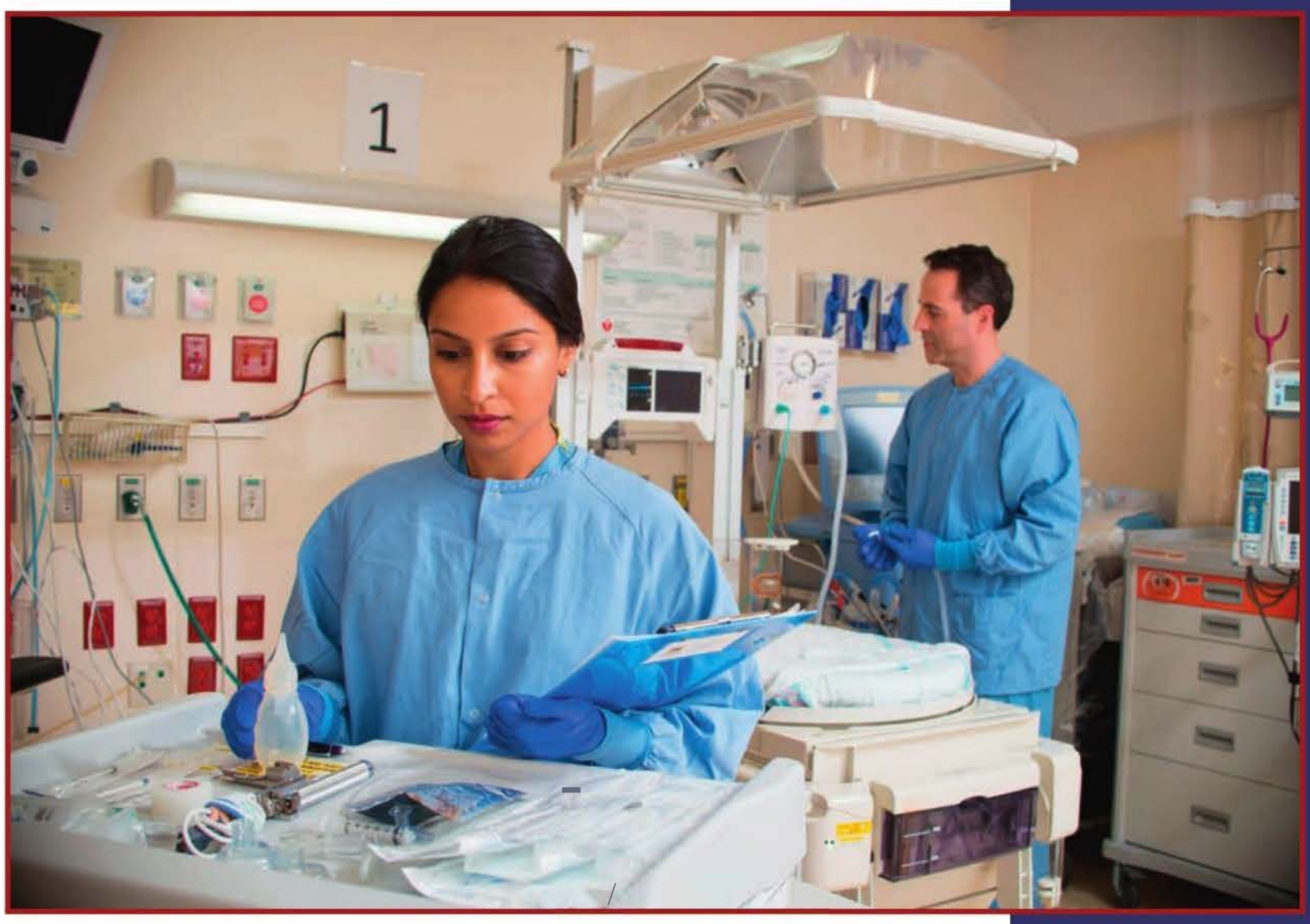
2

Anticipating and Preparing for Resuscitation

What you will learn

- Risk factors that can help predict which babies will require resuscitation
- Four key questions to ask the obstetric provider before birth
- How to determine who should attend a birth
- How to perform a pre-resuscitation team briefing
- How to assemble and check resuscitation supplies and equipment
- Why accurate documentation is important



Key Points

- Identify risk factors by asking the obstetric provider these 4 questions before birth: (1) What is the expected gestational age? (2) Is the amniotic fluid clear? (3) Are there any additional risk factors? (4) What is our umbilical cord management plan?

- Some newborns without any apparent risk factors will require resuscitation.

- Every birth should be attended by at least 1 qualified individual who can initiate resuscitation and whose only responsibility is management of the newly born baby.

- If risk factors are present, at least 2 qualified individuals should be present solely to manage the baby. The number and qualifications of these individuals will be determined by the risk factors.

