



BLS Study Guide

EMT Well Being

Body Substance Isolation (BSI)

- ◆ Hand washing after each call
- ◆ Use of protective gloves, safety glasses, gowns & masks when appropriate
- ◆ 10% bleach solution for blood borne cleanups
- ◆ Solution only good for approximately 3 weeks

EMT Immunizations

- ◆ MMR
- ◆ Hep-B
- ◆ TB test at least once each year
- ◆ No immunization for AIDS

Proper Lifting Techniques

- ◆ Know the physical limitations of self & partner
- ◆ Keep weight in close while carrying or lifting
- ◆ Lift with legs & back from squat position
- ◆ Don't reach
- ◆ #1 cause of EMT injury is from improper lifting

Haz-mat Scene Precautions

- ◆ First concern is for your own safety
- ◆ If scene unsafe do not enter
- ◆ Set up safe zone if you are first unit in
- ◆ Always approach from upwind and uphill
- ◆ Do only that which you are trained to do.

EMT Stress & Critical Incident Stress De- briefing (CISD)

- ◆ EMT response to death or serious injury may lead to critical incident stress.
- ◆ Defusing is an early intervention that occurs at the scene or shortly after the scene of an incident, designed to stop the negative stress process that may occur in the hours immediately following a disaster response.
- ◆ Critical incident stress debriefing (CISD)-A psychological, emotional and educational group process to diminish the impact of critical incident stress.
- ◆ Best accomplished if commenced within 48 hours of the incident

Medical/Legal & Ethical Issues

Golden Rule “Do on to others as you would have others do on to you”

Public Health Law Article 30, Part 800

Contains the rules & regulations in reference to EMS & immunities. An EMT cannot be held liable unless gross negligence can be proven.

Art 30 Sect 3013 – immunity from liability

GOOD SAMARITAN ACT (does not cover the EMT in NYS)

Designed to protect private non-certified persons who assist in emergency treatment from legal action, with the exception of gross negligence.

Staying within the scope of practice & standard of care for his/her level of training, combined with proper documentation will go a long way in preventing the EMT from being involved in litigation.

NEGLIGENCE

Deviation from the standard of care as recognized by law

Criteria:

- Duty to act
- Breach of duty
- Injury occurred
- Proximate cause – Injury resulted from improper action or failure to act.

ASSAULT & BATTERY- In certain circumstances the EMT can be charged with assault & battery for treating an adult without consent.

CONSENT

Agreement by the patient to accept medical intervention

INFORMED (ACTUAL) CONCENT

A patient is told, in a manner they can understand, the nature and extent of the procedure to be performed and the possible risks. The patient fully understands the procedures, risks involved, and accepts.

IMPLIED CONSENT

The unconscious, mentally impaired, or child patient in a true emergency, in which there is a significant risk of death, disability or deterioration of the condition, the LAW assumes that the patient or guardian would give their consent.

ABANDONMENT

The termination of the doctor-patient relationship without the consent from the patient and not allowing that patient time to find another physician while care is still needed. Transferring a patient to another health care professional who is not of equal or higher training than you.

DELEGATED PRACTICE

The System Medical Physician delegates the rescuer to carry out actions on their behalf. Example is on line medical direction (medical control) or off line medical direction (standing orders and/or protocols).

Quality Improvement

A system of internal & external audits, that monitors every aspect of pre hospital care to achieve optimal excellence in-patient services rendered. When quality issues are discovered, suggestions are made to prevent re occurrence.

DOCUMENTATION NYS PCR FORMS

Includes:

- Important to fill all the shaded areas of form.
- Dates and times of the ambulance call
- Information from the patient, bystanders, and a physical examination
- Observations at scene (subjective)
- Physical findings (objective)
- Treatment rendered and changes in patient condition
- **NO PERSONAL COMMENTS FROM THE EMT**
- Legal Document that reflects upon it's author
- **Sloppy, incomplete record suggests sloppy and incomplete patient care**
- A large number of documentation errors occur from incomplete RMA documentation forms. Fill out the PCR form completely with as much information as possible & have police officer witness the signature of the person refusing medical aid.
- **If you didn't write it, you didn't do it.**

QUALITY PATIENT CARE AND A WELL-WRITTEN PCR IS THE EMT-'s BEST PROTECTION AGAINST POSSIBLE LEGAL PROCEEDINGS.

PRONOUNCEMENT OF DEATH

EMT may pronounce death *only under criteria listed below.*

- Rigor mortis
- Dependent lividity
- Decapitation
- De-composition
- Valid NYS pre hospital DNR form with patient

Decision not to initiate CPR constitutes pronouncement of death

COMMUNICATIONS

- 10 medical channels on Nassau Medical Control.
- Use channel # 10 for notifications & EMT Medication unless otherwise directed.
- EMD = Emergency Medical Dispatch. Concept of delivering pre-prescribed scripted instructions to emergency callers prior to the actual arrival of medical technicians.
- Emergency Medical Dispatcher (EMD) a vital link in the chain of survival & treatment

HUMAN BODY

MEDICAL TERMINOLOGY

<u>COMMON PREFIXE</u>
Brady = slow
Contra/Anti = against
Des/dis/dys = disorder/difficult
Tachy = fast
<u>COMMON WORDS</u>
Cardio = heart
Cerebro = brain
Cephalo = head
Hemi = half
Hypo = deficient/below
Hyper = above/excess
Inter = between
Intra = inside

TERMS OF LOCATION

Anterior (Ventral) = Towards the front of the body or body part
Posterior (Dorsal) = Towards the back of the body or body part
Superior = Above, upper
Inferior = Below, lower
Superficial = Near the surface
Deep = Remote to the surface
Internal = Inside
External = Outside

TERMS OF LOCATION CONTINUED

Proximal = Near to the point of attachment
Distal = Farthest from the point of attachment
Medial = Towards the midline of the body
Lateral = Away from the midline of the body
Coronal Plane = Divides body in half front & rear
Medial Plane = Division of body down the middle left & right.

TERMS OF DIRECTION

Cranial (Cephalic) superior = towards the head

Caudad (inferior) = Towards the Feet

TERMS OF POSITION AND MOVEMENT

Supine = Lying on spine, face up
Prone = Lying on stomach, face down
Abduction = Movement away from the midline of the body
Adduction = Movement towards the midline of the body
Flexion = Act of bending
Extension = Act of straightening

TISSUE

A collection of specific cells, that carries out a specific function.

