

Emergency Care NBCE Review

Know specific care related to the following types of injuries

(Note: Do not remove any impaled object. The exception is a wound to the cheek that is causing an airway obstruction or an object that must be removed to perform CPR. For the cheek, once the object is removed, fold or roll several dressings and place them inside the mouth. Apply dressing to the outside of the cheek also. Use an occlusive dressing when bandaging sucking chest wounds or large deep wounds to the neck.)

Know the signs and symptoms associated with open and closed soft tissue injuries. (contusion, hematoma, lacerations, abrasions, avulsions, amputations, and punctures – penetrating and perforating.) **(Note: Most closed wounds do not require any medical care.)**

Contusion: A closed wound, such as a bruise, in which the skin is not broken; often having broken blood vessels and discoloration. Ecchymosis – A small hemorrhagic spot in the skin or a mucous membrane forming a non-elevated blue or purplish patch.

Hematoma: A closed wound with a collection of blood outside the blood vessels, generally the result of hemorrhage or more specifically, internal bleeding.

Laceration: A torn, ragged, mangled wound frequently caused by forceful impact of a sharp object. The wound can be of various depths and can have either linear (incision like, regular edges) or stellate (jagged, irregular edges). It is difficult to determine the degree of underlying injury and the wound may bleed profusely.

Abrasion: An open wound caused by superficial damage to the skin, no deeper than the epidermis. The skin has been scraped/rubbed away.

Avulsion: An open wound where flaps of skin &/or tissue are torn loose or off. Types: degloving (ring avulsion) and extruded (avulsed eye).

Amputation: Removal of a limb or other appendage of the body by trauma or surgery.

Puncture: Two types: Penetrating - entrance wound only. Perforating - entrance and exit wound

Know the steps to control bleeding. (direct pressure, elevation, pressure bandage, pressure points (Brachial, Femoral), and absolute last resort - tourniquet)

Know the signs and symptoms of muscle, bone, head, neck and spinal injuries.

Muscle and bone: Pain, shock, loss of mobility or function, unstable, swelling, deformity

Head, neck, and spinal: Paralysis of extremities. Numbness, weakness, tingling, pain, tenderness or obvious trauma. Loss of sensation below suspected area of injury.

Know different types of dressings and bandages and their purpose.

Dressings: Pads placed directly on the wound to absorb blood/fluids and to reduce risk of further contamination; Types: Compress, universal (trauma) dressings & occlusive (does not allow air to pass through i.e. plastic wrap) with sizes from 2x2, 4x4 inches.

Bandages: Hold dressings in place, applies pressure to help control bleeding, helps to protect a wound from dirt and infection, and to provide support to an injured body part. Types - Tape, roller bandage made of gauze and is generally wrapped around a body part (1 to 6 inches in width, elastic bandages keep continuous pressure on body part but not used for bleeding injuries, and triangular bandages can be used fully unrolled as a sling, folded as a normal bandage, or for specialized applications, as on the head.

Splinting – Know basics of splinting and what needs to be immobilized based on location of injury.

Splinting – prevents motion of bone fragments, bone ends, joints to help minimize or prevent further damage to muscles, nerves, blood vessels, conversion of closed injury to open injury, restriction of blood flow, pain/paralysis, excessive bleeding. Assess CMS (circulation - distal pulse/capillary refill, motor function and sensation) before and after splinting. Immobilize joints above & below injury. Remove or cut away clothing, cover open wounds with sterile dressing, and do not replace protruding bone ends; Pad splints

Know how to compare extremity injuries bilaterally.

Compare distal pulses and gross sensation in both extremities to assure equality, also check motor function (unless it will cause further injury).

Know the classifications for a critical burn based on percentage of body surface area (BSA) adult and child involved.

Rule of 9's (adults/children)

- **Head: 9% (child 18%)**
- **Anterior trunk: 18% total; Chest/abdomen 9% ea**
- **Posterior Trunk: 18% total; upper back/lower back 9% ea**
- **Upper extremity (each): 9%**
- **Lower extremity (each): 18% (child 14%)**
- **Groin: 1%**
- **Total BSA - Adult 100%, and Child 101%**

Rule of Palm

Rule of palm, palm of patient represents 1% of patient's body surface area

Know the severity listing and care for burns including eye injuries.