- A qualified team with full resuscitation skills should be identified and immediately available for every resuscitation. The fully qualified resuscitation team should be present at the time of birth if the need for advanced resuscitation measures is anticipated. All supplies and equipment necessary for a complete resuscitation must be readily available and functional for every birth.

Case: Preparing for a birth with perinatal risk factors

A 30-year-old woman enters the hospital in labor at 36 weeks' gestation. She has insulin-requiring gestational diabetes and hypertension. She is found to have ruptured membranes with clear amniotic fluid. Fetal heart rate monitoring shows a Category II pattern (indeterminate pattern requiring evaluation, surveillance, and possibly other tests to ensure fetal well-being). Labor progresses rapidly and a vaginal birth is imminent. The obstetric provider calls your resuscitation team to attend the birth.

You ask the obstetric provider 4 brief questions and determine that there are several perinatal risk factors. You assemble a team composed of enough people with qualified skills to manage the interventions that may be needed. The team clearly identifies the team leader, performs a pre-resuscitation team briefing, discusses roles and responsibilities, and performs a complete equipment check. As your team enters the room, you introduce yourselves to the mother and the obstetric team and take your positions near the preheated radiant warmer.

Why is it important to anticipate the need for resuscitation before every birth?

At every birth, you should be prepared to resuscitate the newborn. Table 2-1 describes risk factors that increase the likelihood that the newborn will require support with transition or resuscitation. Thoughtful consideration of these risk factors will help you identify the correct personnel to attend the birth. Although attention to these risk factors is helpful and will identify most newborns that require resuscitation after birth, sorne newborns without any apparent risk factors will require resuscitation.

Table 2-1 • Perinatal Risk Factors Increasing the Likelihood of Neonatal Resuscitation

Antepartum Risk Factors	
Gestational age less than 36 0/7 weeks	Polyhydramnios
Gestational age greater than or equal to 41 0/7 weeks	Oligohydramnios
Preeclampsia or eclampsia	Fetal hydrops
Maternal hypertension	Fetal macrosomia
Multiple gestation	Intrauterine growth restriction
Fetal anemia	Significant fetal malformations or anomalies
	No prenatal care
Intrapartum Risk Factors	
Emergency cesarean delivery	Intrapartum bleeding
Forceps or vacuum-assisted delivery	Chorioamnionitis
Breech or other abnormal presentation	Opioids administered to mother within 4 hours of delivery
Category II or 11fetal heart rote pattern*	Shoulder dystocia
Maternal general anesthesia	Meconium-stained amniotic fluid
Maternal magnesium therapy	Prolapsed umbilical cord
Placenta! abruption	

*See Appendix 3 in this lesson for description of fetal heart rote categories.

What questions should you ask before every birth?

It is important for the obstetric and newborn health care providers to coordinate care by establishing effective communication. Before every birth, review the antepartum and intrapartum risk factors described in Table 2-1 and ask the following 4 pre-birth questions:

- What is the expected gestational age?
- Is the amniotic fluid clear?
- Are there any additional risk factors?
- What is our umbilical cord management plan?

Based on the responses to these questions, assemble the necessary personnel and equipment. You will learn more about the timing of umbilical cord clamping and establishing a plan for umbilical cord management in Lesson 3.

What personnel should be present at delivery?

The number and qualifications of personnel will depend on your risk assessment. Consider creating a written policy for how many people should attend a birth, what qualifications they should have based on assessment of perinatal risk, and how to call for additional help if needed.

- Every birth should be attended by *at least 1 qualified individual,* skilled in the initial steps of newborn care and positive-pressure ventilation (PPV), whose only responsibility is management of the newly born baby. When a birth is attended by only 1 qualified individual, the likelihood of resuscitation should be low. In the event of unanticipated resuscitation, this team member will initiate resuscitation and call for additional help.
- If risk factors are present (Table 2-1), *at least 2 qualified people should be present solely to manage the baby.* The number and qualifications of personnel will vary depending on the anticipated risk, the number of babies, and the hospital setting.
- A *qualified team with full resuscitation skills,* including endotracheal intubation, chest compressions, emergency vascular access, and medication administration, should be identified and immediately available for every resuscitation.
  - The fully qualified resuscitation team should be present at the time of birth if the need for advanced resuscitation measures is anticipated.
  - It is not sufficient to have the team with these advanced skills on call at home or in a remote area of the hospital. When resuscitation is needed, it must begin without delay.

For example, a nurse at an uncomplicated birth might evaluate gestational age, muscle tone, and respirations, and provide tactile stimulation. If the newborn does not respond appropriately, the nurse would position and clear the airway, start PPV, and initiate an emergency call for immediate assistance. Quickly, a second person comes to the warmer to assess the efficacy of PPV and places a pulse oximeter sensor. Another provider with full resuscitation skills, including intubation and umbilical venous catheter insertion, is in the immediate vicinity and arrives to assist the team.