- Connective Tissue: Forms the supporting and connective surfaces of the body
- Muscle Tissue: Composed of cells specialized to contract, thereby exert force used in motion. Types; Skeletal (striated), Involuntary (smooth), Cardiac
- Nervous Tissue: Specialized cells that receive stimuli and conduct nerve impulses to various organs

RESPIRATORY SYSTEM

Anatomy

Nose	Warms & humidifies air, traps dust	Trachea	Windpipe
Pharynx	Throat	Carina	Bifurcation of the Trachea
Larynx	Voice Box	Alveoli	Air Sacks
Epiglottis	Protects the Larynx	Bronchi	Passageway to Lungs
Visceral Pleura	Surrounds each lung	Valecula	Valley between epiglottis & tongue
Parietal Pleura	Lines Thoracic Cavity		

Anatomical order – pharynx, epiglottis, larynx, trachea, bronchi, alveoli

Breathing

- Normal Drive: Level of CO₂ in blood (pCO₂)
- Hypoxic Drive: Level of O₂ in the blood (pO₂) COPD patients
- CO₂ is the gas primarily responsible for controlling respirations
- Inhalation - Diaphragm contracts, moves downward causing the thoracic cavity to enlarge from top to bottom
- Exhalation - All muscles relax, passive process, elastic tissues contract
- Chest rise - most effective means of determining adequate breathing

Terms

- Tidal Volume: Air moved and out during a normal respiration (500 cc)
- Total lung capacity – 6000ml (6L)
- Vital capacity amount of air moved during a forceful exhalation, after a full inhalation (1000cc)
- Minute volume = tidal volume x resp rate/min
- 21% room air 16% expired air
- Hypoxia - Inadequate O₂ for cellular needs

Respiratory Patterns

- Apnea - Absence of breathing
- Dyspnea - Difficulty in breathings
- Hyperpnea - Deep ventilation
- Hyperventilation - Increased minute volume
- Hypoventilation - Decreased minute volume
- Orthopnea - Difficulty breathing while lying down
- Tachypnea - Rapid breathing
- Bradypnea - Slow breathing
- Cheyne – Stokes - Regular irregular breathing with periods of Apnea
- PND - Paroxysmal Nocturnal Dyspnea = dyspnea during sleep
- Eupnea- Normal Breathing

Abnormal Respiratory Sounds

- ◆ Snoring - Upper airway partially blocked, usually by the tongue
- ◆ Stridor - Harsh high pitched sound, caused by laryngeal spasms, partial FBAO
- ◆ Wheezing - Whistling sound, heard in Asthma, COPD, CHF
- ◆ Rhonchi - Rattling noises, heard in throat and bronchi
- ◆ Rales - Fine, moist sounds heard in lower airways
- ◆ Silent Chest- Asthma

Assessment of the Respiratory System

- Inspection - Look for signs
- Auscultation - Listen (anterior & posterior)
- Palpate - Feel

Remember NYS Protocol:

Adult: breathing rates greater than **29** or less than **10** with S&S of Hypoxia should be ventilated with high flow oxygen (BVM or pocket face mask with supplemental oxygen).

Child: or infant patient with a breathing rate over **60** should be ventilated with high flow oxygen.

Signs of Respiratory Distress

- ◆ Inadequate chest rise
- ◆ Nasal Flaring
- ◆ Tracheal Tugging
- ◆ Access. Muscle Use
- ◆ Cyanosis
- ◆ Retractions

Adequate Respiratory Rates

Adult	12-20 breaths per min.
Child	15-30 breaths per min.
Infant	25-50 breaths per min.

CARDIOVASCULAR SYSTEM

Anatomy and Physiology

- Myocardium - Heart Muscle
- Pericardium - Double layered sac that surrounds the Heart
- Pulmonary Artery - Carries low oxygenated blood
- Pulmonary Vein - Carries high oxygenated blood
- Coronary Arteries - Supply the heart tissue
- Systemic Circulation - Left Ventricle pumps to body
- Pulmonary Circulation - Right Ventricle pumps to lungs
- Left atrium receives blood from the lungs
- Right atrium receives de oxygenated blood from the body

Systole - Heart muscle is stimulated to contract & pump

Diastole - Heart muscle relaxes refills

CENTRAL NERVOUS SYSTEM

Anatomy and Physiology

Brain

Dura/meninges is the protective covering of the brain.

Cerebrum - Mediates higher mental functions, such as reasoning, thought, memory, speech

Cerebellum - Concerned with equilibrium, coordination, skilled movements

Brain Stem - Maintenance of vital functions, medulla regulates respiration & heart activity

Spinal Cord & Nerves (Skeeter)

- Contains nerve tracts, control position sense, reflex activity

Spinal Vertebrae

- 7 cervical, 12 thoracic, 5 lumber, 5 sacral & 4 coccygeal

Musculoskeletal System

- Axial Skeleton - Composed of the Skull, Vertebral Column, Ribs, and Sternum
- Appendicular Skeleton - Composed of Upper and Lower Extremities
- Remember BLT with Mayo (Bones – ligaments / muscles – tendons)
- Tendons - Tie Muscle to bone
- Ligaments - Link bone to bone
- Cartilage - Cushion, Connective tissue

Muscles

- Smooth - Involuntary (Digestive Tract, Bronchi)
- Skeletal - Voluntary (Striated)
- Cardiac - Heart

The Skin

- Largest organ in the body
- 3 layers
- Epidermis
- Dermis
- Subcutaneous

Functions

- Protects
- Helps regulate temperature
- Absorbs shock

The Endocrine System

- Regulates hormones such as insulin & adrenaline

BASE LINE VITAL SIGNS & SAMPLE HISTORY

Monitor stable patients every 15 minutes.

Monitor unstable patients every 5 minutes.

Pulse & quality

Respirations & quality

Blood pressure (listening with stethoscope: auscultation gives both diastolic & systolic readings)

Palpation gives only the systolic reading

Skin temperature & color

Normal Pulse Rates

Newborn	85-205
Infant	100-190
Child	60-100
Adult	60-100

SAMPLE History

S= Signs & symptoms

A= Allergies

M= Medications

P= Past medical history

L= Last meal

E= Events leading up to the incident

LIFTING & MOVING PATIENTS

- Keep weight in close, Keep back locked
- Know the approximate weight of the Pt & equipment for personnel considerations
- Don't reach more than 15-20 inches
- Use legs, back & power grip when lifting

Equipment

- Split frame stretcher (**scoop**): used for moving patients with little movement (both sides of patient must be accessible)
- **Reeves**: for tight quarters or unconscious patients
- **Stair chair**: used for moving patients down or up stairs
- **Stokes** stretcher/basket: used for carrying over rough terrain or high level rescue
- **Wheeled stretcher**: moving patients to ambulance.

