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Topic Break Down

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QUESTION NO: 1

The way a patient is injured is often referred to as the _____?

A. Mechanism of injury

B. Mechanics of injury

C. Injury pattern

D. Energy transfer

ANSWER: A

Explanation:

“Mechanism of injury” is the correct term for the event or force that caused a patient’s trauma. In EMS assessment, identifying the mechanism of injury helps the EMT understand how energy was transferred to the body and anticipate potentially serious injuries that may not be immediately visible. For example, a high-speed motor-vehicle collision, fall from a significant height, penetrating injury, or blast exposure each provides important context for assessing the patient. The mechanism does not establish a diagnosis by itself; instead, it guides the index of suspicion, focused examination, prioritization of life threats, and decisions about transport and trauma-system resources. EMTs should consider details such as the type of incident, speed, height, direction of impact, use of restraints or protective equipment, vehicle damage, and the patient’s position. This information is combined with the primary assessment, vital signs, physical findings, and patient history to determine appropriate care. National EMS education materials describe mechanism of injury as a key component of trauma assessment and emphasize using the forces involved to recognize potential injury patterns. See the National EMS Education Standards and the CDC traumatic brain injury prevention resources.

QUESTION NO: 2

"You are dispatched to a 21-year old male patient who has an elevated pulse. When asked what he was doing, he replies, ""I was just running"". From the given information, what do you suspect? "

A. The patient needs the AED

B. Nothing, this is normal at this point

C. The patient needs to be transported

D. The patient needs a nitro tablet

ANSWER: B

Explanation:

“Nothing, this is normal at this point” is the best answer because an increased pulse immediately after running is an expected physiologic response to exercise. During physical activity, skeletal muscles require more oxygen and nutrients and produce more carbon dioxide and heat. The sympathetic nervous system responds by increasing heart rate and cardiac output so that blood flow can meet those increased metabolic demands. In a 21-year-old who reports he was just running, an elevated pulse can therefore represent normal sinus tachycardia related to recent exertion rather than an inherently pathologic finding.

EMT assessment still includes evaluating the patient’s overall appearance, mental status, breathing, skin signs, pulse quality, and whether the heart rate decreases appropriately with rest. The available information, however, provides no report of chest discomfort, shortness of breath, syncope, trauma, persistent symptoms, or other concerning findings. The appropriate interpretation from the stated scenario is that the elevated pulse is expected at this point after exertion. The American Heart Association describes exercise as increasing the body’s need for oxygen-rich blood and the heart’s workload: American Heart Association—Target Heart Rates. Additional exercise physiology context is available from NCBI Bookshelf—Physiology, Cardiovascular Response to Exercise.

QUESTION NO: 3

When the diaphragm relaxes it regains it's domed shape causing an increase in thoracic pressure forcing air out of the lungs. To have air forced out of the lungs the pressure in the thorax must rise above _____ pressure?

A. Trans thoracic

B. Atmospheric

C. Trans abdominal

D. Respiratory

ANSWER: B

Explanation:

Atmospheric is correct because airflow always moves from an area of higher pressure to an area of lower pressure. During expiration, the diaphragm relaxes and returns to its dome-shaped resting position. This reduces the volume of the thoracic cavity and lungs. According to the pressure-volume relationship, reducing thoracic volume raises pressure inside the alveoli. Once alveolar (intrapulmonary) pressure rises slightly above atmospheric pressure, a pressure gradient is created from the lungs to the outside environment, and air flows out through the airways.

In quiet, passive exhalation, elastic recoil of the lungs and chest wall is the primary mechanism that helps decrease thoracic volume after inspiratory muscles relax. During forced exhalation, such as coughing or vigorous exercise, expiratory muscle activity can further increase intrathoracic and alveolar pressures, producing a stronger outward flow of air. In either situation, the essential requirement for air to leave the lungs is that pressure within the alveoli exceeds the surrounding atmospheric pressure. This principle is fundamental to normal ventilation and helps EMTs understand how changes in pressure affect breathing and airway movement. See NCBI Bookshelf: Physiology, Pulmonary Ventilation and Perfusion and OpenStax: The Process of Breathing.