In the case of an anticipated high-risk birth, such as an extremely preterm baby or prolapsed umbilical cord, a team with sufficient personnel to provide PPV, intubate the trachea, perform chest

compressions, obtain emergency vascular access, prepare medications, and document events should be assembled before the birth. Depending on the setting, this will likely require 4 or more qualified providers.

Each hospital must develop and practice a system for assembling its resuscitation team. Identify how the team will be alerted if risk factors are present, who will be called, and how additional help will be called if necessary. Practice a variety of scenarios to ensure that you have sufficient personnel immediately available to perform ali of the necessary tasks.

How do you perform a pre-resuscitation team briefing?

Once your team is assembled, perform a pre-resuscitation team briefing to review the clinical situation and any management plans developed during antenatal counseling. Identify a team leader, delegate tasks, identify who will document events as they occur, determine what supplies and equipment will be needed, and identify .how to call for additional help (Figure 2.1). Use ali of the available perinatal information to anticipate potential complications and plan your response (Table 2-2). For example, if the obstetric provider tells you that the mother has just received narcotic analgesia, you will be prepared for a sedated baby that may require assisted ventilation. Discuss who will perform the initial assessment, who will stimulate the baby, who will start PPV if needed, and who will document the events.

The pre-resuscitation team briefing is important even for well-established teams. A common analogy is to compare the medical team's pre-resuscitation briefing toan airline pilot's preflight check. Even pilots that have flown the same flight many times perform their preflight check to ensure their passengers' safety.