Emergency Moves

Cloths drag

Foot drag

Blanket drag

Firefighter drag

Rapid take down

Rapid extrication

Other Moves

Extremity carry

Fireman carry

4 person log roll

one rescuer assist

Two-rescuer assist

Pack strap carry

Narrow Spaces: Movement of a patient with a spinal injury along their long axis
Straddle Slide

Positions

- Fowlers = seated head up
- Trendelenberg = head down
- Shock = legs raised head lowered

Airway

Airway Opening Methods

- Head tilt chin lift (No trauma suspected)
- Modified jaw thrust maneuver

O2 Equipment, Ventilatory Devices & Adjuncts

- BVM with a reservoir delivers 90 – 100% O2 @10-15 LPM
- Unassisted, (no O2 hooked up) delivers 21 % O2
- Most common problem encountered with the use of BVM is an **Ineffective mask seal**
- Pocket Face Mask - With O2 at 10-15 LPM can deliver up to 50% oxygen
- Goal for ventilation of patient at least 800 CC
- Venturi Mask - Can deliver a fixed low concentration of oxygen
- Nasal Cannula - 1 – 6 LPM can deliver 24 – 44% oxygen
- Non re-breather Mask - 10 – 15 LPM can deliver up to 90% oxygen
- Nebulizer- for delivery of Albuterol at approximately 6 lpm.
- Set liter flow on non re- breather mask to allow the bag to stay full on inspiration of patient.
- Flow restricted positive pressure ventilator device (Demand valve).

Airway Adjuncts

Oropharyngeal Airway

- Indication: patient without a gag reflex that requires ventilation.
- Purpose: to help maintain a patent airway.
- Contra Indication: Patient with an intact gag reflex.
- Use tongue depressor in children & infants

Nasopharyngeal Airway

- Indication: patient with a gag reflex or sever facial trauma that requires ventilation.
- Purpose: to help maintain a patent airway.
- Contra-indication: severe head trauma and infants.

Oxygen Cylinders

- Full “D” Cylinder - 2000 PSI
- Safe residual pressure (change bottle) 500 PSI as per NYS student manual
- Mix of oil & O2 will cause explosion

Suctioning:

- Use cross finger technique to open airway.
- Power suction devices should generate 300 mm/hg
- Yankaur tip is hard suction catheter
- Soft tip catheter is called a French tip.
- Use bulb syringe for suctioning infants.
- **NYS: 15 seconds maximum time. Limit suction to on the way out only**
- Suctioning can cause Laryngospasm & hypoxia.

CPR – Compressions / Airway / Breathing = CAB

<u>Rates</u>	<u>1 Person</u>	<u>2 Person</u>
Adult	Approx 100/min	Approx 100/min
Child	Approx 100/min	Approx 100/min
Infant	Approx 100/min	Approx 100/min

Ratio

Adult	30/2	30/2
Child	30/2	15/2
Infant	30/2	15/2

Depth

Adult	1 ½ to 2 inches
Child	Approx 1/3 -1/2 depth of chest
Infant	Approx 1/3 -1/2 depth of chest

Pulse Points

- Adult / Child = Carotid Pulse
- Infant = Brachial Pulse

CPR Misc. Info

- ◆ Maintain Hand Position by keeping the heel of your hand in contact with the chest at all times you can maintain proper hand placement
- ◆ Interruptions - Never except in certain circumstances.
- ◆ Dentures - If not loose leave in place, unless they obstruct airway
- ◆ Blood Flow - 25 – 35 % of normal blood flow
- ◆ Cardiac arrest in children usually results from respiratory arrest.
- ◆ If patient vomits, turn patient to side, sweep out mouth, continue CPR

Airway Obstruction

Adult/Child Conscious Patient: Partial obstruction (good air exchange) ask if they are choking. If they can speak leave alone, stand by to assist and call 911. Complete obstruction, unable to speak: do Heimlich maneuver. Abdominal thrusts

Adult/Child Unconscious Patient...CPR

Infant Conscious Patient Back blows & chest thrusts (same as compression) 5 each

Infant Unconscious Patient.....CPR

PATIENT ASSESSMENT

Scene Size up

- Body substance isolation
- Scene safety, Is the scene safe? Can we make it safe?
- Mechanism of injury
- Number of patients & resources needed
- Take C-spine precautions if appropriate

Primary Assessment: Goal: To identify & correct immediate life threats

TREAT AS YOU GO PROCESS.

- General patient impression (includes age, sex, race, & MOI)
- Mental Status (LOC) AVPU
- Chief Complaint /Nature of Illness/ Any life threats?
- **A**irway- open or closed, adequate? Need assistance?
- **B**reathing- adequate or not. MOI or illness indicates Oxygen therapy or ventilation
Inspect & palpate chest, manage any chest trauma seal any holes Auscultate chest in 2 spots to verify air exchange.
- **C**irculation- Check radial pulse (if no radial pulse check carotid)
- **C**heck voids for any serious bleeding.
- ID priority patients make transportation decision

History and Exam Pneumonic

S= Signs & Symptoms	O= Onset
A= Allergies	P= Provokes
M= Medications	Q= Quality
P= Past Medical History	R= Radiates
L= Last Oral Intake	S= Severity
E= Events leading up to	T= Time
	I= Interventions

Secondary Assessment (Done if appropriate. Head to toe survey of body. Should be done in route to receiving facility)

Trauma

- Detailed physical exam as needed
- Use DCAP/BTLS format
- Treatment Interventions

D= Deformities

C= Contusions

A= Abrasions

P= Punctures /penetrations

B= Burns

T= Tenderness

L= Lacerations

S= Swelling

Medical

Detailed physical exam as needed
Treatment interventions

Ongoing Assessment

- Repeat initial assessment
- Check interventions
- Re-check vitals

PHARMACOLOGY

DRUG: A chemical compound administered as an aid in the diagnosis, treatment, or prevention of a disease or other abnormal condition. Drugs may be given to alter the disease process itself or to relieve the symptoms of the process.

DRUG NAMES

- Official Name - Listed in the United States Pharmacopoeia (USP)
- Chemical Name - Chemical make up, Recipe
- Generic Name - Name given by first manufacture
- Trade Name - Registered trademark ®

DRUG FORMS

- Solids
- Liquids
- Gases
- Gels
- Suspension

TERMINOLOGY

- Indication - Condition for which the drug is recommended and proven value
- Contraindication - A situation that prohibits the use of a drug
- Depressant - Lessens the activity of the body or body part
- Stimulant - Increases the activity of the body or body part
- Therapeutic Action - Beneficial action of a drug
- Side Effect - Unavoidable, undesired effect

ADMINISTRATION ROUTES FOR EMT-B

- Auto injector - Sub-Q injection
- Inhalation - nebulized medications
- Sublingual - under the tongue

MEDICATIONS

Carried on the Ambulance

Provental/Albuterol (standing order drug)

- ◆ Class – Bronchodialator
- ◆ Indication – Patient between ages 1 and 65 with difficulty breathing secondary to exacerbation of their previously diagnosed asthma.
- ◆ Dosage/Route - 1 unit dose (3.0cc) inhaled via nebulizer set at 6 lpm. Second dose may be administered if symptoms persist (**standing orders**)
- ◆ Side effects - Rapid heart rate, headache, agitation.
- ◆ Contraindications: Hypersensitivity to albuterol, respiratory failure.

