

N441 Exam 4 Concept Review

Week 9:

1. **Triage**-(ABCD and C is the cervical spine, not circulation this time)
 - a. Airway
 - b. Breathing
 - c. Cervical spine
 - d. Disability
 - e. Exposure

2. **Carbon Monoxide** (symptoms, treatment, prevention, remember it's odorless)

>>>> It cannot be seen, smelled, or tasted

 - Sx: Dyspnea, HA, tachypnea, confusion, impaired judgment, cyanosis, respiratory depression
 - 1 - 10%: normal level
 - 11 - 20% (mild poisoning): HA, flushing, decreased visual acuity, decreased cerebral functioning
 - 21 - 40% (moderate): HA, N/V, drowsiness, tinnitus & vertigo, confusion & stupor, pale to reddish-purple skin, decreased BP, increased & irregular HR, depressed ST segment
 - 41 - 60% (severe): Coma, seizures, cardiopulmonary instability
 - 61 - 80% (fatal): death

 - Tx: Removal from source, admin of 100% O₂ via NRB, BVM (bag-valve-mask), or intubation and MV (minute ventilation?), consider hyperbaric O₂ therapy to reverse hypoxia
 - Carry the pt to fresh air immediately; open all doors and windows
 - Loosen all tight clothing
 - Initiate CPR if required; admin 100% O₂
 - Prevent chilling; wrap the pt in blankets
 - Keep the pt as quiet as possible, no alcohol, no smoke allowed

 - Prevention: ensuring proper ventilation when using fuel-burning devices (lawnmowers, wood-burning and gas fireplaces, charcoal grills). Gas-burning furnaces, water heaters, and appliances should be inspected

annually. Flues and chimneys should be unobstructed. Carbon monoxide detectors should be installed and inspected regularly.

- ATI question:

home health nurse is discussing the dangers of carbon monoxide poisoning with a client. Which of the following information should the nurse include in her counseling?

- a. Carbon monoxide has a distinct odor.
- b. Water heaters should be inspected every 5 years
- c. The lungs are damaged from carbon monoxide inhalation.
- d. Carbon monoxide binds with hemoglobin in the body.

3. **Acetaminophen overdose** (length of ingestion and expected symptoms, treatment)

- Phase 1 (w/in 24 hrs of ingestion): malaise, diaphoresis, N/V
- Phase 2 (24 - 48 hrs after ingestion): RUQ abd pain, decreased UO, diminished nausea, elevated LFTs
- Phase 3 (72 - 96 hrs after ingestion): N/V, malaise, jaundice, hypoglycemia, enlarged liver, possible coagulopathies including DIC
- Phase 4 (7 - 8 days after ingestion): recovery, resolution of Sx or permanent liver damage, LFTs remain high
- Tx: activated charcoal, N-acetylcysteine (oral form may cause vomiting, IV form can be used)

4. **Drug overdose** (prioritization, ABC's)

- Airway (reposition to open airway, evaluate, re-evaluate)
- Start IV
- Neuro status (awake, alert?)
- Clothes off→ to evaluate

5. **Heroin overdose** (med to tx)

- naloxone (Narcan)

6. **Hypothermia** (Do not rub and elevate the extremity): core body temp < 95

- Cool burns for NO MORE than 10 min
- Do not immerse burned body part in cool water (extensive heat loss)

possible)

- Tepid water → yes
- No ice
- No blanket

7. **Consent** (for unresponsive people, what to do)

- Consent is required to examine and treat any patient
 - If the pt is unconscious upon arrival this should be documented
 - Additional consent for procedures should be obtained when necessary
- The Emergency Medical Treatment and Labor Act (**EMTALA**)
 - Requires medical screening for all pts presenting to the ED
 - EDs are also required to provide Tx aimed at stabilizing each pt's condition
 - If pt must be transferred to another facility, the pt's consent for transfer should be obtained, if possible; In addition, acceptance by the receiving facility and physician must be obtained

8. **Heatstroke** (manifestations)

- A most serious form of heat stress (other heat-related emergencies include heat cramps and heat exhaustion)
- Core temp > 105.3, AMS, absence of perspiration (no sweating); hot and dry skin & circulatory collapse, tachypnea, hypotension, tachycardia
- Neurologic Sx d/t brain sensitivity to thermal injuries: hallucinations, loss of muscle coordination, combativeness
- Death directly r/t amount of time the pt's body temp remains elevated → goal is to reduce temperature!

9. **Airway obstruction**

- Stridor, cyanotic, arm on the neck (universal choking sign), use of accessory muscles, flaring nostrils, anxiety, restlessness, confusion, loss of consciousness.

