INTRODUCTION TO PROTOCOLS
12/03/2013

These protocols were written in joint effort by the Medical Control Board of Lane County. The Medical Control Board is a volunteer organization consisting of Medical Directors and EMS Professionals from the City of Eugene Fire & EMS Department, Lane Fire Authority, South Lane Fire/Rescue, Springfield Fire & Life Safety, Western Lane Ambulance as well as those in surrounding jurisdictions within the Lane County Ambulance Services Areas.

The Board meets monthly with the objective of coordinating the delivery of emergency medical care. Where evidence is available, the Board has diligently evaluated the material and drafted protocols that will assist EMS Personnel in providing excellent patient care. Where evidence is lacking, the Board has relied on best practices, expert advice and consensus to guide the development of the protocol or procedure. These protocols are reviewed on a regular basis and updated when necessary to reflect advances in the art and science pertaining to the care of the acutely ill and injured.

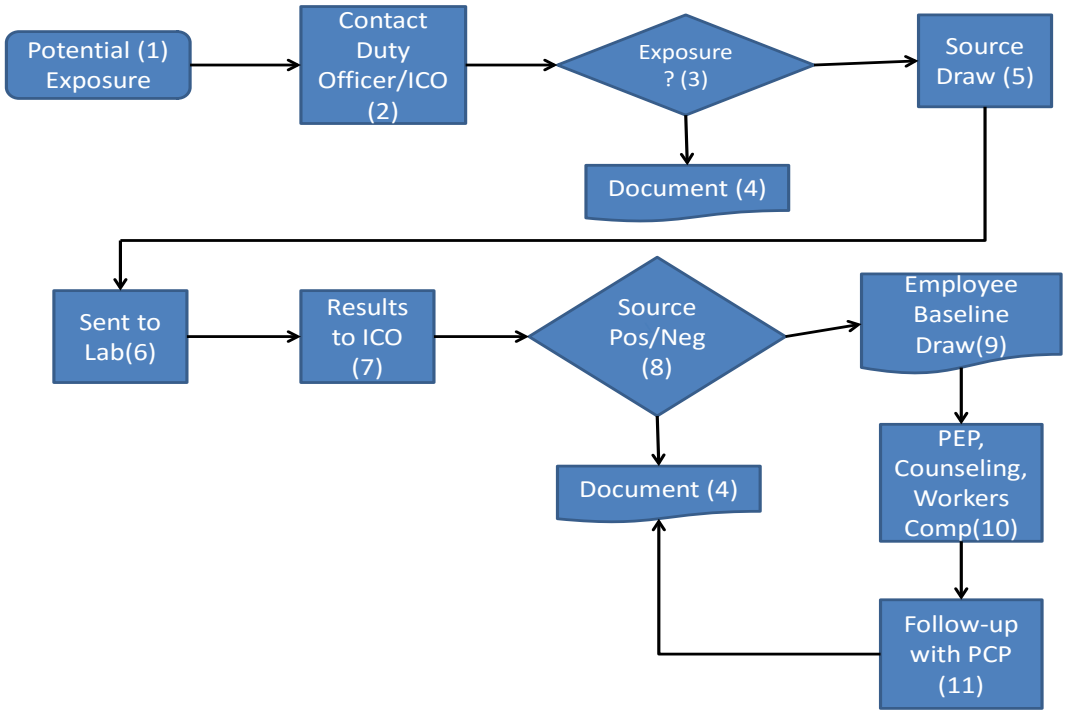
EMS is performed in a stressful environment with time-critical decisions and no specific patient care matrix can be developed that will cover every type of injury, illness, and complicating circumstance that EMS Professionals will encounter while providing on-scene care. It is the Board's expectation that providers will use these protocols in conjunction with their training and experience to do what is best for each patient. From time to time, it is expected that circumstances will arise that are not covered within these protocols. In such instances, providers should function within their scope of practice and use all available resources (including Physician Consultation at the receiving facility) to provide the best possible patient care. Any protocol deviations should be documented and sent to your EMS agency's EMS Office and the Medical Director for review.

The Board attempts to achieve, by consensus, a high level of cooperation in developing, purchasing, maintaining and standardizing EMS equipment and protocols. Individual agencies and their Medical Directors can act independently of the Board; however the coordination of medical equipment and practices within the county is an obvious community benefit. Agency-specific protocols may be appended to these protocols when signed by their respective Medical Directors.

Thanks to everyone who has provided assistance in protocol development and review. Anything that is complex and includes detail is prone to errors. Please review these protocols carefully and route any potential errors, unclear directions, or suggestions for improvement to your agency's EMS Office.

BLOODBORNE PATHOGEN EXPOSURE 05/06/2014	
INDICATIONS	This protocol is intended to be used when there is a bloodborne pathogen exposure to a First Responder or an EMS worker. According to the Ryan White Act, First Responders and EMS personnel have a right to a sample of the patient's blood for testing if there has been an exposure. If patients do not consent; it may be necessary to contact law enforcement to get a court order for source patient testing. **If the source patient is not being transported and there are not personnel on-scene qualified to obtain a blood draw, agencies may contact Med Express to do the draw at (541) 228-3111. Personnel will need to be able to provide a call-back number to Med-Express Dispatch.
EMR/EMT	Provide basic first aid to the worker • Wash or irrigate the area that was affected. • Bandage the wound. • Get the Occupation Exposure Packet from the apparatus. • Explain to the patient that there has been an exposure and have the patient sign the consent for blood specimen collection.
A-EMT, EMT-I, PARAMEDIC	• If patient is not being transported, obtain blood draw from source patient – **See Blood Specimen Collection protocol**

BBP EXPOSURE FLOW CHART
01/15/2014



This flowchart is not intended to replace individual agency bloodborne pathogens policies. It is intended to provide guidance to agencies and personnel that may need additional information during an exposure event.

1. Provide First Aid to employee. Relieve the employee of duties when possible. An exposure or incident form should be completed addressing circumstances surrounding potential exposure per agency policy. If able determine if patient has high-risk lifestyle, IV drug use, known HIV positive.

2. The potential exposure shall be reported immediately to the employee's supervisor or as directed by agency policy. Contact the agency Infection Control Officer (ICO).

3. The ICO shall determine if the incident is an exposure. Elements necessary for transmission include: presence of infectious agent (consider dosage and virulence), means of transmission and host resistance (consider PPE used, skin integrity, recipient health etc). Other considerations include: depth (deep or superficial) of percutaneous injury, visible fresh blood, prolonged mucous membrane or skin contact (compromised skin integrity). If no exposure, proceed to step 4 of the flowchart, process terminated. If determined an exposure proceed to step 5 of the flowchart with the assistance of the ICO.

4. Document incident per agency policy. Documentation shall be placed in employee's confidential health record. Provide counseling as necessary.

BBP EXPOSURE FLOW CHART
01/15/2014

5. Patient Transported: If the source patient is transported to the hospital contact the emergency room charge nurse and advise of need for source blood draw.

   ***PeaceHealth*:** charge nurse shall follow the Employee Body Fluid Exposure protocol. Provide employee's name, date of birth and first six digits of social security number for tracking. Request the lab contact the agency ICO with results ASAP within 24 hours. Request the results are faxed to Cascade Health Solutions.

   ***McKenzie Willamette*:** advise the charge nurse of the exposure. Once the patient is accepted as a patient and the hospital has consent, the lab will draw the source patient. Request the lab contact the agency ICO with results ASAP within 24 hours. McKenzie is also able to send results to Cascade Health Solutions.

6. Patient Not Transported: Obtain source patient blood draw according to Lane County EMS protocols. If needed, the transport agency can provide an approved lab draw kit. MedExpress (541-228-3111) can provide lab draw services if needed.

   Deliver the source blood specimen to the PeaceHealth Lab located at the RiverBend Annex. If needed, MedExpress (541-228-3111) can deliver source blood specimen.

7. The lab or hospital employee health should contact the Infection Control Officer with results ASAP within 24 hours post exposure.

8. ***Negative Results*:** Proceed to step 4. Process terminated

   ***Positive Results*:** Contact employee and provide information on continuance of process. If HIV positive, begin Post Exposure Prophylaxis (PEP). PEP available M-F 8-5 Cascade Health Solutions Clinic 541-228-3000 or after hours at Peacehealth or McKenzie Willamette Emergency Department. For other positive results employee shall report to Cascade Health Solutions the next business day.

9. Employee shall report to Cascade Health Solutions the next business day. Baseline blood testing of an expose employee is a series of initial, 6 weeks, 3-month and 6-month draws.

10. Employee will be provided PEP as directed by occupational health. Post-exposure counseling shall be provided by a qualified counselor to evaluate the potential risks, process and outcomes. Dr Kovacevic, Board Certified Occupational/Environmental medicine, can provide counseling. Cascade Health will provide initial treatment using an educational and treatment script developed by Dr Kovacevic (541-228-3093). Workman's Compensation documentation shall be processed.

11. Employee should follow-up with primary care physician.

BBP EXPOSURE FLOW CHART
01/15/2014

12. Proceed to step 4 of the flowchart. Process terminated.

All agencies must ensure annual bloodborne pathogen training is accomplished.

Further guidance from the Oregon OSHA BloodBorne Pathogens guidance: http://www.orosha.org/subjects/bloodborne_pathogens.html

Contact numbers:

Cascade Health Solutions

(Brandon Mattix): 541-228-3000
Cascade Health Solutions Fax: 541-228-3185
MedExpress: 541-228-3111

PeaceHealth

RiverBend: ER Charge Nurse: 541-222-6929
House Charge Nurse: 541-222-2060
University: ER Charge Nurse: 541-686-6929
Employee Health:541-222-2535
Risk Management: 541-222-2485
Lab: 541-341-8010
(123 International Way, lobby open 8-5, call box inside double doors after hrs to contact lab)
EMS Liaison: 541-222-1794

McKenzie Willamette

Charge Nurse: 541-726-4444 (ask for charge nurse)
Lab: 541-726-4429 (2nd floor above the ER)

CONFIRMED DEATH 09/10/2013	
INDICATIONS	This procedure is used once a patient is pronounced dead.
PROCEDURE	1. Notify Dispatch that the patient is deceased. Dispatch will notify the appropriate law enforcement agency. 2. Determine/evaluate if this appears to be the natural death of someone under the care of a local physician versus a case falling under medical examiner jurisdiction (see below). If any doubt exists, treat this as a medical examiner case and avoid altering the scene until police investigation is complete. 3. In medical examiner cases the body will not be removed from scene until law enforcement personnel arrive. 4. Fire/EMS personnel may be committed to the scene for care of the family. 5. If a patient is under hospice care, contact hospice agency regarding disposition of the body. 6. Document pertinent information in a PCR
DEATHS REQUIRING INVESTIGATION	1. Violent or unnatural death (accident, suicide, homicide, or undetermined manner of traumatic death) 2. Unattended death (not under the care of a physician during the period immediately prior to death) 3. Unanticipated death within 24 hours of discharge from the hospital 4. Substance abuse related deaths 5. Law enforcement custody deaths 6. Deaths relating to employment 7. Communicable diseases
RESOURCES FOR REFERRAL OR BEREAVEMENT	1. McKenzie-Willamette Pastoral Care 541-726-4478 2. Sacred Heart Pastoral Care 541-686-7102 3. Senior & Disabled Services 541-682-4038 4. Chaplain – contact dispatch

DEATH IN THE FIELD 09/10/2013	
PURPOSE	Used to determining death in the field without initiating resuscitative efforts. Withholding resuscitation efforts should be considered by EMS professionals in the following conditions regardless of whether BLS has been initiated prior to EMS arrival. MD contact is not necessary: 1. Patient qualifies as a "DNR" patient (with an MD order); 2. A pulseless, apneic patient in a mass casualty incident or multiple patient scene; 3. Decapitation/Separation of torso; 4. Cremation, Rigor Mortis in a warm environment; Decomposition, Venous pooling in dependent body parts (dependent lividity); 5. Penetrating head wound with no vital sign;. 6. Pulseless, apneic drowning patient with confirmed underwater time of ≥ 1 hour; 7. Pulseless, apneic, patient with evidence of prolonged downtime. If no signed orders are present but the family states that signed orders do exist, and there is evidence of terminal disease, the EMS Personnel may follow family direction.
TRAUMATIC CARDIAC ARREST	Trauma victims should be determined to be dead at the scene if there is evidence of major trauma (blunt or penetrating) and there are no signs of life. • If there is evidence of major trauma to the patient and/or the patient is trapped, a monitor is not needed to pronounce death. • If the amount of body trauma does not appear to account for death, apply the defibrillator and analyze. If the patient is in a shockable rhythm, **follow Pulseless Arrest Protocol**
MEDICAL CARDIAC ARREST	For the victim of a medical cardiac arrest who does not meet the criteria listed above under Withholding Resuscitative Efforts, **follow the Pulseless Arrest Protocol.** If appropriate, contact MD with patient history and current condition to request to discontinue resuscitation efforts. First responders may also wait until a paramedic is on-scene to facilitate this decision.

DEATH IN THE FIELD 09/10/2013	
POLST Physician Order for Life Sustaining Treatment	The POLST registry is voluntary and most often is used to limit care. It may also indicate that the patient wants everything medically appropriate done for them. These forms may be kept by patients or electronically stored by OHSU. Usually there is some indication on-scene that there is POLST documentation. 1. Forms: Must be signed by a Physician. 2. Electronic Access: **Call 1-888-476-5787 (888-4-POLSTS).** OHSU Emergency Communication Center will answer the phone and will provide the POLST orders to EMS. They will ask for the name and date of birth.
END OF LIFE ORDERS	These orders may also be useful in consultation with MD, in the decision about whether to continue resuscitation: • **DO NOT RESUSCITATE ORDERS (DNR)**: Also known as a "No Code" order, this is a legal document with a physician signature. These should be honored. • **LIVING WILL:** also known as an Advance Directive, is a document signed by the patient. This may indicate the patient's wish not to be resuscitated with heroic lifesaving measures. If the patient does not meet death in field criteria listed under (Withholding Resuscitative Efforts), start BLS and call private MD or Emergency Physician to consult regarding discontinuation of resuscitation. • **DURABLE POWER OF ATTORNEY:** Power of attorney is not sufficient for withholding resuscitation if the current event appears to be a reversible situation such as choking on food.

HEALTHCARE PROFESSIONALS ON SCENE
09/10/2013

A Physician (M.D/D.O.) is the highest licensed healthcare provider and therefore has authority to direct the healthcare team in the care of a patient. There are two main types of situations in which EMS personnel will interact with a physician on scene.

CLINIC/OFFICE FACILITY:

EMS Personnel should follow the direction of the physician unless, in your opinion, the care ordered is contrary to reasonable patient care. At that time:

1. Explain that you are operating under protocols authorized by your Medical Director;
2. Contact medical control and request that the ED physician speak to the on scene physician;
3. Follow on scene physician orders when authorized by ED physician.

ON SCENE:

When a medical doctor is on the scene of an emergency and that physician wants to assist with, or assume responsibility and direct patient care, EMS Personnel shall follow the listed guidelines:

1. Explain to the doctor that you are operating under treatment protocols authorized by your Medical Director and that policy requires that you follow those treatment guidelines unless:
   a. Contact is made with Medical Control and the ED physician specifically advises the medic to follow whatever the on-scene physician feels is required in the way of patient care.
   b. The on-scene physician chooses to take full responsibility for any and all care given at the scene of the incident and en-route to the hospital. They must also accompany the patient to the hospital and sign the pre-hospital care chart.
2. If at any time, the on-scene medical doctor orders become questionable, re-establish communication with the receiving hospital ED physician and explain before any questionable orders are completed.
3. If there is a problem with a physician or other healthcare provider, and he/she continues to interfere with reasonable patient care, request police assistance to identify the person and have him/her removed from the scene.
4. Documentation involving physician direction at the scene should include:
   a. The physician's name on the patient care report.
   b. Any unusual/conflicting conditions at the scene.
   c. A detailed agency incident report shall be completed and turned in to the EMS Office and the Medical Director.

INTER-HOSPITAL TRANSFERS
9/10/2013

PURPOSE	This protocol and algorithm clarify the level of service required to complete all inter-facility transports.
GUIDELINES	A. The paramedic should request a full report on the patient to include medications, and the parameters for their use, as well as orientation to any hospital equipment to be used on the transfer. B. If the paramedic is uncomfortable with a transfer situation (e.g. unfamiliar with medications and equipment), or if the patient is critically ill or unstable and critical care transport team is not an option, the paramedic should request additional personnel with specialty or critical care training to accompany the patient to the receiving hospital. 1. Critical Care personnel may include: ICU or Critical Care Nurse, ED Nurse, Paramedic with Critical Care Training (CCEMTP). 2. Specialty Personnel may include: Labor and Delivery Nurse for obstetric patients or Respiratory Therapist (RT) on intubated medically stable patients. C. When receiving an aeromedical transfer patient at the airport, the paramedic may request the transfer personnel accompany the patient all the way to the hospital. 1. If the transferring personnel refuse, the Paramedic should contact their supervisor and the on duty ED physician at the receiving hospital for further direction. D. When weather conditions or other factors prohibit safe transport of the patient to the receiving facility, the transfer will be postponed until other safe transport can be arranged. (**WLAD Only**) ** Critical patients that have a time-sensitive condition need to be transported immediately. Only when critical care transport is not available should these patients go by alternative methods. Sending facilities with patients meeting critical care criteria should use critical care transport for these patients, in the rare event Critical Care Transport is unavailable and aeromedical is not available or not appropriate, the most experienced Paramedics will provide care of critical patient's with an additional Paramedic or Intermediate.*** Medications that are vasoactive should necessitate Critical Care Paramedics. Additional medications would be at the discretion of sending Physician if medications require a Critical Care Paramedic.

