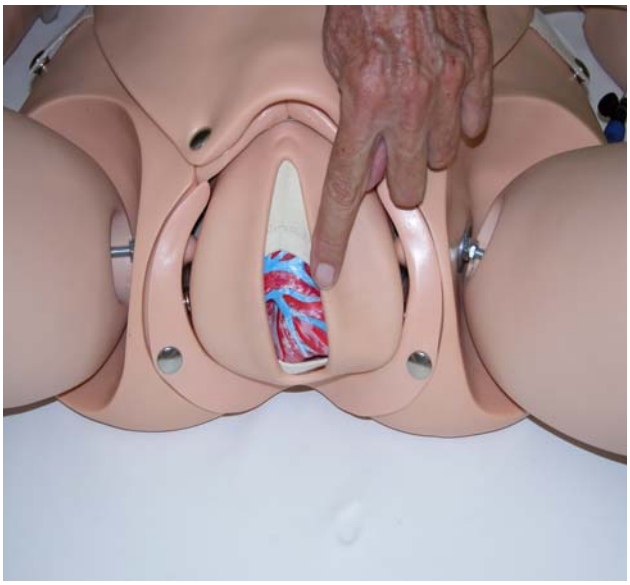
1. Position Gloria in a deep Trendelenberg position. After this is done, stat-page the physician.

Tip: The Instructor should discuss with students the risk factors for cord prolapse, which include fetal malposition, unengaged presenting part, and a small fetus.

2. Cover the cord with sterile towels, moistened with warmed 99°F - 101°F (37°C - 38°C) normal saline.

Tip: At this point, the Instructor should discuss maternal positional interventions to relieve cord compression and priorities related to the need for emergent C/S under general anesthesia.

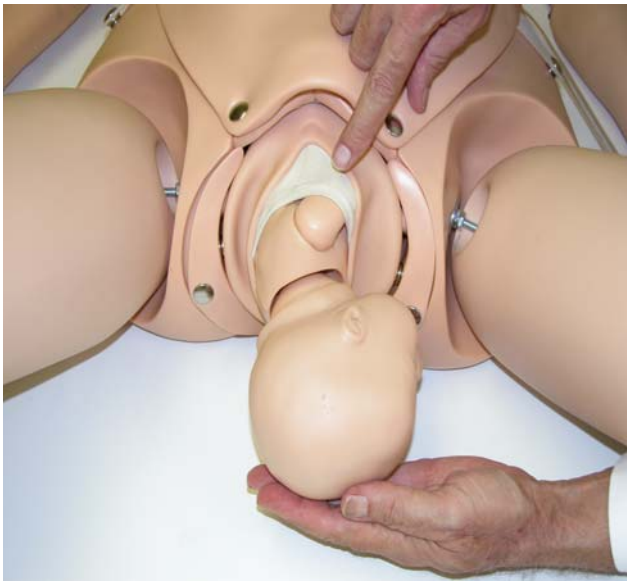
3. Gloria must be quickly moved to a delivery room and a NICU team summoned.



A foul smelling placenta is delivered intact.

The student should inspect the placenta to make sure it is intact.

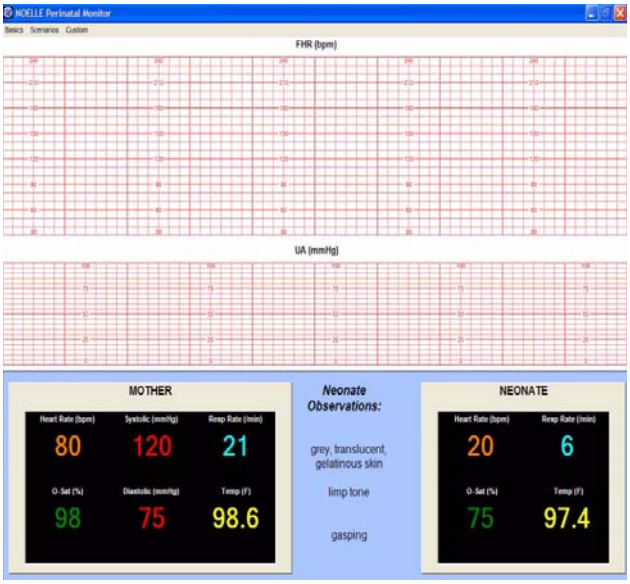
Delivery



Gloria delivers almost immediately.

The male infant's skin is translucent and gray, and limps are extended and flaccid.

The students should place the infant in a warmer.



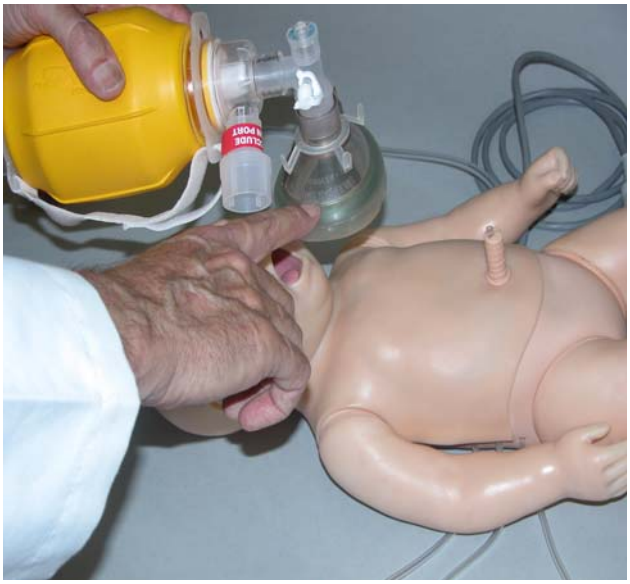
Gloria is in Stage 3. The neonate's heart rate has decreased from 60-80 inutero to about 20 following delivery.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Gloria, and then select Stage 3.

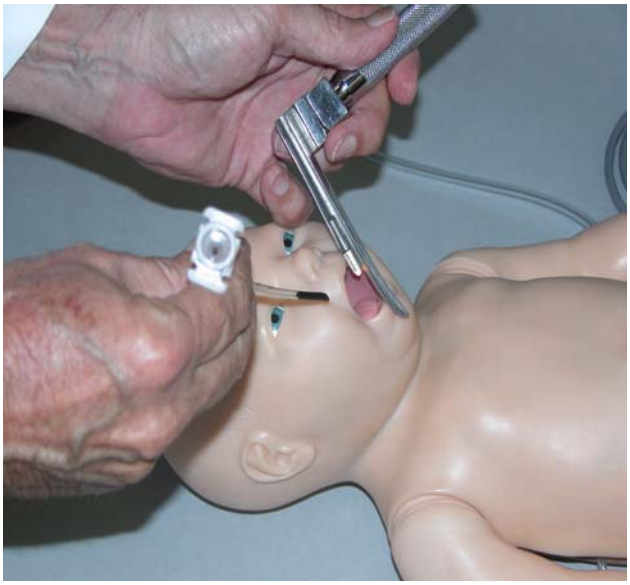
At this point, IM Pitocin is administered to the mother following the delivery of the placenta.