Superficial (1st degree) - involves the epidermis

Partial Thickness (2nd degree) - involves the epidermis and dermis

Full Thickness (3rd degree) - involves the epidermis, dermis, and subcutaneous layer, muscle, bone, or organs

Minor burns:

- **2nd degree involving less than 15% BSA**
- **3rd degree involving less than 2% BSA (excluding hands, feet genitalia)**

Moderate burns:

- **1st degree involving greater than 50% BSA**
- **2nd degree involving 15-30% BSA**
- **3rd degree involving 2-10% BSA (excluding hands, feet genitalia, and upper airway)**

Critical burns:

- **1st degree involving more than 75% BSA**
- **2nd degree involving more than 30% BSA**
- **3rd degree involving more than 10% BSA**

Thermal Burns:

- **Stop burning process, Cool Burn**
- **Activate EMS as appropriate**
- **BSI (Body Substance Isolation) precautions**
- **Ensure Airway, Complete primary Assessment**
- **Treat for Shock, Do Not Clear Debris**
- **Remove smoldering clothing (If not stuck to injury) and jewelry**
- **Do Not Break Blisters**
- **Do not use any type of ointment, lotion, or antiseptic**
- **Cover with a dry sterile dressing**
- **Access CMS (circulation, motor function, sensation)**
- **Bandage loosely (Don't separate digits if stuck together, place hand in position of function)**
- **Reassess CMS**

Chemical Burns:

- **Activate EMS if necessary**
- **If dry chemical (brush away area 1st then flush)**
- **Flush area with copious amounts of water for at least 20 min**
- **Do not allow victim to stand in water**
- **Apply sterile dressing or burn sheet**
- **Treat for shock**

Smoke and/or Inhalation Burns:

- **Remove from source**
- **Activate EMS if unsure of severity of injury**
- **Complete initial patient assessment (care for ABCs)**
- **Provide high flow oxygen if available**

- *Monitor closely for respiratory distress and arrest*

Electrical Burns:

- *Ensure your own safety (safety zones, and turn off power prior to contacting patient)*
- *Activate EMS*
- *Complete initial assessment (care for ABCs and monitor closely for respiratory and cardiac arrest)*
- *Administer oxygen if available*
- *Treat soft tissue injury (look for both entrance and exit wounds)*

Lightning Injuries:

- *Move patient and self out of danger*
- *Activate EMS*
- *Monitor closely for respiratory and cardiac arrest*
- *Look for both entrance and exit wounds (injuries are often more severe than external signs indicate)*
- *Treat soft tissue injuries associated with the burn*
- *Prolonged resuscitation may be required*

(Note: Need to Triage if there is more than one victim. Triage is a process of prioritizing patients based on the severity of their condition. In advanced triage, doctors may decide that some seriously injured people should not receive advanced care because they are unlikely to survive. Normally victims are considered the lowest priority if they show no spontaneous cardiac or respiratory activity. In lightning victims they are the highest priority and can have a high survival rate if CPR is administered immediately)

Eyes – specific injuries

- *Do not apply direct pressure if globe is cut*
- *Foreign objects*
 - *Do not remove object*
 - *Do not probe into the eye socket*
 - *Reduce eye movement (bandage both eyes)*

Know the signs and symptoms of shock (hypoperfusion) and steps in providing care.

(Dropping blood pressure usually appears late and waiting before recognizing and treating may result in the death of your patient. Hypoperfusion is the decreased blood flow through an organ, as in circulatory shock.

Generic Signs and Symptoms:

Restlessness and anxiety (frequently first indicator of shock), Changes in mental status; Pale, cool, clammy skin; Nausea and vomiting; Increased pulse rate; Increased respiratory rate (decreased blood pressure is a late sign); Dilated pupils; Thirst; Cyanosis; Delayed capillary refill time (Note: infants and children maintain blood pressure until volume loss is more than 40%. (By the time their pressure drops they are near death.)

Detailed Signs and Symptoms:

- *At a blood loss of 10% – 15%: None to transient. Restlessness and/or some level of anxiety. As a compensatory effect the veins will contract*
- *At a blood loss of up to 30%: Cool, pale clammy skin, thirst, weakness, faintness/dizziness, rapid shallow breathing, increased pulse rate, delayed capillary refill, and normal blood pressure*
- *At a blood loss of 30% to 45%: Hypotension, deteriorated mental status (combativeness), rapid, shallow (air hungry) respirations. Compensatory effect is decompensation, cardiac output falls.*
- *At a blood loss greater than 45%: Fall in blood pressure (total circulatory collapse), and cardiac arrest*

Care:

BSI (Body substance Isolation), activate EMS, ensure patent airway, administer oxygen, stabilize spine, control any external bleeding, prevent loss of body heat. Position patient supine with legs elevated 8-12 inches unless

- **Anaphylactic shock – upright**
- **Cardiogenic shock – upright or semi-recumbent**
- **Neurogenic shock - supine**
- **Lower extremity or pelvic - supine**

What causes death from anaphylactic shock.