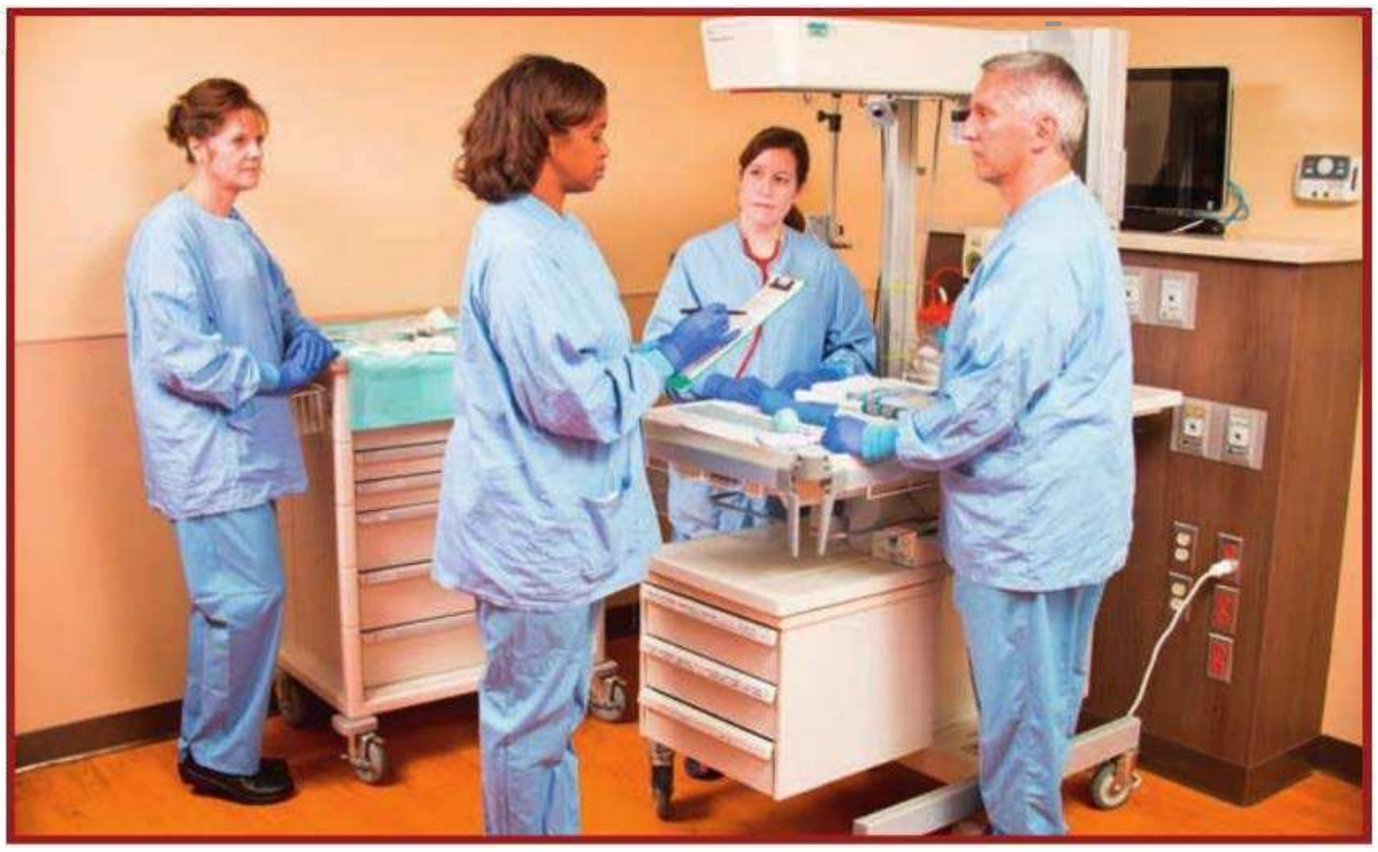


Figure 2.1. Neonatal resuscitation team briefing

Table 2-2. Pre-resuscitation Team Briefing

- Assess risk factors.
- Identify team leader.
- Anticipate potential complications and plan a team response.
- Delegate tasks.
- Identify who will document events as they occur.
- Determine what supplies and equipment will be needed.
- Identify how to call for additional help.

What supplies and equipment should be available?

All supplies and equipment necessary for a complete resuscitation must be readily available and functional for every birth. When a high-risk newborn is expected, ali appropriate supplies and equipment should be ready for immediate use. It is not sufficient to simply look at what is on the radiant warmer. It is much more effective to establish an organized routine using a standardized checklist before every birth. In this way, you will confirm what is ready for immediate use and identify which pieces of equipment are missing.

The appendices of this lesson include 2 lists.

- The Neonatal Resuscitation Program® (NRP®) Quick Equipment Checklist is a tool that you can use during your briefing to check the most essential supplies and equipment. It follows the steps of the NRP Algorithm. Consider keeping this checklist near the radiant warmer so it is accessible before every birth.
- The Neonatal Resuscitation Supplies and Equipment List is a comprehensive inve11tory of the supplies and equipment that should be available within the resuscitation area.

What are the characteristics of an effective team leader?

Every resuscitation team needs to have a team leader. Any team member who has mastery of the NRP Algorithm and effective leadership skills can be the team leader. The leader <loes not have to be the most senior member of the team or the individual with the most advanced degree. That person may have technical skills that will be required during the resuscitation and may not be able to maintain their full attention on the baby's condition. If you are the person with sole responsibility for management of the baby at birth and the baby unexpectedly requires resuscitation, you become the team leader and direct your assistants to help you until the full resuscitation team arr1ves.

- Effective team leaders exemplify good communication skills by giving clear directions to specific individuals, sharing information, delegating responsibilities to ensure coordinated care, and maintaining a professional environment.
- A skilled leader effectively uses resources by allowing all team members to contribute their unique talents to the resuscitation process.
- It is important for the team leader to remain aware of the entire clinical situation, maintain a view of the "big picture;' and not become distracted by a single activity. This is called *situation awareness.*
- If the leader is involved in a procedure that diverts their attention, the leader may need to appoint another qualified person to assume the leadership role. If the person in the leadership role changes during the resuscitation, a clear verbal statement should be made so that all team members know who is leading the team.

What is closed-loop communication?

Although the team has a leader, each team member shares responsibility for ongoing assessment and ensuring that interventions are performed in the correct sequence with the correct technique. Successful coordination requires team members to share information and communicate with each other. Closed-loop communication is a technique that ensures instructions are heard and understood.

When you give an instruction,

- Direct the request to a specific individual.
- Call your team member by name.
- Make eye contact.
- Speak clearly.
- After giving an instruction, ask the receiver to report back as soon as the task is completed.
- After receiving an instruction, repeat the instruction back to the sender.

The following 2 examples demonstrate requests and questions directed to a specific individual, clear and concise language, and closed-loop communication.

Example 1	Example 2
Nicole: *"Lou, I need a three-point-five-millimeter endotracheal tube, with a stylet, and a laryngoscope with a size-one blade now. Tell me when they're ready."* Lou: *"You need a three-point-five-millímeter endotracheal tube, with a stylet, and a laryngoscope with a size-one blade."* Nicole: *"Correct."* Once the equipment is ready, Lou: *"Nicole, a three-point-fíve-millímeter endotracheal tube, with a stylet, and a size-one laryngoscope are ready for you now."*	Nicole: *"Lou, auscultote the heort rote ond tell me íf it's increasíng."* Lou: *"The heart rote is seventy beats per minute ond it is not increosing."* Nicole: *"Is the chest moving?"* Lou: *"No, the chest is not moving."* Nicole: *"Lou, opply o pulse oximeter now. Tell me when it's workíng."* Lou: *"You want o pulse oxímeter."* Nicole: *"Correct."* When the pulse oximeter is applied and working, Lou: *"The pulse oximeter is on the right hand ond reading sixty-fíve percent."*

Why is accurate documentation important?

