



LUCAS COUNTY

DEPARTMENT OF EMERGENCY SERVICES

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August 5, 2008

TO: **ALL LUCAS COUNTY PARAMEDICS**

FROM: Brent Parquette, NREMT-P 
Lucas County EMS Continuing Education Program Administrator

RE: **Continuing Education – September 2008**

I hope you are all having a wonderful summer. For me, I have been very busy preparing CE material and working on updating our system protocols. It was my original intent to have a “new” protocol disk for distribution during our teaching sessions in September. I now know that was an unrealistic goal for me. Hopefully I will have the disk completed for distribution in the month of October.

Trauma will be the hot topic in the month of September. As required by the State of Ohio, I will spend some time in the classroom reviewing the Trauma/Triage protocols. The remainder of class time will be spent in small group skill stations reviewing and practicing our critical trauma skills. I ask that you please review the following LCEMS protocols to help better prepare you for your classroom experience:

- Tab 500 (Medical Procedures/Equipment)
 - Section E: Intubation with C-spine control
 - Section G: Needle Decompression
 - Section H: Surgical Cricothyrotomy
 - Section P: Traction Splints
 - Section U: Flex-Guide
 - Section CC: LMA
 - Section FF: Pain Management
- Tab 800 (Cardiac Protocols)
 - Section E: Trauma Cardiac Arrest
- Tab 1000 (Trauma Protocols)
 - Section A: General Trauma Protocol
 - Section D: Multi-System Trauma Patient

A pre-test containing 42 questions has been attached for your review. Please complete and bring to class with you. The correct answers will be provided at each of the sessions throughout the month.

I look forward to seeing all of you in the coming weeks. As always, if you have any questions or comments please feel free to contact me at 419-213-6508.

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PRE-TEST

1. Immediately following endotracheal intubation you apply the esophageal detector device and notice that there is a free, effortless return of air after you squeeze the bulb device. This indicates that:
 - a. You have intubated the esophagus
 - b. You have entered the left mainstem bronchus
 - c. You have intubated the trachea
 - d. None of the above

2. Which of the following indicates an esophageal intubation?
 - a. Phonation
 - b. Absence of breath sounds
 - c. Gurgling sounds heard over the epigastrium
 - d. All of the above

3. If your intubated patient has breath sounds only over the right chest, you should:
 - a. Remove the tube immediately
 - b. Secure the tube in place
 - c. Bring the tube back a few centimeters and recheck
 - d. Rush the tube in a few centimeters and recheck

4. You have successfully intubated your patient and your partner has been performing bag-valve-mask ventilation for the past few minutes when he tells you that the bag is becoming harder to squeeze. You notice distended jugular veins and cyanosis. Upon auscultation, the right chest is silent, and the left has diminished sounds. What do you do immediately?
 - a. Insert a n oropharyngeal airway as a bite block
 - b. Extubate the patient
 - c. Decompress the right chest with a large-bore catheter
 - d. Perform cricothyrotomy

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PRE-TEST

5. Which of the following is an advantage of using the laryngeal mask airway (LMA)?
 - a. It isolates the trachea
 - b. It protects against regurgitation and aspiration
 - c. It can be used in a patient with a gag reflex
 - d. None of the above

6. Which of the following is true regarding the use of an automatic ventilator (AutoVent):
 - a. It delivers higher minute volumes than the bag-valve-mask
 - b. Most units deliver controlled ventilation only
 - c. It can be used safely in all age groups
 - d. The pop-off valves should be disengaged

7. During your scene assessment, you learn that the driver wore a lap belt only. Based on this information, what types of injuries would you expect?
 - a. Head and neck
 - b. Chest
 - c. Intra-abdominal or lower spine
 - d. Pelvic and femur fractures

8. Which of the following statements is true regarding lateral impact accidents?
 - a. A greater amount of passenger protection lessens the injury pattern
 - b. These accidents account for the smallest percentage of vehicular deaths
 - c. The amount of vehicular damage exaggerates the injury pattern
 - d. None of the above

9. The most commonly seen injury associated with rear-impact accidents is:
 - a. Kidney laceration
 - b. Lumbar spine fracture
 - c. Cervical spine injuries
 - d. Cardiac contusion