Anaphylaxis is a life threatening allergic reaction that causes shock and airway swelling. A constricted airway, caused by a constriction of the bronchiole walls, is the most common cause of death in cases of anaphylactic shock.

Know steps in caring for injuries from bites and stings.

- **Wash area**
- **Position injection site slightly below heart**
- **If stinger is still in skin scrap off using a flat edge (like a credit card) Do not use tweezers**
- **Remove jewelry distal to site of affected area**
- **Observe for allergic reaction**

Know 4 ways poisons can enter the body. (inhalation, injection, ingestion and absorption)

Know steps to take to care for poisoning problems listed above.

- **General Treatment**
 - **Check head, neck, chest, and abdomen**
 - **SAMPLE history**
 - **Baseline vital signs**
 - **On-going assessment**
- **Pediatric Poisonings Are frequent victims**
 - **Very important to have the weight of the patient**
 - **Always assume a lethal dose has been ingested**
- **Injection (insect and animal stings or bites)**
 - **Remove stinger**
 - **Wash wound**
 - **Remove jewelry distal to site**
 - **Watch for signs and symptoms of allergic reaction/take steps to minimize shock if occurs**
- **Patient Assessment- Inhaled Poisons**
 - **What substance?**
 - **When did the exposure occur?**
 - **Over how long a period was the exposure?**
 - **Any interventions?**
 - **What effects have been noted?**
- **Ingestion/Inhaled**
 - **ABCs – Correct any life-threatening problems**
 - **Call National Poison Center 1-800-222-1222 right away**
 - **Follow direction given by poison control**
 - **Ingested only: Activated Charcoal - designed to absorb large amounts of toxins but doesn't work on all poisons**
- **Toxic Inhalation**
 - **If the patient has been exposed to a hazardous chemical or substance, you should not deal with this patient until after decontamination has taken place. The symptoms you see will depend on what substance the patient has been exposed to**
- **Carbon Monoxide Inhalation**
 - **Activation of EMS**
 - **High flow oxygen**
 - **Hyperbaric oxygen therapy**
- **Absorption**
 - **Remove patient from source**
 - **Remove clothing or substance from the patient which might be contaminated**
 - **Brush powders from patient**
 - **Irrigate with water for at least 20 minutes**
 - **Initial assessment**
 - **SAMPLE History**
- **Eyes**
 - **Irrigate with clean water for at least 20 minutes or until EMS arrives**

Know 3 general classifications for misused and abused drugs:

Stimulants, hallucinogens, and depressants

Know care for musculoskeletal injuries.

- **Perform scene size up**
- **Initial assessment**
 - **BSI precautions**

- **Administer oxygen**
- **Treat life-threatening conditions 1st**
- **Do not become distracted by grotesquely angulated or deformed extremities)**
- Detailed exam
 - **Carefully cut away clothing to expose injury site**
 - **Use DOTS (deformity, open injuries, tenderness, swelling) or DCAP/BITS (deformities, contusions, abrasions, punctures/burns, tenderness, and swelling)**
- Dress open wounds
- Treat for shock
- Apply cold packs (if applicable) to reduce swelling and pain
- Splint (as necessary to your situation) and elevate following splinting (if applicable)

Know how to deal with an emotionally distressed patient.

- **To reduce emotional burden**
 - **Treat with dignity and respect**
 - **Communicate – help orient to surroundings**
 - **Allow the patient to express themselves and listen empathetically**
 - **Do not give false reassurances**
 - **Use gentle tone of voice and reassuring touch**
 - **Do what you can to provide comfort**
- **Methods to calm behavioral patients**
 - **Acknowledge that the person seems upset and restate that you are there to help**
 - **Inform the person of what you are doing**
 - **Ask question in a calm, reassuring voice**
 - **Maintain a comfortable distance**

Know sequencing of CPR– what happens if ????????

Know who monitors CPR and signals to change places when one person is tired when performing two person CPR.
The ventilator.

Know when to check pulses and who signals for a pulse check.

A pulse check is performed during the initial patient assessments after two breaths have been given.

What is the most common underlying heart rhythm in a cardiac arrest patient?

In early onset cardiac arrest, the most common underlying heart rhythm in an unconscious pulses patient is ventricular fibrillation or “v-fib”.

Know when to call 911 if you are by yourself and when there is someone else who can make the call for an adult patient.

Adults - By yourself or with others present = Phone after checking responsiveness.

Children and infants –When by yourself assess the patient and provide care for one minute and if still by yourself activate 911. When others are present have someone call 911 as soon as you have checked responsiveness.

What is the best position for performing CPR, rescue breathing, obstructed airway skills.