QUESTION NO: 4

To be effective, hand washing should continue for at least

A. 1–2 minutes.

B. 45–50 seconds.

C. 25–30 seconds.

D. 10–15 seconds.

E. 20 seconds.

ANSWER: E

Explanation:

Current infection-control guidance supports washing hands with soap and clean running water for at least 20 seconds. This duration is intended to provide sufficient friction and contact time to loosen and remove microorganisms, dirt, and organic material from all hand surfaces, including the palms, backs of the hands, fingers, thumbs, fingertips, and areas around the nails. Proper technique includes wetting the hands, applying soap, lathering and rubbing all surfaces for the full 20 seconds, rinsing thoroughly under running water, and drying with a clean towel or air dryer. In patient-care settings, consistent hand hygiene is a foundational measure for reducing transmission of infectious organisms between patients, providers, equipment, and the environment. When soap and water are unavailable and hands are not visibly soiled, an alcohol-based hand sanitizer containing at least 60% alcohol is an appropriate alternative; however, the duration specified for handwashing with soap and water remains at least 20 seconds. The Centers for Disease Control and Prevention gives this 20-second recommendation in its handwashing guidance, and the World Health Organization likewise emphasizes thorough coverage of all hand surfaces during hand hygiene. See CDC: About Hand Hygiene in Schools and Early Care and Education Settings and WHO Guidelines on Hand Hygiene in Health Care.

QUESTION NO: 5

A 65-year-old male with terminal brain cancer calls 911 for shortness of breath. The patient has a Do Not Resuscitate order. What should you do for this patient?

A. Discuss the situation with the family and try to persuade them not to have the patient transported.

B. Administer oxygen and transport the patient to the most appropriate emergency room.

C. Contact medical direction about administering oxygen and not transporting the patient.

D. Contact the patient's oncologist for directions on the patient's care.

ANSWER: B

Explanation:

Administer oxygen and transport the patient to the most appropriate emergency room. A valid Do Not Resuscitate order limits resuscitative efforts if the patient experiences cardiac or respiratory arrest; it does not mean that routine assessment, symptom relief, or other indicated treatment must be withheld. Because this patient is conscious enough to call 911 and reports shortness of breath, EMT care should focus on evaluating the complaint, supporting breathing, and providing comfort-oriented treatment within the EMT scope of practice and local protocol. Oxygen is appropriate when clinically indicated for respiratory distress or suspected hypoxemia and may relieve dyspnea in a patient with terminal illness.

Transport is appropriate because the scenario does not state that the patient refuses care or transport, has a valid medical order for treatment in place specifying no transport, or has a legally authorized decision-maker declining transport on the patient’s behalf. The patient’s terminal diagnosis and DNR status do not remove his right to emergency evaluation and palliative symptom management. During transport, the EMT should continue reassessment, communicate the DNR status to the receiving facility, and honor it should cardiopulmonary arrest occur, consistent with applicable state law and local EMS protocol. The National POLST program explains that DNR orders address CPR, while other treatments may still be provided: POLST FAQ. See also the American College of Emergency Physicians’ guidance on out-of-hospital DNR orders: ACEP policy statement.

QUESTION NO: 6

"You are dispatched to a 50-year old male patient who is having cardiac issues. Which of the following will occur if the patients heart is beating too fast, or too slow? "

A. He will begin to vomit

B. He may become unconscious

C. He will have a seizure

D. He will begin to get very agitated

ANSWER: B

Explanation:

“He may become unconscious” is correct because both excessively slow and excessively fast heart rates can reduce effective cardiac output. Cardiac output is the volume of blood the heart delivers to the body each minute; when a rhythm is too slow, there may not be enough beats to maintain adequate flow. When a rhythm is extremely fast, the ventricles may not have enough time to fill adequately between contractions, so each beat ejects less blood. In either situation, blood pressure and perfusion can fall.

