

**Northwest Community EMS System**  
**February 2021 CE: Peds Breathing Problems**  
**Credit Questions**

Name (Print):		EMS Agency:		
EMS Educator:				
Date submitted	Score:	<input type="checkbox"/> Acceptable <input type="checkbox"/> Not acceptable	<input type="checkbox"/> Incomplete <input type="checkbox"/> Incorrect answers	Date returned w/ feedback
Resubmission received:	Score:	<input type="checkbox"/> Acceptable <input type="checkbox"/> Not acceptable	<input type="checkbox"/> Incomplete <input type="checkbox"/> Incorrect answers	Date returned w/ feedback:
# CE Hours awarded:		Date		

This packet should take 2 hours to complete – which earns you the equivalent of the 2 hour live CE class.

**Sources of information/answers**

February CE Participant slide deck handout

**SOPs:** Peds Respiratory illness

1. Which of these is defined as a state of inadequate SpO<sub>2</sub> and hypercarbia trending to CO<sub>2</sub> narcosis in the presence of increased work of breathing?
  - A. Respiratory distress
  - B. Respiratory failure

2. Give a brief explanation of at least one thing you learned by watching the video link on slide 19 (see link below):  
[www.youtube.com/watch?v=Fmt6JB-W\\_M8](http://www.youtube.com/watch?v=Fmt6JB-W_M8)

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3. Which of these is considered the minimum tachypnea rate per minute of concern for 1-5 year olds?
  - A. 20
  - B. 30
  - C. 40
  - D. 60

4. Which of these are considered signs of SEVERE respiratory distress in a child? Select all that apply.
  - Nasal flaring
  - Head bobbing
  - Sternal retractions
  - Gasping; grunting
  - Talks in sentences

5. What pathology does respiratory grunting suggest (minute 6:54 of above video)?

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6. Which of these is NOT a contributor to the seriousness of URIs in children?
  - A. Obstruction due to small size of airways and Eustachian tubes
  - B. Poor cough reflex and minimal pulmonary reserve
  - C. Lack of early warning signs like stridor

7. If a child has expiratory stridor, where is the obstruction?
- A. At or above the larynx
  - B. Below the carina
8. A 9 y/o child presents after rapidly losing consciousness following a severe headache. The pt's airway is filled with foamy secretions and the child does not respond to pain. After a jaw thrust maneuver and inserting an OPA, the airway remains impaired. Which of these is indicated first?
- A. Suction, consider need for i-gel insertion
  - B. Intubate child based on a persistently impaired airway
  - C. Perform a surgical cricothyrotomy as approved by OLMC
  - D. Continue efforts to suction and assist ventilations with peds BVM into hospital
9. How should one estimate the appropriate size i-gel to select in a child if they are <35kg? (SOPs)
- A. Patient age in months
  - B. Diameter of their 5<sup>th</sup> finger
  - C. Pt weight/Broselow tape color
  - D. Distance from teeth to angle of the jaw
10. A six year old who weighs 40 lbs requires sedation prior to advanced airway insertion for respiratory failure. What sedative and specific dose do they require IVP? (SOPs)
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11. The above patient has been sedated and an i-gel successfully inserted. What is the specific dose of ketamine IVP to maintain Postinvasive Airway Sedation and Analgesia (PIASA) as long as the SBP is 92 mmHg? (SOP)
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12. A 2 y/o presents with a loud seal bark cough and a very hoarse and raspy cry. The child has been ill with an URI for the past 2 days. Respiratory effort is adequate; no wheezing, stridor or retractions noted. Skin is warm (101° F) and pink. VS: BP 94/60; P 140; R 36, SpO2 95%. Which of these should be suspected?
- A. Croup
  - B. Epiglottitis
  - C. Pneumonia
  - D. Foreign body aspiration
13. Which of these actions is indicated for the above patient?
- A. Peds IMC and transport
  - B. Albuterol 2.5 mg/HHN with O<sub>2</sub> at 6 L
  - C. 2 chewable ASA and cool mist nebulizer treatment
  - D. Epinephrine (1mg/10mL) 0.5 mg with 6 L O<sub>2</sub>/HHN or mask
14. List at least 4 clinical signs and symptoms of bad (severe) croup:

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**The next two questions refer to the following scenario**

A 5 y/o conscious child presents sitting in a tripod position with difficulty breathing, subcostal retractions, and mild inspiratory stridor. The pt speaks in a soft, muffled voice (dysphonia) and is drooling with dysphagia. The child became ill with a fever and severe sore throat 6 hours ago. Skin is hot (105° F) with cyanosis. VS: BP 90/60; P 120; R 28; SpO<sub>2</sub> 95%.