- **Compressions - Kneel at the patient’s chest. Position yourself so your shoulders are directly over your hands, arms straight, and elbows locked and press straight down on the patient’s sternum.**
- **Compressions/Breathing (CPR) – Position yourself midway between the chest and head to be able move more easily between compressions and breaths.**
- **Rescue Breathing - Head tilt/chin lift. Tilt until breaths go in.**
- **Obstructed airway – The most common respiratory emergency. If partial obstruction and person is coughing, encourage them to continue coughing. If coughing persist call EMS. If person’s airway becomes completely obstructed and they can no longer breath then perform Heimlich.**

How do you open the open airway of a patient with and without spinal injury

and with or without a resuscitation mask

Without spinal injury

- **The head tilt/chin lift technique Gently pinch the victim’s nose shut with the thumb and index finger of your hand that is on the forehead. Next make a tight seal around the victim’s mouth and breath slowly until you see the chest rise and fall.**

With spinal injury

Use a two handed jaw thrust. In the two handed jaw thrust we place the fingers under the angle of the jaw and lift while our thumbs are on the zygomatic arch. Our cheek will seal the victim's nose.

Resuscitation mask

- **Position lower rim of the mask between the lower lip and chin while the upper is above the nose making sure there is not a seal breach. When performing rescue breathing it is the same as when not using a breather. One difference is when using the two handed jaw thrust method, you will place both thumbs over the mask instead of the zygomatic arches.**

Advantages of a resuscitation mask.

- **Increases air flow to lungs by allowing air to travel through a person's mouth/nose at the same time**
- **Providing an adequate seal for giving breaths, even when a person has facial injuries**
- **Proving an effective and easily accessible, alternative to other methods of ventilation**
- **Allowing easy delivery of supplemental oxygen to either a breathing or non-breathing person**

Advantages and disadvantages of a bag-valve-mask device.

Advantages

- **Delivers a higher concentration of oxygen than delivered through mouth to mouth or mask to mouth**
- **Limits the potential for disease transmission**
- **Very effective when used by two rescuers**

Disadvantages

- **Difficult skill for one person to master**
- **Without regular practice you can't stay proficient**
- **May take longer to assemble than other devices**
- **It is not a device readily available to you**

What percentage of actual oxygen is the victim receiving with and without a breathing device?

Oxygen

- | | |
|--|--|
| - Air - 21% | - Resuscitation mask - 16% |
| - BVM - 21% w/o supplemental O2 | - BVM - 100% w/ supplemental O2 |

What happens if your breaths are too long, too hard, too fast, or if you have improper head positioning.

Too long/Too hard/Too fast

- **Longer than 2 seconds and too hard may cause extra air to fill the stomach. Too fast increase pressure which again forces air into the stomach**

Improper Head Tilt

- **Airway will not open completely, air will enter the stomach.**
- **In all three situations you increase the chance the patient will vomit.**

Know the head position for each age group. **(Adult furthest back, child midway and infant neutral)**

Know how to measure and insert an oral and nasal airway.

- **Oral** - measure distance from the tip of the earlobe to the corner of mouth
- **Nasal** - measure distance from the tip of the earlobe to the tip of nose

(Note: These devices can't be used if victim has a gag reflex, major facial, nose (nasal) or basal skull fractures.)

What is the best way to know breaths are going in. **(Victims chest rise and fall)**

Foreign Body Airway Obstruction: Adult/Child/Infant; Conscious and Unconscious – Know where to place your hands for both conscious and unconscious and order of the steps for performing unconscious obstructed airway skills on each age group. Know when and if you do a blind finger sweep vs. a foreign body check. *See attached charts*

Adult/Child conscious

- **The adult victim can be seated or standing but the child is usually standing with rescuer standing or kneeling behind child. Make a fist with one hand and place the thumb side against the middle of the abdomen just above the navel and well below the tip of the breastbone. Grab your fist with the other hand and give a quick upward thrust into the abdomen.**

Adult/Child conscious who becomes unconscious

- **Once patient becomes unconscious**

- *Open the mouth and look for the objective, if visible sweep the object out if not visible*
- *Perform a head-tilt chin lift and attempt 1 breath*
- *Reposition head if breath does not go in*
- *Give another breath. Assume airways is obstructed if breaths do not go in this time*
- *Give 30 chest compressions*
- *Open the airway*
- *Repeat until object is dislodged*

Infant conscious

- **Begin with 5 back blows followed by 5 chest thrust**
- **Infant initially face down on your forearm using your thumb and fingers to hold the jaw while performing 5 back blows**
- **Sandwich infant between your arms and roll them face up (supporting the head)**
- **Perform 5 chest thrusts (as in CPR)**
- **Flip back and forth alternating between back blows and chest thrusts**

Infant conscious who becomes unconscious

- *Once patient becomes unconscious*
- *Open the mouth and look for the objective, if visible sweep the object out if not visible*
- *Perform a head-tilt chin lift and attempt 1 breath*
- *Reposition head if breath does not go in*
- *Give another breath. Assume airways is obstructed if breaths do not go in this time*
- *Give 30 chest compressions*
- *Open the airway*
- *Repeat until object is dislodged*

Know where to care for a child from a motor vehicle accident who is still in their child safety seat. **(In the safety seat)**

Know when to move a victim and how.