NOTE: Medical Control must be contacted prior to administration if patient has history of previous MI, CHF, Angina or irregular heartbeat.

Activated Charcoal

- Class - Absorbent Agent
- Indications - Poisoning after emesis or when emesis is contraindicated
- Administered only on the order of medical control or poison control
- Dosage/Route: 1 – 2 gm/kg, 2 tbs. (50 gm) mixed with water
- Side Effects - Nausea/vomiting, abdominal cramping, bloating, constipation
- Contraindications - Any potential airway compromise

Auto Injector Epinephrine - EPI Pen

- Class - Predominant Beta Agent dilates bronchiole anti allergy agent
- Indications - Bronchial asthma, anaphylactic reactions
- Dosage/Route - 1 auto injector into thigh of a patient with a known Epi-pen RX. If patient is symptomatic without previous history, contact medical control prior to administration.

Oxygen

- Class - inhaled gas
- Indications: low Oxygen state i.e.; sob, shock – hypoperfusion, cardiac etc.
- Dosage /Route... 2-25 LPM inhaled
- Contraindications: **NONE in pre-hospital setting.**

Oral Glucose

- Class - Gel
- Indications - NYS Protocol: For AMS suspected low blood sugar if patient is conscious enough to swallow & has a gag reflex.
- Dosage - 1 to 4 tubes depending on patient improvement
- Contraindication: **NONE (not intended for patients with AMS from head injury).**

Aspirin

- Class - nonsteroidal anti-inflammatory drugs (NSAIDs)
- Indications - NYS Protocol: Adult Cardiac Related Problems
- Dosage – 325mg of nonenteric chewable aspirin.
- Contraindication: no history of aspirin allergy and no evidence of recent gastrointestinal bleeding

Narcan

- Class - synthetic Opioid antagonist
- Indications - NYS Protocol: AMS with a suspected narcotic overdose
- Dosage – 2mg/2ml (1mg/ml in each nostril)
- Contraindication: none when administered properly

Assisted by EMT

Auto Injector Epinephrine - EPI Pen

Nitroglycerin (Nitro) Pill or Spray.

Proventil (Albuterol) metered dose inhaler

Measurements

- 1 cc = 1 ml 1 oz = 30 ml 1 teaspoon = 5 ml 1 tablespoon = 15 ml
- Gram (gm) = 1000 mg Liter (L) = 1000 ml Grain (gr) = 60 mg
- Kilogram (kg) = 1000 gm or 2.2 pounds (LB) 1 mg = 1000 meg

Respiratory Emergencies

Respiratory Illness (COPD)

- Emphysema - Caused by progressive loss of elastic recoil of the Alveoli.
- Chronic Bronchitis - Caused by constriction of the bronchi, and mucus build up
- Asthma - Caused by spasms and constriction of the bronchi
- Coal miner's Black Lung - Caused by Coal dust in poorly ventilated working areas.
- Asbestosis - Caused by asbestos dust.

Respiratory Illness

- Pulmonary Embolism - Sudden, sharp, pleuritic chest pain, usually associated with history of Thrombophlebitis, use of oral contraceptives, long bone fracture
- Status Asthmaticus - Prolonged asthmatic attack, breath sounds and wheezes are usual inaudible can cause Atelectasis Collapse of the alveoli

Respiratory - Chest Injury

- Pneumothorax - Air in the pleural cavity. Diminished breath sounds and trachea deviation toward the injured side
- Tension Pneumothorax - Trachea deviates away from the injured side (contralateral deviation)
- Hemo-thorax- Blood in the pleural cavity
- Hemo-pneumothorax - blood & air entering the pleural cavity
- Flail Chest - Paradoxical respiratory movement, chest pain, dyspnea, deformity 3 or more ribs broken in 2 or more places.

Signs & Symptoms

- AMS / LOC
- SOB
- Decreased or increased respiratory rate
- Abnormal breathing patterns
- Accessory muscle use
- Retractions

Treatment

- ABC's
- High flow O2
- Seal any holes (air occlusive dressing), manage serious chest trauma
- Treat for shock
- Rapid transport
- Consider ALS intercept.

Hyperventilation Syndrome

Anxiety provoked rapid breathing, usually precipitated by emotional distress. Best Treatment should include calming & re-assuring the patient.
Never use paper bag!

Illness and Injury

- ◆ Cardiac Compromise- term used to describe any type of cardiac related potential problem
- ◆ Coronary Artery Disease:
- ◆ Arteriosclerosis - Disease causing hardening and narrowing of the arteries
- ◆ Atherosclerosis - Disease process that causes an accumulation of plaque within arteries

Angina Pectoris:

- ◆ Short lived Chest Pain (usually under 5 minutes), caused by miss match of oxygen supply vs. demand. (heart tissue hypoxia). Can be relieved by rest, oxygen, and / or Nitro, **It is a principle symptom of Coronary Artery Disease.**

Acute Myocardial Infarction: (Heart Attack, AMI)

- ◆ Chest pain usually present in 80 – 90 % of cases
- ◆ Pain can radiate to arm, back & jaw.
- ◆ 25% of all MI's are pain free.
- ◆ Most deaths occur within the first 2 hours
- ◆ Most frequent cause of death...Ventricular Arrhythmia's
- ◆ Initial medication therapy is Oxygen
- ◆ Patient's past and present history will aid a physician most in diagnostic management of a patient with chest pain prior to physical exam or EKG confirmation

CONGESTIVE HEART FAILURE:

- ◆ Failure of the heart to keep up with demand (damaged pump).
- ◆ Left Sided Heart Failure - Fluid backup cardinal sign: pulmonary edema
- ◆ Right Sided Heart Failure - Peripheral edema, distended neck veins, ascities (swelling), weight gain. May be caused by left sided heart failure
- ◆ **Treatment:** Oxygen, seated upright position with feet dangling if possible, rapid transportation and ALS intercept.

AED

1. Measure of electrical energy is called joules
2. Shocks delivered by AED at pre-set biphasic level of 200 Joules & done with two minutes of CPR in between shocks

AED Shock-Able Rhythms

- ◆ Pulseless Ventricular Tachycardia
- ◆ Ventricular Fibrillation

Management: CPR, Shock if indicated high flow O2, keep warm.
Transport ASAP & ALS Intercept if appropriate.