Neonate

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



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



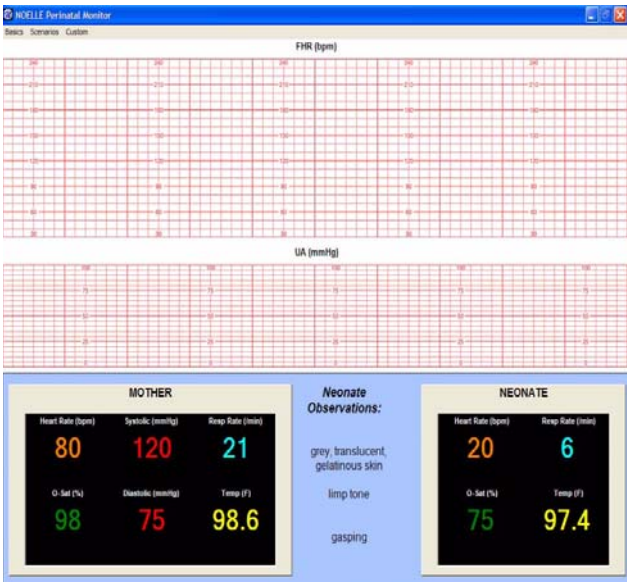
In this scenario, PPV fails to increase the neonate's HR and the student should intubate Gloria's baby.

NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse.

The 550.100 includes a neonate that changes color with resuscitation attempts. If you have the 550.100, select Central Cyanosis and an extended recovery time.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

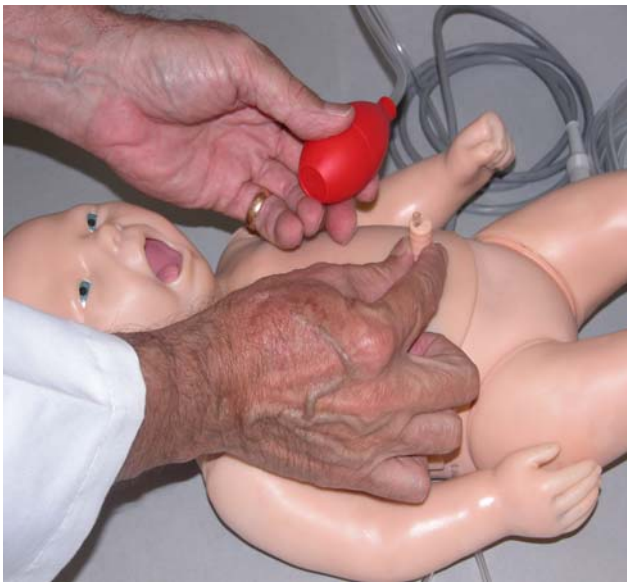
Note: Lubricate the distal end of the ETT prior to intubation.



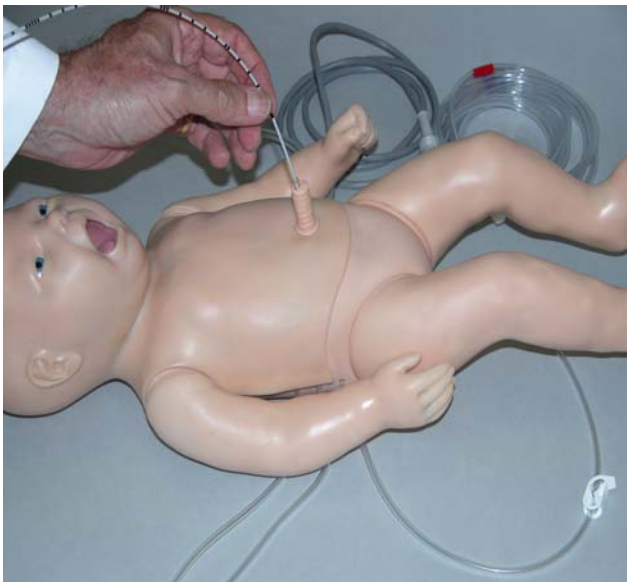
Gloria's vitals are WNL, but her baby remains in serious trouble. Discuss treatment options and take quick action.

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

The scenario now calls for an administration of emergency medications and fluid replacement.

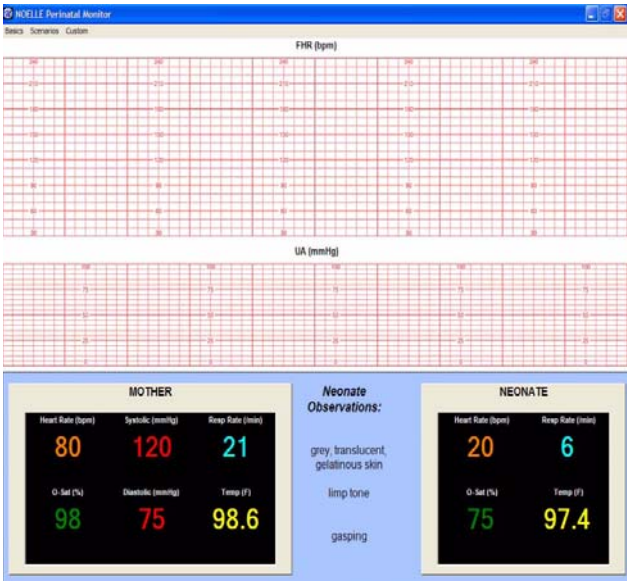


Neonates supplied with both the S550 and S550.100 have patent umbilical veins and a palpable umbilical pulse. The pulse is manually operated to show either a very low rate of 30 to 50; a rate of 70-90; or, a normal rate of about 140.



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

The students can now simulate the administration of fluids and/or emergency medications.



Following BVM, intubation, CPR, and administration of medications 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.

At this point in the scenario, 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.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 221-247 in the NOELLE Instructor and Student Guide.