Only if they are in danger where they currently are, can't gain access to them to provide proper care and how; very carefully

Know the steps of using an AED. **See attached tables**

- **1. BSI precautions**
- **2. Perform an initial patient assessment checking airway, breathing and circulation**
- **3. Turn AED on**
- **4. Preparation of chest if needed**
- **5. Place pads on patient's chest (upper R chest, above nipple; lower L ribs)**
- **6. Plug in the pads connector to the AED**
- **7. Wait for AED to analyze the heart rhythm. If shock is indicated, ensure no one is touching the patient by looking around the patient & loudly and clearly stating I'm Clear, Your Clear, We're all Clear**
- **8. Press the shock button**
- **9. Perform 2 minutes (5cycles) of CPR**
- **10. Repeat step 7, 8, and 9 or follow verbal prompts of the AED**

Know when to use an AED, know the shockable rhythms

(Victim is unresponsive and there is absence of breathing and pulse). Ventricular tachycardia (V-tach) and Ventricular fibrillation (V-fib)

Know the definitions, signs and symptoms and how to care for a victim of hyperthermia, hypothermia, and frostbite.

Hyperthermia - Increased core body temp (often as high as 106 degrees)

Sign and Symptoms

Heat Exposure (early stage) (Heat Exhaustion)

- **Cool, moist pale, or ashen skin (skin may be red in early stage)**
- **Headache, nausea**
- **Dizziness, weakness, and exhaustion**

Heat Exposure (if allowed to progress) (Heat Stroke)

- **Higher body temperature**
- **Red, hot, dry, or moist skin**
- **Progressive loss of consciousness**
- **Rapid, weak, pulse**
- **Rapid, shallow, breathing**

- Lack of sweating due to low fluid levels (body temp rapidly rises at this stage and organs start failing)
- Care
- Check ABCs
 - Summon EMS
 - Remove from hot environment, lie down in cool place and elevate legs slightly
 - Ice pack on victim's wrist, ankles, each armpit groin to cool large blood vessels

Hypothermia (generalized cold exposure) – body temp below 95 deg.

Signs and Symptoms

- Shivering is an early response by the body to create heat through muscle contraction
- Cool skin in the cool area of the body as well as the extremities
- Numbness and poor coordination
- Speech difficulty and rigid muscles
- Decreasing level of consciousness

Care

- Handle gently and do not bump them, especially on the chest (such a blow could cause cardiac arrest), remove from cold, insulate ground before laying down, warm them gradually with blankets and warm water bottles, DO NOT warm too quickly, Hot non-alcoholic, non caffeinated liquids

Frostbite (localized cold exposure) – Damaged or destroyed tissue due to tissue completely freezing

Sign and symptoms

- Superficial frostbite - the skin remains soft but blanches (turns very pale) when it is palpated and there is a loss of sensation. Victim feels a tingling sensation when affected area is re-warmed.
- Deep frost bite - the skin appears white and waxy with a firm feeling. Swelling and blisters may be present. When re-warmed the skin may appear red with areas of blue and purple.

Care

- Handle the area gently. Never rub an affected area or break any blister. Rubbing causes further damage because of sharp ice like crystals in the skin. Remove wet clothing and any jewelry from the affected area. Cover area with dry dressing and bandage it loosely. Do not apply direct heat.

Know the first clinical indicator of hypothermia. **Shivering**

Know definitions, universal precautions, body substance isolation

Universal precautions

- *Treat all human body fluids as if they are known to be infectious*
- *Assume that all patients have disease*
- *Use Standard Precautions (BSI)*

BSI – Body Substance Isolation Using appropriate protective measures

PPE (Personal Protective Equipment) – know what this is and examples.

All equipment & supplies that prevent you from making direct contact with infected materials. Gloves, masks, aprons, gowns, shield, and resuscitation devices

What the four components of negligence.

Duty, Breach, Cause, Damage

Know the signs, symptoms and care for diabetic emergencies, stroke, and seizures. Know the difference in signs and symptoms for a diabetic coma versus insulin shock.