INTER-HOSPITAL TRANSFERS
9/10/2013

SPECIFIC INFORMATION	A. Transfer patients should have the following information with them and the paramedic must ensure that this paperwork arrives with the patient at the destination facility: 1. Transfer orders which indicate receiving hospital and MD. 2. Medication and care orders (in writing) for use during transfer. 3. Patient care report from hospital to include vital signs, medications and treatments given. 4. Relevant diagnostic information (Lab, X-ray and CT or MRI) when needed. B. Patients being transferred on medication that is being self-administered via a pump may continue to be administered by the patient en route. Personnel should be prepared to treat the potential side effects, which may include stopping the infusion. C. Patients that have an antibiotic infusion running may be transported at the ILS, ALS or Critical Care level. If the patient develops any signs of an allergic reaction to the antibiotic being infused, the infusion should be stopped and treatment initiated per the Allergic Reaction Protocol.

INTER-HOSPITAL TRANSFERS
9/10/2013

Transfer Algorithm

Stretcher Car	Basic Life Support (BLS)	Intermediate Life Support (ILS)	Advanced Life Support (ALS)	**Critical Care Transport (CCT) Requires a Paramedic and Additional Trained Specialty Personnel
No EMT/Attendant Required with Patient	EMT-Basic 1 Driver/1 EMT in back	EMT-Intermediate 1 EMT Driver/1 EMT-I in back	EMT-Paramedic 1 EMT Driver/1 EMT P in back	1 EMT Driver/1 EMT P in back with RT, ICU, ED, L&D Nurse, CCT Parmedic, Etc.
STABLE PATIENTS	STABLE PATIENTS	STABLE PATIENTS	STABLE/UNSTABLE PATIENTS	CRITICAL PATIENTS
Patient to remain supine or reclined	IV: SL only NO hanging IVs	IV: May start/maintain saline drip	IV: May start/maintain saline drip	IV: May start/maintain saline drip
Patient may maintain own oxygen				
↓	Basic Airway: May Administer O2 NO Intubation May perform Tracheal Suctioning	Basic Airway: May Administer O2 NO Intubation May perform Tracheal Suctioning	Advanced Airway Management: May Administer O_2 NO Intubated Patients May Perform Tracheal Suctioning NO Acute onset resp distress patients on CPAP/BiPAP NO Vent Patients	Advanced Airway Management: May Administer O_2 Intubated Patients May Perform Tracheal Suctioning Acute onset resp distress patients on CPAP/BiPAP Patients on Ventilator
These transports can be handled by a private vendor	MEDS: NO MEDS	MEDS: May bolus meds <u>only</u> within Agency protocol/standing orders Patients with PCA pump	MEDS: May drip or bolus meds <u>only</u> within Agency protocol/standing orders Patients with PCA pump	MEDS: May maintain med drips and bolus meds outside Agency protocol/standing orders Patients with PCA pump
	Cardiac Monitoring: NO cardiac monitoring	Cardiac Monitoring: Stable rhythms <u>only</u>	Cardiac Monitoring: Stable/unstable rhythms Read and interpret 12 Lead	Cardiac Monitoring: Stable/unstable rhythms Read and interpret 12 Lead
				STEMI
				Active Chest Pain with Ongoing Dynamic ECG Changes
	May Defibrillate with AED NO Cardioversion NO External Pacing	May Manually Defibrillate NO Cardioversion NO External Pacing	May Manually Defibrillate Cardiovert External Pace (Stable)	May Manually Defibrillate Cardiovert External Pace (Stable)
	OB Transfer (Stable) Patient not in labor/delivery not imminent	OB Transfer (Stable) Patient not in labor/delivery not imminent	OB Transfers (Stable) Acute Low Risk/In labor/delivery not imminent	OB Transfers (Stable/Unstable) Acute High Risk/In labor/delivery may be imminent

**Critical patients that have a time sensitive condition need to be transported immediately. Only when critical care transport is not available should these patients go by alternative means. Sending facilities with patients meeting critical care criteria should use CCT transport for these patients. Out of hospital time should be minimized for all critical patients.

L-VAD
12/16/2013

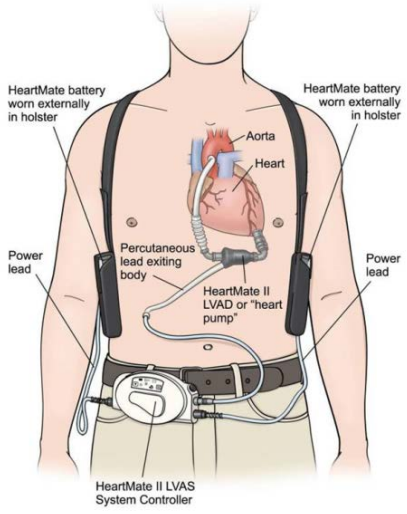
A left ventricular assist device (LVAD) is an implantable mechanical pump that helps pump blood from the lower left chamber of a heart (left ventricle) to the ascending aorta and thus the rest of the body. It is a device that is implanted in a heart failure patient while they await transplant or recovery of their hearts. It is also used in chronic heart failure patients with very poor long-term prognosis not eligible for transplant (age, malignancy, COPD, non-compliance). Patients with LVAD are dependent on these units for survival.

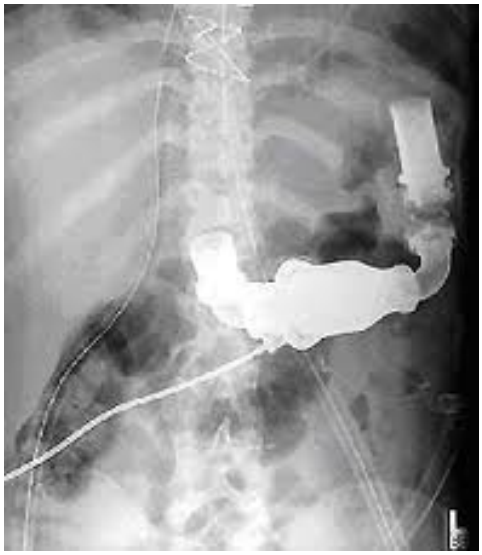
These devices are most commonly implanted internally below the diaphragm. However, they have several external components that must be attached for the units to function. The patient will have a conduit exiting their chest and connecting to the controller. They will also be wearing a harness with one or more batteries which also connect to the controller.

Components

- ●Pump
- ●System Controller
- ●Drive/Power Line
- ●Battery(ies) and Battery Clip
- ●Power Base Unit
- ●Power Base Unit Cable
- ●Display Module

*****ALWAYS TRANSPORT ALL COMPONENTS OF DEVICE WITH PATIENT*****





L-VAD 12/16/2013	
SPECIFIC INFORMATION NEEDED	1. Past Medical History. • These patients generally have other co-morbid factors which may be the cause for acute medical care. Don't overlook these factors. 2. Device Information. • It is important to bring all components and information about the device, as well as the family member responsible, with the patient to the hospital.
PHYSICAL FINDINGS	1. Altered cardiac physiology. • Due to the device, this complicates patient assessment while limiting the effectiveness of normal tools. 2. Talk to the patient to assess mentation and general status. 3. Check blood glucose. 4. The LVAD is a continuous flow device. **The patient will NOT have a palpable pulse.** Accordingly, • SpO_2 will not be accurate. • Blood pressure readings will not be obtainable. 5. Check cable connections. 6. Listen for "hum" in epigastric region to verify device function. 7. Apply $ETCO_2$ for monitoring of cardiorespiratory status. • $ETCO_2 < 10$ verifies death. Do not resuscitate.
TREATMENT	1. Listen to concerns from the patient and family members who have received device specific training. Allow them to manage device and transport family LVAD expert if possible. 2. If patient's primary complaint is NOT cardiopulmonary related, there MAY NOT be a need to provide ACLS care to address a status which is patient baseline. 3. Provide respiratory and ventilator assistance per standard. 4. DO NOT provide chest compressions. 5. Arrhythmias: • Many of these patients are in chronic VT and intermittent VF. • A patient who is awake and talking to you may not need defibrillation. • You may administer anti-arrhythmics per protocol if patient's complaint is cardiopulmonary compromise.
PRECAUTIONS	Always transport **ALL** components of the device with the patient.

PATIENT REFUSAL NON-TRANSPORT
04/01/2014

EMS Personnel may treat and/or transport under the doctrine of implied consent a person who requires immediate care to save a life or prevent further injury. Minors may be treated and transported without parental consent if a good faith effort has been made to contact the parents or guardians regarding care and transport to a hospital, and the patient, in the opinion of EMS Personnel, needs transport to a hospital. When in doubt, contact Medical Control.

Determine if there is an Identified Patient

All instances of an identified patient, with or without impaired decision making capacity, must be documented on a Pre-hospital Care Report.

IDENTIFIED PATIENT	There is a Patient Identified if the person meets ANY of the following criteria: 1. Significant mechanism of injury. 2. Signs or symptoms of traumatic injury. 3. Acute, or recent change in medical condition. 4. Behavior problems that place the patient or others at risk. 5. Person is less than 15 years of age and meets one of the other criteria referenced. 6. Person is the 911 caller. 7. In the medic's judgment, the patient requires medical assessment and treatment.
IDENTIFIED PATIENT- REFUSING MEDICAL CARE & TRANSPORT	1. Determine if the patient appears to have impaired decision making capacity. 2. Consider conditions that may be complicating the patient's ability to make decisions: a. Head injury b. Drug or alcohol intoxication c. Toxic exposure d. Psychiatric problems e. Language barriers (consider translator) f. Serious medical conditions

PATIENT REFUSAL NON-TRANSPORT 04/01/2014	
IDENTIFIED PATIENT WITH DECISION MAKING CAPACITY	1. Explain the risks and possible consequences of refusing care and/or transport. 2. If a serious medical need exists, or any medication has been administered, contact Medical Control for physician assistance. (Request patient speak to physician if necessary.) 3. Enlist family, friends, or law enforcement to help convince patient to be transported. 4. If a patient continues to refuse, complete the Patient Refusal Information Sheet and have the patient sign it. Document in detail the risks and possible consequences of refusing care and information on treatment needed that was advised to the patient.
IDENTIFIED PATIENT WITH IMPAIRED DECISION MAKING CAPACITY	1. Treat and transport any person who is incapacitated and has a medical need. 2. Occasionally, well intentioned friends or bystanders may refuse on the patients behalf. Only the patient can refuse care for themselves. 3. With any medical need, make all reasonable efforts to assure that the patient receives medical care. Attempt to contact family, friends, or law enforcement to help. 4. If necessary, consult with Medical Control and request a physician speak directly with the patient. 5. Consider chemical or physical restraint per protocol.

PATIENT TREATMENT RIGHTS
02/03/2015

These protocols are intended for use with a conscious, consenting adult patient, or an unconscious (implied consent) patient.

If a conscious patient who is rational refuses assessment and treatment, comply with the patient's request and document the refusal.

If a conscious patient who is irrational or may harm him/herself refuses assessment and treatment, you should contact the police and request assistance as the patient is a danger to self or others. The emergency department physician is another important resource in difficult situations.

If a patient's family, physician, or care facility staff refuses treatment for a patient, attempt to establish communication between these parties. If the issue is not resolved, use your judgment to act in the best interest of the patient.

A patient has the right to select a specific hospital in Central Lane County to which to be transported if they are rational and if, in the Paramedic's best judgment, transport to that hospital will not cause loss of life or limb.

Age of Consent/Treatment of Minors:

If the patient is a minor the EMS Personnel should assume responsibility for the patient as if an implied contract exists. If a responsible adult parent or guardian is present who knows the child, is refusing transport, and is willing to take responsibility, and the EMS Personnel believes it is reasonable to leave the child, then act reasonably and fully document the situation.

For most purposes, Oregon law defines a minor as a child under 18 years of age. However, for medical purposes ORS 109.640 states that a minor 15 years of age or older may give consent for diagnosis, treatment and hospital care. In accordance with this statute, our policy is that a competent minor 15 years of age or older may consent to or refuse pre-hospital care and transport.

If a child under age 15 years has no responsible adult present, then it becomes prudent to transport the child to the hospital for follow up and safekeeping. However, if the individual under age 15 years is clearly not ill or injured and does not want transport, it is acceptable to arrange a custodial situation with a responsible adult until a parent is available.

When in doubt in any of the above situations, contact medical control and fully document all of your actions.

Customer Service

The Medical Control Board recognizes that Lane County has a very competent and professional pre-hospital EMS and medical transport system. However, there may be times when customer may have issues or are dissatisfied with the service that is rendered to them. There also may be questions that arise regarding practices or care that is received by pre-hospital providers. It is recommended that customers that have issues, are dissatisfied, or have questions contact the provider directly. If there is no resolution with the provider, customers may contact the EMS Section of the Oregon Health Authority for further resolution.

ABDOMINAL PAIN 12/03/2013	
Follow Assessment, General Procedures Protocol	

EMR	• Assess and support ABCs
	• Position of comfort
	  • Supine if:
	  • Trauma
	  • Hypotension
	  • Syncope
	• NPO
	• Monitor vital signs
	• Oxygen indicated for:
	  • Unstable vitals
	  • Severity of pain
	  • Suspected GI bleed

EMT	• 12-lead – **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing • Titrate fluid to patient's needs – **See Shock Protocol**
EMT-I/ PARAMEDIC	• Cardiac monitoring • Pain management – **See Acute Pain Management Protocol**

ACUTE NAUSEA AND VOMITING
12/03/2013

Follow Assessment, General Procedures Protocol

Every effort should be made to transport patients that:

- Have been vomiting > 6 hours
- Show significant signs of dehydration (e.g. tachycardia, hypotension)
- Significant abdominal pain
- Patients at the extremes of age <5 or >55
- Patients with cardiac history
- Patients with a chronic medical condition are especially vulnerable to serious problems associated with prolonged vomiting

EMR/EMT	• Assess and support ABCs • Position of comfort • Monitor vital signs • Administer oxygen if indicated • Use caution when using a mask
EMT	• Consider obtaining 12 Lead - **See ECG/12 Lead** • Check CBG
A-EMT	• IV – NS with standard tubing • Fluid challenge, titrate fluid to patient's needs– **See Shock Protocol**
EMT-I	• Zofran
PARAMEDIC	• Inapsine (2nd Line) • Compazine (2nd Line) • Phenergan (2nd Line)

ACUTE PAIN MANAGEMENT
03/03/2015

Follow Assessment, General Procedures Protocol

- Consider administering analgesic medication in the management of any acutely painful condition relating to either trauma or medical causes.
- The single most reliable indicator of the existence/intensity of acute pain is the patient's self-report.
- Most people who suffer pain show it, either by verbal complaint or nonverbal behaviors. The intensity using the 0-10 scale should be measured with adult and children >7 yrs (0=no pain – 10=worst pain ever)
- Pediatric patients pain should be assessed by either the FLACC behavioral pain scale (<3 yrs), the Baker-Wong Face Scale (3-7 yrs) or the Visual Analog Scale (>7 yrs)

EMR/EMT	• Assess and support ABCs • Position of comfort • Monitor vital signs • Splint injured extremity
A-EMT	• IV – NS with standard tubing or saline lock • If patient is hypotensive administer fluid challenge, titrate fluid to patient's needs– **See Shock Protocol**
EMT-I	• If hypotensive - **contact MD for pain medication orders** • IO if indicated for shock and no IV access – **See EZ-IO/IO Infusion** • Fentanyl – Use 1st line for abdominal pain • Morphine
PARAMEDIC	• Dilaudid • Midazolam (WLAD only)

ACUTE ADRENAL INSUFFICIENCY PROTOCOL
02/04/2015

Follow Assessment, General Procedures Protocol

- Acute adrenal insufficiency (crisis) can occur in the following settings:
  - During neonatal period (undiagnosed adrenal insufficiency)
  - In patients with known, pre-existing adrenal insufficiency (eg, Addison's disease)
  - In patients who are chronically steroid dependent (ie, taking steroids daily, long-term, for any number of medical conditions)
  - Adrenal crisis can be triggered by any acute stressor (eg, trauma or illness), as well as by abrupt cessation of steroid use (for any reason).
- Signs/symptoms of adrenal crisis: Altered mental status, seizures; generalized weakness, hypotension, hypoglycemia, hyperkalemia.
- Notify hospital you are transporting known/suspected adrenal crisis patient
- Emergency transport for: ALOC, hypotension, hypoglycemia, suspected hyperkalemia.

Acute adrenal crisis is an immediately ***life-threatening*** emergency, and must be treated aggressively

EMR	• Take thorough history of patient's steroid use/dependence, PMH • Assess and support ABC's • Oxygen therapy, as needed • Monitor vitals
EMT	• Check blood glucose • If blood glucose is <60: administer glucose solution orally if the patient is awake and able to protect own airway • Obtain 12 lead ECG; if time permitted. – **See ECG/12-Lead**

A-EMT	• If blood glucose < 60 and the patient is unable to protect own airway :
	  • Initiate IV
	  • Dextrose
	• Fluid Bolus 500 cc NS (or 20cc/kg for peds); repeat if hypotensive with standard tubing
	• Do Not Delay Transport

EMT-I	• IO as indicated for patient condition – **See EZ-IO/IO Infusion** • Monitor cardiac rhythm - **See ECG/12-Lead**
PARAMEDIC	In patients with known/suspected adrenal crisis: • Consider Solu-medrol 125 mg IV/IO, after **MD Consult.** • May administer patient's own steroid medicine if available **MD Consult** Treat ECG findings of hyperkalemia - **See Hyperkalemia Protocol**.

ALLERGIC REACTION/ANAPHYLAXIS (SYSTEMIC)
04/01/2014

Follow Assessment, General Procedures Protocol

- In less severe systemic allergic reactions or in situations where epinephrine may have more risk than benefit, patients may receive diphenhydramine/benadryl without epinephrine.