Helen

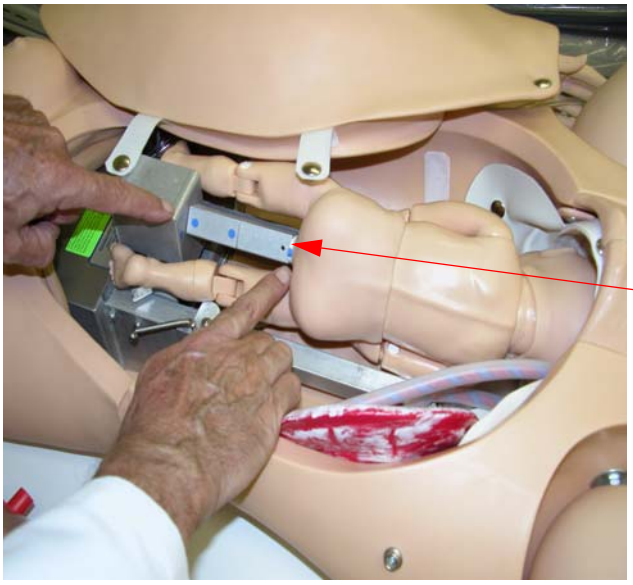
In the Helen scenario, the challenge for the student is to be acutely aware of the potential for excessive blood loss before, during, and after delivery. The students will also be challenged to care for both Helen and her baby following delivery. Helen is a 25 year old gravida 1/0 at 35 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 248-249 in the NOELLE Instructor and Student Guide.

Admission

To get started:

1. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, and the inside of the vulva.



2. Place the fetus in the ROA position with the placenta high in the abdomen, and then line up the blue dots using two extensions.

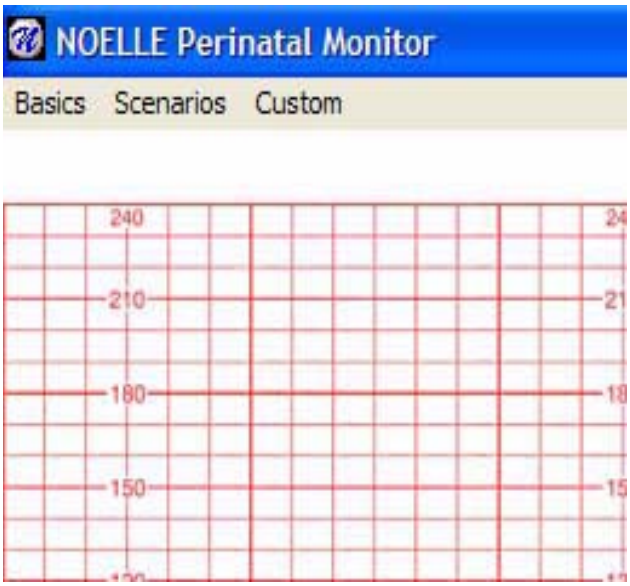
3. Reverse one or both of the detachable fragments in the placenta. This will cause the fragments to be retained after delivery.

Note: If you do not reverse them, the placenta fragments will come loose during the delivery.

4. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed which delivers the fetus in 2-3 minutes.

5. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.

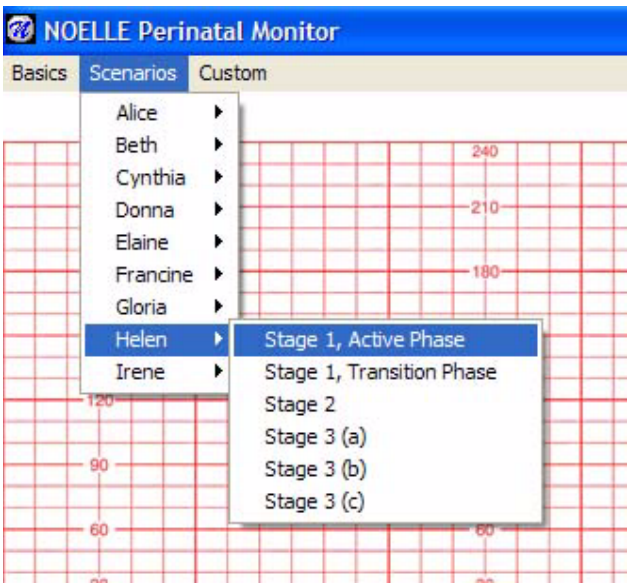


The NOELLE Perinatal Monitor program includes FHTs, vital signs for Helen, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

1. Once the program is installed, double-click the  icon on your desktop.



From the Scenarios menu, select Helen, and then select Stage 1, Active Phase.

This is Helen's condition in the Active Phase on admission. The fetal baseline is 150 with average variability and no decelerations.

Note: The Instructor may want to have ultrasound imaging available for a low lying placenta and to discuss the implications.

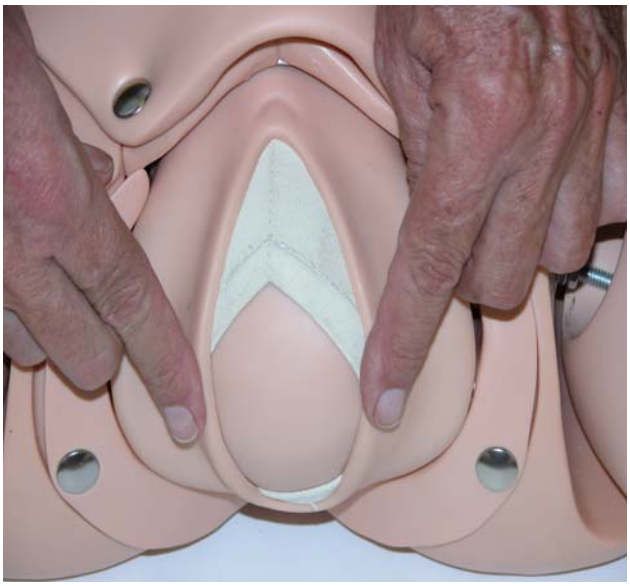
Helen is bleeding on admission. In order to simulate this condition without getting fluid into the birthing mechanism, we suggest using the postpartum hemorrhage kit supplied with NOELLE.

Note: Bleeding on the order of 500 cc can occur from the cervix or os.

Transition

In the Transition Phase, the fetal baseline remains 140-150 and the labor pattern increases in intensity.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Helen, and then select Stage 1, Transition Phase.



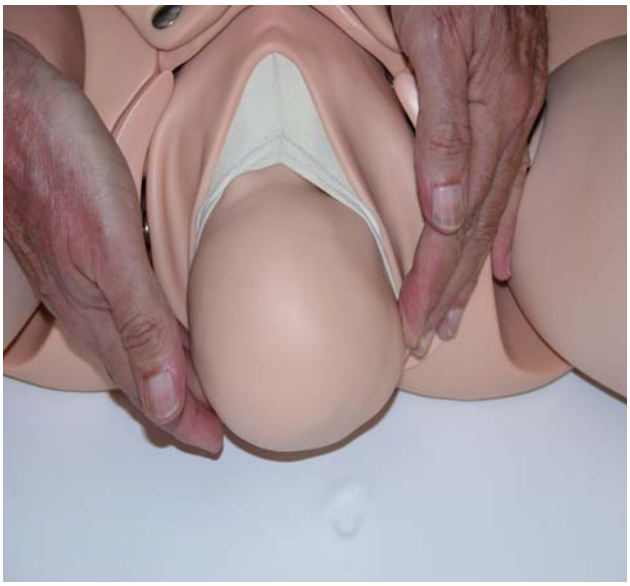
Helen's labor progresses. Delivery is spontaneous at this point.