Defibrillation Lead /Pad Placement

- Pad Placement - White right approx. 2 inches above right nipple (or smoke over fire if color coded).
- Pad Placement - Red rib left side lower approx. 3 inches above belt or waist line

**Works by suppressing all electrical activity in the heart
Before and after a defibrillation or stacks of Defibrillation's**

Medical Emergencies

Diabetes: Body Failure to produce sufficient insulin

Hyperglycemia -

- **not enough insulin**-sugar level too high
- **Dry warm Skin**
- Kussmaul's respiration (rapid deep sighing respiration's)
- Dehydration;
- Gradual onset **SLOW**
- Acetone breath odor

Hypoglycemia

- **INSUFFICIENT SUGAR** insulin level too high.
- **WET SKIN**
- Cool, clammy skin patient
- AMS
- **Sudden Onset**

Management:

ABC's, O2, request ALS intercept, if patient is known diabetic & is conscious enough to swallow give sugar. Rapid transport, ALS intercept if appropriate.

Anaphylactic Reaction

- ◆ Cause- A life threatening **severe** allergic reaction
- ◆ Signs & Symptoms- Swelling of the face & tongue, urticaria (hives), itching wheezing
- ◆ Management- ABC's, treat for shock, Assist with Epi pen or administer when appropriate. Consider ALS intercept.

Cold Emergencies - General Hypothermia

Signs: shivering, red skin, AMS (early) white skin, LOC shallow breathing (late)

Treatment: Maintain airway, High flow O2 treat for shock conserve body heat. DO NOT REWARM, ONLY MAINTAIN WHAT HEAT THE PATIENT HAS.

Re-warming or rough handling can cause V – Fib.

Local Hypothermia Frost bite

- Early stage skin red (frost nip)
- Progressively turns to white (frostbite)
- When total freezing of the part has occurred (deep frostbite) the part will turn black & blue
- Re-warming of a part should only be attempted if there is no chance for the part to re-freeze.

Heat Emergencies- Hyperthermia

Heat Cramps (first stage)

- Caused by - Profuse sweating, loss of salts
- Presents - Muscle cramps
- Management - Remove from environment, salted fluids

Heat Exhaustion (second stage)

- Caused by - Some what severe loss of water and salts
- Presents - Syncope, nausea, cramping, dizziness, pale, clammy skin, headache
- Management - Remove from environment, Cool patient, fluids

Heat Stroke (third stage)

- Caused by - Body lost the ability to sweat
- Presents - Unconsciousness, Dry, flushed skin, hypotension
- Management - Remove from environment, Cool patient down, treat for shock
- True Emergency

Drowning/ Near Drowning

NEVER GO IN UNLESS TRAINED TO DO SO.

Stages:

1st - swallowing water

2nd - spasms of the larynx

3rd - hypoxia

Fresh Water - can result in V-Fib

Salt Water - can result in acute pulmonary edema

Radiation Exposure Emergencies

- Alpha Particles - Can be stopped by paper
- Beta Particles - Can be stopped by heavy clothing
- Gamma Particles - Penetrating
- Clean Accident - No spilling, No danger to the rescuer

Alcoholism

- Problem Drinker - A person who uses alcohol to relieve tensions or other emotional difficulties
- Addiction - Abstinence from alcohol causes major withdrawal symptoms

Alcoholic Prone Illnesses:

- Subdural Hematoma - Due to frequent falls
- Cirrhosis - Liver Damage
- Hypoglycemia - Due to liver damage, lack of Thiamin
- Pancreatitis - Also can lead to hypoglycemia
- Upper Gastrointestinal Bleeding – Ulcers

Alcohol Withdrawal:

Can present with

- Delirium Tremors (DT's) very high mortality rate.
- The sensation of bugs crawling all over them
- Seizures

Overdose

Narcotic Overdose - Opium based drugs, (Morphine, Darvon)
Pin point pupils, Respiratory depression

Management - Airway, Oxygen, Narcan, ALS intercept.

Barbiturate Overdose - Sedatives / Depressants

Serious when mixed with alcohol shallow respiration's, coma,
fixed, dilated, pupils and Hypotension

Management - Airway, Oxygen, Keep warm & TX

Amphetamine - Amphetamines, Dexedrine, "Speed Freak"

Wild-eyed appearance, excitement, Anorexia, Tachycardia, sweating,
hypertension, dilated pupils, tremors

Management - Airway, Oxygen, talk down

Hallucinogens

- ◆ **PCP** (Phencyclidines) violent, combative, paranoid, generally out of control pain perception decreased may cause mutilating self injury
- ◆ **LSD**- Excitement, Panic, Hallucinations unusual body sensations
- ◆ Treatment: Quiet swift transport, with soft restraints if necessary

Poisoning

- Ingested
- Inhaled
- Injected
- Absorbed

Questions to ask

- What was taken?
- How much was taken? When was it taken?
- Was vomiting induced? Was anything given?

Management - Airway, O2, Contact Medical Control or Poison Control for orders & treatments.

NOTE; Do Not To Induce Vomiting if;

1. Comatose patient or patient ingested corrosives
2. Seizures, or ingested petroleum products (kerosene, gasoline)
3. Pregnancy or ingested Iodine, Silver Nitrate, Strychnine

Specific Poisonings

Carbon Monoxide: Predominantly a winter problem colorless, odorless, tasteless gas

Signs & symptoms: Causes pressure sensation in the head, roaring in ears, vomiting, incontinence, convulsions, coma, bounding pulse, dilated pupils, pulmonary edema, cherry red skin (late)

Management: Remove from environment (by appropriately trained & equipped personnel), 100% Oxygen, ALS intercept & Transport ASAP.

Glue (Toluene) - Sniffed to obtain a “high” cause hallucination, extreme panic, similar to LSD overdose

Treatment: Remove from environment, Administer O2, ALS intercept when appropriate.

Absorbed poisons

General Management - Flush site with water

Example: Organophosphate Poisoning found in insecticides

Causes Parasympathetic Nervous System stimulation

Treatment: ABC's, O2, decontaminate the skin with water, notify medical control.

Injected Poisons

Snakebites - Instantaneous pain, progressive local, edema, ecchymosis at the site. Nausea, vomiting, dizziness, bradycardia or tachycardia, hypotension, delirium

Management - Remove all rings and bracelets, splint the bitten extremity, ABC's, oxygen, treat for shock, consult poison control medical control re use of constricting bands.