EMR	• Access and support ABCs • Oxygen therapy – Assist ventilations as necessary. –**See Oxygen Therapy Protocol** • Position of comfort • Attempt to position patient supine unless respiratory distress predominates • Monitor vital signs • Treat for Shock - **See Shock Protocol** • Epinephrine 1:1000 (Auto Injection Device only)
EMT	• Epinephrine 1:1000 IM
A-EMT	• IV – NS with standard tubing or saline lock • IO if indicated for shock and no IV access Peds <6 y.o. **See EZ-IO/IO Infusion** • Consider albuterol/atrovent • Fluid challenge, titrate fluid to patient's needs– **See Shock Protocol**
EMT-I	• IO if indicated for shock and no IV access - **See EZ-IO/IO Infusion** • Diphenhydramine/Benadryl IM/IV/PO
PARAMEDIC	• If vascular collapse, consider epinephrine 1:10,000 IV/IO • Solu-medrol

BEHAVIORAL EMERGENCIES
01/05/2016

- EMS Personnel should consider their safety:
  - Request law enforcement as needed
  - Check the patient for weapons prior to transport
  - If combative (threat to self or others) consider use of restraints – **See Physical / Chemical Restraint Protocol**
- Follow Assessment, General Procedures Protocol
- Some behavioral emergencies are life threatening and can be caused by medical conditions such as:
  - Hypoglycemia – Low CBG
  - Excited Delirium –
    - Behavior Components: abrupt onset, confusion and bizarre behavior, hallucinations and paranoia, violent behavior, super-human strength/insensitivity to pain
    - Physical components: Hyperthermia (undressing common, diaphoresis), presence/evidence of stimulant drugs, psychiatric disease
    -

EMR	• Access and support ABCs • Look for possible overdose or self-injury • If suspicion of hypoglycemia, the patient is cooperative and has no difficulty swallowing, administer oral glucose. • If suspicion of excited delirium, be cautious of airway compromise.
EMT	• Check CBG, if <60, the patient is cooperative and has no difficulty swallowing and is cooperative, administer oral glucose.
A-EMT	• IV – NS with standard tubing or saline lock, TKO • Dextrose
EMT-I	• Cardiac monitor if tolerated – **See ECG/12-lead**
PARAMEDIC	• Agitation without threat: • Midazolam • Threat to self and/or others requiring chemical restraint – See Physical /Chemical Restraint Protocol

BURNS **12/03/2013**	
• Follow Assessment, General Procedures Protocol	

EMR/EMT	• Be sure all burning has stopped and remove any smoldering clothing
	• Assess and support ABC's
	• Oxygen therapy, high flow.
	• Bandage:
	  • Small burns (<5% BSA) – moist clean towels or sheets.
	  • Moderate to severe burns – dry clean dressing or burn sheet.
	• Keep patient warm.
	• Remove all rings, bracelets, or other constricting items.
	• Chemical burns:
	  • Consider Hazmat activation or consultation.
	  • Use proper PPE to avoid cross contamination.
	  • Remove chemical from body flush with copious amounts of water.
	  • Brush dry chemicals off prior to flushing.
	• Electrical burns:
	  • Apply sterile dressing to entrance and exit wounds.
	  • Consider spinal precautions.

A-EMT	• IV – NS with standard tubing • IO if indicated for shock and no IV access Peds <6 y.o. -**See EZ-IO/IO Infusion** • Fluid Resuscitation • For burns >20% use the Parkland Formula
EMT-I	• Cardiac monitoring – **See ECG/12-Lead** • IO if indicated for shock and no IV access - **See EZ-IO/IO Infusion** • Pain management – **See Acute Pain Management Protocol**
PARAMEDIC	• Consider early intubation with suspected airway involvement – **See RSI** • For closed space smoke/fire exposure, consider CO and cyanide poisoning • Cyanokit

PARKLAND FORMULA **(WITH FIRST HOUR FLOW RATES CHARTED BELOW):**

kg/lbs	**9%**	**18%**	**27%**	**36%**	**45%**	**54%**	**63%**	**72%**	**81%**	**99%**
10/22	**22** cc	**45** cc	**67** cc	**90** cc	**112** cc	**135** cc	**157** cc	**180** cc	**202** cc	**247** cc
20/44	**45** cc	**90** cc	**135** cc	**180** cc	**225** cc	**270** cc	**315** cc	**360** cc	**405** cc	**495** cc
30/66	**67** cc	**135** cc	**202** cc	**270** cc	**337** cc	**405** cc	**472** cc	**540** cc	**607** cc	**742** cc
40/88	**90** cc	**180** cc	**270** cc	**360** cc	**450** cc	**540** cc	**630** cc	**720** cc	**810** cc	**990** cc
50/110	**112** cc	**225** cc	**337** cc	**450** cc	**562** cc	**675** cc	**787** cc	**900** cc	**1012** cc	**1237** cc
60/132	**135** cc	**270** cc	**405** cc	**540** cc	**675** cc	**810** cc	**945** cc	**1080** cc	**1215** cc	**1485** cc
70/154	**157** cc	**315** cc	**472** cc	**630** cc	**787** cc	**945** cc	**1102** cc	**1260** cc	**1417** cc	**1732** cc
80/176	**180** cc	**360** cc	**540** cc	**720** cc	**900** cc	**1080** cc	**1260** cc	**1440** cc	**1620** cc	**1980** cc
90/198	**202** cc	**405** cc	**607** cc	**810** cc	**1012** cc	**1215** cc	**1417** cc	**1620** cc	**1822** cc	**2227** cc
100/220	**225** cc	**450** cc	**675** cc	**900** cc	**1125** cc	**1350** cc	**1575** cc	**1800** cc	**2025** cc	**2475** cc
110/242	**247** cc	**495** cc	**742** cc	**990** cc	**1237** cc	**1485** cc	**1732** cc	**1980** cc	**2227** cc	**2722** cc
120/264	**270** cc	**540** cc	**810** cc	**1080** cc	**1350** cc	**1620** cc	**1890** cc	**2160** cc	**2430** cc	**2970** cc
130/286	**292** cc	**585** cc	**877** cc	**1170** cc	**1462** cc	**1755** cc	**2047** cc	**2340** cc	**2632** cc	**3217** cc
140/308	**315** cc	**630** cc	**945** cc	**1260** cc	**1575** cc	**1890** cc	**2205** cc	**2520** cc	**2835** cc	**3465** cc

CARDIAC ARREST CARE AFTER ROSC - ADULT
12/10/2013

- Follow Assessment, General Procedures Protocol
- Consider Reversible Causes

-Hypovolemia	-Tension pneumothorax
-Hypoxia	-Tamponade, cardiac
-Hydrogen ion (acidosis)	-Toxins
-Hypo/Hyperkalemia	-Thrombosis, coronary
-Hypothermia	-Thrombosis, pulmonary

EMR	• Assess and support ABCs • Monitor Vital Signs • Maintain O_2 saturation of ≥ 94% • Ventilate at a rate of 10-12 breaths per minute for adults
EMT	• King Airway Placement **- See King Airway** • Quantitative waveform capnography - **See Capnography Protocol** • Obtain 12 lead **– See ECG/12Lead** • Activate STEMI if appropriate.
A-EMT	• Treat hypotension if B/P < 90 • IV with standard tubing. • Administer 1-2 liters of NS while monitoring lung sounds.
EMT-I	• IO if indicated and no IV Access **– See EZ-IO/IO Infusion**
PARAMEDIC	• Consider induction of hypothermia – **See Induced Hypothermia Post Resuscitation** • Consider dopamine if appropriate. • Consider transcutaneous pacing if appropriate. • Sodium bicarbonate (suspected hyperkalemia). • Calcium chloride or gluconate (suspected hyperkalemia).

CARDIAC BRADYARRHYTHMIA 12/03/2013	
Follow Assessment, General Procedures Protocol • Adult, typically <50 with signs of compromise • Pediatric, pre-puberty, typically <60 with signs of poor perfusion despite adequate oxygenation and ventilation.	
EMR	• Assess and support ABC's • Oxygen therapy, high flow. • Position of comfort • CPR if indicated per AHA guidelines
EMT	• Obtain 12 lead ECG - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock TKO • IO as indicated for shock and no IV access Peds <6 y.o. - **See EZ-IO/IO Infusion**
EMT-I	• Cardiac monitoring - **See ECG/12 Lead** • IO as indicated for shock and no IV access - **See EZ-IO/IO Infusion** • Atropine (for hypotension, acutely altered mental status, signs of shock, ischemic chest discomfort, or acute heart failure)
PARAMEDIC 	• Epinephrine (Pediatric) • Transcutaneous pacing • Consider **MD Consult**

CARDIAC CHEST PAIN
12/03/2013

Follow Assessment, General Procedures Protocol

EMR	• Assess and support ABC's • Administer oxygen, high flow – **See Oxygen Therapy Protocol** • Position of comfort
EMT	• Obtain 12 lead ECG - **See ECG/12-Lead** • Aspirin • Nitroglycerin (Assist patient with their own prescription)
A-EMT	• IV – NS with standard tubing or saline lock TKO • Nitroglycerin
EMT-I/ PARAMEDIC	• Cardiac monitoring - **See ECG/12-Lead** • IO as indicated for shock and no IV access -**See EZ-IO/IO Infusion** • Pain management – **See Acute Pain Management Protocol**

CATH ALERT CRITERIA

- Chest pain or suspected cardiac discomfort;
- (and) No LBBB;
- (and) 1 mm ST elevation in 2 anatomically adjacent leads
- (or) ECG printout consistent with acute STEMI

ACTIVATION

- Call receiving hospital and provide following information:
- Patient Name, DOB, weight, expected ETA
- Deliver 12 lead to ED staff
- Consider a 2nd IV
- Transport with defib pads anterior/posterior position
- RiverBend (541) 222-1581
- McKenzie Willamette (541) 726-4470

CARDIAC PEDIATRIC PULSELESS ARREST
09/10/2013

- Follow Assessment, General Procedures Protocol
- Consider Reversible Causes for PEA
  - Hypoxia is the most common cause of pediatric arrest

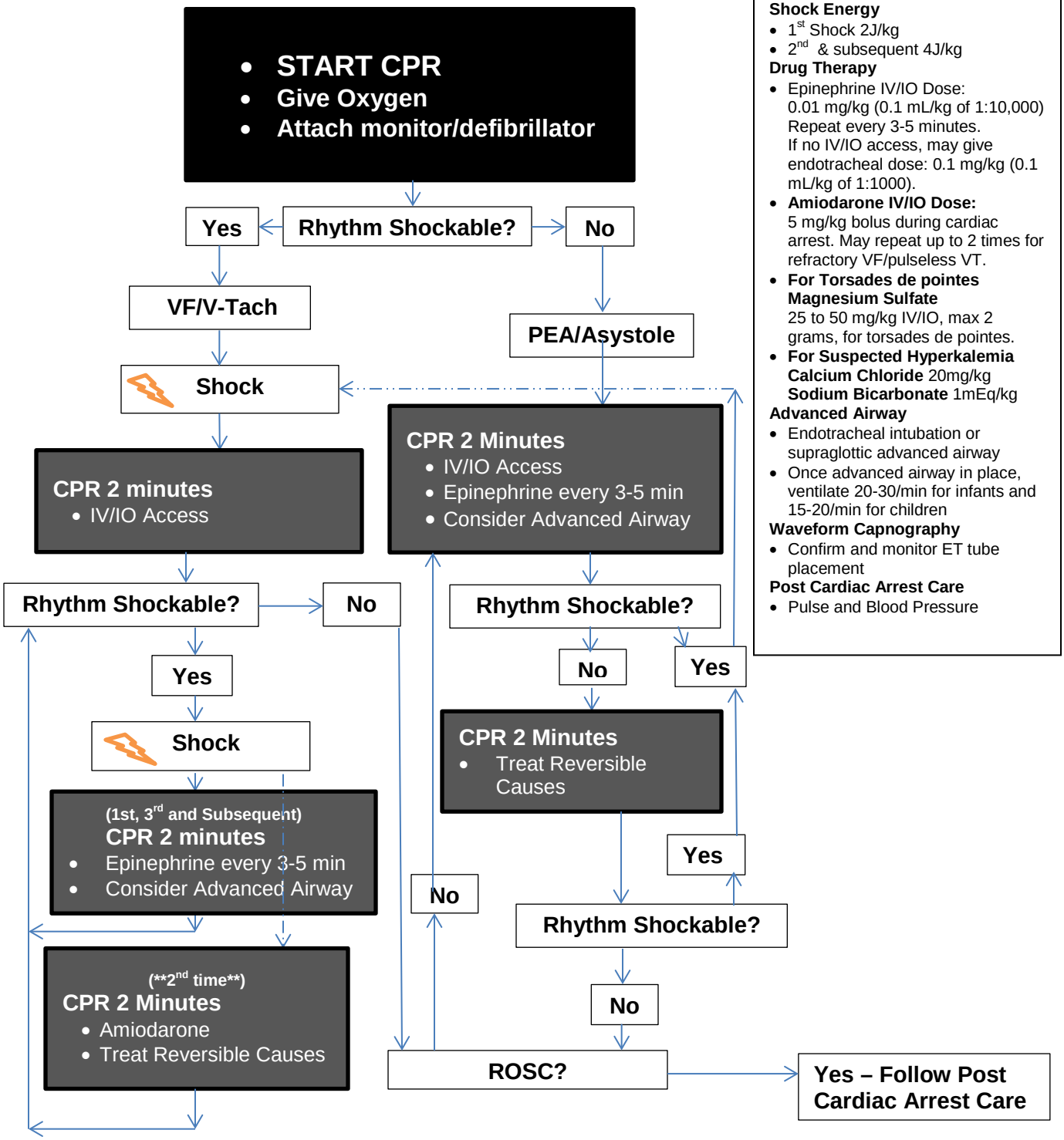
EMR	• Assess and support ABCs, • Push hard (1/3 of anterior-posterior diameter of chest) and fast (at least 100/min) and allow complete chest recoil • Minimize interruptions in compressions • Avoid excessive ventilation • BVM – rate per AHA guideline • Rotate compressor every 2 minutes • If no advanced airway, 15:2 (2 Rescuer) 30:2 (Single Rescuer) compression-ventilation ratio • Attach an AED **– See Defibrillation** • Follow prompts of the AED

EMT	• King Airway Placement if patient greater than 35" or 12kg **–See King Airway**
	• If advanced airway is placed, do not interrupt chest compressions to ventilate.
	  • Infant 20-30 breaths/min
	  • Child 15-20 breaths /min
	• Quantitative waveform capnography **– See Capnography/ETCO$_2$**
	  • If ETCO$_2$ <10mm Hg. Attempt to improve CPR quality

A-EMT	• IV/IO – NS with standard tubing - **See EZ-IO/IO Infusion**
	  • Administer 20 cc/kg of NS > 1 month.
	  • Administer 10 cc/kg of NS < 1 month.

EMT-I	• Manual defibrillation – **See Defibrillation** • Epinephrine • Amiodarone
PARAMEDIC	• Consider intubation if needed **– See Intubation** • Calcium Chloride • Magnesium Sulfate • Sodium Bicarbonate

Cardiac Pulseless Pediatric Arrest Algorithm



Doses/Details

Quality CPR
Shock Energy
- 1st Shock 2J/kg
- 2nd & subsequent 4J/kg

Drug Therapy
- Epinephrine IV/IO Dose: 0.01 mg/kg (0.1 mL/kg of 1:10,000) Repeat every 3-5 minutes. If no IV/IO access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of 1:1000).
- **Amiodarone IV/IO Dose:** 5 mg/kg bolus during cardiac arrest. May repeat up to 2 times for refractory VF/pulseless VT.
- **For Torsades de pointes Magnesium Sulfate** 25 to 50 mg/kg IV/IO, max 2 grams, for torsades de pointes.
- **For Suspected Hyperkalemia Calcium Chloride** 20mg/kg **Sodium Bicarbonate** 1mEq/kg

Advanced Airway
- Endotracheal intubation or supraglottic advanced airway
- Once advanced airway in place, ventilate 20-30/min for infants and 15-20/min for children

Waveform Capnography
- Confirm and monitor ET tube placement

Post Cardiac Arrest Care
- Pulse and Blood Pressure

CARDIAC PULSELESS ARREST (CCR)
09/10/2013

- Follow Assessment, General Procedures Protocol
- Consider Reversible Causes

-Hypovolemia	-Tension pneumothorax
-Hypoxia	-Tamponade, cardiac
-Hydrogen ion (acidosis)	-Toxins
-Hypo/Hyperkalemia	-Thrombosis, coronary
-Hypothermia	-Thrombosis, pulmonary

- If the patient has a ROSC - **See Cardiac Arrest Care After ROSC Protocol**

EMR	• Quality CPR
	  • Push hard (≥2 inches [5 cm]) and fast (100-120/min) and allow complete chest recoil.
	  • Minimize interruptions in compressions
	  • Rotate compressor every 2 min
	• Assess and support ABCs
	• Attach an AED and follow voice prompts **– See Defibrillation**
	• Oxygen - passive ventilation with NRB and adjunct during first 600 compressions
	• After 6 minutes, BVM - 6-8 breaths/min avoiding excessive ventilation

EMT	• King Airway Placement **- See King Airway** • Quantitative waveform capnography **– See Capnography/ETCO$_2$** • If ETCO$_2$ <10mm Hg. Attempt to improve CPR quality
A-EMT	• IV • NS with standard tubing • Administer 1-2 liters of NS
EMT-I	• Manual Defibrillation **– See Defibrillation** • IO if indicated - **See EZ-IO/IO Infusion** • Epinephrine • Amiodarone
PARAMEDIC	• Needle chest decompression (Suspected Tension Pneumothorax) – **See Pleural Chest Decompression** • Magnesium sulfate (Torsades de Pointes) • Sodium bicarbonate (suspected hyperkalemia) • Calcium chloride or gluconate (suspected hyperkalemia)

CCR SEQUENCED FLOW CHART	
Scene Time	Action
00:00	Initiate chest compressions (**Continue compressions without interruption throughout arrest.**)
	BLS Airway: suction, OPA, O2 with NRB Mask
	Apply CPR stat pads
	Apply 4 lead
	Obtain vascular access. IO or IV. Administer 1-2 liters NS throughout arrest.
	Obtain CBG
	Drug therapy: 1 mg of epinephrine 1:10,000 (Continue epinephrine every 3 to 5 minutes throughout arrest.)
02:00	Check rhythm
	If indicated, defibrillate at 120 J
	Rotate compressor, continue compressions
	Drug therapy: **VF or pulseless VT**: Amiodorone 300mg **Asystole or PEA**: None
	Treat reversible causes
04:00	Check rhythm
	If indicated, defibrillate at 150 J
	Rotate compressor, continue compressions
	Drug therapy: **VF or pulseless VT**: Epinephrine, 1 mg of 1:10,000 IV/IO **Asystole or PEA:** Epinephrine, 1 mg of 1:10,000 IV/IO **Torsades:** Mag sulfate,1.0 to 2.0 grams IV/IO **TCA OD:** Sodium bicarb, 1mEq/kg IV/IO **Hyperkalemia**: Calcium chloride, 1gm or; Calcium gluconate 3gm Sodium bicarb, 1 mEq/kg IV/IO **Narcotic OD:** Narcan, 0.5 – 2.0 mg IV/IO **Hypoglycemia:** Dextrose, 25g IV/IO
06:00	Check rhythm
	If indicated, defibrillate at 200J
	Rotate compressor, continue compressions
	ALS Airway: King Airway or Video assisted Laryngoscope Intubation (WLAD) , initiate $ETCO_2$ monitoring
	Drug therapy: **VF or pulseless VT:** Amiodorone, 150 mg IO/ IV
08:00 to 20:00	Continue uninterrupted compressions. Continue rotating compressors every 2 minutes.
	Monitor rhythm, defibrillate every 2 minutes if indicated
	Continue drug therapy as indicated. Continue epinephrine every 3 to 5 minutes.
	Continue assessing $ETCO_2$
20:00 +	If $ETCO_2$ > 10 mmHg, continue CCR on scene
	If $ETCO_2$ < 10mm Hg, terminate resuscitation efforts
	If ROSC, transport patient to hospital continuing post resuscitation care.