At this point in the scenario, the Instructor may want the students to perform a midline episiotomy.

If an episiotomy is performed, insert one of the repair modules supplied with NOELLE so that students may practice repair.

Helen is in Stage 2 of labor. Her vitals are WNL.

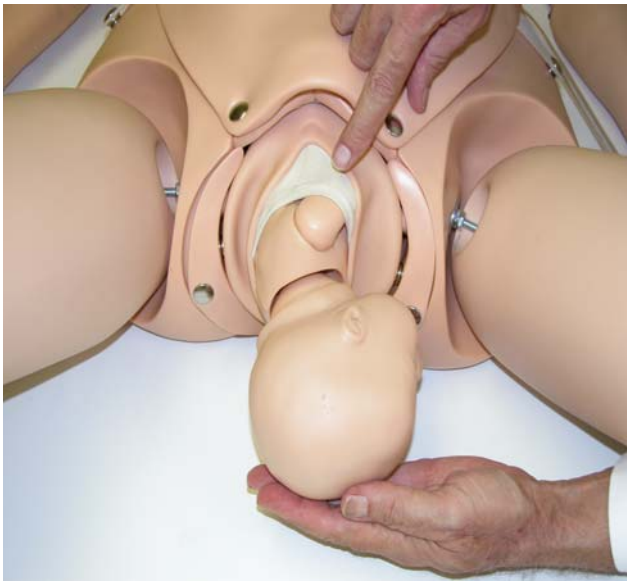
To follow along, from the Scenarios menu, select Helen, and then select Stage 2.



Fetal descent continues with little active pushing.

Students should prepare to suction the mouth, and then the nose.

Delivery



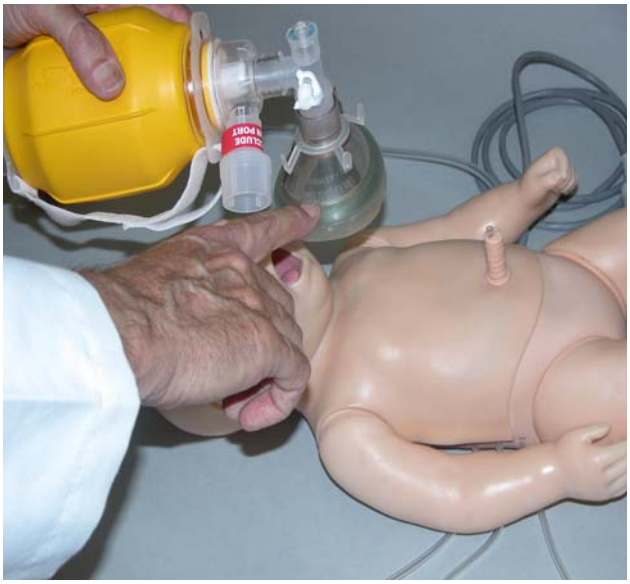
Delivery is rapid following the episiotomy.

The placenta delivers but it is not intact.

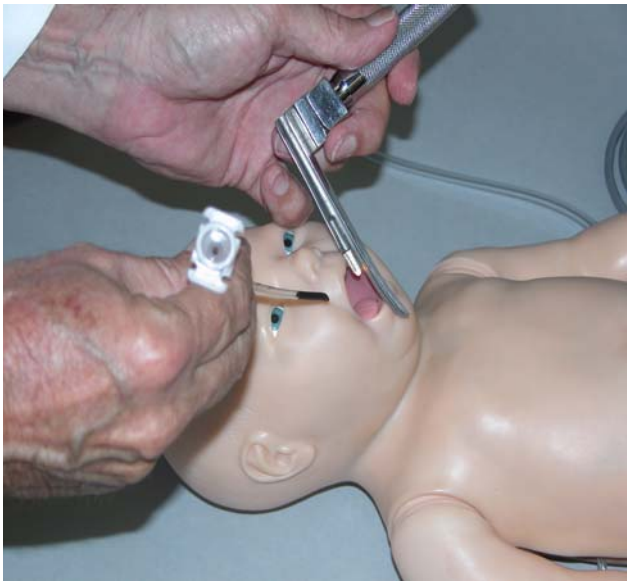
Sedation is indicated prior to bimanual uterine exploration for the retained fragment(s).

Neonate

In this scenario, the neonate is pale and flaccid. RR is 20 and HR is 58. He is covered in vernix and blood.



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



In this scenario, PPV fails to increase the neonate's HR.

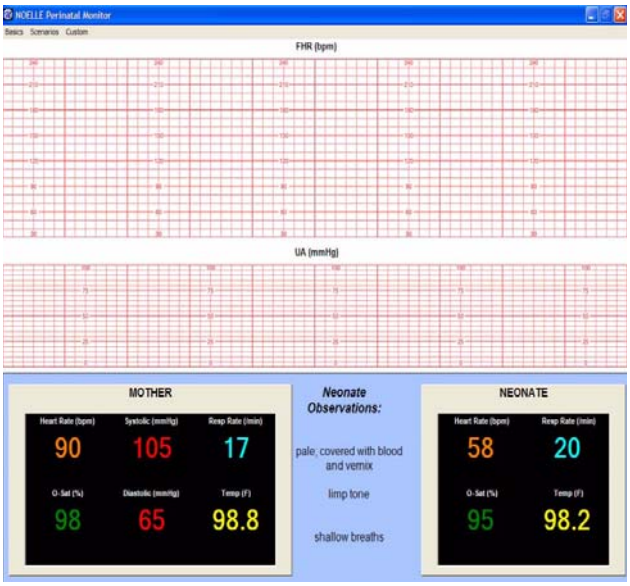
At this point, the student should practice intubation.

NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse.

The 550.100 includes a neonate that changes color with resuscitation attempts. If you have the 550.100, select Central Cyanosis and an extended recovery time from the Neonatal Monitor screen.