15. Which of these should be suspected?
- A. Croup
  - B. Epiglottitis
  - C. Pneumonia
  - D. Bacterial tracheitis
16. Which of these is indicated first for the above patient?
- A. 2 chewable ASA and cool with wet sheets
  - B. Lay flat and ventilate with 15 L O<sub>2</sub>/peds BVM
  - C. Epinephrine (1mg/10mL) 0.5 mg w/ 6 L O<sub>2</sub>/HHN/mask
  - D. Gently insert a tongue blade and inspect the posterior pharynx
17. Which of these should be suspected in any previously well, afebrile child with a sudden onset of respiratory distress that is associated coughing, choking, stridor or wheezing?
- A. Asthma
  - B. Pertussis
  - C. Epiglottitis
  - D. Foreign body aspiration
18. If a conscious infant less than one year who cannot speak, cough, or cry presents with a suspected upper airway obstruction, which intervention is indicated first after repositioning the head and attempting to ventilate? (SOP)
- A. Five abdominal thrusts
  - B. Five back slaps followed by 5 chest thrusts
  - C. Direct laryngoscopy and removal with the Magill forceps
  - D. Intubate and push the obstruction into the right mainstem bronchus
19. If an unconscious child presents with a possible foreign body aspiration, which of these is indicated first? (SOP)
- A. Open airway w/ chin lift & look for FB in mouth/pharynx; if visible, remove w/ a finger sweep or suction
  - B. Perform a blind finger sweep.
  - C. Perform 5 abdominal thrusts
  - D. Begin CPR
20. A 7 y/o is unconscious due to a complete upper airway foreign body obstruction. CPR is in progress. Manual attempts to remove the obstruction with forceps and suction have been unsuccessful and ventilations remain ineffective. Which of these should be considered next? (SOP)
- A. Needle cricothyrotomy
  - B. Surgical cricothyrotomy
  - C. Transport with BVM ventilations
  - D. Intubate the child and push the FB downward if possible to allow some ventilation
21. A conscious and alert 10 y/o presents with difficulty breathing from a suspected asthma attack. Respiratory effort is adequate at a rate of 30; expiratory wheezes present in all lung fields. There are no retractions or use of accessory muscles. SpO<sub>2</sub> 95%; ET/CO<sub>2</sub> 45 with a shark fin waveform. HR 120, strong. Which of these is indicated *first*?
- A. Ketamine IVP
  - B. Magnesium slow IVP/IO
  - C. Epinephrine (1 mg/1mL) IM
  - D. Albuterol & ipratropium/HHN

22. List at least 3 S&S of a severe asthma attack in a child:
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23. What is the pediatric concentration, dose and route of epinephrine to give to a child with a severe asthma attack who weighs 45 lbs? (SOP)
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24. What is the specific pediatric dose of magnesium (mg added to a volume of NS and IV push rate) for a child who weighs 48 pounds?
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25. How can one differentiate a pediatric asthma attack from an allergic reaction? What S&S generally characterize the early development of an allergic reaction that would be absent in an asthma attack?
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26. List the elements to include in the OLMC report for a child with a severe asthma attack:
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27. A 10-month old child presents with moderate respiratory distress and audible wheezing. The child prefers a sitting position, has a runny nose, high fever, head bobbing, and expiratory grunting. VS: P 190; RR 80; SpO<sub>2</sub> 84%; T 103 F. The child is not tugging on its ear and there is no stridor, hoarseness, or drooling. What should EMS suspect?
- A. Asthma
  - B. Epiglottitis
  - C. Pertussis
  - D. Bronchiolitis (due to RSV virus)
28. Treatment for the above child should include all of the following EXCEPT:
- A. ABCs: Suction pm; O<sub>2</sub>
  - B. Position to optimize air exchange (upright)
  - C. Delay transport until medication can be set up and initiated at point of patient contact
  - D. Nebulize epinephrine (1 mg/10mL) 0.5 mg (5 mL) w/ 6 L O<sub>2</sub>/HHN/mask (aim mist at child's face)
29. An infant presents in respiratory failure due to RSV and has been ventilated by EMS personnel with a BVM. Enroute, the child develops an increased RR, use of accessory muscles, SpO<sub>2</sub> 84%, HR 190, thready central pulses, agitation, and absent lung sounds on the right. What should EMS suspect and what is the treatment of choice?
- A. Acute septic shock; norepinephrine drip
  - B. Tension pneumothorax; needle pleural decompression
  - C. Severe bronchoconstriction; epinephrine IV push dose
  - D. Airway obstruction due to the disease; needle cricothyrotomy