The brain is particularly sensitive to reduced perfusion. A patient may first report weakness, light-headedness, dizziness, or near-syncope, and may become unconscious if cerebral blood flow becomes insufficient. In the field, an EMT should promptly assess mental status, airway, breathing, circulation, skin signs, pulse quality and rate, blood pressure, and signs of shock, while providing appropriate supportive care and rapid transport. The American Heart Association identifies altered mental status and signs of poor perfusion as important indicators of symptomatic bradycardia, and the same perfusion

principle applies when tachycardia severely compromises output. See the American Heart Association resuscitation algorithms and the National Registry examination guidance.

QUESTION NO: 7

When assessing a patient complaining of depression, which of the following would be most suggestive that the patient is at risk for suicide?

A. Previous attempt that was unsuccessful

B. Packing away of cherished possessions

C. Hostility toward concerned family members

D. Recent diagnosis of hypertension

ANSWER: A

Explanation:

Previous attempt that was unsuccessful is the strongest indicator in this scenario because a history of suicide attempt is a well-established major risk factor for future suicidal behavior and suicide death. An earlier attempt demonstrates that the patient has previously progressed from suicidal thoughts or distress to potentially lethal action. In a patient currently reporting depression, this history warrants immediate, direct assessment of current suicidal ideation, intent, plan, access to lethal means, recent stressors, substance use, protective factors, and the patient's ability to remain safe. The assessment should be conducted calmly and without judgment; asking directly about suicide does not create suicidal thoughts and can help identify urgent danger. If the patient reports current intent, a specific plan, available means, or inability to commit to safety, EMS should provide continuous observation, request appropriate resources, protect the patient from immediate self-harm when feasible, and transport for emergency mental-health evaluation according to local protocol. The National Institute of Mental Health identifies a prior suicide attempt as a key risk factor, and CDC suicide-prevention guidance recognizes prior attempts as an important predictor requiring attention and intervention. See the National Institute of Mental Health warning signs and risk factors and the CDC suicide risk-factor guidance.

QUESTION NO: 8

You are transporting a 48-year-old male patient between medical facilities...

During the history, you learn that the patient was involved in a fall at work and suffered a hip fracture and a head injury. The patient is now presenting with labored breathing at 30/min that has progressively worsened over the last 24 hours, a heart rate of 104, and a blood pressure of 98/70. On auscultation, you hear diffuse rales. The patient denies any complaints of pain other than those related to his recent fall. What is the most likely cause of the patient's respiratory distress?

A. Cardiogenic shock

B. Congestive heart failure

C. Acute bronchitis

D. Adult respiratory distress syndrome

ANSWER: D

Explanation:

Adult respiratory distress syndrome, now more commonly termed acute respiratory distress syndrome (ARDS), is the most likely cause because it can develop within hours to several days after major trauma. Head injury and orthopedic trauma can trigger a systemic inflammatory response that damages the alveolar-capillary membrane. This damage increases pulmonary capillary permeability, allowing fluid to enter the alveoli and causing noncardiogenic pulmonary edema. Clinically, this produces progressively worsening respiratory distress, tachypnea, hypoxemia, and diffuse crackles or rales on auscultation. The patient's deterioration over approximately 24 hours after injury is consistent with this expected time course. ARDS may

also cause tachycardia and hypotension as hypoxemia and systemic inflammation worsen. It is important that ARDS reflects a lung injury process rather than simply fluid overload from primary cardiac dysfunction. Trauma is a well-recognized precipitating condition, and early recognition during interfacility transport is essential because these patients can deteriorate rapidly and may require escalating oxygenation and ventilatory support. See the Merck Manual discussion of ARDS and the NCBI StatPearls review of ARDS.

QUESTION NO: 9

Statements from patients are used as assessment tools, which of the following statements about stroke symptoms should cause the clinician to use a higher index of suspicion?

