

Prehospital Pediatric Care Course

Scenarios

Throughout this program, instructors will encounter Pediatric Simulations

These simulations are meant to be performed by the students, preferably using the same equipment as is available on the response vehicle.

While discussion and skill practice are valuable learning tools, the student gains most from actually performing the skills in an environment where conditions resemble those found in the pre-hospital setting.

Instructors are encouraged to be creative in setting up these simulations as long as the principal learning objectives are included.

Rapid First Impression/Initial Assessment Scenario 1

Practices Rapid First Impression and Initial Assessment skills.

You are responding to a call for a 2 year old child with difficulty breathing at home.

On arrival, prior to approaching the child, describe how you would formulate a Rapid First Impression?

Appearance

Posture/Muscle tone: Child is standing up. Does not appear very sick.
Mental Status: Child looks at you and backs away, closer to mother.

Breathing

Respiratory Rate and Effort: Chest rises and falls normally, rate is 24/min and speaks to his mother in a clear voice.

Circulation

Skin Color: Child has pink tones to skin.

From these observations, is this child urgent or non-urgent? Non-urgent as there are no signs of respiratory distress; no signs of inadequate perfusion and mental status is normal.

What is next?

Continue with initial assessment (airway, breathing, circulation and mental status).

Airway assessment for effectively moving air and potential for compromise

Airway: Airway is open because he is speaking clearly.
Does anything endanger the airway? No. (Absence of distress, stridor, gurgling, signs of FBAO)

Breathing: Assessed for adequacy: equal chest rise, effort and rate.
Rate and Effort are normal. There are no signs of additional work of breathing.
Rate remains 24/min.
Chest rise is equal bilaterally.
Lung sounds on chest wall are clear
Tracheal sounds are clear

Circulation: Check peripheral and central pulses for rate and compare strength.
Heart rate is 100/min.
Femoral and pedal pulses are equally strong.

Mental status: Child appears to be curious but is cautious.
AVPU is A.

Are there any findings that change the child's status from non-urgent to urgent? No

Obtain focused history and transport.

Rapid First Impression/Initial Assessment Scenario 2

You are responding to a call for a 2 year old child with difficulty breathing at home.

On arrival, prior to approaching the child, describe how you would formulate a Rapid First Impression?

Appearance

Posture/Muscle tone: Lying quietly on couch..
Mental Status: Eyes half open, uninterested in your presence.

Breathing

Respiratory Rate and Effort: Rate is 44, but is breathing without extra effort

Circulation

Skin Color: Pale

From these observations, is this child urgent or non-urgent?

Urgent as there are signs of respiratory failure including exhaustion, altered mental status, flaccid muscle tone and pale skin.

What is next?

Assure an open airway, administer oxygen and initiate transport.

Delay additional assessment (airway, breathing, circulation and mental status) until transport is underway.

During transport, initial assessment is done:

Airway assessment for effectively moving air and potential for compromise

Airway: Airway is clear, (no stridor, gurgling) but there is a potential for compromise as the child is not alert.

Breathing: Assessed for adequacy: equal chest rise, effort and rate.
Rate is slightly high. Effort is slight.
Rate remains 44/min.
Chest rise is slight bilaterally.
Lung sounds on chest wall are clear
Tracheal sounds are clear

Responsiveness: Child looks at you when you speak to him.

Circulation: Pedal pulse is weak, femoral pulse is strong. Rate is 120. Skin is pale, hot and dry.

Mental status The child looks up when you call his name. He makes no effort to otherwise respond to you.

What's next? Maintain body temperature and reassess ABC and mental status throughout transport.

Hypoperfusion Scenario 1

Assessment and Management

You are responding to a pedestrian struck. Upon arrival, you find your patient to be a 6 year old who is lying on the street about 20 feet from the car which hit him.

The child appears to be unconscious as you approach. There is obvious deformity to the right leg and the clothing over the chest and abdomen is torn. He is breathing slowly and irregularly. According to the RFI is he urgent or non-urgent? Any child who is unresponsive due to trauma is always considered urgent.

Please demonstrate how you will assess the patient.