10. **Primary Survey** (components and what they are)

- Rapid assessment of life-threatening conditions
- Should be completed systematically
- Use standard precautions

- Guide the primary survey with ABCDE principle
- Potential life-threatening conditions found during the primary survey
 - Airway: inhalation injury (e.g., fire victim), obstruction (partial or complete) from foreign bodies, debris (vomitus), or tongue
 - Breathing: anaphylaxis, flail chest w/ pulmonary contusion, hemothorax, pneumothorax (e.g., open, tension)
 - Circulation: direct cardiac injury (e.g., MI, trauma), pericardial tamponade, shock (e.g., massive burns, hypovolemia), uncontrolled external hemorrhage, hypothermia
 - Disability: head injury, stroke

Week 10:

1. Assigning triage categories (color coding, priority of patients based on acuity, who is qualified to triage)

- Color Coding
 - Red-immediate; life-threatening injuries (sucking chest wound, obstruction r/t mechanical cause, shock, hemothorax, etc.)
 - Yellow-delayed; significant injuries but can wait hours w/o threat to life or limb (stable abdominal wounds w/o significant hemorrhage, maxillofacial wounds w/o airway compromise, etc.)
 - Green-minor; minor injuries, tx can be delayed hours to days (upper extremity fractures, minor burns, sprains, etc.)
 - Black-deceased; extensive injuries (unresponsive w/ penetrating head wounds, high spinal cord injuries, etc.)
- Priority of patients: Red→ Yellow→ Green→ Black
- Qualified: has to be a trained person (nurse, doctor, EMT, paramedic)

2. EOP, Emergency Operations Plan (know basic functions)

- **Role:** Warning and communication, Emergency public information, Mass care, and emergency assistance, health and medical services, Public protection.
- Components of EOP
 - Activation response: where, how, and when the response is initiated

- Internal/external communication plan
- Plan for coordinated pt care
- Security plans
- ID of external resources
- Plan for people management and traffic flow
- Data management strategy
- Demobilization response
- After-action report or corrective plan
- Plan for practice drills
- Anticipated resources
- MCI planning
- Education plan for all of the above

3. **Escharotomy** (Definition and purpose)

- Definition: Incision through the eschar relieves pressure from the constricting force of fluid buildup under circumferential burns on the extremity or chest and improves circulation
- Purpose: relieves pressure and improves circulation

4. **Burns** (airway evaluation and protection, emergency treatment, positioning for airway safety, electrolyte imbalances, compartment syndrome, degrees)

- Airway evaluation and protection:
 - Upper airway: assess for blisters, edema, hoarseness, dysphagia, copious secretions, stridor, substernal and intercostal retractions, total airway obstruction
 - Lower airway: assess the presence of facial burns or singed nasal or facial hair, dyspnea, carbonaceous (carbon-containing) sputum, wheezing, hoarseness, altered mental status
- Emergency tx: fluid therapy, antibiotics/antimicrobials, wound care
- Positioning: ** (high Fowlers?), NOT FLAT
- Electrolyte imbalances: major shifts in Na (HYPOnatremia) and K (HYPERkalemia)
- Compartment Syndrome: pressure within one or more muscle compartments or compromised extremity; edema causes pressure on nerve endings

- Degrees:
 - 1st degree (superficial); red, painful
 - 2nd degree (partial thickness); blistered, painful
 - 3rd degree (full thickness); subcutaneous, non-painful
 - 4th degree (full-thickness involving fat, fascia, muscle, and/or bone); deep tissue, muscle, and bone; non-painful

5. Calculating fluid replacement (Parkland Formula, be able to calculate IV rate)

- Parkland (Baxter) formula: Calculates fluid needs in the first 24 hrs post-burn: 4 mL/kg/TBSA burn
 - 1st 8 hr: 50%
 - 2nd 8 hr: 25%
 - 3rd 8 hr: 25%
 - (Ex: 70 kg w/ 50%TBSA → 4mL x 70 kg x 50 = 14,000mL in 24 hr →
 - 50% in 1st 8 hr: 7,000mL
 - 25% in 2nd 8 hr: 3,500 mL
 - 25% in 3rd 8hr: 3,500 mL
 - <https://www.youtube.com/watch?v=iHsilm0Ybxw>

6. Rule of Nines (calculations)

- Calculates total body surface area (TBSA) of burns
- <https://www.youtube.com/watch?v=JRa9F2PvmL0&t=12s> (Ex. at 5:38)
- Quick method to approximate the extent of burns by dividing the body into multiples of nine. The sum equals the TBSA.

7. Inhalation injuries (priority, clinical manifestations, humidified oxygen)

- Priority: ABC/airway/watch closely for signs of respiratory distress (airway compromise and pulmonary edema can occur in the first 12-24 hr)
- Expected findings:
 - Difficulty swallowing
 - Cough up black sputum (tissues)
 - Burnt hair, black hair
 - Tachypnea; working hard to breathe

- Tx with 100% humidified O2
- ATI QUESTION: A nurse is caring for a client who has sustained burns over 35% of his total body surface area. Of this total, 20% are full-thickness burns on the arms, face, neck, and shoulders. The client's voice has become hoarse. He has a brassy cough and is drooling. The nurse should identify these findings as indications that the client has which of the following? C. Inhalation injury.
- Rationale: Wheezing and hoarseness indicate inhalation injury with impending loss of the airway. These require immediate reporting to the provider.

8. **Disaster preparedness kits** (what things to include)

- a. 2 quarts (1quart=1L) for one person per day x 3 days (6 quarts for 3 days)
- b. ID
- c. Clean clothes
- d. Matches
- e. Prescription meds

9. **RACE acronym for fire response-** RACE review Rescue, Alarm, Contain, Evacuate

10. **HICS** (what it is)- hospital incident command system; (modified ICS-incident command system-- that is used by both hospitals and law enforcement agencies); used for disaster management at facility level