CARDIAC TACHYARRHYTHMIA WITH A PULSE
12/03/2013

Follow Assessment, General Procedures Protocol

- If rhythm is sinus tachycardia consider treatable causes.
- Most tachyarrhythmias do not need treatment unless > 150.

EMR	• Assess and support ABC's • Oxygen therapy, high flow. –**See Oxygen Therapy** • Position of comfort • Monitor vitals
EMT	• Obtain 12 lead ECG; don't delay therapy -**See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock TKO • IO as indicated for shock and no IV access Peds <6 y.o. - **See EZ-IO/IO Infusion** • Give fluid challenge unless contraindicated
EMT-I	• Cardiac monitoring - **See ECG/12 Lead** • IO access as indicated for shock, patient needs, and no IV access - **See EZ-IO/IO Infusion**
PARAMEDIC	• Vagal maneuvers (narrow QRS) • Synchronized cardioversion **– See Cardioversion** • Adenosine (regular and narrow QRS) • Amiodarone (stable with Wide QRS) • Diltiazem/cardizem-by **MD order** (Accelerated A-Fib, >130, contraindicated in WPW) • Consider MD consultation

CHEST INJURIES 12/03/2013	
Follow Assessment, General Procedures Protocol • Scene time should be minimized in trauma patients – treat en route if possible	
EMR	• Assess and support ABC's. • C-spine precautions as indicated (all major trauma, including gunshot, should be fully immobilized) • Oxygen therapy, high flow. Assist ventilations as needed. • For open chest wound: cover with occlusive dressing taped on three sides. The patient must be observed closely for signs of a developing tension pneumothorax. If this occurs try lifting the edge of the occlusive dressing. • Stabilize large flail segments with tape dressing, or hand. • Impaled objects should be left in-place and stabilized. • Monitor vitals.
EMT	• Obtain 12 lead ECG if able - **See ECG/12 Lead**
A-EMT	• IV – two large bore NS with standard tubing • IO as indicated for shock and no IV access Peds <6 y.o. – **See EZ-IO/IO Infusion**
EMT-I	• IO access as indicated for shock and no IV access - **See EZ-IO/IO Infusion** • Monitor cardiac rhythm -**See ECG/12 Lead** • Pain management – **See Acute Pain Management Protocol**
PARAMEDIC	• Assess for signs of tension pneumothorax and treat as indicated by standing order. - **See Pleural Decompression**. • A trauma patient who has recently coded and does not meet death in the field criteria warrants bilateral needle chest decompression by standing order.

CVA (Cerebral Vascular Accident)
04/04/2017

Follow Assessment, General Procedures Protocol

Specific Precautions

- The most important predictor of impending ischemic stroke is a TIA. Patients with TIA's should be transported for evaluation.
- Patients should be evaluated as follows:
  - Complete a C-STAT exam, if positive, the patient should be made a "C-STAT Stroke Alert." (See Neurologic Assessment Protocol)
  - If C-STAT negative, the patient may still be a Stroke Alert. Complete the following neurologic assessments: level of consciousness (GCS); Cranial Nerve Assessment; Cerebral Function (Cincinnati Stroke Scale); Cerebellar Function (finger to nose, heel to shin). (See Neurologic Assessment Protocol)
- Patient should have head of bed elevated approx. 30° to prevent aspiration.
- Seizures are a potential complication of acute stroke. Seizures may be un-witnessed and focal neurological deficits may be due to seizure or postictal state.
- Treat hypotension aggressively to promote cerebral perfusion
- Whenever possible a family member should accompany the patient to the hospital. At a minimum, the name of the witness and a cellular phone number should be obtained.
- Determine if patient is taking a blood thinner and notify the receiving physician.

Patients who have stroke symptoms where they were last seen well within 6 hours, or are a "Wake-up Stroke" should be made a stroke alert. Transport all stroke alerts code 3. If possible, Stroke Alerts should be called in by phone and need to include: Name, age, DOB and last seen well time in military time.

EMR	• Assess and support ABCs • Oxygen therapy, as needed • Ventilate at normal tidal volume and assist ventilations at a rate of 12-14 breaths/minute for adults. Do not hyperventilate. • Manage $ETCO_2$ - **See Capnography/ $ETCO_2$.** • Monitor vitals • Consider spinal precautions if there is evidence of trauma.
EMT	• Check blood glucose • Obtain 12 lead ECG; if time permitted. – **See ECG/12-Lead**
A-EMT	• IV – NS with standard tubing or saline lock (using a catheter ≥ 20g. inserted proximal to wrist); Do Not Delay Transport • Titrate fluids to vitals

EMT-I	• Monitor cardiac rhythm - **See ECG/12-Lead**
PARAMEDIC	• Patients are subject to respiratory depression and vomiting. • Consider intubation - **See RSI** • Signs of increased intracranial pressure may be mitigated some by increasing ventilation rate. - **See Capnography/ETCO$_2$**

NEUROLOGIC ASSESSMENT
04/04/2017

All patients presenting with stroke-like symptoms shall receive a complete neurologic assessment.

A complete neurologic assessment requires assessment of the following:

- Level of Consciousness (Glasgow Coma Score)
- Cranial Nerves (Eye/facial movement and sensation)
- Cerebral Function (Cincinnati Stroke Score; sensation/movement of extremities, speech)
- Cerebellar Function (Finger to Nose, Heel to Shin)
- Cortical Function (C-STAT)

Remember that brainstem and cerebellar strokes may present with atypical stroke symptoms: nausea/vomiting, vertigo, abnormal eye movements or double vision, swallowing difficulties, decreased LOC, or crossed (bilateral) neurologic findings.

Level of Consciousness	**See Glascow Coma Score Procedure** • Remember that GCS is based on patient's BEST neuro response. • If patient does not respond to voice commands, deep painful stimulus ***must*** be employed to adequately assess LOC
Cranial Nerve Assessment	The cranial nerves control the movement and sensation from the neck up. • Ask the patient to do the following: - Raise their eyebrows - Close their eyes tightly - Follow your finger with their eyes (should travel symmetrically; watch for nystagmus) - Show you all their teeth (or smile) - Stick their tongue straight out (should not deviate from midline) - Say "ahhhh" (palate/uvula should elevate symmetrically) - Shrug their shoulders • Touch the patient's face on both sides in 3 places: forehead, cheek, jaw. The sensation should feel equal on both sides as described by the patient.
Cerebral Function	Use Cincinnati Stroke Score. (Facial Droop, Arm Drift, Speech), add lower extremity movement as well. (eg, have patient lift leg off of bed)

NEUROLOGIC ASSESSMENT
04/04/2017

Cerebellar Function

Have patient perform Finger to Nose, and/or Heel to Shin testing:

- **Finger to Nose:** Hold your finger out in front of patient, at full arm's length. Ask them to touch their nose, then your finger. Move your finger slowly back and forth in front of them, and have them repeat at least 3 times each arm. ***Test both sides!*** Movements should be smooth, not jerky, and symmetrical on both sides.

- **Heel to Shin:** Have patient pick up one leg, touch a heel to the opposite knee, and then scrape that heel **straight** down the top of their shin to the ankle. Tell them to go slow, and to be as precise as possible. ***Test both sides.*** Movements should be smooth and reasonably straight, not jerky.

Be mindful that the elderly, or those with underlying neurologic disability (eg, prior stroke), may have difficulty performing these tests. If difficulties are symmetrical, this ***does not* constitute a positive test.

Cortical Function

C-STAT SCORE

GAZE	
Conjugate gaze deviation present	2
CONSCIOUSNESS/COMMANDS	
• Ask patient the following LOC questions: - Their age? - Ask the current month? • Ask patient to do the following commands: - Close eyes open them? - Close hand? *Incorrectly answers at least one of the two LOC questions AND does not follow at least one of two commands.*	1
MOTOR ARM	
Cannot hold arm up (left, right or both) for 10 sec before it falls to bed.	1
TOTAL SCORE	0-4
POSITIVE if ≥2	

Mechanical thrombectomy is standard of care for the treatment of Emergent Large Vessel Occlusion (EVLO). If a patient is C-STAT positive, crews should:

- Direct the patient to a hospital capable of emergency thrombectomy. *(If transport time is greater than 30 minutes to a stroke center, consider transport to a closer hospital for stabilization and preparation for transfer.)*
- Notify the receiving hospital of positive C-STAT results.
- Consider the use of air transport in the interest of time.

NEUROLOGIC ASSESSMENT
04/04/2017

For patients that have been administered tPA at the hospital and are being transferred to another hospital, the abbreviated National Institute of Health Stroke Scale (NIHSS) should be completed every 15 minutes along with a complete set of vitals. This information should be documented on the transfer paperwork as well as in the ePCR documentation.

This is an abbreviated NIHSS for use by Pre-hospital providers during the transfer:

	Scale Definition / Function
LOC: *level of consciousness*	0 = Alert, keenly responsive; 1 = Not alert, arousable; 2 = Not alert, requires stimulation; 3 = Reflex or no response
LOC Questions: *Ask patient the month and their age*	0 = Answers both correctly; 1 = Answers one correctly; 2 = Performs no task correctly;
LOC Commands *Open* & close eyes, make fist- let-go	0 = Performs both tasks correctly; 1 = Performs one task correctly; 2 = Performs no task correctly
Right Arm Motor	0 = No drift; 1 = Drift down before 10 sec; 2 = Drifts to bed; 3 = No effort against gravity; 4 = No movement; UN = Amp or fusion
Left Arm Motor	0 = No drift; 1 = Drift down before 10 sec; 2 = Drifts to bed; 3 = No effort against gravity; 4 = No movement; UN = Amp or fusion
Right Leg Motor	0 = No drift; 1 = Drift down by end 5 sec; 2 = Drifts to bed; 3 = No effort against gravity; 4 = No movement; UN = Amp or fusion
Left Leg Motor	0 = No drift; 1 = Drift down by end 5 sec; 2 = Drifts to bed; 3 = No effort against gravity; 4 = No movement; UN = Amp or fusion

DIABETIC EMERGENCIES 12/10/2013	
Follow Assessment, General Procedures Protocol	
EMR	• Assess and support ABC's • Oxygen therapy, as needed. - **See Oxygen Therapy** • Monitor vitals
EMT 	• Check CBG • If blood glucose is <60: administer glucose solution orally if the patient is awake and able to protect own airway • If blood glucose reads "high" or is >300 and the patient is refusing transport request **an MD Consult**. • If patient is an insulin dependent diabetic who refuses transport after treatment and has had a full return to consciousness, have patient sign a refusal. Document repeated Blood Glucose Level and vital signs, mental status and absence of other complaints. Recommend that patient eat a meal and contact his/her personal MD to report the incident • If patient is on oral diabetic medication, every effort should be made to transport, including physician consult if needed.

A-EMT/EMT-I PARAMEDIC	• If blood glucose <60 and the patient is unable to protect own airway:
	  • Initiate IV (with diminished or unconsciousness)
	  • Dextrose
	  • Glucagon IM (if IV is unobtainable)

DROWNING/NEAR DROWNING
12/03/2013

Follow Assessment, General Procedures Protocol

Specific Information:

- In all drowning events, the patient should be transported.
- Most drowning patients have copious oral secretions, do not delay oxygenation, ventilate aggressively.

EMR	• Assess and support ABC's • C-spine precautions as indicated, stabilize neck prior to removing from water if any suggestion of neck injury • Oxygen therapy, high flow. Assist ventilations as needed • Monitor vitals
EMT	• Obtain 12 lead ECG, if able
A-EMT	• IV – NS with standard tubing or saline lock, TKO or fluids as needed • IO as indicated for shock and no IV access Peds <6 y.o.
EMT-I	• IO as indicated for patients condition
PARAMEDIC	• Consider NG tube if vomiting and pronounced abdominal distention noted • Monitor for pulmonary edema

ASSESSMENT/GENERAL PROTOCOL
09/10/2013

Priorities in patient care always start with the basic life support procedures such as airway maintenance, CPR and stopping life threatening blood loss. In the following protocols, most care is done by standing order within your scope of practice. No procedure may be done that is outside the scope of practice of the individual EMS provider. Some treatment protocols require a **MD Order** prior to implementation**.**

To obtain an **MD Order** for care not specified in the protocols:

- Contact an emergency department physician by phone or radio.
  - **RiverBend Hospital – (541) 222-1581**
  - **McKenzie Willamette Hospital – (541) 726-4470**
  - **University District Hospital – (541) 686-7341**
  - **Peace Harbor Hospital (541) 997-1076**
- Contact a private physician.

In the event that an emergency department physician cannot be contacted for urgent orders refer to the protocols and give the care you judge necessary.

PARAMEDICS GIVING ORDERS TO INITIAL UNITS ON SCENE: If the request appears reasonable a paramedic is authorized to give the order. If in doubt, the paramedic should attempt to consult with Medical Control prior to giving the order to on-scene personnel. The Paramedic is expected to be familiar with Central Lane County Protocols and Oregon Scope of Practice for all levels of EMS personnel.

SPECIAL PATIENTS/PLAN OF CARE: If there are identified patients that need a specific protocol written for their medical condition/circumstance, a Plan of Care will be written by the medical director and kept on file at the EMS Agency and if appropriate, the patient will also receive a copy.

UNIVERSAL TREATMENT GUIDELINES: The following should be done for every patient:

- Scene Safety
- Trauma Scene Assessment
- Physical Exam
- History Assessment
- Follow appropriate patient treatment protocol if applicable

ASSESSMENT/GENERAL PROTOCOL 09/10/2013	
SCENE SAFETY	
SCENE SAFETY	Identify potential threats/hazards to the safety of the: • EMS personnel • Patients • By-standers Wear appropriate PPE based on the dispatch information and the actual conditions found on scene.
TRAUMA SCENE ASSESSMENT	
MECHANISM OF INJURY	1. What forces and energies led to the victims' injuries? 2. Position of automobiles, weapons, etc. 3. Potential speed of vehicles 4. Could a medical problem be the cause of the trauma? 5. Number of patients, critical and non-critical 6. Need for additional resources, i.e. medic units, fire apparatus, police or utilities.
PHYSICAL EXAMINATION	
PRIMARY SURVEY	Airway and cervical spine stabilization (if appropriate), breathing, circulation, disability and Glasgow coma score, expose/environment.

ASSESSMENT/GENERAL PROTOCOL 09/10/2013	
SECONDARY SURVEY	The Secondary Survey is performed only after the Primary Survey is completed, all life threatening injuries have been identified and treated, and resuscitation initiated. 1. Head to toe evaluation of the patient, determine chief complaint. 2. Obtain a complete set of vital signs including; blood pressure, pulse rate and quality, ventilation rate (including breath sounds), skin color and temperature. 3. Monitor; SpO_2, ECG (including 12 lead) if appropriate, $ETCO_2$ and obtain CBG reading if appropriate 4. Obtain pain severity scale including **PQRST** (Precipitation, Quality, Radiation, Severity, Time)
HISTORY ASSESSMENT	
	1. Establish why help was requested (again, try to identify a chief complaint) 2. Obtain **SAMPLE** History • **S**ymptoms • **A**llergies • **M**edication • **P**ast Medical History • **L**ast Meal • **E**vent leading up to the 911 call

HEAD TRAUMA
02/03/2016

- Restlessness can be a sign of serious head injury. Cerebral anoxia is the most frequent cause of death in head injury.
- The most important information you provide for the E.D. physician is changes in the patient's level of consciousness.
- Isolated head trauma as a result of significant mechanism/force should be immobilized in C-Collar for transport. (May not require use of LBB)

**Concussion is a mild traumatic brain injury and may be caused either by direct blow to the head, face, neck or elsewhere on the body with a sudden acceleration or deceleration force transmitted to the head. Any bump or blow to the head should be suspect of possibly causing a concussion. Signs and Symptoms of a concussion include:

☐ Amnesia: retrograde (events before the injury),

anterograde (events after the injury),

☐ Loss of consciousness,

☐ Appears dazed or stunned,

☐ Is confused about events,

☐ Answers questions slowly,

☐ Repeats questions,

☐ Forgetful of recent information

☐ Nausea or vomiting

Patients who are experiencing concussion symptoms should be transported to the hospital. If the patient declines transport, the patient should be encouraged to seek medical evaluation and should be advised of risk of Second Impact Syndrome (SIS). **Second Impact Syndrome is a serious life threatening condition that may occur in patients that have a second head injury before signs and symptoms of the first head injury has resolved. This second head injury can occur minutes, days or weeks after the initial head injury.