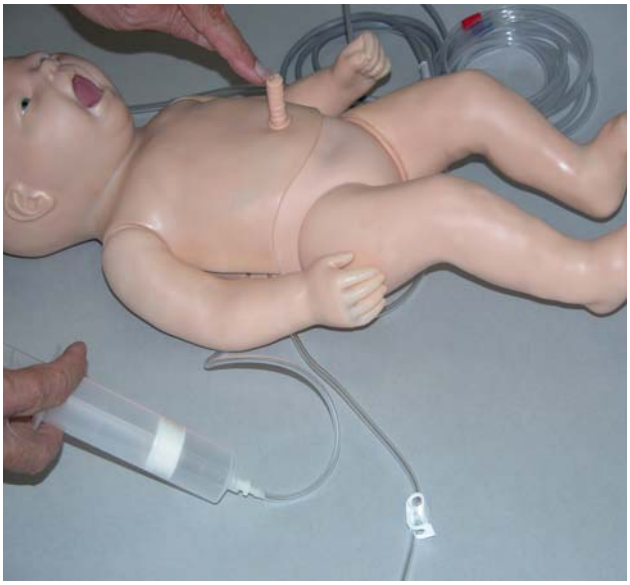
In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

Note: Lubricate the distal end of the ETT prior to intubation.



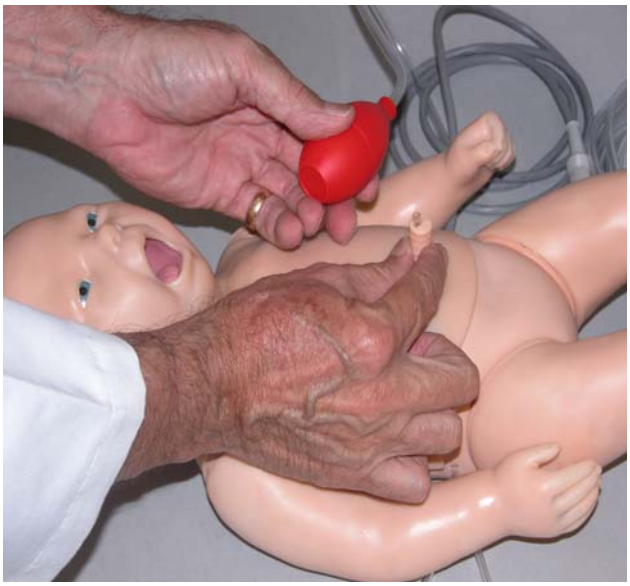
Helen's vitals are WNL, but her baby remains in serious trouble. Discuss treatment options and take quick action.

To follow along, from the Scenarios menu, select Helen, and then select Stage 3 (a).

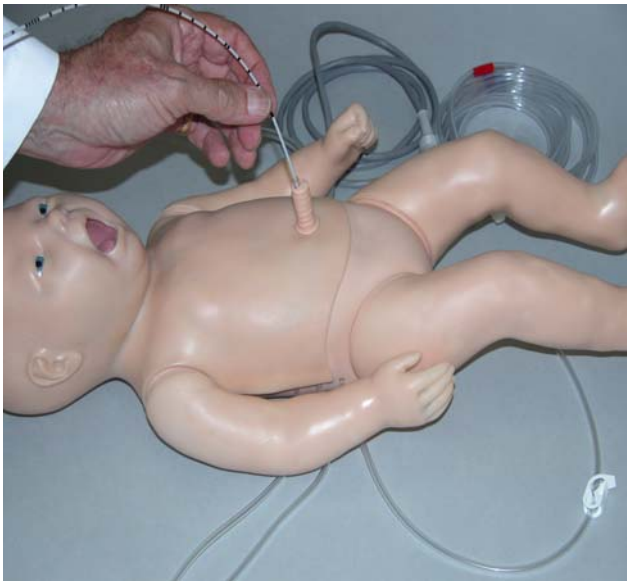


If the neonate's HR has not increased significantly after both BVM and intubation coupled with chest compressions, the next step is to use the patent umbilical vein.

This scenario now calls for an administration of emergency medications and fluid replacement.

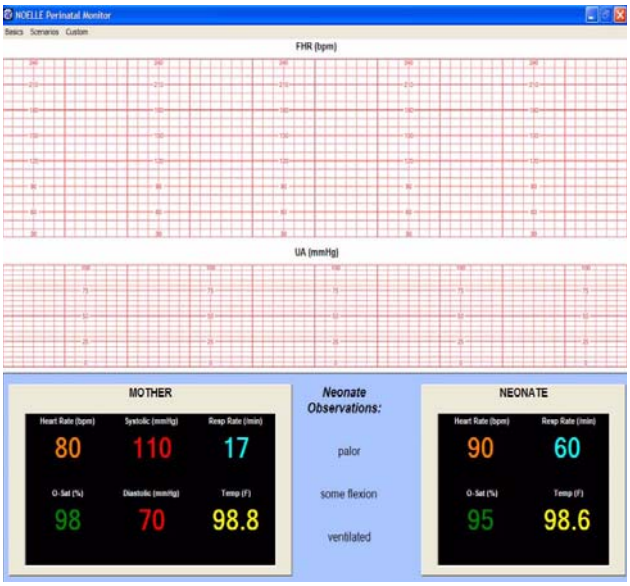


Neonates supplied with both the S550 and S550.100 have patent umbilical veins and a palpable umbilical pulse. The pulse is manually operated to show either a very low rate of 30 to 50; a rate of 70-90; or, a normal rate of about 140.



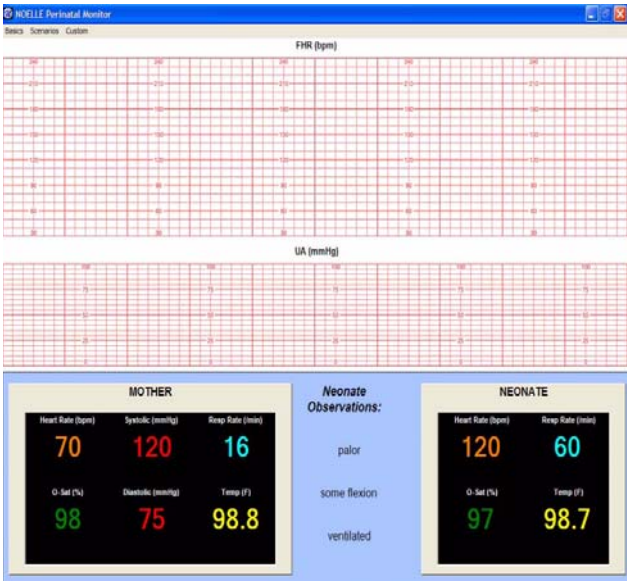
Lubricate the distal end of a standard umbilical catheter before insertion. A resistance will be felt after several centimeters of insertion.

The students can now simulate the administration of fluids and/or emergency medications.



Following resuscitation efforts and the administration of medication, the neonate's HR has increased to 90 and the RR is 60. Things are improving!