During an emergency, highly effective teams accurately document the series of events as they occur. Complete and accurate documentation is important for clinical decision-making andas a source for quality improvement data.

The sense of urgency surrounding resuscitation can make accurate documentation challenging, but preparation can make this essential task easier. If your hospital uses paper documentation, consider keeping a hard copy of your hospital's neonatal code documentation sheet on a clipboard at every radiant warmer. If your hospital uses electronic documentation, consider keeping a device that can rapidly enter your electronic medical record system near every radiant warmer. Practicing documentation skills warrants the same preparation as any other resuscitation skill and should be practiced during mock codes and simulation.

- During your tean1 briefing, assign someone to be the scribe who will document events. Ideally, this should be an experienced team member who knows what is important to record, is comfortable communicating with team members, and can provide decision support to the team leader. For example, the scribe may remind the team leader how much time has passed since chest compressions were started or epinephrine was administered. Without experience, the scribe may have difficulty deciding what is important to record and providing decision support to the team leader.
- Use a single time reference to document when events occur. If team members use different watches or clocks during a resuscitation, it may cause confusion or documentation errors.

- Because multitasking can disrupt observation and communication, and increase medication errors, the scribe should not be responsible for performing other critical tasks.
- To assist the scribe, team members need to clearly announce their assessments and when interventions are performed.
- Consider using a paper form or electronic template designed specifically for neonatal resuscitation. Well-designed forms that follow the NRP Algorithm enable rapid data entry, allowing the scribe to assist the team leader by providing prompts for the next intervention and identifying delayed assessments. The NeoLog, available on the NRP website, is one example of a code documentation form designed specifically for neonatal resuscitation.
- After the event, consider supplementing the resuscitation record with a narrative summary that clarifies decision-making.

What are the benefits of a post-resuscitation team debriefing?

A post-resuscitation team debriefing is a constructive review of actions and thought processes that promotes reflective learning. Performing a debriefing after the resuscitation reinforces good teamwork habits and helps your team identify areas for improvement. A quick debriefing can be performed immediately after the event, while a more comprehensive debriefing may be scheduled a short time afterward. Your debriefings do not have to find major problems to be effective. You may identify a series of small changes that can result in significant improvement in your team's performance and clinical outcomes.

Focus on Teamwork

The preparation phase of neonatal resuscitation highlights severa! opportunities for effective teams to use the NRP Key Behavioral Skills.

Behavior	Example
Know your environment.	Know how the resuscitation team is called and how additional personnel and resources can be summoned. Know how to access additional supplies and equipment for a complex resuscitation.
Use available information.	Ask the obstetric provider the 4 pre-birth questions to identify risk factors.
Antici pote and plan.	Know which providers are qualified to attend the birth based on the identified risk factors. Perform a standardized equipment check before every birth. Assign roles and responsibilities.
Clearly identify a team leader.	If risk factors are present, identify a team leader before the birth and perform a pre-resuscitation team briefing to ensure that everyone is prepared and responsibilities are defined.
Use available resources.	Prepare additional supplies and equipment, as necessary, based on identified risk factors.

Quality Improvement Opportunities

Ask yourself the following questions and begin a discussion with your team if you find a difference between the NRP recommendations and what is currently done in your own hospital setting. Consider using the suggested process and outcome measures to guide your data collection, identify areas for improvement, and monitor if your improvement efforts are working.

Quality improvement questions

- Who is responsible for ensuring that supplies and equipment are ready before every birth?
- Is the table of risk factors accessible in your delivery setting?
- Is a supplies and equipment checklist available at every warmer?
- Do you have a designated paper form or electronic template designed specifically for neonatal resuscitation readily available for use at every birth?
- How is the resuscitation team mobilized when a newborn without risk factors needs resuscitation?

Process and outcome measures

- What percentage of providers involved in the care of newborns have completed the NRP course?
- What percentage of births have a qualified provider present who is only responsible for the newborn?
- What percentage of births have a standardized supplies and equipment checklist completed?
- What percentage of births attended by 1 NRP provider require additional team members for an unanticipated resuscitation?

Frequently Asked Questions

What is the ideal number of people to have on the resuscitation team?

There is no single correct answer to this question. You must have sufficient personnel immediately available to perform all of the necessary tasks without delay. The personnel required at any particular birth will depend on the identified risk factors, the qualifications

of the individuals on the team, and the setting. Simulate different scenarios to ensure that you have sufficient personnel on your team to perform all necessary procedures quickly and efficiently. For a complex resuscitation, this will likely require 4 or more people.

What if I am concerned that we do not hove the correct team configuration (number of people or qualifications) to attend a birth?