Black Widow Spider - Sharp, sudden prick, cramping or numbing pain over the bite area. Excruciating pain and muscle rigidity, severe difficulty breathing, nausea, vomiting, headache, sweating, parasthesia

Management - ABC's, oxygen, rapid transport, contact poison/medical control

Acute Abdomen - Sudden onset of severe abdominal pain the cause of which may not be known

Anatomy and Physiology

Solid Organs

- ◆ Liver (RUQ),
- ◆ Spleen (LUQ),
- ◆ Pancreas (LUQ),
- ◆ Kidneys R&L UQ Posterior
- ◆ Ovaries (R & LLQ)

Hollow Organs

- ◆ Stomach (LUQ)
- ◆ Small Intestine (R & LLQ)
- ◆ Appendix (RLQ)
- ◆ Gallbladder (RUQ)
- ◆ Bladder (R & LLQ),
- ◆ Large Intestine (ALL QUADRANTS)

Geriatric Patients

- ◆ Altered reactions to illness, pain mechanism depressed.
- ◆ Temperature regulation mechanism depressed.
- ◆ Mental deterioration, depression, thirst mechanism not as active

Behavioral Emergencies

- Realistic Fears - Fear of pain, disability, death
- Diffused Anxiety - Feeling of helplessness
- Depression - Natural, psychotic response to loss
- Regression - Return to an earlier or more primitive mode of behavior
- Denial - Ignore the problem
- Anger - Become resentful to the situation
- Confusion - Common among the elderly
- Blind Panic - Individual's judgment seems to disappear
- Overreaction - Person who talks compulsively, jokes inappropriately, become overactive

Specific Psychiatric Emergencies:

- Depression - Sad expression, bouts of crying, listless behavior, feelings of worthlessness
- Suicide - Willful act designed to bring an end to one's own – life
- Paranoia - Patient is Suspicious, reclusive, Distrustful
Does not go along with his / her delusions

OB / GYN

- EMT does not deliver babies mothers do. The EMT's roll is to assist in the birth.
- If contractions are 2–3 minutes apart lasting 60-90 seconds, crowning present prepare for emergency delivery.
- The EMT should assist in the birth of the child by gently guiding the head downward.

Anatomy and Physiology

- Ovaries - Produce female sex hormones, contain eggs
- Uterus - Muscular organ where fetus develops
- Cervix - Neck of Uterus
- Perineum - Area of skin between the genitals and anus
- Fetus - developing baby
- Placenta - fetus is nourished by this special organ
- Umbilical Cord - life line
- Amniotic Sac - bag of waters
- Amniotic Fluid - cushions fetus, approx. 1 liter

Labor

- 1st Stage - From the first contraction to full dilation of the Cervix
- 2nd Stage - Delivery of the baby
- 3rd Stage - Delivery of the Placenta
- Normal Delivery - Cephalic (Head First)
- Normal first pregnancy labor time - Average of about 16 hours
- Average Blood Loss - half pint

(More than five blood soaked pad type dressings could indicate serious post birth bleeding).

- Crowning - Head of baby starts to emerge from the vagina
- Suction mouth then nose (obligate nose breathers)

Proper order of newborn resuscitation

1. Suction
2. Stimulation
3. CPR

APGAR Score..... Includes
0-2 for each 10 total score
At 1 minute and 5 mins

Appearance (Color)
Pulse Rate
Grimace (reflex irritability)
Activity (muscle tone)
Respiratory Effort

OB Emergencies

- Breech Birth - Buttocks First. If baby is not delivered within 3 minutes insert gloved hand in vaginal opening, form a “V” over baby’s nose. Push vaginal wall away to establish airway.
- Limb presentation - One extremity is the first presenting part. (**True Emergency**)
- Vaginal Bleeding (No Trauma) - Treat for shock, oxygen & monitor vitals.
- Spontaneous Abortion - Occurring naturally (miscarriage)
- Criminal Abortion - Illegal attempt to produce abortion
- Therapeutic Abortion - Induced for justified medical reasons
- Threatened Abortion - Bleeding during pregnancy (miscarriage) pain (resembling menstrual cramps). May progress or subside
- Pre-eclampsia - Toxemia of pregnancy precursor to Eclampsia, hypertension, edema
- Eclampsia - Development of seizures, do not transport with lights or sirens (promote seizures)
- Prolapsed Umbilical Cord - Cord is first presenting part, keep moist, place mother in elevated shock position or knee-chest position, oxygen
- **Prolapsed cord’s primary danger is suffocation of baby due to lack of O2**

NYS Protocol: place gloved hand at vaginal opening. Press the baby’s head back and up inch or so to try and relieve pressure on the cord.

- Supine Hypotensive Syndrome - Fetus is pressing on the mother’s inferior vena cave. Place mother left laterally recumbent
- Premature Infant - Under 5.5 Lb. Or less than 37 week or prior to 7 months
Management - Airway, O2, monitor, rapid transport & keep warm

Bleeding & Shock/Hypoperfusion

- ◆ Artery Bleed- bright red spurting blood
- ◆ Venous Bleed – dark maroon flowing blood
- ◆ Capillary Bleed – bright red oozing.

Bleeding Control

Direct Pressure /Pressure bandage/Tourniquet

- **Blood Volume** - 6 Liters in average adult (or 6 quarts, 12 pints, 12 units)
- **Composition, Solid** - Red Blood Cells/erythrocytes/ (Transport) hemoglobin carries O₂ White Blood Cells/ leukocytes/(Defense fights disease)
Platelets/ thrombocytes/ (Clotting) fibrinogen
- **Liquid** - Plasma, (Transport Medium)

SHOCK/ Hypoperfusion

Definition - Inadequate Tissue perfusion/hypo perfusion

Signs and Symptoms

Early Compensating Shock

- Restlessness/AMS/ (**Very Early Sign**)
- Rapid, weak pulse (radial pulse is the most difficult to palpate)
- Rapid shallow respiration's
- Cool, clammy skin

Late Sign Decompensating

- Hypotension (**LATE SIGN**)

Remember: Constant changes in blood vessel size will not lead to shock, and Hypovolemia & is usually not a sign of a head injury.

HOMEOSTASIS: Body's attempt to maintain stability of the internal environment

TYPES OF SHOCK

- ◆ **Hypovolemic/Hemorrhagic** - External or internal blood loss, loss of plasma from burns or crushing injuries
- ◆ **Respiratory** - Prevention of adequate O₂ and CO₂ exchange.
Example; Pulmonary edema or lung injury
- ◆ **Metabolic** - Loss of ELECTROLYTES, from diarrhea, vomiting
- ◆ **Cardiogenic** - Inadequate functioning of the heart.
- ◆ **Neurogenic** - Loss of sympathetic tone, over dilation of blood vessels, usually a spinal injury.
- ◆ **Psychogenic** - Simple fainting; a sudden, but usually temporary dilation of blood vessels.
- ◆ **Septic** - Severe infection
- ◆ **Anaphylactic** - Severe allergic reaction

Treatment

- Maintain airway
- High concentration of O₂
- Control external bleeding
- Elevate legs, MAST suit (if NYS MAST protocol indicates use)
- Keep patient warm
- Monitor vital signs, rapid transport

NYS BLS PROTOCOLS FOR MAST SUIT

INDICATIONS: serious MOI or bleeding and

- SIGN/SYMPTOMS OF SHOCK WITH B/P BELOW 50 systolic
- SIGN/SYMPTOMS OF SHOCK WITH B/P BELOW 90 systolic and evidence of an unstable pelvic fracture

CONTRAINDICATIONS

- Pulmonary Edema
- Penetrating Chest Trauma
- Cardiogenic Shock
- Children under 8 years old

In place it artificially increases peripheral resistance

Tasks that **can** be done with suit completely in place:

- X-Ray
- Catheterization
- EKG

Task that **cannot** be done with suit completely in place

- Abdominal palpation & examination.