As the student completes each step, provide the corresponding information:

Assessment	Findings	Actions
Responsiveness:	None to voice or touch	C Spine/Airway Prepare to transport
Airway	Gurgling is heard	Suction
Breathing:	Chest rise is slight. Rate is 10/min. irreg There are abrasions on chest Lung sounds are faint.	Ventilate using E-C Clamp and BVM w/ oxygen. Use Squeeze Release Release for Rate of 25/min.
Circulation:	No hemorrhage noted Strong carotid/ weak radial pulse Cool, mottled skin in extremities	Maintain body heat.
Mental status:	Unresponsive to all stimuli	
Extremities:	large deformity over the middle of the right thigh.	

What is your priority at this time?

Complete immobilization and transport as soon as possible. Continue ventilating patient. Request ALS for intubation and possible IV fluids.

Hypoperfusion Scenario 2

You are responding to a call for an unconscious child. Upon arrival, the father tells you that his 18 month old has had fever, vomiting and diarrhea for two days and now has grown extremely weak. As you approach the child, who is supine on the sofa, your RFI reveals that his skin is pale, breathing very rapidly, has flaccid muscle tone and is not alert.

Is this child's condition urgent or non-urgent?

Urgent, because he has signs of respiratory failure, inadequate circulation and altered mental status.

Please demonstrate how you will assess the patient.

As the student completes each step, provide the corresponding information:

Assessment	Findings	Actions
Responsiveness:	Slightly rouses to touch	Assess Airway Prepare to transport
Airway	Open airway with head tilt And chin lift No abnormal sounds	Continue assessment
Breathing:	Chest rise is slight. Rate is 50/min.	Ventilate using E-C Clamp and BVM w/ oxygen. If not tolerated High concentration of Oxygen by non- rebreather mask.
Circulation:	No hemorrhage noted Weak carotid/ absent radial pulse Cool, mottled skin in extremities	Maintain body heat.
Mental status:	Responsive to touch.	
Extremities:	Unremarkable	

What is your priority at this time?

(Prepare for transport, continuous monitoring of the ABCs, prepare to assist ventilations, CPR.)

Respiratory Distress and Failure Scenario 1

Assessment and Management

You are responding to a call for a 2 year old 'not breathing'. When you arrive, you find a toddler sitting quietly in his mother's lap. He appears pale and you note central cyanosis about the mouth. The child looks at you curiously but holds on to his mother. His breathing is about 30/min.

On arrival, prior to approaching the child, describe how you would formulate a Rapid First Impression?

Appearance

Posture/Muscle tone: Child is sitting up comfortably.
Mental Status: Child looks at you and turns away, toward mother.

Breathing

Respiratory Rate and Effort: Chest rises and falls equally, rate is 30/min but with a harsh sound on inspiration. Retractions are noted at sternum.

Circulation

Skin Color: Child is pale with blue tones around mouth and eyes.

From these observations, is this child urgent or non-urgent?
Urgent as there are signs of partial airway obstruction (stridor on inspiration) respiratory failure due to cyanosis.

What is next?

Prepare to transport and continue with initial assessment (airway, breathing, circulation and mental status).

Airway assessment for effectively moving air and potential for compromise

Airway: Airway is partially obstructed.
Does anything endanger the airway? Yes, infection causing the stridor (swelling).

Breathing: Assessed for adequacy: equal chest rise, effort and rate.
Rate is elevated slightly. Extra effort is being used.
Rate remains 30/min.
Chest rise is equal bilaterally.
Lung sounds on chest wall are clear

Circulation: Check peripheral and central pulses for rate and compare strength.
Heart rate is 100/min.
Femoral and pedal pulses are equally strong.

Mental status: Child appears to be curious but is cautious.
AVPU is A.

What is the priority now?

Initiate transport.

Avoid agitating the child while providing humidified oxygen.

Obtain focused history during transport.

Reassess during transport.

Respiratory Distress and Failure Scenario 2

Assessment and Management

You are responding to a call for an 18 month old tracheostomy patient whose home ventilator keeps alarming. When you arrive, a worried aunt, babysitting the child for the evening, is standing beside the crib. The child appears pink, but when you check the ventilator, the pressure alarm is continuously lighted and sounding. The aunt attempted to reach the parents, who were celebrating their anniversary on a rare night out, on their cell phone, but got only their voice mail. The ventilator is set at a rate of 20/min. The aunt appears very frightened.