This problem usually can be avoided by having a clearly written hospital protocol to determine the number and qualifications of people who should attend a birth based on a standardized assessment of risk factors and effective team communication. Remember that safety is the top priority in decision-making. Following the concepts outlined in the NRP Key Behavioral Skills, use the available information to identify the safety concern, use effective communication and professional behavior to express your concern, and use your knowledge of the available resources to suggest an alternative. Start by saying, "I believe this delivery has risk factors that require ... :' If your concern is not acknowledged, continue with "I am concerned because..." and suggest an alternative course of action.

LESSON 2 REVIEW

1. What are the 4 pre-birth questions to ask the obstetric provider before every birth?

2. Every delivery should be attended by at least 1 qualified person (whose only responsibility is the management of the newborn)/ (who shares responsibility for the mother and newborn's care).

3. If a high-risk birth is anticipated, (1 qualified person)/ (a qualified team) should be present at the birth.

4. During the pre-resuscitation team briefing, (prepare for a routine delivery because you do not know what will be needed)/(anticipate potential complications and discuss how responsibilities will be delegated).

5. A qualified nurse or respiratory therapist who has been trained in neonatal resuscitation and has strong leadership skills (can)/ (cannot) be the team leader.

6. The equipment check includes (checking that ali supplies and equipment for a complete resuscitation are readily available and functional only when anticipating a high-risk birth)/(checking that ali supplies and equipment for a complete resuscitation are readily available and functional for every birth).

Answers

1. The 4 pre-birth questions are: (1) What is the expected gestational age? (2) Is the amniotic fluid clear? (3) Are there any additional risk factors? (4) What is our umbilical cord management plan?

2. Every delivery should be attended by at least 1 qualified person whose only responsibility is the management of the newborn.

3. If a high-risk birth is anticipated, a qualified team should be present at the birth.

4. During the pre-resuscitation team briefing, anticípate potential complications and discuss how responsibilities will be delegated.

S. A qualified nurse or respiratory therapist who has been trained in neonatal resuscitation and has strong leadership skills can be the team leader.

6. The equipment check includes checking that all supplies and equipment for a complete resuscitation are readily available and functional for every birth.

Appendix 1. NRP Quick Equipment Checklist

This checklist includes only the most essential supplies and equipment needed at the radiant warmer for most neonatal resuscitations. Tailor this list to meet your unit-specific needs. Ensure that an equipment check has been done prior to every birth.

Warm	• Preheated warmer • Warm towels or blankets • Temperature sensor and sensor cover for prolonged resuscitation • Hat • Plastic bag or plastic wrap (< 32 weeks' gestation) • Thermal mattress (< 32 weeks' gestation)
Clear airway	• Bulb syringe • 10F or 12F suction catheter attached to wall suction, set at 80 to 100 mm Hg • Tracheal aspirator
Auscultate	• Stethoscope
Ventilate	• Flowmeter set to 10 L/min • Oxygen blender set to 21 % (21 %-30% if < 35 weeks' gestation) • Positive-pressure ventilation (PPV) device • Term- and preterm-sized masks • 8F orogastric tube and 20-ml syringe • Laryngeal mask (size 1) and 5-ml syringe (if needed for inflation) • 5F or 6F orogastric tube if insertion port is present on laryngeal mask • Cardiac monitor and leads
Oxygenate	• Equipment to give free-flow oxygen • Pulse oximeter with sensor and cover • Target Oxygen Saturation Table
Intubate	• Laryngoscope with size 0 and size 1 straight blades (size 00, optional) • Stylet (optional) • Endotracheal tubes (sizes 2.5, 3.0, 3.5) • Carbon dioxide ($C0_2$) detector • Measuring tape and/or endotracheal tube insertion depth table • Waterproof tape or tube-securing device • Scissors
Medicate	Access to • Epinephrine (0.1 mg/ml= 1 mg/10 ml) • Normal saline (100-ml or 250-ml bag, or prefilled syringes) • Supplies for placing emergency umbilical venous catheter and administering medications • Table of pre-calcuated emergency medication dosages for babies weighing 0.5 to 4 kg

Appendix 2. Neonatal Resuscitation Supplies and Equipment List

Suction equipment

Bulb syringe
Mechanical suction and tubing
Suction catheters, SF or 6F, lOF, 12F or 14F
8F orogastric tube and 20-mL syringe
Tracheal aspirator

Positive-pressure ventilation equipment

Device for delivering positive-pressure ventilation
Pace masks, term and preterm sizes
O_{xy} gen source
Compressed air source
O_{xy} gen blender to mix oxygen and compressed air with flowmeter (flow rate set to 10 L/min) and tubing
Pulse oximeter with sensor and cover
Target Oxygen Saturation Table
Stethoscope (with neonatal head)
Laryngeal mask (size 1) or similar supraglottic device, and 5-mL syringe (if needed for inflation)
5F or 6F orogastric tube if insertion port present on laryngeal mask
Cardiac monitor and leads

