

Conducting a Simulation

With the NRP Theme

Preparation

- 1 Familiarize yourself with the topic and objectives of the scenario in the section “Educational Focus”.
- 2 Setup the room to resemble the setting of the case and prepare the simulator as described in the case guide. Arrange equipment in a way that most closely resembles the learners’ actual clinical setting. The equipment list in each Case Guide lists equipment specific for the case. In addition, for all cases you’ll need the items listed on the NRP Quick Equipment Checklist (See Instructor’s Resources)

Educational Focus

Scenario Outline

This case presents a woman with term pregnancy complicated by gestational hypertension and fetal heart rate decelerations during labor. At birth, the infant appears term, has no muscle tone, and is apneic. The focus of this case is specifically on face-mask ventilation of the newborn. Learners are expected to be familiar with the setup and proper use of the self-inflating bag, and if used locally, the T-piece resuscitator and/or the flow-inflating bag.

Learning Objectives

Upon completion of the simulation, the learners will be able to:

- Identify the newborn that requires positive-pressure ventilation (PPV)
- Demonstrate correct technique for administering PPV
- Demonstrate the steps for assessing response to PPV
- Demonstrate the ventilation corrective steps (MR_SOPA)
- Identify indications and method for discontinuing PPV

Debriefing Points

Points for discussion during debriefing could include:

- Indications for use of PPV, supplemental oxygen, and CPAP
- Use of NRP Key Behavioral Skills

Reference Materials

Textbook of Neonatal Resuscitation, 8th edition, Lesson 4: Positive-Pressure Ventilation

Setup & Simulation

Equipment

For setup:

- Damp, lightly blood-stained blanket or towel
- Segment of simulated umbilical cord
- Simulated amniotic fluid or water
- Simulated blood

For use during simulation:

- All items included in the NRP Quick Equipment Checklist
- Umbilical cord clamps

Setup & Preparation

- Setting: Delivery room.
- Moisten the simulator’s skin with simulated amniotic fluid and blood, insert the umbilical cord segment into the abdomen.
- Wrap the simulator in a damp, lightly blood-stained blanket or towel, without a diaper, and place it under a blanket or towel on the mother’s abdomen.

Learner Brief


Provide this information to the participants as they enter the simulation:
You are called to attend a vaginal birth. The mother is a 20-year-old woman who has been admitted for induction of labor. The obstetric provider is present. Please prepare for the birth.

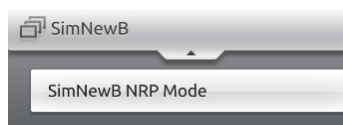
Additional Information

Provide this information to the participants, if asked during simulation:

Gestational age:	40 weeks
Amniotic fluid:	Clear
Additional risk factors:	Gestational hypertension Category II FHR tracing (late fetal heart rate decelerations)
Estimated fetal weight:	3500 g (7 lb 11 oz)
Umbilical cord management plan:	Plan to delay cord clamping for 30-60 seconds if baby is vigorous

Starting up the equipment

- 3 Start up SimPad, simulator, and patient monitor, making sure it’s all connected.
- 4 Select Manual Mode 
- 5 Click “SimNewB” and select “SimNewB NRP Mode”.
- 6 Enter name of participants and select debriefing server, if wanted. Then click “OK”.



Simulation

- 7 Read the learner brief out loud to the learners.
- 8 Use the case guide flow chart as guidance for how to progress through the simulation (see the backside for additional information).
- 9 When appropriate, end the simulation and debrief.

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NOTE! Learners must know how they will receive vital signs and other clinical feedback from the simulator. If they are not already familiar with the simulator, allow them to listen to the heart rate and breath sounds, hear the vocal sounds, note the different levels of muscle tone and activity, and interact with the patient monitor, before the simulation begins. The checklist on the backside of Instructor’s Resources can be used as a guidance for giving a systematic introduction to the capabilities of the simulator.

The Flow Chart

The NRP Theme includes 6 preset patient state levels, that each represent a physiological state of the newborn. The preset state Level 0 indicates a very compromised cyanotic infant with no respiratory rate or cardiac output, whereas, in Level 5, the infant is vigorous with stable vital signs, a strong cry, and active movement.

For an overview of the settings and vital signs in each level, see the table of preset states on Instructor's Resources.

The flow chart on the backside of each case guide presents how to progress through the simulation using the preset patient state levels to control the simulator. For example, in this case, when the baby is born:

3 Resuscitation Requiring Positive-pressure Ventilation (PPV)

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A Activate level 2

B Push the lung icon and hold it until this text appears:
LUNG INFLATION CLOSED

C Click: "Start" simultaneously with simulating the birth of the baby

The blue boxes list critical performance steps that learners should complete before progressing the simulation to a new state. You may use a dry-erase marker to check critical performance steps, as the steps are completed by the learners. Having checked the steps that were completed, may be helpful during the debriefing.

Symbols Used

L2	SpO ₂ 98	Lungs closed	Lungs open	Grunting	Limp
Activate the preset level indicated by the number.	Set the indicated parameter to the shown value.	Set lungs to be closed.	Set lungs to be open.	Set the vocal sound as indicated below the icon.	Set movement as indicated below the icon.

The scenarios described in the case guides are also available as pre-programmed scenarios in Laerdal Scenario Cloud. Laerdal scenario Cloud is a cloud-based platform for simulation scenarios. With one subscription, you will have access not only to these scenarios, but to Laerdal's entire scenario library.