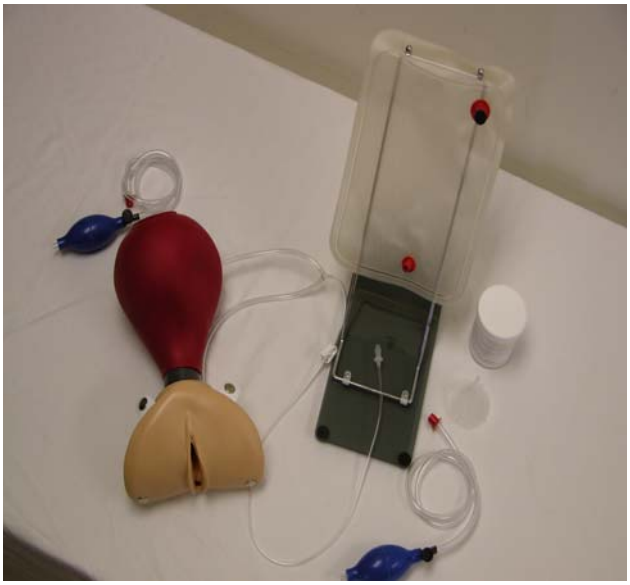
To follow along, from the Scenarios menu, select Helen, and then select Stage 3 (b).



The cumulative effect of the team's efforts has saved the baby! How is Helen?

To follow along, from the Scenarios menu, select Helen, and then select Stage 3 (c).

Postpartum

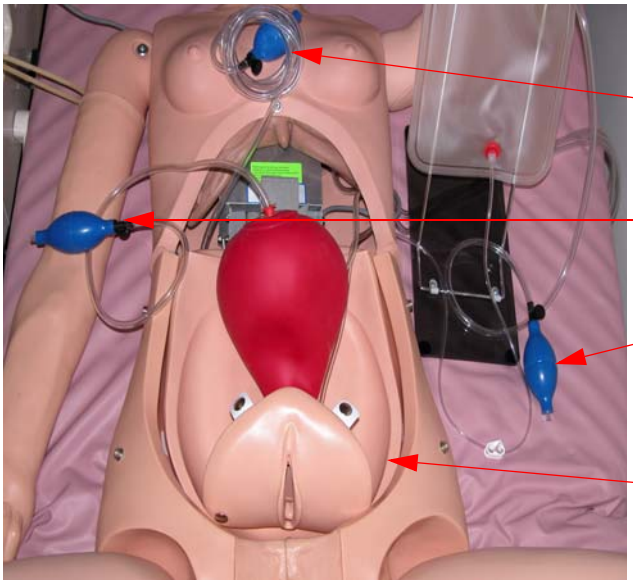


In this scenario, immediate postpartum bleeding is heavy and contains clots.

To simulate postpartum bleeding, use the PPH kit which consists of the uterus and perineum and the water or blood supply.

Use the squeeze bulb to increase the flow of blood to the os or the cervix.

The blood can be routed to either the cervical os or the edge of the distended postpartum cervix that looks like a "duck-bill".



Inflate or deflate the elevating pillow

Inflate or deflate the large uterus

Increase pressure of simulated blood in bag

Elevating pillow

To set up the Postpartum Hemorrhage (PPH) kit:

1. Retract the birthing mechanism.

Note: The birthing mechanism must be in its fully retracted position in order to insert the elevating pillow.

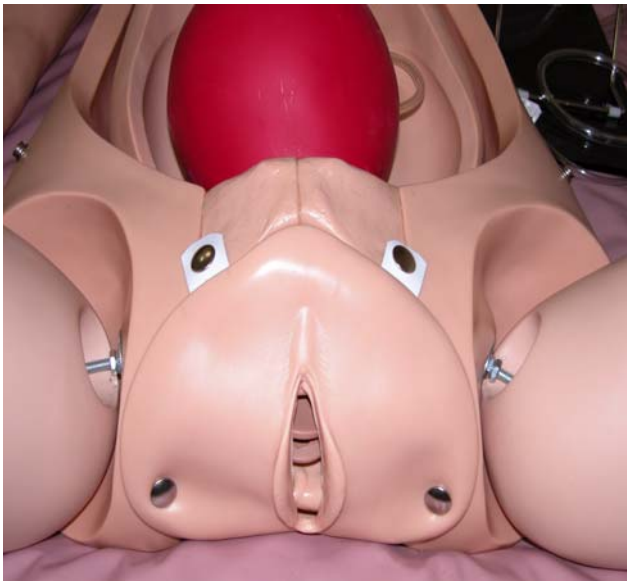
2. Insert the elevating pillow.

3. Insert the PPH kit from the INSIDE.

4. Insert the perineum through the birth canal, and then snap it into place on the OUTSIDE of NOELLE.

What are the squeeze bulbs for?

- The squeeze bulb connected to the large uterus inflates or deflates the uterus, causing it to be "boggy" or firm.
- The squeeze bulb connected to the elevating pillow inflates or deflates the pillow, lifting the uterus anteriorly.
- The squeeze bulb connected to the blood bag and stand increases the pressure on the simulated blood in the bag causing the rate of bleeding to increase.



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

Note: Velcro strips on the uterus and on the inside surface of the stomach cover prevent the uterus from moving while palpation is performed.

Once Helen has recovered from sedation, she becomes very concerned about her baby. We suggest instruction in psychosocial support for Helen and her "support system" during and following this emergency.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 248-278 in the NOELLE Instructor and Student Guide.

Irene

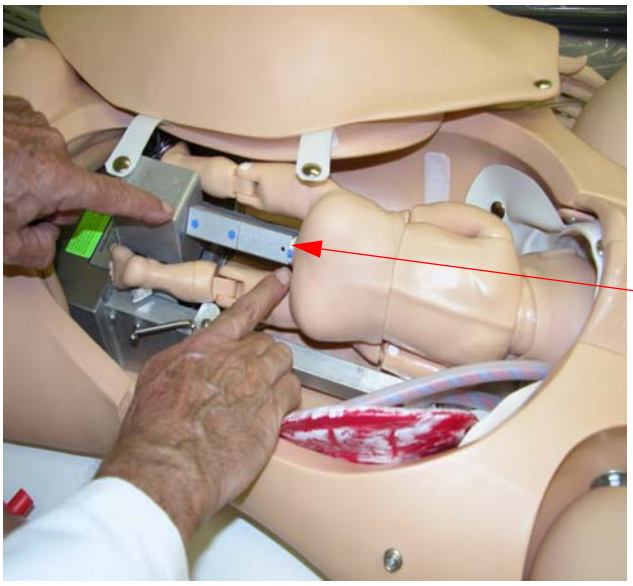
Preterm labor is one of the most significant problems facing OB professionals. Should delivery be delayed or allowed to continue? The premie requires aggressive care. Irene is a 19 year old gravida 2/0 at 29 weeks.