A. This is the worst head ache I have ever had.

B. This head ache is behind my right eye.

C. My head is throbbing.

D. Bright light causes my head to hurt worse.

ANSWER: A

Explanation:

“This is the worst head ache I have ever had.” is a high-risk description because a sudden, severe headache—often termed a thunderclap headache—can signal subarachnoid hemorrhage or another form of intracranial bleeding. Hemorrhagic stroke is a time-critical neurologic emergency, and patients may initially describe the headache before developing obvious focal neurologic deficits, altered mental status, vomiting, neck pain or stiffness, seizure activity, or loss of consciousness. In the prehospital setting, this statement should prompt the clinician to maintain a high index of suspicion, perform a focused neurologic assessment, establish the time of onset or last known well time, assess vital signs and glucose, and expedite transport to an appropriate stroke-capable receiving facility in accordance with local protocols. The key feature is the exceptional severity and abruptness implied by the patient’s description, rather than simply the presence of headache. The American Heart Association identifies sudden severe headache as a warning sign of stroke, particularly hemorrhagic stroke. Additional clinical context, including anticoagulant use, trauma, hypertension, and neurologic findings, can further increase concern. See the American Stroke Association’s stroke warning signs and the CDC overview of stroke signs and symptoms.

QUESTION NO: 10

You patient is a 17 year old male found face down in a swimming pool. He is currently being help face up at the surface of the water, he is unconscious but breathing and has a pulse. What is the best course of action for this patient.

A. Jump into the pool and begin CPR

B. Remove the patient from the pool, immobilize, and transport.

C. Apply cervical and spinal immobilization while the patient is still in the pool

D. Wait for a trained water rescue team

ANSWER: C

Explanation:

Apply cervical and spinal immobilization while the patient is still in the pool is the best course because this patient is unconscious after a submersion event, and the cause of the loss of consciousness is unknown. An unwitnessed fall, a dive, contact with the pool bottom, or another traumatic event could have produced a cervical-spine injury. While the patient is being supported at the surface, the rescuer should provide manual in-line stabilization of the head and neck, maintain the airway, and coordinate a controlled extrication using appropriate spinal-motion-restriction equipment. This approach reduces unnecessary neck movement during movement from the water while allowing continued assessment of breathing and pulse. Because the patient is breathing and has a pulse, immediate CPR is not indicated; care should instead focus on airway support, spinal precautions when trauma is possible, prompt removal from the water, prevention of heat loss, and transport

for definitive evaluation. The American Heart Association notes that rescue priorities in drowning include removal from the water and respiratory assessment, while cervical-spine precautions are appropriate when trauma is suspected. See the American Heart Association CPR and ECC Guidelines and the EMS.gov clinical resources.

QUESTION NO: 11

Your patient has a laceration to the right leg which has intersected the femoral artery. You have applied direct pressure to the wound, but it continues to soak through the bandages. What should you do next.

A. Apply a tourniquet

B. Elevate the Leg

C. Remove the old bandage and apply new ones

D. Apply pressure to the pressure point just above the injury

ANSWER: A

Explanation:

Apply a tourniquet is correct because this injury involves suspected life-threatening extremity hemorrhage from the femoral artery that continues despite direct pressure and dressings. A commercially manufactured extremity tourniquet should be placed proximal to the wound—between the wound and the torso—and not over a joint. It should then be tightened until the bleeding stops and distal pulse is absent. The application time should be documented, the device should remain visible, and it should not be loosened or removed in the prehospital setting unless directed by appropriate medical authority. Rapid control of severe external bleeding is the priority because ongoing femoral arterial hemorrhage can cause shock and death quickly. Current trauma and EMS hemorrhage-control guidance supports early tourniquet use when direct pressure is ineffective or when bleeding is immediately life threatening. The Committee on Tactical Combat Casualty Care describes extremity tourniquets as the first-line intervention for life-threatening extremity bleeding, while the American Red Cross likewise advises tourniquet use for severe limb bleeding that cannot be controlled with direct pressure. See Committee on Tactical Combat Casualty Care Guidelines and American Red Cross: Severe Bleeding First Aid.

QUESTION NO: 12

The correct flow of blood through the heart and lungs is…?