EMR/EMT	• Assess and support ABC's with manual spine care • Assess patient for spinal immobilization • Oxygen therapy. **– See Oxygen Therapy** • Calculate baseline GCS **– See GCS** • Stop bleeding with direct pressure. If it looks like CSF, put a dressing over it and do not apply pressure unless bleeding is excessive. • Frequently reassess vitals and level of consciousness • Ventilate at normal tidal volume and assist ventilations at a rate of 12-14 breaths/minute for adults. Do not hyperventilate. • Manage $ETCO_2$ **– See Capnography/$ETCO_2$**.

A-EMT	• IV – NS with standard tubing or saline lock, titrate to patient's needs • IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion** • With suspected increased ICP, maintain systolic BP ≥90.
EMT-I	• IO access as indicated by patient condition and needs **– See EZ-IO/IO Infusion**
PARAMEDIC	• Seizure activity – **See Seizure Protocol** • Intubate if signs of significant head injury, i.e. GCS <9. **– See RSI** • Signs of increased intracranial pressure may be mitigated some by increasing ventilation rate. **See Capnography/ETCO$_2$.**

HYPERKALEMIA
12/13/2013

1. Follow Assessment, General Procedures Protocol
2. Signs of hyperkalemia: Peaked T waves, lowered P wave amplitude, prolonged P-R interval, second degree AV blocks, and widened QRS complexes.
3. Causes of Hyperkalemia:
   - Renal failure/insufficiency (acute or chronic)
   - Addison's Disease (Adrenal Insufficiency)
   - Sepsis/DKA (acidosis)
   - Severe Dehydration
   - Transplant rejection
   - Rhabdomyolysis
   - Muscular dystrophy patients
   - Paraplegia/quadriplegia patients
   - Crush injuries
   - Serious burns (onset after several hours)
   - Angiotensin-converting enzyme (ACE) inhibitors
   - Excessive use of potassium supplements
4. Documented hyperkalemia from physician's office and EKG changes (peaked T-waves and QRS widening.)

EMR	• Assess and support ABC's • Oxygen therapy, high flow –**See Oxygen Therapy**
EMT	• Obtain 12 lead ECG - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock TKO • Administer 1 liter of NS unless contraindicated
EMT-I	• Cardiac Monitoring - **See ECG/12 Lead** • IO access as indicated for shock, patient needs, and no IV access **– See EZ-IO/IO Infusion**
PARAMEDIC	• Calcium chloride or gluconate (contraindicated if suspected digitalis toxicity) • Sodium bicarbonate • Albuterol

HYPERTENSIVE EMERGENCIES
12/03/2013

Follow Assessment, General Procedures Protocol

Specific Information

- Patients with symptomatic hypertension (e.g. vision disturbance, headache, chest pain, ataxia) should be transported to the hospital.
- Symptomatic pregnancy induced hypertension (PIH), transport patient to the hospital and be prepared for seizures.
- Rapid onset of symptoms (coma, hemiparesis) often indicates intracranial hemorrhage or cerebral infarction.

EMR/EMT	• Assess and support ABC's. • Oxygen therapy **– See Oxygen Therapy** • Position head of bed 15-20 degrees if possible • Monitor vitals and level of consciousness every 5 min
EMT	• Obtain 12 lead ECG if possible - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock TKO.
EMT-I/ PARAMEDIC	• Cardiac monitoring - **See ECG/12 Lead** • IO as indicated for patient condition **– See EZ-IO/IO Infusion**

HYPERTHERMIA EMERGENCIES
01/14/2014

Follow Assessment, General Procedures Protocol

- Differentiate from heat cramps (abdominal or leg) or heat exhaustion (hypovolemia or gradual onset), but be aware that heat exhaustion can progress to heat stroke.
- Heat stroke is accompanied by changes in mental status (generally >104ºF 40ºC) and may present with hot red dry skin.
- Wet sheets over patient without good air flow will tend to increase temperature. Water must evaporate to provide cooling.
- Definitive cooling will need hospital treatment, but early cooling improves chance of good outcome.

EMR	• Assess and support ABC's • Oxygen therapy – **See Oxygen Therapy** • Begin cooling immediately. Remove clothing, cool with wet sheets, or sponging, mist patient with water and place ice packs in groin and axilla while maintaining good ambient air flow. • Monitor vitals, to include frequent core temperature assessments.
EMT	• Check blood glucose • Obtain 12 lead ECG if possible **– See ECG/12-Lead**
A-EMT	• IV – NS with standard tubing or saline lock • IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion** • Give a fluid bolus of 1 L NS to adult patients, 20 cc/kg NS pediatric patients not to exceed 1 L (do not use warmed fluid) • If CBG <60 administer dextrose
EMT-I	• IO access if indicated and no IV access is obtainable **– See EZ-IO/IO Infusion** • Cardiac monitoring **– See ECG/12-Lead**
PARAMEDIC	• Midazolam (Versed) (for continuous seizures) - **See Seizure Protocol**.

HYPOTHERMIA EMERGENCIES
12/03/2013

Follow Assessment, General Procedures Protocol

- Consider hypothermia with elderly patients, poverty and drug/alcohol use.
- Shivering generally occurs between 90-98° F (32-37° C), but may be absent or minimal below this.
- Severe hypothermia is currently defined in ACLS guidelines as core temperature below 86°F (30°C).
- Handle patients gently, as manipulations can precipitate lethal cardiac arrhythmias.
- Consult MD for therapies or direction of care when unclear about degree of hypothermia.
- See attached ACLS severe hypothermia algorithm.

EMR	• Remove/protect from environment • Remove wet clothing • Protect against heat loss and wind chill • Maintain horizontal position • Assess and support ABC's • Monitor vitals, to include frequent core temperature assessments • Oxygen therapy. (Heated preferred) – **See Oxygen Therapy** • Assist ventilations as needed • Begin warming immediately, use caution with the application of hot packs – **See Hypothermia Algorithm** • Administer liquid oral glucose for treatment of possible hypoglycemia if indicated.
EMT	• Check blood glucose. • If blood glucose is <60: administer glucose solution orally if the patient is awake and able to protect own airway. • Obtain 12 lead ECG if able. - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing/saline lock. Use warmed solution if possible (109°F 43°C) 500 ml, then reduce rate to 1 L/hr. • IO as indicated for shock and no IV access Peds <6 y.o. **-See EZ-IO/IO Infusion** • Consider additional 500 ml bolus if hypotensive, unless contraindicated by onset of pulmonary edema • If patient is hypoglycemic and temperature is >93F (34C) administer Dextrose. • If patient is hypoglycemic and temperature is <93F (34C) administer Dextrose 5% (50 grams in a 1 liter bag).
EMT-I	• IO access if indicated and IV is not obtainable **See EZ-IO/IO Infusion**
PARAMEDIC 	• Avoid intubation if possible • **MD Order** prior to any cardiac meds

Algorithm for Treatment of Severe Hypothermia

INITIAL THERAPY FOR ALL PATIENTS

- Remove wet garments avoiding rough movement and excess activity
- Protect against heat loss and wind chill (use blankets and insulating equipment)
- Maintain horizontal position
- Monitor core temperature if possible[a]
- Monitor cardiac rhythm if possible

Assess responsiveness, breathing, and pulse

Pulse/breathing present

What is core temperature?[b]

34°C to 36°C (93°F to 96.8°F)
Mild hypothermia
- Passive rewarming
- Active external rewarming

30°C to 34°C (86°F to 93°F)
Moderate hypothermia
- Passive rewarming
- Active external rewarming of trunk areas only
- Infuse warm normal saline[c]

<30°C (86°F)
Severe hypothermia
- Active internal rewarming sequence (see below).

Pulse/breathing absent

- Start CPR
- Give 1 Shock
  - Manual biphasic: device specific (typically 120-200 J) If unknown, use 200 J.
  - If AED, device specific
  - Monophasic: 360 J
- Resume CPR immediately
- Attempt, confirm, secure airway
- Ventilate with warm, humid ***oxygen*** (42°C to 46°C [108°F to 115°F])
- Establish IV access
- Infuse warm NS (43°C [109°F])[c]

What is core temperature?[b]

<30°C (86°F)

- Continue CPR
- Withhold IV medications
- Limit to 1 shock for VF/VT
- Transport

≥30°C (86°F)

- Continue CPR
- Give IV medications as indicated (but space at longer than standard intervals)
- Repeat defibrillation for VF/VT as core temperature rises

Active internal rewarming[b]
- Warm IV fluids (43°C [109°F]), if available[c]
- Warm, humid **oxygen** (42°C to 46°C [108°F to 115°F])

Continue internal rewarming until
- Core temperature >35°C (95°F) or
- Return of spontaneous circulation or
- Resuscitative efforts cease

[a] If unable to accurately assess core temperature in patient who is not in cardiac arrest, use shivering as a rough clinical guideline. If the patient is shivering, the hypothermia is mild to moderate.

[b] **If unable to accurately assess core temperature in arrested patient and unsure whether this patient is severely hypothermic, use routine ACLS guidelines.**

[c] If hypoglycemic, add 50g dextrose to 1000 cc NS

INTOXICATED PATIENT
12/09/2013

Follow Assessment, General Procedures Protocol

Specific Information

- No patient that appears intoxicated with a GCS <14 should be left in the field. Transport (or arrange appropriate alternative transport) if indicated for patient safety.
- Any patient being considered for release/refusal must be able to repeat risk of refusal given to them in a manner that reflects understanding, and to ambulate with a steady gait.
- Intoxicated/alcohol abuse patients are at high risk for comorbid conditions such as trauma, subdural hematoma, GI bleeding, pancreatitis. Abnormal vital signs and altered LOC must be fully accounted for. Generally, patients who are intoxicated or who have a history of alcohol abuse who have abnormal VS or LOC should be transported for evaluation.
- Signs of alcohol withdrawal may present as tachycardia, hypertension, severe tremulousness, acute delirium/agitation (altered mental status with visual hallucinations in a known/suspected alcoholic).

EMR	• Assess and support ABC's • C-spine precautions as indicated **– See Spine Trauma** • Oxygen therapy – **See Oxygen Therapy** • Vital signs (abnormal vital signs can signal alcohol withdrawal, occult trauma/bleeding) • Level of consciousness: (GCS <14 cannot be left safely in the field). **– See GCS** • Administer liquid oral glucose for treatment of suspected hypoglycemia • Treat the underlying chief complaint as you would for a non-intoxicated patient
EMT	• Check CBG, if <60: administer liquid oral glucose for treatment of suspected hypoglycemia if the patient is awake and able to protect own airway. • Obtain 12 lead ECG if able - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock TKO.
EMT-I	• IO access if unable to obtain IV access with signs of shock **– See EZ-IO/IO Infusion**
PARAMEDIC	• Intoxicated patients are high risk patients. If in doubt, transport. • Versed, for signs of withdrawal, as per protocol.

LESS LETHAL MUNITIONS CARE
09/10/2013

Follow Assessment, General Procedures Protocol

EMR/EMT
AEMT/EMT-I
PARAMEDIC

Pepper Spray (Oleoresin Capsicum, "OC Spray")
& Tear Gas (o-Chlorobenzylidene Malononitrile, "CS Gas")

Specific Physical Findings: Extreme burning of the eyes, nose, and congestion due to increased mucous production, Increased tear production, Spasmodic contraction and involuntary closing of the eyes, immediate respiratory inflammation, cough, shortness of breath, gagging, retching and burning sensation to the skin. These effects usually subside in 30-40 minutes; however, the severity and duration of these symptoms are dependent on concentration of chemical in the spray.

Treatment:

- Irrigate affected areas with water or NS.
- Physical exam must include assessment for trauma to the eye, lung sounds, and vital signs including pulse oximetry.
- If the patient continues to experience pain and it can be determined that the pain is secondary to the capsicum spray, the eyes should be numbed with Proparacaine. - **Paramedic**
- Transport patient if there is indication of eye trauma, respiratory distress, or other priority symptoms.

Special Considerations and Precautions:

- Be aware of cross contamination dangers when treating these patients.
- Use appropriate body substance isolation (BSI) precautions when dealing with contaminated patients. Always wear gloves and eye protection when irrigating contaminated patients.
- There may be serious complications seen in patients who have cardiac, asthma, or COPD history.
- Care should be taken in the treatment of the elderly who are exposed to this substance, with transport to a hospital for evaluation encouraged.

	Taser Dart Two darts are shot that lodge in a person's skin or clothing. Once implanted an electrical charge is applied through the darts (less than 2 joules). This overrides the voluntary nervous system and prevents coordinated action, disabling the person who was tased. **Treatment:** • Pull skin around taser probe taut and pull probe straight out. • Discard probe into sharps container. • Provide wound care. Clean site with antiseptic solution, apply antibiotic ointment (if available.) Educate patient to seek medical care if signs of infection (redness, swelling, fever, or drainage) occur. • If the dart has penetrated the eye or become embedded in sensitive tissue such as the neck, face, and groin, do not attempt to remove it. Make sure the taser is shut off, immobilize object, cut the wire right above the dart, and transport the patient. **Special Considerations:** • The taser has no effects on heart rhythm or implanted pacemakers. • The taser does not damage nervous tissue. **Kinetic Impact Munitions** **Treatment:** • Patient treatment is based on the area of impact, type of injury seen, and the patient complaint. **Special Considerations and Precautions:** • Some types of kinetic impact munitions may contain OC or other chemical agents. Patients struck with these will require care for both the kinetic impact munition and the chemical agent. • Use appropriate BSI precautions when dealing with contaminated patients. Always wear gloves and eye protection when irrigating contaminated patients.

OBSTETRIC EMERGENCIES
06/18/2014

Follow Assessment, General Procedures Protocol

For any obstetrical complication in the field, medics should call the STORK line at RiverBend hospital in addition to the ED for consultation. The STORK Line is (541) 222-3911.

EMR/EMT

- Assess and support ABC's
- If not pushing or bleeding, place in left lateral position

NORMAL DELIVERY

- Use clean or sterile technique
- Guide and control, but do not prevent or hurry delivery
- After delivery of head:
  - Check to see if umbilical cord is looped around infant's neck - if so, remove from around the neck/head
  - Suction mouth, then nose (NOT throat) with bulb syringe
- Complete delivery:
  - Keep infant level with perineum
- Dry infant off and wrap in warm, dry, clean blanket.
- Clamp cord in two places approximately 4"-6" from infant, cut cord between clamps
- Check vitals
- If multiple deliveries expected, do not allow nursing until all deliveries completed.
- Record APGAR at 1 and 5 minutes.
  - If APGAR is very low immediately after delivery, DON'T WAIT until a 1 minute APGAR to begin resuscitation.
  - If pink, crying, and good tone (APGAR >8) then, place on mother's abdomen, cover warmly. Allow to nurse.
- If excessive bleeding occurs after delivery, massage fundus until firm and put baby to breast.

CORD PROLAPSE

- Insert gloved hand in vagina; gently elevate presenting body part to relieve pressure on cord.
- Place mother in knee/chest position and transport immediately.

BREECH/LIMB PRESENTATION

- Transport immediately, with mother in left lateral recumbent position.

OBSTETRIC EMERGENCIES 06/18/2014	
	SHOULDER DYSTOCIA (head out but baby not delivering) • Position mother flat on her back and pull her knees up to her chest. • If baby does not deliver, apply suprapubic pressure • **Consult MD** for further maneuvers.
A-EMT	• Fundal massage for postpartum bleeding • IV – NS with Standard Tubing, titrate to patient needs
EMT-I	• IO as indicated for shock and unable to obtain IV **– See EZ-IO/IO Infusion**
PARAMEDIC	• Pitocin for bleeding unresponsive to fundal massage • Magnesium for eclamptic seizure

APGAR SCORE

	0 points	1 point	2 points
Appearance	Blue	Blue Extremities	Pink
Pulse	Absent	<100	>100
Grimace	Unresponsive	Some	Vigorous
Activity	Flaccid	Some Tone	Active
Respiration	Absent	Slow, Irregular	Strong Cry

ORTHOPEDIC INJURIES / EXTREMITY TRAUMA / CRUSH INJURY 09/10/2013	
Follow Assessment, General Procedures Protocol	

EMR	• Immobilize C-Spine if indicated
	• Assess and support ABC's
	• Control hemorrhage
	• Oxygen therapy, if indicated
	• Apply sterile dressings to open fractures
	• Splint suspected/obvious fractures **– See Splinting Protocol**
	• Remove rings, bracelets, and other constricting items on injured extremities
	• Consult with medical control if no palpable pulses
	• UNCONTROLLED BLEEDING:
	  • Control with direct pressure. Hemorrhage not controlled with direct pressure, utilize tourniquet; note time of application.
	• AMPUTATIONS
	  • Stump: Sterile dressing, control bleeding with direct pressure.
	  • Severed Part: Wrap in gauze/4x4, wrap in plastic (keep dry), place on ice (do not use salt)
	  • If delay in transport, consider sending amputated part ahead
	  • Partial amputation: Sterile dressing, splint in anatomical position. Avoid torsion and angulation

EMT	• Obtain 12 Lead ECG, if able. (Indicated for Crush Injury) - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock • IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion** • Titrate fluid to vital signs and signs of shock – **See Shock Protocol**
EMT-I	• IO access **– See EZ-IO/IO Infusion** • Pain management – **See Acute Pain Management Protocol**

ORTHOPEDIC INJURIES / EXTREMITY TRAUMA / CRUSH INJURY 09/10/2013	
PARAMEDIC	• If tourniquet was applied prior to paramedic arrival it is appropriate to gradually release while applying direct pressure (and pressure points as necessary). If bleeding becomes uncontrolled, reapply tourniquet If patella dislocation is suspected: • Identify the lateral location of the patella. Simultaneously straighten the knee while applying forward pressure under the patella with thumb and fingers. • If unsuccessful, splint in place and ice **– See Splinting Protocol** • If successful reduction is made, patient should be transported for x-ray and further evaluation
PARAMEDIC	CRUSH INJURY • 2 Liter Bolus followed by 500cc/hr infusion (clear lungs) • Sodium bicarbonate (Significant/prolonged entrapment >1 hour of torso, pelvis, or lower extremity) • Place tourniquets proximally on crushed limb just prior to release. • Monitor for Hyperkalemia (Peaked T waves and QRS widening) - **See Hyperkalemia Protocol** • Treat pain aggressively if blood pressure permits **– See Acute Pain Management Protocol** • Rocuronium if RSI is necessary

POISONING/ OD
02/03/2015

Follow Assessment, General Procedures Protocol

Poison/Overdose information:

RIVERBEND – (541) 222-1581
McKENZIE-WILLAMETTE – (541) 726-4470
OREGON POISON CENTER - 1-(800)-222-1222

Specific Precautions:

- Inhalation poisoning is particularly dangerous to rescuers. Recognize an environment with continuing contamination and extricate rapidly by properly trained and equipped personnel.
- If possible, contact receiving hospital en route to scene of a known exposure/ingestion so they can obtain information for you on toxicity, symptoms, treatment, etc. ORDER FOR CHARCOAL MUST BE OBTAINED FROM MD AT RECEIVING HOSPITAL.
- Signs of organophosphate poisoning include S.L.U.D.G.E. - If this is suspected, protect yourself from exposure. Pulmonary edema and bradycardia are common.

