Northwest Community EMS System
August 2024 CE: Environmental, Water & industrial Emergencies Credit Questions

Name (Print):		EMS Agency:		
EMS Educator:				
Date submitted	Score:	☐ Acceptable ☐ Not acceptable	☐ Incomplete ☐ Incorrect answers	Date returned w/ feedback
Resubmission received:	Score:	☐ Acceptable ☐ Not acceptable	☐ Incomplete ☐ Incorrect answers	Date returned w/ feedback:
# CE Hours awarded:		Date		

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

Sources of information/answers

August CE PowerPoint PDF, NWCEMSS SOPs, NWC EMSS Continuing Education August 2024 Case Studies document

1. Which of the following are medically accepted terms related to drowning? Select all that apply. (PPT slide #8)
   - ☐ Dry drowning
   - ☐ Non-fatal drowning
   - ☐ Fatal drowning
   - ☐ Non-fatal drowning
2. Priority for EMS treating patients who have drowned is correction of _____ and support of _____ (PPT slide #8)
3. Read the scenario on slide 9. What airway/breathing/oxygenation/ventilation intervention is most appropriate for this patient? (SOP p 31)

   _____
4. Continue reading the scenario on slide 14. Defend your reasoning for whether it is safe for this patient to refuse and have a friend take him home as he wishes. (SOP p 31)

   _____

   _____
5. True or false: All victims of submersion/drowning who require any form of resuscitation should be transported for evaluation and monitoring, unless they appear to be alert and demonstrate effective cardio-resp function at the scene. (SOP p 31)
   - ☐ True
   - ☐ False
6. List the mode of O_2 delivery appropriate for each of the following patients *with a pulse*, who have experienced drowning: (SOP p 31)

   Unresponsive; shallow, labored respirations; SpO2 89% _____

   Awake; good resp effort; ↑ WOB; coarse rhonchi _____

   Child who is awake, coughing; coarse breath sounds; SpO2 90% _____
7. Complete the following comparing Mild and Moderate hypothermia. (SOP p 30)

	LOC / speech	Muscle tone and shivering	Heart rate
Mild			
Moderate			

8. Read slides 23 and 24. Then complete the following: (Slides and SOP p 30)

   Heat loss is directly proportional to _____

   Application for EMS when covering a patient to prevent further heat loss: _____

9. Read "Scenario 2". According to assessment findings, what stage/level of severity cold is this patient experiencing? List VS, assessments etc by which you came to your conclusion. (SOP p 30)

   _____

10. Which of the following actions *for this patient* is/are most appropriate to prevent further heat loss? Select all that apply. (SOP p 30)

    ☐ Active rewarming

    ☐ Passive rewarming only

    ☐ Warm NS IVF at TKO rate

    ☐ Warm NS IVF 200 mL boluses

    ☐ Remove wet clothing, and dry patient's skin

11. This patient should be positioned supine, and allowed to move as little as possible / lie quietly. Why? (SOP p 30)

    _____

12. What physiologic event in early re-warming allows cold acidic blood to return to the core, creating a cold, acidotic core environment and risk for life-threatening dysrhythmias? (Slide 28)

    _____

Read case study 3. Then answer questions 13-16. (SOP p 32)

13. This patient has signs and symptoms of both heat exhaustion and heat stroke. List those below:

    Heat exhaustion: _____

    Heat stroke: _____

14. Assuming the patient may be experiencing heat stroke, what care should this patient receive with regards to cooling? List 3. (SOP p 32)

    _____

    _____

15. How should the patient be positioned? (SOP p 32)

    _____

16. A patient with heat stroke presents w/ BP 178/112. The patient has been sweating profusely. At what rate should IVF be delivered? Select the correct answer. (SOP p 32)

    ☐ TKO ☐ 200 mL increments

17. What causes patients with heat stroke to become hypovolemic, even if they have not been sweating heavily? (Slide 34)

- ☐ Lack of oral fluid intake
- ☐ Elevated core temperature
- ☐ Redistribution of volume to the core via vasoconstriction
- ☐ Redistribution of volume to the periphery via peripheral vasodilation