Note: Before starting this scenario, review Introduction and Objectives on pages 279-280 in the NOELLE Instructor and Student Guide.

Admission

To get started:

1. Thoroughly lubricate the fetal head and shoulders, the inside of the cervix, the inside of the vulva, and both sides of the placenta.

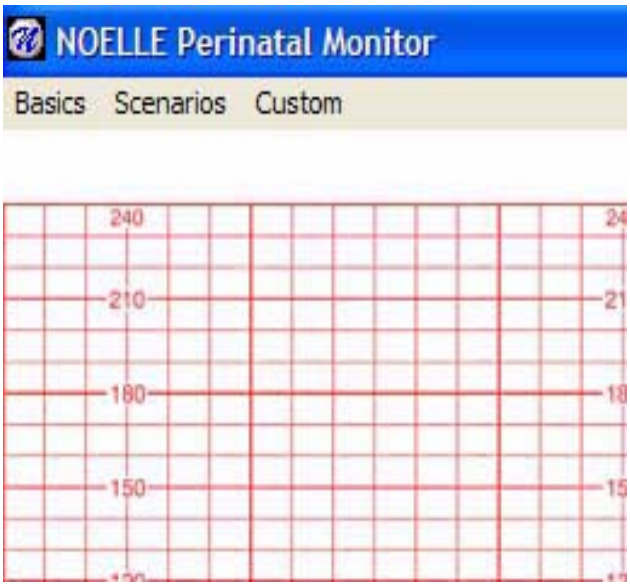


2. Place the fetus in the ROA position with the placenta high in the abdomen, and then line up the blue dots using two extensions.

3. Select a birthing speed of 1, 2, 3, or 4 and fetal heart rate using the NOELLE Birthing Controller. You may pause the delivery or change the baseline FHR at anytime; however, do not change the speed once it is selected.

Note: 1 is the fastest speed which delivers the fetus in 2-3 minutes.

4. Inflate the bladder beneath the fetal head lifting it anteriorly for palpation.

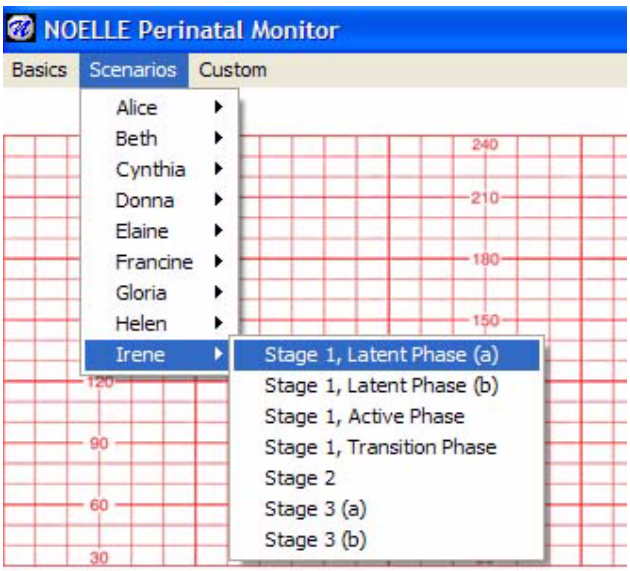


The NOELLE Perinatal Monitor program includes FHTs, vital signs for Irene, the neonate, and more. You may also use the Scenario Editor to create any FHTs you want. The Perinatal Monitor program may be purchased as Gaumard product CD500 or CD501.

Tip: You may want to display the FHTs and vital signs using a LCD projector or by using the Paint program on your computer to produce a hardcopy for teaching and/or testing purposes.

To use the Perinatal Monitor program:

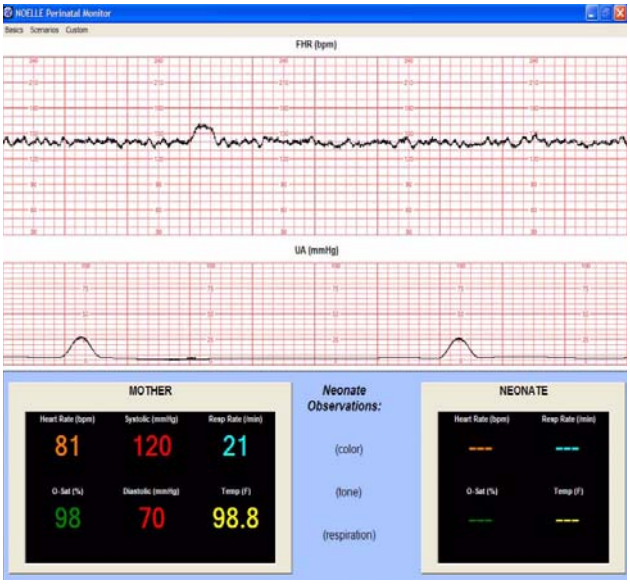
1. Once the program is installed, double-click the  icon on your desktop.



From the Scenarios menu, select Irene, and then select Stage 1, Latent Phase (a).

Labor

This is Irene's condition in Stage 1.



Irene is in the Latent Phase on admission. The fetal baseline is 140 with uterine irritability and a regular contraction pattern.

To follow along using the Perinatal Monitor, from the Scenarios menu, select Irene, and then select Stage 1, Latent Phase (b).

At this point, the Instructor may want to ask students to perform an internal exam and a ferning test. Ask students if a cerclage should be placed.

Here are some discussion topics and questions to work on with students:

- 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 Irene and her baby and why they are so important.

Irene is in the Active Phase.

To follow along, from the Scenarios menu, select Irene, and then select Stage 1, Active Phase.

At this point, the Instructor should ask what medications were administered and why.

Irene is in the Transition Phase.

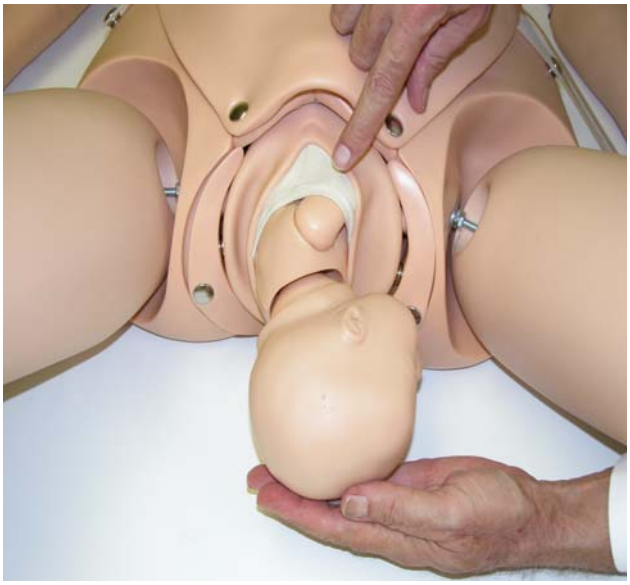
To follow along, from the Scenarios menu, select Irene, and then select Stage 1, Transition Phase.