EMR	**External Contamination:** • Protect medical personnel • Remove contaminated clothing. • Flush contaminated skin and eyes with copious amounts of water. **Ingestion** • Assess and support ABC's • Oxygen therapy – **See Oxygen Therapy** • Monitor and document vitals throughout treatment and transport. • If patient is poorly responsive and has respiratory depression, administer Naloxone HCL (Narcan).
EMT	• Check CBG • Consider Activated Charcoal in conscious, alert patients if ingestion occurred within the 1 hour by **MD Order**. • Obtain 12 lead ECG; don't delay therapy or needed treatments. - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing or saline lock if indicated • IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion**
EMT-I	• IO access if indicated by shock and unable to establish IV. **– See EZ-IO/IO Infusion** • Monitor and document cardiac rhythm. - **See ECG/12 Lead**
PARAMEDIC	**Tricyclic antidepressant overdose:**

POISONING/ OD 02/03/2015	
	• Hyperventilate if possible • Treat hypotension, as indicated, with fluid challenge. • Monitor for wide QRS or arrhythmia, if present, administer sodium bicarbonate IV push. **Calcium channel blocker overdose:** • Consider calcium chloride IV for symptomatic bradycardia/ hypotension **Beta blocker overdose: MD order** • Consider glucagon IV for symptomatic bradycardia/hypotension. **Cholinergic poisoning:** • If cholinergic poisoning (e.g. organophosphate poisoning) has occurred and patient is critical with "S.L.U.D.G.E." symptoms: Administer Atropine. Repeat dose every 2-3 minutes until secretions have substantially decreased. If HR > 120 **consult with MD** prior to use. • Administer Pralidoxime Chloride if indicated

RESPIRATORY EMERGENCIES
12/03/2013

Follow Assessment, General Procedures Protocol

- Obtain an SPO_2 reading before and after oxygen administration.
- Obtain CO measurement if appropriate.
- Capnography/$ETCO_2$ monitoring can be very effective in measuring the effectiveness of ventilations in perfusing patients and response to therapies. **See Capnography/End – tidal CO_2 Monitoring**

EMR	• Assess and support ABC's • Oxygen therapy, high flow – **See Oxygen Therapy** • Oral suction if necessary – **See Suctioning** • If foreign body obstruction, follow AHA guidelines. • Place patient in upright position or position of comfort, unless other findings or mechanism of injury contraindicate this. • COPD patients, O_2 flow to maintain $Sp0_2$ of 90-95%. • If croup suspected consider moving child to humid environment or outside to cool moist air. • Epinephrine (Auto Injection Device only for Anaphylaxis)

EMT	• Tracheal Suctioning if necessary – **See Suctioning**
	• Obtain 12 lead ECG; don't delay therapy. - **See ECG/12 Lead**
	• Consider:
	  • CPAP (if indicated) – **See CPAP**
	  • Epinephrine 1:1000 IM (Anaphylaxis)
	  • King Airway **– See King Airway**

A-EMT	• IV – NS with standard tubing or saline lock TKO.
	• IO as indicated for shock and no IV access Peds <6 y.o. – EZ-IO/IO Infusion
	• Withhold IV for pediatric respiratory distress unless needed for resuscitation.
	• Consider:
	  • Albuterol
	  • Atrovent (Ipratropium bromide)

EMT-I	• IO access if indicated – EZ-IO/IO Infusion • Cardiac monitoring - **See ECG/12 Lead**

PARAMEDIC	• If possible meconium aspiration, consider meconium suctioning – **See Suctioning**
	• If suspected pneumothorax - **See Pleural Chest Decompression**
	• Depending on the cause of the respiratory distress, consider:
	  • Solu-medrol
	  • Nitroglycerin
	  • Epinephrine
	  • Endotracheal Intubation

SEIZURES
06/18/2014

Follow Assessment, General Procedures Protocol

- Transport all children with seizures. If the guardian refuses, **MD consult is required.**
- All first time seizures should be transported
- If patient has a known seizure disorder and is now alert and refuses transport, document vital signs and absence of other complaints and have patient sign a refusal.
- If new onset seizure and the patient is in the third trimester of pregnancy or within 6 weeks post-delivery, consider eclampsia as a possible cause of the seizure. In this case consider the use of magnesium as treatment. If unsuccessful, consider versed.

EMR	• Assess and support ABCs; nasopharyngeal (NPA) airways may be useful. **NOTE:** Do not force anything between the teeth. • Oxygen therapy **– See Oxygen Therapy** • Suction as needed. **– See Suctioning** • Lateral recumbent position if possible but maintain spinal precautions if appropriate. • Protect patient, restrain only if needed to prevent injury. • Monitor airway and vitals closely. • Administer liquid oral glucose for treatment of possible hypoglycemia if indicated. • If a patient is febrile, remove clothing and consider cooling with tepid sponging until temperature is down to 101 F. Do not cool to the point of shivering, as the body activity will actually increase in temperature.
EMT	• Check CBG. If < 60 and patient is awake and able to protect their own airway, administer liquid oral glucose. • Consider obtaining 12 Lead if patient is over the age of 40 and does not have history of seizure. - **See ECG/12 Lead**
A-EMT	• IV – NS with standard tubing if possible. • IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion** • If CBG <60 administer dextrose
EMT-I	• IO Access **– See EZ-IO/IO Infusion**
PARAMEDIC	If the patient is seizing on arrival, or has continuous seizing known to have lasted more than 2 minutes: • Midazolam (Versed®). The IV route is preferred when easily accessible. If no easy IV access, as in pediatric cases, immediate IM, IN or IO use is indicated.

	• Magnesium Sulfate for eclamptic seizures • Contact Medical Control to obtain order for additional midazolam if seizure activity continues and/or to notify them in the event a patient has continuous seizing.

SEPSIS
01/05/2016

Follow Assessment, General Procedures Protocol

Sepsis is a rapidly progressing, life threatening, treatable condition caused by systemic infection. Early recognition and aggressive treatment is essential for patient survival.

Sepsis is defined by the presence of TWO or MORE of the following criteria for Systemic Inflammatory Response Syndrome (SIRS), in a patient with KNOWN or SUSPECTED infection:

- Temp > 38 º C (100.4 º F) or < 36 º C (96.8 º F)
- RR > 20/min
- HR >90/min

Severe Sepsis may manifest with any of the following signs of end-organ dysfunction and/or metabolic acidosis:

- Altered mental status
- Hypotension
- Hypoxia
- Elevated serum lactate
- Decreased $ETCO_2$

SEPSIS ALERT:

- The purpose of the SEPSIS ALERT is to provide the ED with notification in order to facilitate rapid assessment of the suspected severe sepsis patient.
- Code 1 or Code 3 transport determined by paramedic judgement based on the condition of the patient.
- A SEPSIS ALERT will be instituted for patients meeting the following three criteria:
  1. Suspected infection or altered mental status
  2. Two or more of the following:
     - Temp > 38 º C (100.4 º F) or < 36 º C (96.8 º F)
     - RR >20
     - HR >90
  3. $ETCO_2 \leq 25$ mmHg or lactate > 4mMol

EMR	• Assess and support ABC's • Obtain complete vital signs every 5-10 minutes with lung sounds once fluids are running. • Oxygen therapy, high flow –**See Oxygen Therapy**
EMT	• King Airway - **See King Airway** • Quantitative waveform capnography – **See Capnography/$ETCO_2$.** • Obtain 12 lead ECG – **See ECG/12 Lead**

A-EMT	• IV – multiple if possible
	• IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion**
	  • Adult - Bolus NS in 500cc increments up to 30cc/kg total. Reassess lung sounds between each 500 cc bolus.
	  • Peds – Bolus NS 20cc/kg, may repeat x1 if needed.

EMT-I	• Monitor Cardiac Rhythm. **– See ECG/12-Lead** • IO access as indicated for shock, patient needs, and no IV access **– See EZ-IO/IO Infusion**
PARAMEDIC	• For Adults - If hypotension refractory to 30cc/kg total bolus consider Dopamine per protocol **MD Consult required**. • Initiate SEPSIS ALERT on MD Consult Line • Defer Intubation when possible as this may worsen patient's hemodynamic/metabolic status.

SHOCK **11/05/2013**	
Hypotension and shock result from volume, pump or rate problems.	
EMR/EMT	• Assess and support ABCs. • Place patient in supine position. • C-Spine precautions if indicated. • Oxygen therapy, high flow; assist ventilations as needed. • Control hemorrhage, if present. • Take measures to avoid heat loss. • Transport immediately. • Monitor vital signs and level of consciousness during transport.
A-EMT	• Start IV of NS using standard tubing with a 14-16 gauge. Start second IV if time permits. **Do not delay transport to start IVs.** • IO as indicated for shock and no IV access Peds <6 y.o, do not delay transport. **– See EZ-IO/IO Infusion** • Give 500 ml rapidly as possible; reassess patient frequently. Repeat fluid bolus, contraindicated if signs of fluid overload/pulmonary edema.
EMT-I	• IO Access**– See EZ-IO/IO Infusion** • Cardiac monitoring - **See ECG/12 Lead** • Evaluate and treat dysrhythmias
PARAMEDIC	• Consider dopamine if suspected cardiogenic shock • Consider tension pneumothorax

SYNCOPE 12/03/2013	
Follow Assessment, General Procedures Protocol • Patients over the age of 40 with syncope, even though apparently normal, should be encouraged to be transported • Orthostatic vital signs should be checked and documented.	
EMR	• Assess and support ABCs • Oxygen therapy as needed **- See Oxygen Therapy** • Lateral recumbent position if possible (maintain spinal precautions if appropriate). • Administer liquid oral glucose for treatment of possible hypoglycemia if patient awake and able to protect airway. • Monitor airway and vital signs closely
EMT	• Obtain 12 lead ECG - **See ECG/12 Lead** • Check CBG, if <60: administer liquid oral glucose if the patient is awake and able to protect airway
A-EMT	• IV – NS with standard tubing or saline lock TKO or titrate fluid to patient's needs – **See Shock Protocol** • IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion**
EMT-I/ PARAMEDIC	• Cardiac monitoring - **See ECG Monitoring – 12 Lead** • IO access as indicated by patient condition and needs**– See EZ-IO/IO Infusion**

TRAUMA ACTIVATION
12/03/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]

It is mandatory for a patient to be entered into the Trauma System in ATAB 3 (Lane, Douglas and Coos Counties) when they have been involved in a trauma incident **and** meet **any** one of the following criteria in Step 1 through Step 3.

The EMS Provider should report the exact reason for patient entry to the Trauma Center and document the incident fully, including the reason for Trauma System entry.

Measure Vital Signs and Level of Consciousness

Step 1: Physiological Criteria

Glasgow Coma Scale	≤13; or
Systolic blood pressure	<90; or
Respiratory rate	<10 or > 29 (< 20 in infant < one year); or
	Need for ventilatory support

YES

Take to trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported to the highest level of care within the Trauma System.

NO

Assess anatomy of injury

Step 2: Anatomical Criteria

- All penetrating injuries to head, neck, torso and extremities proximal to elbow and knee
- Chest wall instability or deformity (e.g. Flail chest); or
- Two or more proximal long-bone fractures; or
- Crushed, de-gloved, or mangled extremity; or
- Amputation proximal to wrist and ankles; or
- Suspected pelvic fracture; or
- Open or depressed skull fracture; or
- Motor or sensory deficit

YES

Take to trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported to the highest level of care within the Trauma System.

NO

Assess mechanism of injury and evidence of high-energy impact

Go to Step 3, next page

TRAUMA ACTIVATION
12/03/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]

Step 3: Mechanism of Injury

Falls

- Adults: > 20 ft. (one story is equal to 10 ft.); or
- Children: > 10 ft. or 2-3 times the height of the child; or

High-Risk Auto Crash

- Intrusion, including roof > 12" into passenger compartment; or > 18" anywhere on vehicle; or
- Ejection (partial or complete) from automobile; or
- Death in same passenger compartment; or
- Vehicle telemetry data consistent with high risk of injury; or

Auto vs Pedestrian/Bicyclist Thrown, Run Over, or with significant (>20 mph) impact; or
Motorcycle or ATV Crash > 20 mph

YES

Take to trauma center. These patients should be transported to the highest level of care within the Trauma System.

NO

Assess special patient or system considerations

Step 4: Special Populations (Comorbidities)

Age

- Older Adults: Risk of injury or death increases after age 55; or
- SBP < 110 might represent shock after 65 years; or
- Low impact mechanisms (e.g. ground level falls) may result in severe injuries; or
- Children: Should be triaged preferentially to pediatric-capable trauma centers; or

Anticoagulation and Bleeding Disorders

- Patients with head injury are at high risk for rapid deterioration; or

Burns

- Without other trauma mechanism: Triage to burn facility; or
- With trauma mechanism: Triage to trauma center; or

Pregnancy > 20 Weeks; or

EMS Provider Judgment

YES

Take to trauma center. These patients should be transported to the highest level of care within the Trauma System. Consider consultation with Medical Control.

NO

Transport according to protocol

TRAUMA ACTIVATION **12/03/2013**	[EMT, A-EMT, EMT-I, PARAMEDIC]
COMMUNICATIONS	It is essential that early radio communications be established between the Trauma Center (TC) and the scene. The medic in charge of patient care is responsible for ensuring the communication occurs. 1. When advising of a Trauma Activation ideally over the HEAR radio, the crew must request to speak to the Charge Nurse and a Physician at the TC. 2. The following information shall be provided; • Unit number, and priority of transport • Location of the incident • Number of patients • Age and sex of the patient(s) • **Trauma System entry criteria including a brief description of major injuries. (Be as specific as possible)** • Patient(s) vital signs, specify if **not taken** or **not present** • Approximate ETA of patient(s) to Trauma Center Communications from the Trauma Center or Medical Control to EMS Providers in the field: 1. The Trauma Center will inform the EMS Provider if more information is needed. 2. The Trauma Center will inform the EMS Provider if the destination trauma center is unable to receive the patient(s).

TRAUMA ACTIVATION **12/03/2013**	[EMT, A-EMT, EMT-I, PARAMEDIC]
TRANSPORT PROTOCOL	All trauma system entry patients should be transported to a Trauma Center unless advised by Medical Control or under the following circumstances: 1. If unable to establish and maintain an airway, the nearest hospital is appropriate to obtain definitive airway control. 2. A Level III hospital is appropriate for immediate evaluation and stabilization if the expected scene and transport time to a Level II facility is greater than 30 minutes and the Level III hospital is closer. 3. A Level IV hospital is appropriate for immediate evaluation and stabilization if the expected scene and transport time to a Level II or III is greater than 30 minutes and the Level IV hospital is closer. If the patient is transported from the scene by helicopter the destination will be determined by the flight crew.
MODE OF TRANSPORT	Communication between the lead medic and the Incident Commander is highly encouraged regarding the decision to request air transport. Helicopter transport should be considered in any one of the following cases: 1. The patient will benefit from rapid transport or critical care transport; or 2. Patient is a trauma activation; or 3. Multiple patient scene; or 4. The use of air transport will reduce transport time by 20 minutes. Always continue ground response to the scene even if there is certainty that the helicopter will be able to transport and that air transport will save transport time.

TRAUMA ACTIVATION **12/03/2013**	[EMT, A-EMT, EMT-I, PARAMEDIC]
PATIENT EVALUATION	Treatment priority should be approached in this order: 1. Airway maintenance (including control of the cervical spine); If unable to establish and maintain an adequate airway, the patient should be transported to the nearest hospital to obtain definitive airway control. 2. Breathing; 3. Control of circulation; 4. Control of hemorrhage; 5. Treatment of shock; **- See Shock Protocol** 6. Splinting of fractures **– See Splinting Protocol** 7. Neurological examinations; 8. Detailed patient assessment.
SCENE TIME	After gaining access to the patient, scene time should not exceed ten (10) minutes for any patient who is entered into the trauma system. Plan to start IVs and initiate other care once en route to the Trauma Center.