18. To be diagnosed with heat stroke, a patient must have absent sweating. True or false? (Slides 35-36; SOP p 32)

☐ True ☐ False

19. What happens to peripheral fluid volume location and movement when the patient begins to cool? (Slide #36)

_____

20. What is EMS' primary responsibility in the care of a patient with heat stroke? (Slide #36)

_____

21. Why is crush syndrome often overlooked? (slide 40)

_____

22. Name 3 intracellular components that are released during crush syndrome, that cause damage in the extracellular space: (slide 41)

1. _____
2. _____
3. _____

23. Which of the following are potential ECG changes for someone experiencing crush syndrome? (slide 45)

- ☐ Peaked T waves
- ☐ Hyperacute P wave
- ☐ Prolonged/widening QRS
- ☐ Sine wave pattern
- ☐ ST depression
- ☐ Ventricular fibrillation

24. What is the mechanism of action for Sodium Bicarbonate during crush syndrome? (SOPs drug appendix)

_____

25. For a patient experiencing suspension injury with decreased brain circulation, how might they present: (slide 54)

A. Unconscious B. Cardiac arrest C. Brain damage

D. Death E. All of the above

26. During suspension injury, blood is allowed to flow to the lower extremities, but return back to the heart is impeded by the harness straps acting like tourniquets, forcing blood to pool in the legs. As a result, there is coagulated/toxic blood collecting in the legs and decreased circulation back to vital organs like the heart and lung. As such, once the patient is released from being suspended, what is the treatment for how they should be positioned? (slide 55)

_____

_____

27. What is currently the only replantation center in the Northwest Community EMS System? (slide 56)

A. Lutheran General Hospital B. Alexian Brothers Medical Center

B. St. Alexius Medical Center D. Condell

28. Which of the following is NOT part of the protocol for care of amputated parts: (slide 57)

A. Locate all amputated parts

B. Irrigate generously with normal saline

C. Wrap in saline-moistened gauze or towel

D. Place in waterproof container and seal

E. Surround container with cold packs and cool the parts (do not freeze)

29. Label the following as a Primary, Secondary or Tertiary injury due to a blast or explosion: (slide 59)

a. Patient is thrown across the room and their body strikes a nearby wall _____

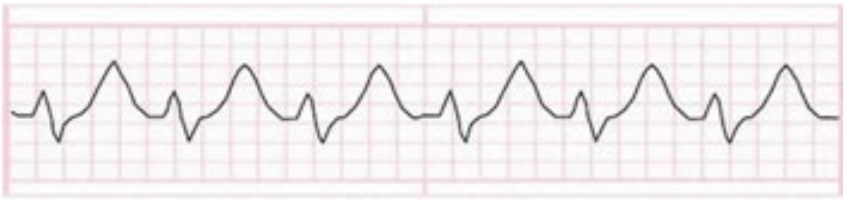
b. Patient presents with a tension pneumothorax with no obvious external injury _____

c. Patient has multiple pieces of glass embedded in their abdomen _____

30 – 35. Match the syndrome with the symptoms or treatment (answers may be used more than once): (slides 39-60)

A. Compartment Syndrome
B. Crush Syndrome
C. Suspension Injury
D. Blast Injury

30. EMS notes the following EKG after a patient has been extricated from a large tree branch that had been pinning their leg for several hours. What condition is the patient experiencing? _____



31. 39-year-old male is presenting with a flail segment after being thrown against a nearby machine in a factory following and explosion. _____

32. A window washer becomes unresponsive after hanging in their harness for 30 min. _____

33. A patient calls EMS due to extreme pain in his lower leg after a recent surgery. EMS notes significant swelling in the lower leg. What condition is the patient likely experiencing? _____

34. The treatment for this condition includes starting an IV and running a baseline EKG on your patient prior to moving them: _____

35. The treatment for this condition includes a fasciotomy at the hospital to relieve the increase in pressure: _____

36. If you are treating a patient for crush syndrome and are unable to establish an IV/IO, what medication should be given? (slide 48)

_____

37. What is the mechanism of action (for crush syndrome) for the medication listed in question 36? (SOPs)

_____

38. In the case study involving the patient trapped by a plow, once he is moved, he experiences crush syndrome. After initial treatment with fluids and sodium bicarb takes place, the patient is still tachycardic and has increased respiratory rate. What treatment would be indicated next, per protocol? (slide 70).

_____

39. How should EMS care for/treat a penetrating object that is not impeding airway/breathing? (slide 63)

_____

40. Where should a patient be transported with a penetrating injury to a proximal extremity? (slide 63)

_____