Diabetic Emergencies

- **Types**
 - **Insulin Shock**
 - Also called insulin shock, insulin reaction, insulin coma, hypoglycemic coma)
 - **Caused by Hypoglycemia**
 - Rapid onset
 - Rapid recovery following treatment
 - Triggering mechanisms
 - Excessive insulin
 - Insufficient food intake
 - Vomiting following insulin injection

- Strenuous or excessive exercise
 - Severe emotional excitation
- **Signs and Symptoms**
 - Headache (common)
 - Restless, irritable, decreasing LOC
 - Absence of Thirst, Occasional hunger
 - Normal or shallow breathing
 - Normal to increased respiratory rate
 - Pale, moist skin, clammy skin
 - Diaphoresis
 - Pulse normal to rapid and full
 - Tingling & numbness in fingers & feet
 - Normal or lower than normal Blood Pressure
 - General muscular weakness
 - Tremors
 - Faintness, Double vision
 - Dizziness
 - Drooling
- **Diabetic Coma**
 - Also called diabetic coma, diabetic acidosis
 - **Caused by Hyperglycemia**
 - Gradual onset (12 - 48 hours)
 - Gradual improvement (usually 6 - 12 hour)
 - Triggering mechanisms
 - Insufficient insulin
 - Excessive food intake
 - Stress, such as underlying infection or illness
 - **Signs and symptoms**
 - Red, dry, warm skin
 - Rapid, weak thready pulse
 - Normal or low BP
 - Intense thirst
 - Lack of hunger
 - Ketoacidosis
 - sweet, fruity breath
 - develops over several hours to days
 - Kussmaul respirations
 - rapid, deep breathing, frequent sighing
 - Fever
 - Intense abdominal pain
 - Possible vomiting
 - Dizziness
 - Sunken eyes
 - Frequent urination
 - Confusion, disorientation
 - Restlessness progressing to coma

Care

- Comfort, calm, and reassure the patient while awaiting additional EMS resources.
- Protect the patient from the environment.
- Assure patency of airway.
- Place patient in position of comfort.
- NPO (nothing by mouth) if decreased LOC or unconscious
- Administer sugar in some form for a fully conscious patient.
- If the patient is bluish, assure airway and artificially ventilate.
- check ABCs if unconscious until EMS arrives

Stroke

Signs and Symptoms

- Feeling ill, change in consciousness, displaying abnormal behavior, sudden weakness or numbness of the face, arm, or leg, especially on one side of the body

5 D's

- Dizziness
- Drop Attacks
- Diplopia (visual disturbances)
- Dysarthria (speech difficulties)
- Dysphagia (difficulty swallowing)

Ataxia (incoordination)

3 N's

- Nausea
- Numbness
- Nystagmus

Care

- Open airway (unconscious), SAMPLE history, don't give food or water, comfort and assurance. Have victim lay on affected side if drooling, having trouble swallowing or vomiting

Seizure

Signs and Symptoms

- **Stages**

- Aura
- Tonic phase
- Hypertonic phase
- Clonic phase
- Postictal (post seizure stupor)

Care

- protect the head, do not restrain; maintain airway by rolling victim onto their side (recovery position) following the seizure

Know definitions: respiratory distress, respiratory arrest, cardiac arrest, golden hour, platinum 10 minutes, hypoperfusion.

Respiratory arrest – stopping of breathing

Respiratory distress – difficult breathing

Cardiac arrest – no heartbeat

Golden hour – optimum time limit between trauma and care/surgery at hospital

Platinum 10 minutes – optimum time limit (excluding extrication time) at scene for trauma patient to have best chance of survival using the “golden hour” rule

Hypoperfusion – (shock) decrease in oxygen-rich blood to tissues

Know definitions and abbreviations: EMS, DOTS, LOC, AVPU, APGAR, BSI, DNR, etc.

EMS – Emergency medical System

DOTS – deformity, open wound, tenderness, swelling

LOC – Level of consciousness

AVPU – alert, verbal, responsive to pain, unresponsive

APGAR – Appearance, Pulse, Grimace, Activity, Respiratory effort

BSI – Body substance isolation

DNR – Do not resuscitate

Be able to answer basic anatomy and physiology questions (largest system, regulatory system) (anterior, posterior, supine, lateral recumbent) etc...

When can you stop providing care as a first responder?

When more advanced personnel arrive on scene, to exhausted to continue, scene becomes unsafe, type of care needed changes

Know definitions for implied consent, actual consent, informed consent, parents consent and when they would apply. Also know the definition of battery, advanced directives and the difference between a DNR and a living will.

Implied consent – unconscious, mentally impaired, or seriously injured or ill patient

Informed/Actual/Expressed consent - permission given by the victim after given all info about their condition

Parents consent – given by parent or guardian

1. **Battery** – battery is the unlawful touching of a victim without the victims consent.