A. Inferior/superior vena cavae, right atrium, right ventricle, lungs, left atrium, left ventricle, aorta

B. Aorta, left atrium, left ventricle, lungs, right atrium, right ventricle, Inferior/superior vena cavae

C. Inferior/superior vena cavae, right atrium, right ventricle, aorta, lungs, left atrium, left ventricle

D. Right atrium, right ventricle, Inferior/superior vena cavae, lungs, aorta, left ventricle, left atrium

ANSWER: A

Explanation:

Inferior/superior vena cavae, right atrium, right ventricle, lungs, left atrium, left ventricle, aorta is correct because it accurately presents the major sequence of pulmonary and systemic circulation. Deoxygenated blood returning from the body enters the heart through the superior vena cava (from the upper body) and inferior vena cava (from the lower body). It enters the right atrium, passes into the right ventricle, and is pumped to the lungs through the pulmonary arteries. In the lungs, carbon dioxide is released and oxygen is taken up. The newly oxygenated blood returns to the left atrium through the pulmonary veins, moves into the left ventricle, and is then pumped through the aorta to supply the systemic circulation. Although the listed sequence condenses the pulmonary arteries and pulmonary veins into the term “lungs,” its order of chambers, lungs, and aorta correctly represents normal blood flow. This pathway is fundamental for EMT assessment because cardiopulmonary problems can impair oxygen delivery at any point in this circulation. See the American Heart Association overview of how the heart works and NCBI StatPearls review of cardiovascular physiology.

QUESTION NO: 13

Your patient is a known diabetic who takes up to four insulin injections a day. Today he is found unresponsive, diaphoretic, tachycardic and breathing 18 times a minute. What is likely the patients chief complain?

A. Hypoglycemia

B. Hyperglycemia

C. CVA

D. Hypertensive crisis

ANSWER: A

Explanation:

Hypoglycemia is the most likely cause of this patient's presentation. A person receiving multiple daily insulin injections is at risk of blood glucose falling below the level needed to support normal brain function, particularly if insulin was taken without adequate food intake, after unusual exertion, or when illness disrupts usual eating patterns. The brain depends heavily on circulating glucose; as hypoglycemia becomes more severe, patients may develop altered mental status, seizures, or unresponsiveness.

Diaphoresis and tachycardia are classic adrenergic warning signs. When blood glucose falls, the body releases counterregulatory hormones, including epinephrine, in an effort to raise glucose availability. This sympathetic response commonly produces sweating, palpitations, tremor, anxiety, and tachycardia. A respiratory rate of 18 breaths per minute is within the typical adult range and does not suggest a primary respiratory cause. In an unresponsive diabetic patient, EMS assessment should promptly include blood glucose measurement when available and management according to local protocol, with attention to airway protection and the patient's ability to safely receive oral glucose. The American Diabetes Association describes low blood glucose as a potentially urgent condition associated with confusion and loss of consciousness, while the CDC highlights sweating and fast heartbeat among common symptoms. See the American Diabetes Association hypoglycemia guidance and the CDC overview of low blood sugar.

QUESTION NO: 14

The physiological function of insulin is to promote utilization of glucose by the cells. What would happen to a patient with a low level of insulin?

A. Glucose would remain in the cell and would not be functional.

B. The level of insulin outside of the cell would be insufficient and would not break down the glucose.

C. The level of insulin inside the cell would be insufficient and would not break down the glucose.

D. Glucose would remain outside the cell and would not be metabolized.

ANSWER: D

Explanation:

Glucose would remain outside the cell and would not be metabolized. Insulin is a pancreatic hormone that enables glucose uptake and use by many insulin-dependent tissues, particularly skeletal muscle and adipose tissue. When insulin levels are too low, glucose cannot be moved effectively from the bloodstream into these cells for normal energy production. As a result, blood glucose rises while affected cells have inadequate access to glucose as a fuel source. The body may then shift toward breaking down fat and protein for energy; in severe insulin deficiency, this can contribute to ketone production and metabolic acidosis. This is the fundamental physiologic problem in diabetes mellitus caused by marked insulin deficiency: glucose is present in the blood but is not adequately utilized by insulin-dependent cells. Insulin also supports storage of glucose as glycogen and limits hepatic glucose release, so low insulin further contributes to elevated circulating glucose. For an EMT, recognizing that inadequate insulin action causes cellular glucose starvation despite hyperglycemia helps explain the dehydration, weakness, and altered mental status that may occur in a diabetic emergency. See the NCBI overview of insulin physiology and the CDC information on type 1 diabetes.