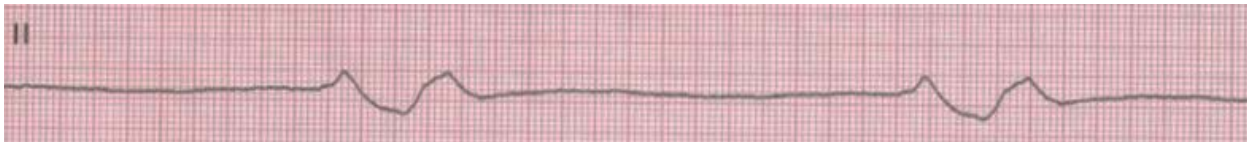
**The next two questions refer to the following scenario**

A febrile (103° F) 6-month-old infant presents with a poor feeding and decreased activity over the past 3 days. The child appears dehydrated & lethargic, is warm to touch, coughing; RR 70 (shallow); SpO<sub>2</sub> 90%; ETCO<sub>2</sub> 33 w/ square waveform; isolated crackles present in the right lower lung field (no stridor or wheezing); HR 120; BP 80/60.

30. What clinical condition should you suspect?
- A. Asthma
  - B. Pneumonia
  - C. Bronchiolitis
31. If the ETCO<sub>2</sub> drops to 30, what should you anticipate?
- A. Sepsis
  - B. Heart failure
  - C. Thyroid storm
  - D. Malignant hyperthermia
32. A 2 y/o presents with AMS following a severe respiratory infection and high fever. Cap refill is 5 secs; legs are cold and knee caps are mottled. VS: BP 64/40; P 70; RR 64 and shallow with increased WOB and retractions; SpO<sub>2</sub> 78%; lungs sounds: bilateral wheezing; EtCO<sub>2</sub> 65; glucose 80. IMC is incomplete. Which of these is indicated *first*?
- A. Albuterol & ipratropium/mask
  - B. IO access and give NS 40 mL/kg
  - C. Epinephrine (1mg/1mL) 0.5 mg IM
  - D. Preox for 3 min while prepping i-gel

33. When ventilating a child who is not in cardiac arrest, how often should a breath be given? (SOP)
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34. If a pediatric patient is found in a respiratory arrest due to a possible opiate overdose, what is the dose and route of naloxone that is indicated?
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35. A 3 year old is found unconscious in the following rhythm with no peripheral pulses.



- What is the most common cause of this presentation?
- A. Bacterial infection
  - B. Profound hypoxemia
  - C. Sick sinus syndrome
  - D. Congenital heart defect
36. Which of these *is contraindicated* when managing a child in cardiac arrest due to VF?
- A. i-gel insertion
  - B. Tibial IO access
  - C. Apneic oxygenation
  - D. Immediate defibrillation

37. What are the Hs and Ts that may cause asystole or cardiac arrest in children? (Slide deck/SOPs)

Hs	Ts

38. How soon should the **initial** dose of epinephrine be given to a child found in cardiac arrest?

- A. As soon as pulselessness is discovered
- B. Within 5 minutes of starting chest compressions
- C. As soon as the rhythm is confirmed to be shockable
- D. As soon as vascular access and an advanced airway are established

39. Which of these *is true* regarding epinephrine administration during pediatric cardiac arrests?

- A. Use only when  $ETCO_2$  is  $>20$
- B. Administer q. 6 min with CPR
- C. Repeat until max total dose reaches 1 mg
- D. Use only when the arrest was caused by a cardiac event

40. Which of these is a rare, but severe complication seen in those  $<21$  years who tested positive for SARS-CoV-2 infection within 4 weeks prior to the onset of symptoms that include fever, lab evidence of inflammation, and clinically severe illness presenting with multisystem ( $>2$ ) organ involvement? <https://www.cdc.gov/mis-c/hcp/>

- A. Kawasaki Disease
- B. Guillain-Barre Syndrome
- C. Stevens-Johnson syndrome (SJS)
- D. Multi-System Inflammatory Syndrome (MIS-C)