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PRE-TEST

10. Your patient presents with profound hypotension from external and internal hemorrhage. How much blood do you estimate he has already lost?
- a. < 15%
 - b. 15-25%
 - c. 25-35%
 - d. > 35%
11. Traction splinting is indicated in which of the following conditions?
- a. Isolated midshaft femur fracture
 - b. Disease-induced proximal femur fracture
 - c. Bilateral femur fractures with profound shock
 - d. All of the above
12. Which of the following statements is true regarding scalp lacerations?
- a. They tend to bleed profusely
 - b. They result in severe bleeding that can lead to shock
 - c. The blood vessels lack effective muscular control
 - d. All of the above
13. Which of the following is NOT part of Cushing's response?
- a. Hypertension
 - b. Bradycardia
 - c. Altered respirations
 - d. Hypothermia
14. A patient who responds only to deep pain by abnormally flexing the arms has a Glasgow Coma Score of:
- a. 3
 - b. 5
 - c. 7
 - d. 9

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PRE-TEST

Scenario

Questions 15 – 20 refer to the following scenario:

Your patient is a 25-year-old boxer who was knocked out with a left hook to the side of the head and now lies in the dressing room fully awake. His initial vital signs are BP 130/80, pulse 80, respirations 18, and pupils equal and reactive to light. Enroute to the hospital, he begins to lose consciousness and complains of being sleepy. His breathing becomes erratic, his pulse slows to 60, and his blood pressure rises to 180/90. His left pupil is larger than the right and is slow to react to light.

15. This patient is probably suffering from a/an:

- a. Epidural hematoma
- b. Subdural hematoma
- c. Basilar skull fracture
- d. Concussion

16. The rapid onset of signs and symptoms is most likely due to the:

- a. Fracture of the cribriform plate
- b. Rupture of the middle meningeal artery
- c. Leakage of CSF into soft tissues
- d. Jarring of the reticular activating system

17. This patient also shows the classic signs and symptoms of:

- a. Increasing intracranial pressure
- b. Decreasing cerebral blood volume
- c. Basilar skull fracture
- d. Contrecoup injury

18. These signs and symptoms are caused by:

- a. Brain shrinkage
- b. Cerebral blood flow interruption
- c. Brainstem herniation
- d. Abnormally low carbon dioxide levels

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PRE-TEST

19. This patient may hyperventilate in an attempt to:

- a. Vasodilate the brain vasculature
- b. Vasoconstrict the brain vasculature
- c. Increase carbon dioxide levels
- d. Cause a metabolic alkalosis

20. This patient may vomit without accompanying nausea due to:

- a. High levels of carbon dioxide
- b. Brain hypoxia
- c. Cushing's reflex
- d. Pressure on the medulla

21. Which mechanism of injury causes the majority of spinal cord injuries?

- a. Penetrating trauma
- b. Sports-related trauma
- c. Falls
- d. Motor vehicle crashes

22. Approximately how many spinal cord injuries result from improper handling after the incident?

- a. 5%
- b. 25%
- c. 50%
- d. 75%

Scenario

Questions 23 – 26 refer to the following scenario:

Your patient is a 45-year-old male who was ejected from a vehicle in a one-car rollover accident. He presents on the ground complaining of the inability to move his arms and legs. His airway is clear, and his vital signs are respirations 18 with no chest rise, BP 70/30, pulse 50, and skin warm and dry.

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PRE-TEST

23. Your field diagnosis of this patient should include:

- a. Neurogenic shock
- b. Cervical spinal cord interruption
- c. Bilateral paralysis
- d. All of the above

24. His unusual vital sign presentation is due to:

- a. Peripheral nerve interruption
- b. Loss of sympathetic nervous system control
- c. Loss of parasympathetic nervous system control
- d. Blood loss below the injury

25. The absence of chest rise is due to:

- a. Intercostal muscle paralysis
- b. Rupture of the diaphragm
- c. Damage to the third cranial nerve
- d. Cushing's reflex

26. Prehospital management includes which of the following procedures?

- a. IV fluid replacement
- b. Atropine IV
- c. Spinal immobilization
- d. All of the above

Scenario

Questions 27 – 29 refer to the following scenario:

Your patient is a 26-year-old who was shot with a small-caliber handgun in the right chest. She presents with dyspnea, distended neck veins, absent breath sounds on the right side, diminished breath sounds on the left side, and hyperresonance on both sides. Her vital signs are BP 70/30, pulse 120 and weak, and respirations 30 and shallow.