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

Irene is in Stage 2.

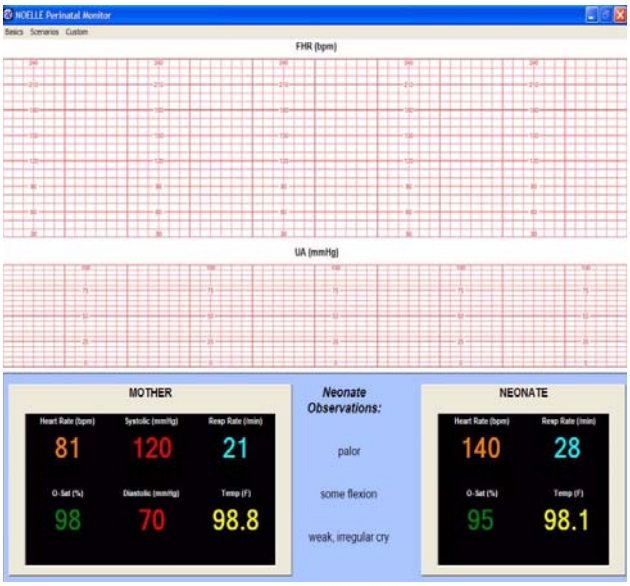
To follow along, from the Scenarios menu, select Irene, and then select Stage 2.

Delivery



Spontaneous delivery occurs and the NICU personnel should receive the neonate.

At this point, oxytocin should be added to the mainline IV so the uterus can firmly contract.



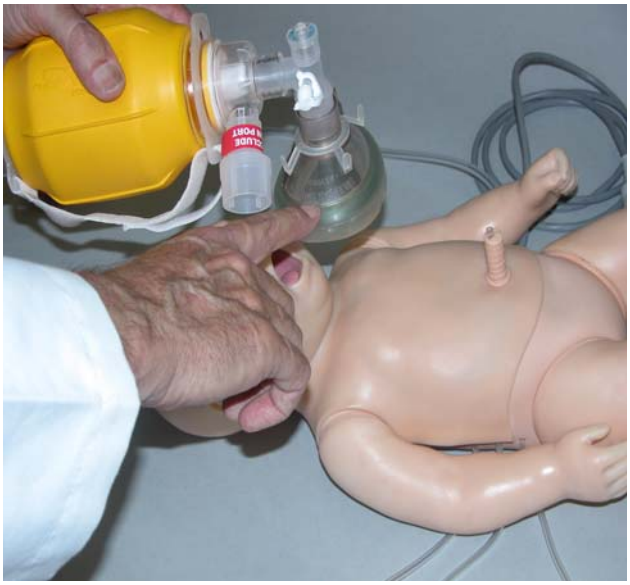
Irene is in the Third Stage following delivery.

To follow along, from the Scenarios menu, select Irene, and then select Stage 3 (a).

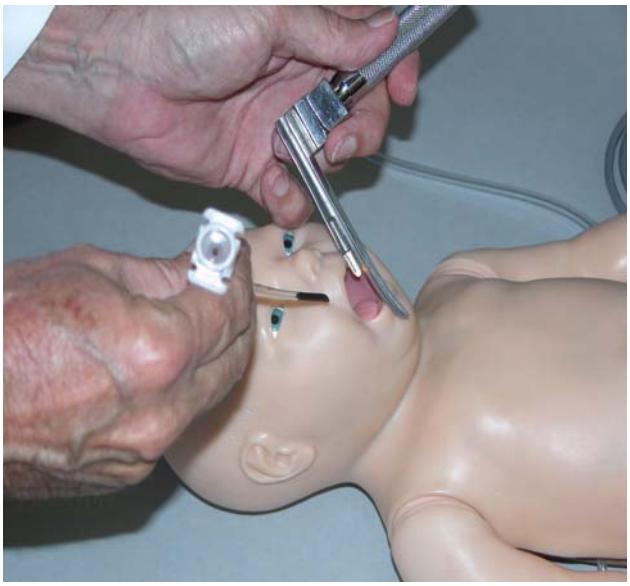
The students should now practice drying the neonate, and then stimulating the neonate to breathe.

The neonate's heart rate is 140; however, respirations are only 28. Discuss APGAR scores and note slight flexion and weak cry.

Neonate



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



In this scenario, PPV fails to increase the neonate's HR.

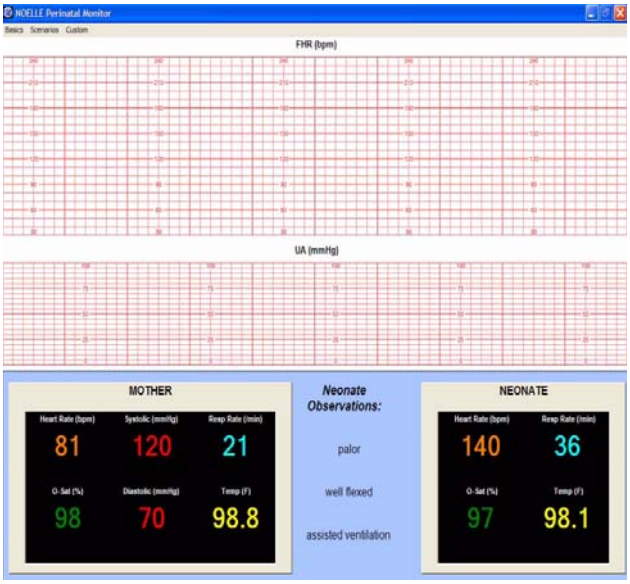
At this point, the student should practice intubation.

NOELLE models 550.100 and 550 are supplied with a full term neonate which has a patent umbilical vein and palpable pulse.

The 550.100 includes a neonate that changes color with resuscitation attempts. If you have the 550.100, select Central Cyanosis and an extended recovery time.

In order to intubate, use a Miller 1 blade and 2.5 mm - 3.0 mm ETT. When intubating, the chest will rise at approximately 25 cm water pressure.

Note: Lubricate the distal end of the ETT prior to intubation.



Once intubated, give a dose of surfactant.

The neonate responds well.

To follow along, from the Scenarios menu, select Irene, and then select Stage 3 (b).

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 on how to professionally address Irene's concerns.

Tip: For supplemental readings, discussion questions, tests and answers, take a look at pages 279-311 in the NOELLE Instructor and Student Guide.