QUESTION NO: 15

A pregnant patient at 38 weeks states that she feels an urge to push. You observe crowning at the vaginal opening. What should you do?

A. Prepare for immediate delivery

B. Transport the patient before delivery occurs

C. Have the patient stand and walk to the stretcher

D. Instruct the patient to hold her legs together

ANSWER: A

Explanation:

Prepare for immediate delivery. Crowning means the fetal head is visible at the vaginal opening and delivery is imminent. The EMT should position the patient, prepare obstetric supplies, support the baby's head as it delivers, and check for a nuchal cord. Transport should not be attempted before delivery when crowning is present because the birth is likely to occur immediately.

QUESTION NO: 16

You are transporting an elderly male patient in respiratory distress with a history of COPD...

The patient has very shallow, rapid respirations with minimal chest wall motion and slight wheezing in the upper lung fields. Given this situation, what would you expect the arterial carbon dioxide levels to be?

A. Not enough information to determine

B. Normal

C. Lowered

D. Elevated

ANSWER: D

Explanation:

Elevated is correct because the described pattern indicates inadequate alveolar ventilation. Although the patient is breathing rapidly, the breaths are very shallow and produce minimal chest-wall movement. A substantial portion of each small tidal volume fills the conducting airways—the anatomic dead space—rather than reaching alveoli where oxygen-carbon dioxide exchange occurs. Consequently, effective alveolar ventilation falls, carbon dioxide elimination declines, and arterial carbon dioxide tension ($PaCO_2$) rises. This is hypercapnia.

In COPD, airflow obstruction and increased work of breathing can make it difficult to sustain sufficient ventilation. As respiratory muscles fatigue or obstruction worsens, a patient may compensate with rapid but ineffective respirations. The combination of tachypnea, shallow tidal volumes, and poor chest excursion is therefore clinically concerning for hypoventilation and CO_2 retention. In the prehospital setting, this finding supports close assessment of ventilatory adequacy—not merely respiratory rate—including mental status, chest rise, oxygenation, and, when available, waveform capnography. Assisted ventilation may be needed if the patient cannot maintain adequate tidal volume or shows signs of respiratory failure. For physiologic background, see Merck Manual: Overview of Respiratory Failure and StatPearls: Physiology, Dead Space Ventilation.

QUESTION NO: 17

Your 16 year trauma patient has what appears to be a mid-shaft femur fracture, you notice that there is a laceration directly over the suspected fracture. Bleeding is controlled, what type of fracture would this be?

A. Greenstick

B. Comminuted

C. Closed

D. Open

ANSWER: D

Explanation:

Open is correct because a laceration over the site of a suspected femur fracture creates concern for communication between the fracture and the outside environment. In EMS assessment, a fracture associated with a wound in the overlying skin must be treated as an open fracture, even when bleeding has been controlled and even if bone is not visibly protruding. The important feature is disruption of the protective skin barrier near the injury, which permits contamination of the fracture site and surrounding deep tissues.

This classification is clinically important because open fractures carry a substantial risk of infection, soft-tissue injury, hemorrhage, and later complications. A mid-shaft femur injury can also involve significant hidden blood loss, so the EMT should continue to assess perfusion and signs of shock while minimizing movement of the extremity. Care includes controlling external bleeding, covering the wound with a sterile dressing, avoiding attempts to push exposed tissue or bone back into place, immobilizing according to local protocol, and promptly transporting for definitive orthopedic evaluation and treatment. The American Academy of Orthopaedic Surgeons describes open fractures as fractures in which the bone breaks through the skin or a wound reaches the broken bone. See AAOS: Open Fractures and Merck Manual: Open Fractures.

QUESTION NO: 18

Your patient has a history of epilepsy, has had a seizure and has not recovered the way he normally does, according to his family. While assessing this unresponsive patient he suffers a second seizure what is this condition?

A. Stacked seizures

B. Status epilepticus

C. Tonic-clonic

D. Repeatius epilepticus

ANSWER: B

Explanation:

Status epilepticus is the correct diagnosis because the patient has recurrent seizure activity without recovering to his usual neurologic baseline between events. In EMS practice, this is a time-critical neurologic emergency. A person who remains unresponsive after an initial seizure and then begins another seizure has not had the meaningful return of consciousness that separates distinct, self-limited seizure episodes. This pattern meets the clinical concept of status epilepticus even when the duration of the individual seizures is not fully known.