On arrival, prior to approaching the child, describe how you would formulate a Rapid First Impression?

Appearance

Posture/Muscle Tone: Child is lying supine, moving all limbs.
Mental Status: Child appears agitated, does not focus.

Breathing

Respiratory Rate and Effort: Chest rises and falls slightly, rate is 20/min on ventilator. Tubing adapter pops off tracheostomy tube as you observe the child. Retractions are suddenly noted at ribs and sternum.

Circulation

Skin Color: Child was initially pink but is now pale with blue tones around mouth and eyes.

From these observations, is the child urgent or non-urgent?

Urgent as there are signs of respiratory distress progressing to respiratory failure due to problems with the tracheostomy tube or home ventilator.

What is next?

Disconnect from ventilator, provide assisted ventilations via bag-valve-mask. Higher than normal inflating pressures are required. Suction tracheostomy tube. Catheter meets resistance but does pass with difficulty. Remove catheter, instill saline into tracheostomy tube. Suction tracheostomy tube again. Catheter now passes easily. Continue assisted ventilations. Prepare for transport.

Airway assessment for effectively moving air and potential for compromise

Airway: Airway was partially obstructed, is clear after saline and suctioning. Does anything endanger the airway? Yes, thick secretions in tracheostomy tube may block airflow and cause respiratory arrest.

Breathing: Assessed for adequacy: initially minimal chest rise, now adequate. Rate is 20/min via bag-valve-mask. Inflating pressures now lower. Chest rise is equal bilaterally. Lung sounds initially distant, now normal and clear.

Circulation: Check peripheral and central pulses for rate and compare strength. Heart rate is 100/min. Femoral and pedal pulses are equally strong.

Mental status: Child now appears to be less agitated but is still anxious.
AVPU is A.

What is the priority now?

Initiate transport.

Avoid agitating the child while assisting ventilations via bag-valve-mask.

Obtain focused history during transport.

Reassess during transport.

Newborn Resuscitation Scenario 1

You are responding to a call for a woman in labor. When you arrive you find that the baby is about to be born. The head has already delivered.

Describe what actions you would take at this time to care for the baby.

(Universal precautions)

Check for umbilical cord around neck.

Suction mouth and nose.

Gently support and guide baby's head through the birth.

The baby has now been born. Please demonstrate the assessment and management of this newborn.

Suction mouth and nose.

Dry, stimulate and warm baby.

The baby now begins to cry. What further actions would you take?

Assess the respirations and pulse.

The respirations are 40/minute and the heart rate is 130 beats per minute.

What other tasks should be performed now?

Clamp and cut the umbilical cord.

Wrap the baby in a towel or blanket.

Wrap the outside of the blanket with the foil baby bunting, if available.

Reassess the respirations and heart rate frequently.

Newborn and Infant Resuscitation Scenario 2

You are responding to a call for a woman in labor. When you arrive you find that the baby was born about 5 minutes ago. The baby is limp, centrally and peripherally cyanotic. You cannot detect any chest rise.

Demonstrate what actions you would take at this time to care for the baby.

(Universal precautions)

Suction the mouth and nose.

Open the airway by head tilt, chin lift. (Put small towel or dressing under shoulders to aid in maintaining correct position.)

Look, listen and feel for breathing. (The patient is not breathing.)

Ventilate the baby with a BVM, oxygen and reservoir for 30 seconds at a rate of 40-60/min. Ventilations are adequate if the chest rises.

Check the brachial pulse. Pulse is 50.

Begin two rescuer CPR with encirclement of the chest and thumbs on sternum. Initiate chest compressions at a rate of 120/min and interpose a ventilation after every 3rd compression. Recheck every 15-30 seconds.

After 30 seconds heart rate climbs to 60.

After 1 minute, heart rate climbs to 90.

Stop compressions.

Continue ventilations until the patient has a respiratory rate greater than 30, heart rate is at least 120 and central cyanosis disappears. Switch to high concentration mask or blow-by oxygen.

What other tasks need to be accomplished?

The baby should be dried and wrapped.

The baby must be kept warm throughout resuscitation.

The umbilical cord should be clamped and cut.

Reassess the respirations and heart rate frequently.