EMR/EMT	• Access and support ABCs
	• Spinal immobilization – **See Spine Trauma**
	• Primary Survey
	• Monitor vital signs every 5 minutes minimum
	• Oxygen indicated for:
	  • Unstable vitals
	  • Mechanism of injury
	• Perform neurological examination including GCS Score and Secondary Survey **– See GCS**
	• **Notify Trauma Center of trauma patient with trauma entry criteria that the patient met.**
	• Keep patient warm

A-EMT	• IV – NS with standard tubing • IO as indicated for shock and no IV access Peds <6 y.o, do not delay transport. **– See EZ-IO/IO Infusion** • Titrate fluid to patient's needs – **See Shock Protocol**

TRAUMA ACTIVATION **12/03/2013**	[EMT, A-EMT, EMT-I, PARAMEDIC]
EMT-I	• IO Access**– See EZ-IO/IO Infusion** • Advanced airway management as indicated. **See Respiratory Distress Protocol;** • Pain management – **See Acute Pain Management Protocol** • Initiate cardiac monitor, SaO_2, $ETCO_2$
PARAMEDIC	• Provide emergency advanced airway access - **See RSI, and possibly Cricothyrotomy Protocol** • Treat life threats including: decompression of tension pneumothorax – **See Decompression of Tension Pneumothorax Protocol**

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UNCONSCIOUS/UNKNOWN **12/03/2013**	
Follow Assessment, General Procedures Protocol	
EMR	• Assess and support ABCs • C-Spine precautions if indicated or suspected **– See Spine Trauma** • Oxygen therapy, high flow, assist ventilations as needed **– See Oxygen Therapy** • Monitor airway and vitals closely • Lateral recumbent position if possible (maintain spinal precautions if appropriate) • Administer liquid oral glucose for treatment of possible hypoglycemia if indicated and patient regains consciousness and is able to self-administer.
EMT	• Check blood glucose, if <60: administer liquid oral glucose for treatment of suspected hypoglycemia if the patient is awake and able to protect own airway. • Consider the need for King Airway **– See King Airway** • Obtain 12 lead - **See ECG/12 Lead**

A-EMT	• IV – NS with standard tubing or saline lock, titrate to patient's needs – **See Shock Protocol**
	• IO as indicated for shock and no IV access Peds <6 y.o. **– See EZ-IO/IO Infusion**
	• Consider:
	  • Dextrose IV/IO
	  • Glucagon
	  • Naloxone

EMT-I	• Cardiac monitoring - **See ECG/12 Lead** • IO access as indicated by patient condition and needs **– See EZ-IO/IO Infusion**
PARAMEDIC	• Consider the need for intubation **– See RSI**

VAGINAL BLEEDING
12/03/2013

Follow Assessment, General Procedures Protocol
Specific Precautions:

- Always consider pregnancy as a cause of vaginal bleeding. – **See Obstetric Emergencies**
- Most postpartum bleeding will occur immediately after, to within 24 hours after, delivery. Do not massage uterus or administer oxytocin (Pitocin®) immediately post-delivery unless placenta has delivered or you receive MD order.
- Consider transport to a hospital with a NICU if possible pre-term delivery

EMR/EMT	• Assess and support ABC's • Oxygen therapy, high flow **– See Oxygen Therapy** • Position of comfort • Monitor vital signs • Treat for Shock - **See Shock Protocol**
A-EMT	• IV – NS with standard tubing or saline lock • Titrate fluids to patients needs
EMT-I	• IO as indicated for shock and no IV access**– See EZ-IO/IO Infusion**
PARAMEDIC	• Pitocin (postpartum bleeding) **MD order**

ADENOSINE / ADENOCARD® **09/10/2013** [PARAMEDIC]	
ACTIONS	Naturally occurring nucleoside slows electrical conduction through the AV node.
INDICATIONS	To convert PSVT to normal sinus rhythm, including PSVT that is associated with accessory bypass tracts (e.g., WPW).
CONTRA-INDICATIONS	1. Second or third degree heart block (except in patients with a functioning artificial pacemaker) 2. Sick sinus syndrome (except in patients with a functioning artificial pacemaker) 3. Pregnancy (relative contraindication since no studies have been performed)
ADULT	**PSVT:** 6 mg rapid IVP, use IV port as close to patient as possible and follow with rapid NS flush. 2nd dose of 12 mg may be repeated in 1-2 min. if no change is observed.
PEDIATRIC 	**PSVT: MD order** 0.1 mg/kg IVP, increase to 0.2 mg/kg if necessary.
KEY POINTS	May be used in pregnancy if benefit outweighs risk.

ALBUTEROL 0.083 % (2.5 mg Albuterol diluted to 3 ml) **09/10/2013** [EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Sympathomimetic drug, Beta 2-selective. Dilates bronchioles, increases heart rate.
INDICATIONS	1. Respiratory distress with bronchospasms / wheezes. 2. Treatment of suspected hyperkalemia.
CONTRA-INDICATIONS	Known hypersensitivity
PRECAUTIONS 	1. HR over 160 or suspected myocardial ischemia (i.e. chest pain) **consult MD** prior to use. 2. Use cautiously in pt. with cardiovascular disease, dysrhythmias, CHF, convulsive disorders, diabetes, hyperthyroidism and patients who are unusually sensitive to drugs that stimulate the sympathetic nervous system.
SIDE EFFECTS	1. Tachycardia, nervousness, tremors, dizziness, palpitations, nausea, vomiting, headache, nasal congestion, hypertension, bad taste and increased bronchial secretions. 2. Paroxysmal bronchoconstriction can occur in patients with repeated excessive administration.
ADULT	**Bronchospasms and Hyperkalemia:** Nebulized premeasured 2.5mg vial, may repeat as needed.
PEDIATRIC 	**Bronchospasms and Hyperkalemia:** Nebulized premeasured 2.5mg vial, may repeat as needed.
KEY POINTS	1. Administer simultaneously with atrovent. 2. Should be kept out of direct sun light. 3. Albuterol by nebulizer is an adjunct drug in allergic reaction; it is not a substitute for epinephrine in severe anaphylaxis.

AMIODARONE / CORDARONE **09/09/2014** [EMT-I, PARAMEDIC]	
ACTIONS	Antiarrhythmic
INDICATIONS	1. For treatment of shock-refractory VF and pulseless VT. 2. For treatment of wide complex tachycardia with a pulse; including ventricular tachycardia, pre-excited atrial fibrillation (AF + WPW).
CONTRA-INDICATIONS	1. Cardiogenic shock 2. Marked sinus bradycardia 3. Second or third degree AV block in the absence of a functioning pacemaker.
PRECAUTIONS	May cause vasodilatation, hypotension and/or prolonged QT interval. Use with caution if renal failure is present.
ADULT	**Pulseless arrest; VF or VT:** 300 mg IVP/IO, may repeat 150mg in 3-5min. **Post conversion if arrhythmia returns with a pulse or if increasing ectopy:** 150 mg over 10 minutes, mix in 100 cc NS, run at 15mg/min If hypotension or bradycardia develops, stop the infusion. **Wide complex tachycardia with a pulse; including VT:** 150 mg IV/IO over 10 minutes, mix in 100cc NS, run at 15 mg/min. Repeat once as needed if VT recurs.
PEDIATRIC	**Pulseless arrest; VF or VT:** 5mg/kg IV/IO (max of 300mg per dose), may repeat x 2 for a total of 3 doses **Wide complex tachycardia:** 5mg/kg IV/IO (max of 150 mg per dose) mix in 100cc NS, run at 50gtts/min over 20 min, may repeat once with MD order.
KEY POINTS	Incompatible with sodium bicarbonate and heparin. Do not administer in the same IV tubing without flushing between meds.

ASPIRIN (ACETYLSALICYLIC ACID) 01/06/2014	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Anti-platelet agent.
INDICATIONS	Suspected MI or cardiac chest pain
CONTRA-INDICATIONS	1. Known allergy 2. Active or recent GI bleed within the last 7 days
ADULT	**Cardiac chest pain:** 324 mg (4x81 mg chewable “baby aspirin”)* *If patient has taken 324 mg of ASA in the last 2 hours, Aspirin therapy may be waived.

ATROPINE SULFATE **09/10/2013**	[EMT-I, PARAMEDIC]
ACTIONS	Anticholinergic agent (Parasympatholytic)
INDICATIONS	1. Symptomatic bradycardia 2. Organophosphate O.D. 3. Pre-treatment for RSI (< 10 y.o.)
PRECAUTIONS	1. Used cautiously in atrial fibrillation and flutter because increased conduction may speed ventricular rate excessively. 2. Initiate pacing if any delay in administering atropine. 3. Bradycardia in the setting of an acute MI is common and probably beneficial. Do not treat unless there are signs of poor perfusion (low blood pressure, mental confusion). Chest pain could be due to an MI or to poor perfusion caused by the bradycardia itself.
SIDE EFFECTS	Dilates pupils
ADULT 	**Symptomatic bradycardia:** 0.5 mg IVP every 3-5 min to 3.0 mg (ET use 2x dose) **Organophosphate poisoning:** 1.0 mg IVP Q 2-3 min until drying of secretions. If HR > 120, **consult with MD** prior to use.
PEDIATRIC 	**Symptomatic bradycardia:** 0.02 mg/kg IVP, not to exceed 0.5 mg per dose (ET use 2x dose); PRN 3-5 minutes to max of 1 mg child and 2 mg adolescent **Organophosphate poisoning:** 0.02 mg/kg IVP, not to exceed 0.5 mg per dose, PRN 2-3 min. until drying of secretions. **RSI pretreatment (Children < 10 y.o):** 0.02 mg/kg (minimum 0.1 mg) IV/IO given 3 minutes before RSI.

ATROVENT / IPRATROPIUM **09/10/2013**	[A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Anticholinergic and bronchodilator.
INDICATIONS	Maintenance treatment of bronchospasm associated with asthma and chronic obstructive pulmonary diseases (COPD).
CONTRA-INDICATIONS	Known allergy to atrovent or atropine.
PRECAUTIONS	1. In patients with heart rate >160 **MD Order** 2. Use with caution in patients with suspected MI.
SIDE EFFECTS	May cause palpitations, dry mouth, blurred vision, anxiety, dizziness, and/or headache in some patients
ADULT	**Bronchospasm:** 0.5 mg nebulized, combined with albuterol
PEDIATRIC	**Bronchospasm:** Child (>5y/o): 0.5 mg combined with albuterol Child (<5y/o): 0.25 mg combined with albuterol
KEY POINTS	1. Administer simultaneously with albuterol. 2. Protect from light

CALCIUM CHLORIDE 10% **09/10/2013** [PARAMEDIC]	
ACTIONS	Increases force of myocardial contraction, increases excitability of muscle fibers, may either increase or decrease systemic vascular resistance.
INDICATIONS	1. Symptomatic calcium channel blocker or magnesium sulfate overdose. 2. Known or suspected hyperkalemia or hypocalcemia with symptoms and/or ECG changes
PRECAUTIONS	1. Do not give simultaneously with sodium bicarbonate. Flush tubing well between medications. 2. Use with caution in patients on digoxin. May precipitate digoxin toxicity. May cause arrhythmias. 3. Necrosis can occur if the medication infiltrates.
ADULT  	**Cardiac Arrest In Dialysis patient or suspected renal failure patient:** 1.0 Gram IVP, give after initial shock and first dose of epinephrine. (follow Cardiac Algorithm Pulseless Arrest) **Dysrhythmias In Dialysis Patient:** 1.0 Gram slow IVP, **Consult MD** first if possible. Bradycardia: (follow Cardiac Algorithm Bradycardia) Wide complex tachycardia: (follow Cardiac Algorithm Tachycardia) **Symptomatic Overdose On Calcium Channel Blocker:** 1.0 Gram slow IVP over 2 min. Hypotension: < 80 systolic (follow Shock Protocol) Bradycardia: < 50/min (follow Cardiac Algorithm Bradycardia) **Reverse Magnesium Sulfate Toxicity:** 1.0 Gram slow IVP over 2 min. **MD order** Suspect Mag Sulfate toxicity in pregnant patient receiving Mag Sulfate and is developing decreased respirations or hypotension and has diminished or absent reflexes. **Suspected Hyperkalemia:** 1.0 Gram slow IVP over 5 min.
PEDIATRIC 	**Suspected Hyperkalemia:** 20 mg/kg (0.2 ml/kg) slow IVP over 5 min. **MD order**

CALCIUM CHLORIDE 10% **09/10/2013** [PARAMEDIC]	
KEY POINTS	1. Rapid administration can cause bradycardia or arrest, give slowly. 2. Some calcium channel blockers which may be taken in overdose include: diltiazem (Cardizem), felodipine (Plendil), nicardipine (Cardene), nifedipine (Adalat, Procardia), verapamil (Calan, Isoptin). 3. Calcium should not be used during resuscitation except for uses listed under indications.

CALCIUM GLUCONATE **09/10/2013** [PARAMEDIC]	
ACTIONS	Increases force of myocardial contraction, increases excitability of muscle fibers, may either increase or decrease systemic vascular resistance.
INDICATIONS	1. Symptomatic calcium channel blocker or magnesium sulfate overdose. 2. Known or suspected hyperkalemia or hypocalcemia with symptoms and/or ECG changes
PRECAUTIONS	1. Do not give simultaneously with sodium bicarbonate. Flush tubing well between medications. 2. Use with caution in patients on digoxin. May precipitate digoxin toxicity. May cause arrhythmias. 3. Necrosis can occur if the medication infiltrates.
ADULT  	**Cardiac Arrest In Dialysis patient or suspected renal failure patient:** 3.0 Gram IVP, give after initial shock and first dose of epinephrine. (follow Cardiac Algorithm Pulseless Arrest) **Dysrhythmias In Dialysis Patient:** 3.0 Gram slow IVP, **Consult MD** first if possible. Bradycardia: (follow Cardiac Algorithm Bradycardia) Wide complex tachycardia: (follow Cardiac Algorithm Tachycardia) **Symptomatic Overdose On Calcium Channel Blocker:** 3.0 Gram slow IVP over 2 min. Hypotension: < 80 systolic (follow Shock Protocol) Bradycardia: < 50/min (follow Cardiac Algorithm Bradycardia) **Reverse Magnesium Sulfate Toxicity:** 3.0 Gram slow IVP over 2 min. **MD order** Suspect Mag Sulfate toxicity in pregnant patient receiving Mag Sulfate and is developing decreased respirations or hypotension and has diminished or absent reflexes. **Suspected Hyperkalemia:** 3.0 Gram slow IVP over 5 min.
PEDIATRIC 	**Suspected Hyperkalemia:** 60 mg/kg slow IVP over 5 min. **MD order**

CALCIUM GLUCONATE **09/10/2013** [PARAMEDIC]	
KEY POINTS	1. Rapid administration can cause bradycardia or arrest, give slowly. 2. Some calcium channel blockers which may be taken in overdose include: diltiazem (Cardizem), felodipine (Plendil), nicardipine (Cardene), nifedipine (Adalat, Procardia), verapamil (Calan, Isoptin). 3. Calcium should not be used during resuscitation except for uses listed under indications.

CHARCOAL, ACTIVATED / ACTIDOSE® WITH SORBITOL 09/10/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]	
ACTIONS	Absorbs toxic substances ingested and inhibits gastrointestinal absorption by forming an effective barrier between remaining particulate material and the gastrointestinal mucosa.
INDICATIONS	Management of poisoning or overdose of many substances.
CONTRA-INDICATIONS	Patients who are unconscious or with altered mental status.
PRECAUTIONS	1. Administration of activated charcoal can result in aspiration or significant particulate obstruction of the airway. 2. Always have suction on standby; patient should be monitored closely for decreasing level of consciousness and impending vomiting.
ADULT 	**Poisoning / Overdose: MD order** 1 gm/kg PO. Usual dose is 50 grams but dosage may be higher as directed.
PEDIATRIC 	**Poisoning / Overdose: MD order** 1 gm/kg PO

COMPAZINE/PROCHLORPERAZINE **09/10/2013** [PARAMEDIC]	
ACTIONS	2nd line anti-emetic.
INDICATIONS	Nausea and vomiting
CONTRA-INDICATIONS	1. Known adverse reaction/allergy to phenothiazines (ie Compazine, Phenergan) 2. Depressed level of consciousness and/or presence of large amounts of CNS depressants. 3. Hypotension 4. Pregnancy
PRECAUTIONS	Elderly are more susceptible to hypotension and neuromuscular effects, therefore start with smaller dose (ie 5 mg)
SIDE EFFECTS	1. Extrapyramidal reactions-often can be effectively treated with Benadryl. 2. Hypotension 3. Neuroleptic malignant syndrome (rare and serious disorder characterized by muscle rigidity, fever, mental status changes and autonomic instability) 4. Seizure 5. Ventricular dysrhythmias (if present, treat with 50-100 mEq sodium bicarbonate; if ineffective, use lidocaine in ACLS doses) 6. Dry mouth 7. Blurred vision
ADULT	**2nd Line Anti-Emetic:** 5-10 mg IV over 2 minutes, or IM

DEXTROSE **06/09/2017**	[A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Carbohydrate which produces most of the body's quick energy and is used to raise blood sugar levels.
INDICATIONS	1. Unknown, unconscious patient 2. Symptomatic hypoglycemia with CBG<60
PRECAUTIONS	1. If feasible, check blood glucose to confirm hypoglycemia prior to administration of dextrose. Certain neurological problems may be worsened with hyperglycemia. 2. Extravasation of dextrose will cause necrosis of tissue. IV should be secure and free return of blood into the syringe or tubing should be checked multiple times during administration.
ADULT	**Hypoglycemia, unconscious / unknown:** 10 Grams IV/IO (100 ml D10%W) reassess CBG. Additional doses "PRN" bolus 25-50 ml (2.5 – 5 Gms). **Hypothermia with hypoglycemia:** Infusion of 25 Grams of D10%W (250 ml) reassess CBG. (D10%W Supplied in 500 ml bag).
PEDIATRIC 	**Hypoglycemia, unconscious / unknown: (See Chart)**
KEY POINTS	1. Effect is delayed in elderly people with poor circulation. 2. Dose may need to be repeated if patient does not improve and hypoglycemia is confirmed by repeat blood glucose. 3. If patient awake and able to protect airway give sugar solution orally (IV dextrose may be used for this purpose).