MAST Special Situations

Do not use abdominal chamber in abdominal eviscerations, impaled object in abdomen or pregnancy no leg chamber on impaled object in leg.

SOFT TISSUE INJURIES

SKIN: largest organ of the body

Layers - Epidermis (Outer layer)

Dermis (Inner layer) contains sweat glands, nerve endings

Subcutaneous Layer (Connective)

Function - Protection, temperature regulation prevents water loss sensory organ

Note: Sweat, is promoted by the sympathetic nervous system.

Skin Condition Indicators

<u>Color</u>	<u>Possible Cause</u>
Red	Vasodilatation, fever, allergic reactions
White (Pale)	Vasoconstriction, blood loss, fright
Blue (Cyanosis)	Hypoxia, shock, vasoconstriction
Cherry Red	Carbon monoxide poisoning

<u>Temperature</u>	<u>Possible Cause</u>
Hot, Dry	Excessive body heat
Hot, Wet	Reaction to internal changes
Cool, Dry	Exposure to cold
Cool, Clammy	Shock

Soft Tissue Wounds

- **Abrasion** - Caused by rubbing or scraping
- **Evisceration** - Abdominal wound with intestine protruding
- **Laceration** - Jagged cut or slice
- **Incision** - Smooth, clean cut
- **Puncture** - Hole, made from a pointed object
- **Penetrating** - Entrance only
- **Avulsion** - Tearing loose of a flap of skin
- **Amputation** - Tearing loose of a body part. Management: wrap in moist sterile dressing gauze, seal in plastic bag and keep cool. Do not put unprotected part on ice.
- **Impaled Object** - Never remove an impaled object except in the cheek

Dressing – Sterile material that is used to cover the wound.

Bandage- Material used to hold dressing in place

Burns

First step in the treatment of burns is to stop the burning process

1st Degree	Superficial	Reddening of the skin
2nd Degree	Partial thickness	Blisters
3rd Degree	Full thickness	Charred or white and waxy skin, least amount of pain

Electrical/Lighting Injuries Burns

First step assure your own safety.

Electrical/lighting injuries burns can cause entrance /exit wounds fractures, deep subcutaneous burns, and cardiac arrhythmia. Have defibrillator ready.

Rule of Nines

Adult	Area	Child
9	Head	18
9	Chest	9
9	Abdomen	9
9	Upper Back	9
9	Lower Back	9
9	Full Arm	9
18	Full Leg	14

Burn Management

Thermal Burns

- Stop the burning process
- **NYS Burn Protocol: DRY STERILE DRESSING**
- Chemical Burns - Flush with copious amounts of water
- Dry Lime Burns - Brush off first, then flush with water
- Electrical Burns – De-energize patient from source safely, check for fractures, burns and dysrhythmia

Eye Injuries

- ◆ Vitreous Fluid - Clear, jelly like fluid, fills the posterior portion of the eye (If lost, sight in the eye may be lost)
- ◆ Sclera - White portion of the eye, mild cases of jaundice may be seen here
- ◆ Injuries - Cover both eyes with loose, moist dressing
- ◆ Flushing - Flush away from the good eye
- ◆ Light Injuries - Cover with dark patches
- ◆ Avulsion of the eye - Treat as an impaired object

Facial Injuries - Can cause cervical injuries, airway may be obstructed

Nosebleed/Epistaxis - Pinch the nostrils with head flexed forward

Neck Injury - Critical until proven otherwise, airway & spinal injuries are major concern. Neck lacerations can result in pulmonary embolism.

Blunt neck injury can result in fracture to the trachea

Trauma to the Abdomen

Anatomy & Physiology

- ULQ... Spleen, Stomach, Colon, Pancreas
- LLQ... Colon, Small Intestine
- URQ... Liver, Gallbladder, Colon, Pancreas
- LRQ... Colon, Small Intestine, Appendix

- Blunt Trauma - Can result in a rupture to: Liver (Contains 25% of your blood supply) Spleen (Left sided abdominal & left shoulder pain, Shock)
- Eviscerated Abdominal Organ (open abdominal injury) do not replace organs Cover with a moist, non-adherent dressing, a bulky dressing over the moist one, to prevent hypothermia to the organs. Place the patient in a supine position, with the knees bent (if there is no spinal injury)

Musculoskeletal Care

Signs & Symptoms - exposed bone ends (MOST OBVIOUS SIGN), Pain, deformity, swelling, loss of movement, crepitus (grating of bone ends) and discoloring.

Management: ABC's first

1. Manual stabilization
2. Check distal pulse (before and after splinting).
3. Choose & apply an appropriate splint.
4. Immobilize adjacent joints above and below the fracture
5. Re- check pulse motor & sensory.

N.Y. Protocol Long Bone & Joint Injury as of 11/08

Long Bone Injuries: If the long bone is severely deformed **or** the distal extremity is cyanotic **or** lacks pulses, align the long bone by applying gentle manual traction prior to splinting. If resistance is encountered, the extremity should be splinted in the deformed position.

Joint Injuries: An injured joint should be immobilized in the position in which it was found **unless** the portion of the extremity distal to the site of the injury is cyanotic and/or lacks pulses and no resistance is met when straightening the extremity.

Special Notes

- ◆ Hand Injuries - Splint in the position of function
- ◆ Traction Splint - Does not reduce a fracture. Only stabilizes bone ends helps correct angulation and helps control muscle spasms.
- ◆ Fractured Humerus - Distal end can damage vessels and nerves (I.e. Ulnar nerve)

Suspected Hip Injury: IF IT'S IN IT'S OUT IF IT'S OUT IT'S IN.

- ◆ Medial rotation of the foot generally indicates presence of a dislocated hip.
- ◆ Lateral rotation generally indicates presence of a hip fracture.

Sprain - Ligament damage; pain, swelling, discoloration caused by pushing a joint beyond its range of motion tearing ligaments.

Strain - Tendon damage, pain, possible swelling.

Dislocation - Separation of a joint, pain, swelling, deformity, difficulty in motion

Head Injury

- Concussion - Usually mild, jarring of the brain, little or no damage
- Contusion - Bruising of brain tissue can cause permanent damage.