Intubation equipment

Laryngoscope with straight blades, No. 0 (preterm) and No. 1 (term)
Extra bulbs and batteries for laryngoscope, if required
Endotracheal tubes, 2.5-, 3.0-, 3.5-mm internal diameter (ID)
Stylet (optional)
Measuring tape
Endotracheal tube insertion depth table
Scissors
Waterproof tape or tube-securing device
Alcohol pads
Carbon dioxide detector or capnograph

Medications

Epinephrine (0.1 mg/mL= 1 mg/10 mL)
Normal saline for volume expansion-100-mL or 250-mL bag, or prefilled syringes
Dextrose 10%, 250 mL (optional)
Normal saline for flushes
Syringes (1 mL, 3 mL or 5 mL, 20-60 mL)
Three-way stopcocks or fluid-dispensing connectors
Table of pre-calculated emergency medication dosages for babies weighing 0.5 to 4 kg

Umbilical vessel catheterization supplies

Sterile gloves
Antiseptic prep solution
Umbilical tape
Small clamp (hemostat)
Forceps (optional)
Scalpel
Umbilical catheters (single lumen), 3.SF or SF
Three-way stopcock
Syringes (3-5 mL)
Needle or puncture device for needleless system
Normal saline for flushes
Clear adhesive dressing to temporarily secure umbilical venous catheter to abdomen (optional)

Miscellaneous

Timer/clock with second hand
Gloves and appropriate personal protection equipment
Radiant warmer or other heat source
Temperature sensor with sensor cover for radiant warmer (for use during prolonged resuscitation)
Warmed linens
Hat
Tape, 1/2 or 3/4 inch
Intraosseous needle (optional)

For very preterm babies

Food-grade plastic bag (1-gallon size) or plastic wrap
Thermal mattress
Size 00 laryngoscope blade (optional)
Transport incubator to maintain baby's temperature during move to the nursery

Appendix 3. Fetal Heart Rate Categories

Category I: This is a *normal* tracing and is predictive of normal fetal acid-base status at the time of the observation, and routine follow-up is indicated.

Category 11: This is considered an *indeterminate* tracing. There is currently inadequate evidence to classify these tracings as either normal or abnormal. Further evaluation, continued surveillance, and reevaluation are indicated.

Category 111: This is an *abnormal* tracing and is predictive of abnormal fetal acid-base status at the time of the observation. A Category III tracing requires prompt evaluation and intervention.

Reference

Macones GA, Hankins GD, Spong CY, Hauth J, Moore T. The 2008 National Institute of Child Health and Human Development workshop report on electronic fetal monitoring: update on definitions, interpretation, and research guidelines. *Obstet Gynecol.* 2008;112(3):661-666

LESSON 2: PRACTICE SCENARIO

Anticipating and Preparing for Resuscitation

Learning Objectives

- Determine the process for identifying antepartum and intrapartum risk factors for neonatal resuscitation and identifying how the decision is made for who will attend the birth.

- f) Demonstrate a pre-resuscitation team briefing.

- E) Demonstrate an organized method for performing an equipment check prior to the birth.

- 8 Identify the process used to call for additional help if needed for newborn resuscitation.

This Practice Scenario is for review/practice and evaluation.

This is the suggested Practice Scenario sequence.

- **Review the Knowledge Check Questions** with your Neonatal Resuscitation Program (NRP) instructor.

  a. What are the 4 key questions to ask the obstetric provider before the birth? What is the purpose of these questions?

  b. What is your unit's process for assessing risk factors that increase the likelihood of newborn resuscitation? How is it determined who will attend a birth?

  c. If a newborn unexpectedly requires resuscitation at birth, what is the system to call for help?

  d. What happens at a pre-resuscitation team briefing?

  e. Who is responsible for checking resuscitation supplies and equipment before every birth?

- f) **Practice/review these skills** with your NRP instructor.

  a. Prepare the radiant warmer for use.

  b. Set up the positive-pressure ventilation (PPV) device(s) for use. If a T-piece resuscitator normally is used in the delivery room, the learner may demonstrate proficiency with setting up that device and check the readiness of a self-inflating bag and mask.

  c. Checl< the functio11 of wall suction device(s).

  d. Check the function of the laryngoscope.

- **Practice this scenario** with your NRP instructor until you need little or no assistance or coaching.
- **Pass the Lesson 2 Practice Scenario evaluation** by leading this practice scenario and performing the skills relevant to your role and responsibilities. If a technical skill included in this scenario is not within your scope of responsibility, delegate the skill to a qualified team member and perform the role of assistant, if appropriate. When you can lead the scenario(s) and perform the skills with little or no instructor coaching, proceed to the next lesson's practice scenario.

Practice Scenario

Two variations of the scenario are offered.