Advanced directives – Advanced Medical Directives encompass a Living Will, Power of Attorney, and Health Care Proxy, and refers to treatment preferences and the designation of a surrogate decision- maker in the event that a person should become unable to make medical decisions on her or his own behalf.

DNR (Do Not Resuscitate) – A physician's order issued after consulting with patient or surrogate decision maker

Living will – A legal document that allows you to convey your wishes regarding treatment when those wishes can no longer be personally communicated due to loss of consciousness or state of mind. Do not keep me alive on machine.

Know the basic (common sense) approach of dealing with scene safety issues

Disease transmission – know how diseases are transmitted (4 conditions have to be met)

- **Pathogen is present**
- **The pathogen is in sufficient quantity to cause disease**
- **A person is vulnerable to the specific pathogen**
- **The pathogen is transmitted through correct entry site**

Pathogens enter the body in 4 ways (**direct contact, indirect contact, airborne, vector (animal/insect bite) born**)

Know how diseases discussed in this lecture are transmitted.

| Disease | Mode of transmission | Incubation |
|---------------------------------------|---|--|
| <i>Aids</i> | <i>Direct: Unprotected sex, IV drug use, needle sticks</i> | <i>Several months to years</i> |
| <i>Chickenpox (varicella)</i> | <i>Indirect: Airborne Direct: Contact with open sores</i> | <i>11 - 21 days</i> |
| <i>Hepatitis</i> | <i>Direct: Blood, other bodily fluids</i> | <i>Weeks to months depending on type</i> |
| <i>Meningitis (bacterial)</i> | <i>Direct: Oral or nasal secretions</i> | <i>2 – 10 days</i> |
| <i>German measles</i> | <i>Indirect: Airborne</i> | <i>10 – 12 days</i> |
| <i>Mumps</i> | <i>Indirect: Droplets of water</i> | <i>12 – 24 days</i> |
| <i>Pneumonia (bacterial or viral)</i> | <i>Indirect: Oral or nasal droplets of secretions</i> | <i>Several days</i> |
| <i>Staphylococcal skin infection</i> | <i>Direct: contact with wounds Indirect: Contaminated objects</i> | <i>Several days</i> |
| <i>Tuberculosis (TB)</i> | <i>Indirect: Airborne respiratory secretions or from contaminated objects</i> | <i>2 days – 6 weeks</i> |
| <i>Whooping cough (pertussis)</i> | <i>Indirect: Respiratory secretions or droplets</i> | <i>6 – 20 days</i> |

Know which BSI technique is most basic. **Hand washing is the single most important way to prevent spread of disease**

Know why you need to inform your supervisor of exposure to blood/other potential infectious materials.

State laws vary (some may require prompt reporting?)

Know the signs of localized versus generalized infection and what you can do for them as a first responder.

An infection may be localized, which means it develops only in one place on the body, or it may be general/systemic and spread throughout the body by the bloodstream.

- **Localized infection** may cause one or more of the following symptoms in the area of the broken skin: skin that is warm or hot, pain, a pus-like discharge, redness and swelling, in addition, to fever and chills.
- **Generalized infection** has entered the bloodstream and has general systemic symptoms such as fever, chills, and low blood pressure.

The best initial defense is to cleanse the localized area thoroughly. I don't think we can do much about systemic

What is delayed capillary refill? **When performing the C part of CMS press down on the fingernails for 2 seconds and then release. The area beneath the fingernail will turn pale and then should immediately turn pink again. If it takes longer than two seconds, it is considered delayed.**

Know the purpose of & what to do in a scene size-up, initial patient assessment, a detailed patient assessment, & an ongoing assessment. Know how often to reassess a stable versus unstable patient and why.

Scene Size Up – (5) Key Points

- **Scene safety**
- **Location**
- **Mechanism of injury/nature of illness**
- **Number of patients/bystanders**

- **Resources available**

Initial Patient Assessment

- **Check responsiveness (form general impression)**
- **Open airway**
- **Check breathing**
- **Give breaths**
- **Check for a pulse (look for major bleeding)**

Performing an Ongoing Assessment

- **Initial assessment should be performed every 5 minutes for an unstable patient, and every 15 minutes for a stable patient (i.e. mental; status and ABCs)**

Know the steps of assessing patients for mass casualty and how to classify them as red, yellow, green or black based on airway, respiratory rate, radial pulse present or absent and level of consciousness.

- **Red tag (immediate) – Breathing more than 30 times a minute. Breathing normal, but radial pulse absent. Breathing normal, radial pulse present, but level of consciousness abnormal**
- **Yellow (urgent care can delay up to 1 hr.), breathing normal, radial pulse present and mental status normal injuries present that would prevent patient from walking or moving without assistance.**
- **Green tag (Delayed care, up to 3 hrs. delay) – Breathing normal, radial pulse present, and level of consciousness normal (minor injuries)**
- **Black tag (Dead/nonsalvageable) – Not breathing**

Know signs and symptoms of a heart attack, the care you should give.

