

As summer is now upon us, it is only fitting that we discuss some seasonal topics!

1. You are dispatched to a park for two patients reported to be in cardiac arrest. Upon your arrival you find a total of 7 patients huddled under a tree after being struck by lightning. There are 5 ambulatory patients and 2 patients in cardiac arrest. You assess the scene to be safe and you call for further assistance.

Who do you treat first? If you said the patients in cardiac arrest, you are correct! As per the Basic Life Support Patient Care Standards (Section 4-18), "If there are multiple victims as a result of lightning strike, focus efforts on victims who are VSA" as the major cause of death is respiratory and/or cardiac arrest which can be successfully reversed with appropriate management. Patients presenting alive usually survive although they can suffer injuries including hearing loss, seizures, sleep disorders, cognitive impairments, chronic pain, and paresthesias.

Management of the cardiac arrest patients include early defibrillation, good quality CPR, airway management and consideration of spinal immobilization. The ambulatory patients may require treatment for burns or spinal immobilization and close monitoring for possible seizures, dysrhythmias, neurological deficits and altered mental status.

2. You are dispatched to a home for a possible drowning. Upon your arrival a pediatric patient has been pulled from the pool and CPR has been initiated. You are told that the child was found at the bottom of the pool, being alone in the water for no more than 5 minutes.

Management includes early defibrillation and good quality CPR with early advanced airway management and early transport. Consider cutting off wet clothing, passive warming and spinal immobilization as any patient found or removed from a pool will likely require spinal immobilization unless mechanism rules out trauma with reasonable confidence.

3. You are called to a residence for a patient who has been outside working on a construction site all day in hot, humid weather and is complaining of nausea, weakness, muscle cramps and headache. Upon your arrival, the patient states that he had vomited earlier and appears flushed and very diaphoretic, but is alert and oriented.

What could cause these symptoms? If you included heat illness in your list of possible causes, you are correct! Heat illness is often separated into heat exhaustion, which is a mild form of heat illness and heat stroke, which is more severe. Signs and symptoms of heat exhaustion include nausea, vomiting, headache, muscle cramps, fatigue and diaphoresis. Heat stroke may have similar features but the patient may no longer be able to sweat and may be hot and dry – it is characterized by hyperthermia ($T > 40$ C) and confusion (and/or disorientation and bizarre behaviour) and can lead to seizures, brain damage and death as the body is unable to regulate its internal temperature due to a combination of exposure to extreme heat and dehydration. Management of both includes removal of clothing, placing in a cool environment, moistening the skin with a wet cloth or spray and using a fan during transport. Additional measures include applying cold packs to axillae, groin, neck and head and manage any associated problems (ie. combative, hypotension, seizures, etc.)

As per the BLS PCS (Section 4-24) heat illness can also occur with overdoses of tricyclic anti-depressants, antihistamines and beta blockers, as well as cocaine and amphetamine abuse.