Sign and Symptoms

- Changes in LOC - **MOST IMPORTANT TOOL OF EVALUATION**
- Unequal Pupils
- Vomiting COMMON IN CHILDREN, SERIOUS IN ADULTS

Head Injury Increasing Intracranial - Pressure developing within the cranium

- ◆ **RISING BP, SLOWING PULSE AND RESPIRATION'S (OPPOSITE OF SHOCK) = *Cushing's Triad***
- ◆ Warm Skin
- ◆ Vomiting (often projectile)
- ◆ Rising Pulse Pressure (difference between systolic & diastolic blood pressure)
- ◆ Epidural Hematoma- bleeding between the dura matter & the skull
- ◆ Sub-dural hematoma- bleeding between the dura matter & the brain
- ◆ Intracerebral hematoma- bleeding within the brain tissues

Skull Fracture Signs & Symptoms

- ◆ Cerebrospinal fluid leaking from ears or nose.
- ◆ Battle's Sign (Basilar Skull Fracture) ecchymosis behind the ears
- ◆ Raccoon's Eyes, discoloration of and around eyes
- ◆ Deformity (depressed area) of head.

Management

- ABC's
- C-Spine
- High flow oxygen
- Rapid transport
- Do not stop the flow of CSF, cover with a loose dressing only
- Head injuries alone do not usually cause Hypovolemia

NYS Protocol: Hyperventilate the adult patient that exhibits signs & symptoms of brain herniation (posturing) & GCS < 8 at a rate not more than 25 per minute.

Spinal Injuries

Area of Injury	Affected Paralysis Region
Cervical Region	Arms and Legs affected
Lumbar Region	Legs affected
C – 1, C –5	Cessation of respiratory movements
T - 4	Loss of sensation inferior to the nipple line
T - 10	Loss of sensation inferior to the umbilicus

NOTE:

**Thoracic region of the spinal cord does not control respiration.
The cervical area is responsible for respiratory control.**

Spinal Injury Signs & Symptoms

- Paralysis
- Tingling
- Pins & needles

Spinal Injury Management

1. Manual stabilization, ABC's (may need to be ventilated)
2. Extrication collar
3. Immobilize
4. Continual re-evaluation and documentation

CENTRAL NERVOUS SYSTEM MEDICAL PROBLEMS**Transient Ischemic Attack (T. I. A.)**

Temporary neurological deficits lasting 5 – 10 minutes caused by interruption of blood supply to the brain. Mini stroke, usually self-correcting.

Cerebrovascular Accident (CVA, Stroke or Brain Attack)

Interruption of blood flow to brain caused by clot or bleeding.
Altered L.O.C., hemiparesis, hemiparalysis, and weakness in ability to move extremities.

Management maintain airway, monitor vital signs, oxygen

Seizures**Stages**

- ◆ Aura - Sensation of impending seizure
- ◆ Tonic - Rigidity of muscles
- ◆ Clonic - Uncontrolled contraction and relaxation of muscles
- ◆ Postictal - Period after a seizure, patient is usually drowsy and in need of sleep

Status Epilepticus - two or more seizures without regaining consciousness between seizures

Coma: Defined as a state of unresponsiveness from which the patient cannot be aroused

Common Causes of Seizures (AEIOU/TIPS)

- Alcohol intoxication
- Epilepsy (seizures)
- Infection (meningitis)
- Unknown or underdose
- Overdose (drugs)
- Trauma
- Insulin (diabetic problems)
- Psychiatric
- Stroke

Infants & Children

9 Most Common Pediatric Emergencies

- Respiratory
- Seizures
- AMS
- Poisoning
- Fever
- Shock
- Trauma
- Near drowning
- SIDS

AMS in children - EMT must consider/suspect hypoglycemia, poisoning, postictal seizure, head injury, hypoxia & shock hypoperfusion.

Common Pediatric Emergencies

- ◆ Asthmatic Attack - Give humidified oxygen assist with inhaler if appropriate
- ◆ Bronchiolitis - Administer humidified oxygen, semi-sitting position
- ◆ Croup – viral infection with stridor, whooping sound on inhalation and seal bark cough. Usually less than 4 years of age with low-grade fever, signs of respiratory distress.
- ◆ Epiglottitis - Caused by bacterial infection swollen, cherry –red epiglottis, usually over 4 years old pain on swallowing, drooling high fever.

Caution: do not place anything in the mouth of a child with epiglottitis. This could cause laryngospasm.

Management: administer humidified oxygen allow patient to remain in position of comfort. DO NOT EXAMINE THE THROAT

CHILD ABUSE

Part 800.21 requires the EMT to report suspected cases of child abuse to dept of Social Services. EMT'S are MANDATORY REPORTERS. Phone call to NYS Child abuse hotline within 24 hrs and written report within 48 hrs.

Signs & Symptoms

- Multiple bruises in various stages of healing.
- Injury inconsistent with MOI given.
- Repeated calls to the same address.
- Burns that is even or circumferential.
- Parents seem inappropriately concerned.
- Conflicting stories
- Fear of the patient (child victim) to discuss injury.

Management:

- Get child to a safe environment.
- Keep your emotions under control
- Do not accuse or confront parents with your suspicions
- Treat injuries (keeping chain of evidence in mind).
- Police intervention may be needed if parent RMA for child.

AMBULANCE OPERATIONS, GAINING ACCESS & OPERATIONS

Ambulance Operations

- Most ambulance accidents occur at intersections
- Following too close is the # 2 cause
- Red lights & Sirens should be used cautiously
- Cannot pass a stopped school bus.
- Allow plenty of stopping distance.

Incident Command System

- ◆ Organizes and utilizes resources that respond to major EMS, Police or Fire events.
- ◆ Consists of a structured design to control, direct & coordinate all of the resources available for the given incident.

Extrication Notes

- ◆ The EMT's primary role is personal safety of self & the patient care
- ◆ First Step - Gaining Access
- ◆ Long Spine Board - Recommended when moving a patient as a unit
- ◆ First Manual Maneuver - Cervical Stabilization, until patient is secured to a device
- ◆ First Mechanical Maneuver - Cervical Collar
- ◆ Windshields are laminated glass

- ◆ Side & rear glass are tempered
- ◆ Quickest access to patient is through a door

Triage - French word meaning to sort.

Utilize START Triage – respirations, circulation, mental status

TRIAGE TAGS

- ◆ **Green** – Uninjured
- ◆ **Yellow** – Low priority
- ◆ **Red** - High priority
- ◆ **Black** - Dead

First Priority - airway, obstruction, sucking chest wound, apnea, cardiac arrest, serious hemorrhage

Second Priority - tension pneumothorax, pericardial tamponade impending shock, massive hemothorax

Third Priority - head injury, evisceration, open fractures, spinal injuries

Fourth Priority - Lesser Fractures and Wounds