Signs and symptoms

- **Persistent chest pain or discomfort (most prominent)**
- **Pain may spread to the shoulder, arm, neck, or jaw**
- **Pain will not be relieved by resting, changing position, or taking oral medication**
- **A victim with chest pain lasting longer than 5 minutes should receive emergency medical care**
- **Difficult breathing (Victim may be breathing faster due to the body trying to get much needed oxygen to heart)**

Care

- **The most important care is early recognition**
- **Administer oxygen**
- **Position patient semi-recumbent**
- **Maintain body temperature**
- **Rapid 911 activation**
- **Be prepared to give CPR if heart stops and apply and use an AED.**

Know the primary and secondary responsibilities of a first responder.

- **Primary – personal safety and safety of others, access, assisting of immediate life threatening injuries, initial care, assisting more advanced personnel**
- **Secondary – summarizing help when needed, controlling and protecting bystanders, record scene events, reassure victim's family and friends**

Know why, when and how to use body language and your voice for dealing with patients of various ages and stress levels. Know how to ease a patient's fears.

- **Position yourself close to eye level and speak in a calm and positive manner. Don't cross your arms on chest or place hands on hips.**

Know the positioning of a patient with:

- **Respiratory distress – Sitting up.**
- **Respiratory arrest – supine**
- **Stroke (conscious) – Semi-recumbent position**
- **Stroke (unconscious) - Place in coma position (lateral recumbent on affected side). Reason, mainly due to unconscious stroke victims often tend to drool and/or having difficulty swallowing.**
- **Chest pain (Angina Pectoris) – Semi-recumbent**
- **Seizures (Generalized – movement type) – Leave victim where they are if possible, and do not restrain. Move away nearby objects, and protect victim's head. (Note: most seizures stop within 5 minutes)**

- **Post seizure** – Place in recovery position. Victim will be drowsy and disoriented for a few minutes.
- **Diabetic emergency** – Position of comfort.
- **Heat exposure**– Supine and elevate legs.
- **Cold (hypothermia)** – Supine & don't allow victim to exert themselves (For long exposure times).
- **Unconscious patient without spinal injury, if you have to leave them unattended.** Position victim on one side/lateral recumbent/recovery position in case victim vomits while you are gone.

Know how to move a victim with a spinal injury onto a backboard, who is in charge of coordinating move & why.

- **Victim in a lying position** – Immobilize to a long board.
- **Victim in a sitting position in a chair.**
 - ***Immobilize with a short spine immobilization device***
 - ***If patient must be moved due to injuries, to gain access to others, or danger at the scene, he/she must be lowered directly onto a long board and moved with manual immobilization provided.***
- **Victim in a standing position** - Immobilize to a long spine board (Note: if victim is critical perform a rapid extrication)
- **The person in charge is the person immobilizing the head.**

Why should you use a towel to hold a baby during emergency delivery; how to ease the pain associated with delivery.

What tells you when you need to assist with the delivery of a baby (key indicator)?

- **A towel is used to catch baby because they usually are wet and slippery**
- **Have the mother take slow deep breaths to help her relax and to ease pain**
- **When the expectant mother says that she feels need to push or feels as if she has to have a bowel movement, delivery is near.**

Know how to control bleeding and speed contraction of the uterus after an emergency childbirth.

- **Allow the mother to nurse the new born. Nursing will stimulate the uterus to contract and helps slow bleeding. Contraction of the uterus usually expels the placenta within 30 minutes which will cause some addition bleeding. Place a sanitary pad or towel over the vagina and have the mother place legs together. Massage the lower abdomen. Massage the abdomen will help contract the uterus and reduce bleeding.**

How should you function as a first responder in a multiple casualty incident (MCIs)?

- **Use START (Simple, Triage, And, Rapid, Treatment) system. This is a simple way to quickly assess and prioritize victims. This system requires you to only check three items; breathing, circulation (including bleeding), and level of consciousness. You will classify the victims based on severity into three to four levels (immediate, delayed, minor, and dead/nonsalvageable). Triage color labels will be placed on each victim with red tag for immediate care required, then yellow for urgent care (delayed up to an hour), then green tag (delayed care up to 3 hrs.) for minor injuries and grey/black for dead/nonsalvageable.**

Do you diagnosis as a first responder or provide care for the signs and symptoms you find.

- **The signs and symptoms may give you a good idea of the problem even through as a first responder we generally do not diagnose.**