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PRE-TEST

27. Your field diagnosis is:

- a. Simple pneumothorax
- b. Tension pneumothorax
- c. Pericardial tamponade
- d. Massive hemothorax

28. Her hypotension could be caused by:

- a. Decreased venous return
- b. Tamponade effect on the heart
- c. Blood loss
- d. All of the above

29. Emergency field management of this patient includes:

- a. Pneumatic antishock garment
- b. Needle chest decompression
- c. Pericardiocentesis
- d. None of the above

30. Your patient is a 24-year-old male who was stabbed in the left upper quadrant. He presents alert and oriented in moderate respiratory distress and with minor external blood loss. His airway is clear, but his breathing is shallow at a rate of 36/minutes. He has good peripheral pulses, and his skin is warm and pink. He complains of pain upon inspiration in the left chest. Upon auscultation, you hear what sounds like bowel sounds in the left lower lobes. The right lungs are clear. Your likely field diagnosis is:

- a. Tension pneumothorax
- b. Massive hemothorax
- c. Cardiac tamponade
- d. Diaphragmatic herniation

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PRE-TEST

31. Which of the following is the ***most reliable indication*** that endotracheal intubation has been successful?
- a. Observation of anterior chest wall rising and falling
 - b. Auscultation of equal bilateral breath sounds
 - c. The absence of gastric noises auscultated on ventilation
 - d. Confirmation provided by an end-tidal CO₂ detector or esophageal detector device.
 - e. Direct visualization of the ET tube passing between the vocal cords
32. According to LCEMS protocol, which of the following statements regarding surgical cricothyrotomy is true?
- a. A surgical incision is made in the thyroid cartilage
 - b. A surgical airway should be attempted any time placement of an advanced airway fails
 - c. A surgical airway should only be attempted when total airway obstruction is present and other airway maneuvers have failed
 - d. A surgical airway intervention is NOT a reportable skill to the LCEMS Medical Director
33. Possible signs and symptoms of a tension pneumothorax include all of the following ***except***:
- a. Agitation, increasing dyspnea, increasing resistance to ventilation
 - b. Subcutaneous emphysema
 - c. Jugular venous distention
 - d. Hyperresonant percussion response on the side opposite the injury
 - e. Tachypnea, tachycardia, and hypotension
34. Pre-hospital needle decompression of a tension pneumothorax should be performed in the _____ intercostal space, at the _____ line.
- a. Fifth or sixth / midclavicular
 - b. Second or third / midaxillary
 - c. Fifth / midclavicular
 - d. Second / midclavicular
 - e. Second / midaxillary

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PRE-TEST

35. Any chest decompression performed by a paramedic must be reported to Lucas County EMS Dispatch so the Medical Director can be notified.
- a. True
 - b. False
36. When introducing the Flex-Guide to aid in endotracheal intubation, correct depth of insertion is measured by the thick black line at the level of the:
- a. Nose
 - b. Corner of the mouth
 - c. Arytenoid cartilages
 - d. Epiglottis
37. As an aid to introduce an ET tube into place over the Flex-Guide, rotate the ET tube _____. This will keep the end of the tube from locking on the end of the arytenoid cartilages.
- a. Counter-clockwise
 - b. Back and forth
 - c. Clockwise
 - d. None of the above. The ET tube should be introduced straight over the Flex-Guide with no side or swivel movement
38. The laryngeal mask airway (LMA) should only be introduced after 3 failed ET attempts.
- a. True
 - b. False
39. The cricothyroid membrane is located:
- a. Above the thyroid cartilage
 - b. Below the cricoid cartilage
 - c. Between the thyroid and cricoid cartilages
 - d. Between the cricoid cartilage and the first full ring of the trachea

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40. Absent a patent IV line, medications can be delivered via the LMA:
- a. True
 - b. False
41. Which of the following are complications of surgical cricothyrotomy:
- a. Hemorrhage
 - b. Vocal cord paralysis
 - c. Creation of a false passage into tissues
 - d. Aspiration
 - e. All of the above
42. Which of the following statements regarding tactile (Digital) intubation is *false*:
- a. The technique requires direct visualization of the vocal cords for proper placement of the ET tube
 - b. The technique does not require direct visualization of the vocal cords for proper placement of the ET tube
 - c. The technique requires displacement of the epiglottis with gloved fingers to allow passage of the endotracheal tube
 - d. The technique requires that the patient be unresponsive with no gag reflex