Modern definitions emphasize seizure activity lasting at least 5 minutes or recurrent seizures without recovery of consciousness between them. Ongoing or repeated convulsive activity can compromise airway protection, ventilation, and oxygenation, while prolonged abnormal electrical activity increases the risk of neuronal injury and other systemic complications. EMT care should therefore prioritize airway and breathing assessment, oxygenation and ventilation as indicated, protection from injury, prompt reassessment, and rapid transport while following local seizure and medication-assistance protocols. The family's observation that the patient is not recovering as usual is clinically important because it establishes an altered postictal course and supports the urgency of the presentation. See the Epilepsy Foundation's status epilepticus overview and the NCBI StatPearls review of status epilepticus.

QUESTION NO: 19

You are in charge of devising an ambulance deployment plan for the EMS system within your community. Your goal is to minimize response times while simultaneously using all of the EMS resources in an efficient and cost effective manner. As such, which of the following information would be most valuable in formulating a plan?

A. Location of previous ambulance collisions

B. Time and location of calls over last 5 years

C. Average age of the population

D. Socioeconomic status of neighborhoods

ANSWER: B

Explanation:

Time and location of calls over last 5 years is the most valuable information because historical demand data lets an EMS system identify when and where emergency incidents predictably occur. Reviewing call timestamps, geographic locations, call volume, and recurring peak-demand periods supports deployment decisions such as posting ambulances near high-demand areas, adjusting unit schedules for rush-hour or nighttime demand, and using dynamic system-status management. These actions can reduce travel distance and response time while avoiding the cost of placing resources where they are rarely needed. A multiyear period is especially useful because it can reveal stable trends as well as seasonal, day-of-week, and time-of-day variations rather than relying on isolated events. This approach is consistent with evidence-based EMS system design: resources should be matched to measured community demand and monitored through performance data, including response-time performance. The National Highway Traffic Safety Administration describes EMS system planning as an ongoing process that uses data to assess needs and allocate resources effectively. The National EMS Information System also provides a national framework for collecting standardized EMS event data that can support this type of local analysis. See NHTSA EMS System Planning and National EMS Information System.

QUESTION NO: 20

A patient suddenly develops sharp chest pain and shortness of breath after a long flight. The patient has one leg that is swollen and tender. What condition should you suspect?

A. Acute bronchitis

B. Pulmonary embolism

C. Spontaneous pneumothorax

D. Congestive heart failure

ANSWER: B

Explanation:

Pulmonary embolism is correct because the combination of sudden dyspnea, pleuritic chest pain, and unilateral leg swelling suggests a thrombus may have formed in a deep vein and traveled to the pulmonary circulation. A pulmonary embolus obstructs blood flow through part of the pulmonary vascular system and can produce hypoxemia, tachycardia, respiratory distress, and signs of shock.

EMT care includes airway and breathing support as needed, careful assessment for deterioration, and prompt transport. See the Merck Manual discussion of pulmonary embolism.

QUESTION NO: 21

Routes of entry for accidental poisoning is the same as for allergic reactions. What route is the most common route of entry for a poisoning?

A. Injection

B. Absorption

C. Ingestion

D. Inhalation

ANSWER: C

Explanation:

Ingestion is the most common route of entry in accidental poisonings, particularly among young children. Children naturally explore their environment by putting objects and substances in their mouths, which can lead to swallowing medications, household cleaning products, cosmetics, plants, alcohol, or other potentially toxic materials. This pattern is reflected in poison-center surveillance: unintentional exposures in children younger than 6 years account for a substantial proportion of reported human poison exposures, and these exposures commonly involve substances taken by mouth. For an EMT, recognizing ingestion as the usual accidental exposure route helps guide a focused history: identify the substance, estimated amount, time of exposure, patient age and weight, symptoms, and any available container or packaging. Management priorities include assessment of airway, breathing, circulation, mental status, and early consultation with Poison Control for substance-specific guidance. In the United States, Poison Control can be reached at 1-800-222-1222. Current poison-prevention and exposure data are available from the America's Poison Centers annual reports, and public guidance on accidental poisonings is provided by the Centers for Disease Control and Prevention.