- A baby of 38 weeks' gestation with no known risk factors
- A baby of 29 weeks' gestation with additional risk factors

"You are notified that a woman has been admitted to the hospital in active labor. Prepare your team far the birth and check your supplies and equipment. As you work, say your thoughts and actions aloud so I will know what you are thinking and doing."

The instructor should check boxes as the learner responds correctly. The learner may refer to the NRP Quick Equipment Checklist or use a unit-specific checklist. Two gestational ages are offered for use.

Critical Performance Steps		
Assess perinatal risk.		
Assesses perinatal risk (learner asks 4 pre-birth questions and instructor ["OB provider"] responds)		
What is the expected gestational age?	**"38 weeks' gestation."**	**"29 weeks' gestation."**
Is the amniotic fluid clear?	**"Clear fluid."**	**"Clear fluid."**
Are there any additional risk factors?	**"No known risk factors."**	**"Preeclampsia."**
What is our umbilical cord management plan?	**1will delay cord clamping. If the baby is not crying, 1'11take a moment to stimulate the baby. If there's no response, 1'11clamp and cut the cord."**	
Assemble team.		
Assembles team based on perinatal risk factors. When the likelihood of resuscitation is low, l qualified individual should attend the birth. If risk factors are present, at least 2 qualified people should be present solely to manage the baby. The number of team members and qualifications vary depending on risk.		

Critical Performance Steps (cont)	
	If the birth will be attended by 1 person, Knows the answers to the 4 pre-birth questions, determines supplies and equipment needed, knows how to call for help
	If the birth will be attended by a team, perform a pre-resuscitation briefing. Identifies team leader. Assesses risk factors, discusses potential complications and the management plan, delegates tasks, identifies who will document events, determines supplies and equipment needed, knows how to call for additional help.
Perform equipment check.	
	Demonstrates an organized routine to locate the most essential supplies needed for newborn resuscitation: **Warm.** • Preheated radiant warmer • Towels or blankets • Temperature sensor and sensor cover for use during prolonged resuscitation • Hat • Plastic bag or wrap (< 32 weeks' gestation) • Thermal mattress (<32 weeks' gestation)
	Clear the airway. • Bulb syringe • 1OF or 12F suction catheter attached to wall suction, set at 80 to 100 mm Hg • Tracheal aspirator
	Auscultate. • Stethoscope
	Ventilate. • Sets flowmeter to 1O L/min • Sets oxygen blender to 21 % (21 %-30% if < 35 weeks' gestation) • Checks presence and function of PPV device(s), including pressure settings and pressure pop-off valves • Sets T-piece resuscitator at peak inflation pressure (PIP) = 20 to 25 cm H_2O for term baby; PIP = 20 cm H_2O for preterm baby; positive end-expiratory pressure (PEEP) = 5 cm H_2O • Term- and preterm-sized masks • Laryngeal mask (size 1) and 5-ml syringe (if needed for inflation) • 5F or 6F orogastric tube if insertion port present on laryngeal mask • 8F orogastric tube and 20-ml syringe • Cardiac monitor and leads
	O_{xy} genate. • Equipment to give free-flow oxygen • Target Oxygen Saturation Table • Pulse oximeter with sensor and sensor cover
	Intubate. • Laryngoscope with size O and size 1 straight blades and bright light (size 00, optional) • Stylet (optional) • Endotracheal tubes (sizes 2.5, 3.0, 3.5) • Carbon dioxide ($C0_2$) detector • Measuring tape and/or endotracheal tube insertion depth table • Waterproof tape or tube-securing device • Scissors

Critical Performance Steps (cont)	
Perform equipment check (cont).	
	Medicate. Ensure access to • Epinephrine (1 mg/10 ml=0.1 mg/ml) • Normal saline (100- or 250-ml bag, or prefilled syringes) • Supplies for administering medications and placing emergency umbilical venous catheter and administering medications • Pre-calculated medication dose chart
	Other potential items to check. • Temperature in resuscitation location (23°C to 25°C [74°F-77°F] if < 32 weeks' gestation) • Oxygen and air tanks • Access to intraosseous needle and insertion supplies • Access to surfactant (preterm birth) • Transport incubator for transfer to nursery or NICU

Sample Debriefing Questions

O What factors determined your decision for who would attend the birth(s) described in the scenario(s)?

f) If all equipment and supplies are present, how long does it take you to confirm readiness for a birth? Are there methods you could use to decrease the time needed to perform the equipment check?

E) Which of the NRP Behavioral Skills are demonstrated during preparation for resuscitation?

NRP Key Behavioral Skills

- Know your environment.
- Use available information.
- Anticipate and plan.
- Clearly identify a team leader.
- Communicate effectively.
- Delegate the workload optimally.
- Allocate attention wisely.
- Use available resources.
- Call for additional help when needed.
- Maintain professional behavior.