QUESTION NO: 22

What is the most common spinal injury associated with improper lifting techniques?

A. Thoracic

B. Cervical

C. Lumbar

D. Sacral

ANSWER: C

Explanation:

Improper lifting techniques are most commonly associated with injury to the lumbar region of the spine. The lumbar spine bears a substantial share of the upper body's weight and is exposed to high mechanical forces when a person bends at the waist, twists while carrying an object, reaches away from the body, or lifts a load without using the legs. These movements can overload lumbar muscles, ligaments, intervertebral discs, and vertebral joints, producing acute strains or sprains and contributing to low-back injury. In EMS, sound body mechanics reduce this risk: keep the load close to the body, maintain a neutral spinal position as practical, bend at the hips and knees, avoid twisting, communicate with partners, and use additional personnel or equipment when needed. OSHA identifies lifting, lowering, and related manual-material-handling tasks as important contributors to work-related musculoskeletal disorders, including low-back disorders. NIOSH likewise provides a lifting equation intended to assess and reduce the risk associated with manual lifting tasks. These principles support identifying the lumbar area as the spinal region most commonly injured when lifting is performed improperly. See OSHA Ergonomics and NIOSH Ergonomics.

QUESTION NO: 23

There are two types of cerebral vascular accident, CVA, (Stroke), the most common is an ischemic stroke. What is the other type?

A. Transient ischemic attack

B. Hemorrhagic

C. Thrombotic

D. Embolic

ANSWER: B

Explanation:

Hemorrhagic is correct because a hemorrhagic stroke results from bleeding into or around the brain after a blood vessel ruptures. The escaped blood can directly injure brain tissue and increase pressure within the skull, which may further compromise neurologic function. Hemorrhagic strokes are broadly categorized by the location of bleeding, including intracerebral hemorrhage, in which blood enters brain tissue, and subarachnoid hemorrhage, in which bleeding occurs in the space surrounding the brain. Although ischemic stroke is more common, prompt recognition of hemorrhagic stroke is essential because its evaluation and treatment differ substantially from those for a stroke caused by interrupted arterial blood flow. In the prehospital setting, an EMT should recognize suspected stroke rapidly, establish the time the patient was last known well, assess and support airway, breathing, and circulation, check blood glucose when indicated, and transport without delay to an appropriate stroke-capable facility. Definitive distinction between ischemic and hemorrhagic stroke requires brain imaging, typically a noncontrast head CT. The American Stroke Association describes hemorrhagic stroke as bleeding caused by a ruptured blood vessel, and the NINDS provides additional information on stroke types and emergency care. See American Stroke Association and National Institute of Neurological Disorders and Stroke.

QUESTION NO: 24

EMS will be set up in which zone during a HazMat incident?

A. Hot zone

B. Warm zone

C. Luke warm zone

D. Cold zone

ANSWER: D

Explanation:

EMS is set up in the cold zone during a hazardous-materials incident. The cold zone is the safe, support area outside the contamination-control line, where personnel do not require specialized chemical protective equipment for routine operations. EMS personnel working in this area can establish treatment, triage, transport, rehabilitation, staging, and command support functions. Patients who may have been exposed to hazardous materials must first be removed from the contaminated area and undergo appropriate decontamination before being transferred to the EMS treatment area. This placement protects EMS crews, ambulances, equipment, and receiving facilities from secondary contamination while allowing medical assessment and definitive prehospital care to proceed safely. Scene boundaries may be adjusted by incident command as conditions and hazard monitoring dictate, but the treatment area remains in the clean/cold area after decontamination. The U.S. Department of Transportation's Emergency Response Guidebook describes the need to isolate hazardous areas and keep unprotected people out of them, while OSHA's hazardous-waste operations standard addresses site control and appropriate protection for responders. See the U.S. DOT Emergency Response Guidebook and OSHA HAZWOPER standard.