Pediatric Dose Chart

Patient Size	Dextrose (Gms)	D10 (0.10 gm/ 1 ml) For any age
3 KG	1.5 Gms	15.0 ml
4 KG	2.0 Gms	20.0 ml
5 KG	2.5 Gms	25.0 ml
Pink (6-7 kg)	3.25 Gms	32.5 ml
Red (8-9 kg)	4.25 Gms	42.5 ml
Purple (10-11 kg)	5.25 Gms	52.5 ml
Yellow (12-14 kg)	6.5 Gms	65.0 ml
White (15-18 kg)	8.25 Gms	82.5 ml
Blue (19-23 kg)	10 Gms	100 ml
Orange (24-29 kg)	10 Gms	100 ml
Green (30-36 kg)	10 Gms	100 ml

DIAZEPAM / VALIUM® **09/10/2013** [PARAMEDIC]	
ACTIONS	Benzodiazepine with anticonvulsant, skeletal muscle relaxant, anxiety reducing, amnesic and sedative effects.
INDICATIONS	Diazepam is used to control seizures
CONTRA-INDICATIONS	Known allergy to diazepam.
PRECAUTIONS	Diazepam can cause respiratory depression, hypotension or sedation particularly in the elderly or in those with chronic disease or in the presence of other sedating agents including: alcohol, barbiturates, benzodiazepines or opiates.
SIDE EFFECTS	1. Paradoxical excitement or agitation may occur. 2. Respiratory depression. 3. Hypotension.
ADULT	**Seizures:** 2-10 mg IVP, IM or IO every 3-5 minutes up to a maximum of 20 mg
PEDIATRIC 	**Seizures:** 0.1-0.3 mg/kg, IVP, IM or IO (maximum dose 5 mg) May repeat once.

DILAUDID® / HYDROMORPHONE HYDROCHLORIDE 09/10/2013 [PARAMEDIC]	
ACTIONS	Narcotic analgesic, opiate type.
INDICATIONS	Analgesic for extreme pain
CONTRA-INDICATIONS	1. Pediatric patients, labor, respiratory depression or when ventilatory function is depressed such as status asthmatics, COPD, emphysema. 2. Patients who are hypersensitive to dilaudid or other opiates; those with intracranial lesions associated with ICP. 3. Acute exacerbation of chronic pain is not an indication for dilaudid. 4. Hypotension.
PRECAUTIONS	Use with caution in elderly patients, and patients with chronic liver conditions.
SIDE EFFECTS	1. CNS: pupillary constriction, sedation, somnolence, clouded sensorium, dizziness. 2. CV: hypotension, bradycardia; 3. GI: nausea, vomiting. 4. RESP: respiratory depression, bronchospasm.
ADULT	**Pain Management:** 0.5 -1.0 mg slow (over 1-2 min) IVP. Repeat 0.5 mg dose every 30 min PRN pain relief, to max of 2.0 mg. For IM use: Initial dose 1.0 mg. Repeat 1.0 mg dose every 30 min PRN pain relief, to max of 2.0 mg.
KEY POINTS	1. IV administration should be done over 1-2 minutes. 2. 7-10 times more analgesic than morphine with a long duration of action.

DILTIAZEM / CARDIZEM® **09/10/2013** [PARAMEDIC]	
ACTIONS	Calcium channel blocker that slows conduction and prolongs refractoriness in the AV node.
INDICATIONS	Control of symptomatic rapid ventricular rate (130 or greater) associated with atrial fibrillation and atrial flutter.
CONTRA-INDICATIONS	1. Systolic blood pressure of less than 90 mmHg. 2. Sick sinus syndrome or AV block in the absence of a functioning pacemaker. 3. Wolff-Parkinson-White Syndrome. 4. Wide QRS tachycardia unless it is known with certainty to be supraventricular in origin. 5. Relative contraindication in patients with severe heart failure.
PRECAUTIONS	Use caution in patients receiving beta blockers due to the potential of synergistic effects.
SIDE EFFECTS	Nausea, vomiting, headache, dizziness, bradycardia, heart block, hypotension and asystole.
ADULT 	**Atrial fibrillation and atrial flutter with rapid ventricular rate:** **MD order** 0.25 mg/kg IVP over 2 minutes, second bolus dose of 0.35 mg/kg IVP may be administered after 10-15 minutes, if the initial dose does not convert the rhythm or slow the rhythm to an acceptable rate. *May maintain an established diltiazem drip during inter-hospital transfer with a written MD Order
KEY POINTS	1. If the patient is exhibiting serious signs or symptoms of cardiac compromise, (i.e. SOB, chest pain, hypotension), cardioversion is the preferred method of conversion. 2. Bradycardia can occur if cardioversion is done immediately after administration of diltiazem.

DIPHENHYDRAMINE HCL / BENADRYL® **03/07/2016**	[EMT-I, PARAMEDIC]
ACTIONS	1. Histamine blocker 2. Anticholinergic 3. Anti-Parkinsonism effect (to treat dystonic reactions)
INDICATIONS	1. Anaphylaxis (after epi) 2. Allergic reactions 3. Acute dystonic reaction
PRECAUTIONS	May cause hypotension when given IV.
SIDE EFFECTS	1. Drowsiness, confusion, dizziness, blurred vision, confusion wheezing and thickening of bronchial secretions as well as tachycardia, palpitations, dry mouth, especially in elderly 2. May have additive effect with alcohol or other depressants.
ADULT	**Allergic reaction:** 50 mg PO or slow IVP or deep IM. **Extrapyramidal / dystonic reaction:** 50 mg slow IVP or deep IM.
PEDIATRIC 	**Allergic reaction:** 1 mg/kg slow IVP or IM, max 50 mg **Extrapyramidal / dystonic reaction: contact MD if possible** 1 mg/kg slow IVP or IM, max 50 mg

DOPAMINE / INTROPIN® **09/10/2013**	[PARAMEDIC]
ACTIONS	Alpha effects cause peripheral vasoconstriction and increased blood pressure. Beta effects cause increased cardiac output.
INDICATIONS	Shock that is not hypovolemic in origin and has not responded to an IV fluid bolus.
CONTRA-INDICATIONS	Hypovolemic Shock.
PRECAUTIONS	1. May induce tachycardia, in this case infusion should be decreased or stopped. 2. High doses may cause extreme peripheral vasoconstriction. 3. Should not be added to sodium bicarbonate or other alkaline solutions since dopamine will be inactivated in alkaline solutions.
SIDE EFFECTS	1. Ectopic beats, nausea, and vomiting. 2. Angina has been reported following treatment.
ADULT 	**Hypotension: MD order** 1600 mcg/ml (400 mg in 250 ml normal saline) IV infusion with microdrip chamber only. Infusion rate should start at 10 mcg/kg/min. Adjust rate to achieve desired effect (usual range 10-20 mcg/kg/min.)
PEDIATRIC 	**Hypotension: MD order** Infusion at 10-20 mcg/kg/min as described above.
KEY POINTS	1. Can precipitate hypertensive crisis in susceptible individuals. 2. Consider hypovolemia, and treat with appropriate fluids before administration of dopamine.

This chart is for double strength Dopamine (1600/mcg/ml)

DOSAGE (mcg/kg/min)

For patients over 100 kg, dosage will be based on "lean body weight". Physicians should make this calculation when the medic calls in for the drug order.

Patient's Body Weight (kg)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
35	1	3	4	5	7	8	9	11	12	13	14	16	17	18	20	21	22	24	25	26
40	2	3	5	6	8	9	11	12	14	15	17	18	20	21	23	24	26	27	29	30
45	2	3	5	7	8	10	12	14	15	17	19	20	22	24	25	27	29	30	32	34
50	2	4	6	8	9	11	13	15	17	19	21	23	24	26	28	30	32	34	36	38
55	2	4	6	8	10	12	14	17	19	21	23	25	27	29	31	33	35	37	39	41
60	2	5	7	9	11	14	16	18	20	23	25	27	29	32	34	36	38	41	43	45
65	2	5	7	10	12	15	17	20	22	24	27	29	32	34	37	39	41	44	46	49
70	3	5	8	11	13	16	18	21	24	26	29	32	34	37	39	42	45	47	50	53
75	3	6	8	11	14	17	20	23	25	28	31	34	37	39	42	45	48	51	53	56
80	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60
85	3	6	10	13	16	19	22	26	29	32	35	38	41	45	48	51	54	57	61	64
90	3	7	10	14	17	20	24	27	30	34	37	41	44	47	51	54	57	61	64	68
95	4	7	11	14	18	21	25	29	32	36	39	43	46	50	53	57	61	64	68	71
100	4	8	11	15	19	23	26	30	34	38	41	45	49	53	56	60	64	68	71	75

Drip Rate (gtts/min. for 60 gtt set)

EPINEPHRINE **09/10/2013**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	1. Increased heart rate, myocardial contractile force, systemic vascular resistance, arterial blood pressure. 2. Potent bronchodilator.
INDICATIONS	1. Cardiac arrest. 2. Systemic allergic reactions/anaphylaxis. 3. Asthma and other forms of reactive airway disease. 4. Treatment of bradycardia with pulse in pediatric resuscitation. 5. Croup
PRECAUTIONS	1. Must be used very cautiously in patients with hypertension, hyperthyroid-ism, ischemic heart disease, or cerebrovascular insufficiency. 2. Should not be added directly to bicarbonate infusion
SIDE EFFECTS	1. Anxiety, tremor, palpitations, tachycardia, headache, and hypertension. 2. At IM injection site, a temporary area of blanching may occur. 3. With nebulized administration, perioral pallor or blanching may be noted and requires no treatment.
ADULT	**Cardiac Arrest**: 1.0 mg (10 ml of 1:10,000 solution) IVP every 3-5 min during arrest (ET 2.0 mg per dose). *EMT-I, P Only* **Allergic Reaction/Anaphylaxis:** 0.3 mg (0.3 ml of 1:1,000) IM *EMT*, *AEMT, EMT-I, Paramedic* **For cardiovascular collapse:** 0.3mg of 1:10,000 (3ml of 1:10,000) slow IVP, ***Paramedic Only*** Epi Auto Injection Device 0.3mg *EMR, EMT* , *AEMT, EMT-I*, *Paramedic* **Asthma/Reactive Airway Disease**: 0.3 mg (0.3 ml of 1:1,000 solution) IM. ***Paramedic Only*** Standing order if < age 40 and no cardiac disease, **otherwise MD order**

EPINEPHRINE **09/10/2013**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
PEDIATRIC 	**Cardiac Arrest:** <u><1 month of age:</u> IVP or IO - all doses 0.1 ml/kg of 1:10,000 (0.01 mg/kg) every 3-5 min. • ET - First dose 0.1 ml/kg of 1:10,000 (0.01 mg/kg). Then go to 1:1,000 and give 0.1 ml/kg (0.1 mg/kg) every 3-5 min until IV established. <u>>1 month of age</u>: IVP or IO - Administer all doses 0.1 ml/kg of 1:10,000 (0.01 mg/kg) every 3-5 min. • ET - all doses 0.1 ml/kg (0.1 mg/kg of 1:1,000) every 3-5 min until IV established. **Allergic Reaction/anaphylaxis:** 0.01mg/kg (0.01 ml/kg of 1:1,000 solution) IM May use Epi-Pen. • May need to give 0.01 mg/kg **<u>1:10,000</u>** slow IVP **(*EMT-P only*)** if patient in cardiovascular collapse. **Contact MD *first* if** possible. • Maximum single pediatric dose 0**.3 mg. Contact MD** first if possible. **Asthma/Reactive Airway Disease:** 0.01 mg/kg (0.01 ml/kg of 1:1,000 solution) SQ/IM. **Contact MD** prior to use if possible. **Bradycardia w/ Pulse:** IVP or IO - 0.1 ml/kg of 1:10,000 (0.01 mg/kg). Repeated every 3-5 min. • ET - 0.1 ml/kg (0.1 mg/kg of 1:1,000) every 3-5 min until IV established. **Croup**: by **MD order** Nebulize 0.5 ml/kg of 1:1,000 to maximum 5 ml (5 mg) • Indicated for child < 6 yrs old. Observe for rebound effect.
KEY POINTS	Epinephrine increases cardiac work and can precipitate angina and/or MI in susceptible individual with ischemic heart disease.

ETOMIDATE / AMIDATE® **09/10/2013** [PARAMEDIC]	
ACTIONS	1. Sedative hypnotic 2. Onset 20-30 seconds, duration 7-10 minutes
INDICATIONS	For induction of unconsciousness in rapid sequence intubations.
CONTRA-INDICATIONS	Known allergy
PRECAUTIONS	Has no analgesic property.
SIDE EFFECTS	1. Can cause myoclonus (muscle jerking/twitching). 2. Can cause pain at injection site. 3. Can cause nausea/vomiting/hiccups.
ADULT	**RSI induction:** 0.3 mg/kg IV/IO (usual dose 20 mg).
PEDIATRIC 	**RSI induction:** 0.3 mg/kg IV/IO.
KEY POINTS	Administer immediately before succinylcholine.

FENTANYL / SUBLIMAZE **04/01/2014** [EMT-I, PARAMEDIC]	
ACTIONS	Narcotic analgesic
INDICATIONS	1. Pain Management 2. RSI pretreatment for head injury/increased ICP 3. Post RSI sedation 4. Treatment of shivering –**See Induced Hypothermia protocol**.
CONTRA-INDICATIONS	Known allergy
PRECAUTIONS	1. Respiratory depression, peak depression occurs 5-15 min. after IV dose, continuous pulse oximetry required. 2. Respiratory depressive effects enhanced by simultaneous benzodiazepine administration (e.g., Versed). 3. In large doses and with rapid administration, may cause muscle rigidity, particularly respiratory muscles (rare); in emergency, can be overcome by neuromuscular blockade (e.g., Succinylcholine) ***not by Narcan.***
SIDE EFFECTS	1. May cause nausea/vomiting. 2. Will cause pupillary constriction.

FENTANYL / SUBLIMAZE **04/01/2014** [EMT-I, PARAMEDIC]	
ADULT	**Pain management:** (*EMT-I, Paramedic*) 50-100 mcg slow IV/IO/IM initial dose. May repeat 50 mcg every 5 minutes up to the maximum dose of 300 mcg. • Start with 25-50 mcg in elderly /debilitated. **Intra-nasal:** Age ≥ 8 y.o 2mcg/kg. Max of 100mcg. Repeat only by **MD Order.** **Pretreatment for RSI if suspected head injury/suspected increased ICP:** (*Paramedic Only*) 3 mcg/kg IV/IO. • Administer over 30-60 seconds immediately before RSI **Sedation post RSI:** (*Paramedic Only*) 3 mcg/kg IV/IO **Induced Hypothermia Post Resuscitation:** (*Paramedic Only*) 3 mcg/kg IV/IO • May repeat in 20 minutes if needed to treat shivering. • If unsuccessful consider rocuronium 1 mg/kg **MD order**
PEDIATRIC	**Pain management:** 1 mcg/kg, slow IV/IO/IM initial dose. May repeat every 5 minutes up to the maximum of 3 doses then **contact MD.** (*EMT-I, Paramedic*) **Intra-nasal**: Age ≤8 yrs: 2 mcg/kg. Max of 100mcg. Repeat only by **MD Order.** **Sedation / pretreatment for RSI in suspected head injury or suspected increased ICP:** (*Paramedic Only*) 3 mcg/kg IV/IO

GLUCAGON **09/10/2013**	[A-EMT, EMT-I, PARAMEDIC]
ACTIONS	1. Hormone which causes glucose mobilization in the body 2. Positive inotropic and chronotropic effect on heart (sometimes used in treatment of beta blocker and calcium channel blocker overdose).
INDICATIONS	1. Symptomatic hypoglycemia when dextrose solution can not be immediately administered. 2. Symptomatic beta blocker overdose 3. Symptomatic calcium channel blocker overdose unresponsive to IV calcium.
SIDE EFFECTS	Nausea and vomiting may occur.
ADULT 	**Hypoglycemic Emergency:** 1 mg IM **Beta blocker or calcium channel blocker OD: by MD order** *(Paramedic only)* 2-10 mg IV
PEDIATRIC  	**Hypoglycemic Emergency:** 0.1 mg/kg to a maximum of 1 mg IM or SQ **MD order** to repeat. • Maximum 1.0 mg every 30 minutes. **Beta Blocker or calcium channel blocker OD: by MD order** *(Paramedic only)* 0.1mg/kg to a maximum of 1 mg IM or SQ. **MD order** to repeat.
KEY POINTS	1. Neonates/pediatric patients/alcoholics or malnourished patients may not be able to mobilize any glucose in response to Glucagon. 2. Return to consciousness should be within 20 minutes of IM dose if patient is hypoglycemic.

GLUCOSE, ORAL **12/12/2013**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Restores blood sugar level to normal in some states of hypoglycemia.
INDICATIONS	Suspected hypoglycemia patient who can swallow.
CONTRA-INDICATIONS	Diminished level of consciousness resulting in the patient's inability to protect their airway.
ADULT	**Hypoglycemia:** Squeeze entire contents of tube (15GM glucose) into mouth and have the patient swallow. May repeat dose if no effect within 15 minutes.

Heparin (Unfractionated) **04/04/2016** [PARAMEDIC]	
CLASS **ACTIONS**	● Anticoagulant ● Heparin works to prevent further clotting, but will not actively dissolve clots that have already formed.
INDICATIONS	STEMI
CONTRA-INDICATIONS	● See Questionnaire Checklist (Must be completed in its entirety prior to MD call).
PRECAUTIONS	If spontaneous hemorrhage develops, evidence by hematuria, hematemesis, epistaxis, etc., immediately discontinue administration and contact Medical Control. Consider *Protamine Sulfate* (Refer to Protocol).
SIDE EFFECTS	● Paradoxical excitement or agitation may occur ● Respiratory depression ● Hypotension
ADULT Only	**STEMI:** 60 units/kg bolus (Max 4000 units), followed by infusion 12 units/kg/hr (Max 1000 units/hr).
MD ORDER	● Call in after the Questionnaire is complete.

HEPARIN QUESTIONNAIRE CHECKLIST

(COMPLETE THIS PRIOR TO MD CALL IN)

ABSOLUTE CONTRAINDICATIONS (If ***YES*** to any ***DO NOT GIVE***)

- Internal bleeding or recent major trauma, GU/GI bleed, surgery (includes laser eye surgery within 6 weeks)
- History of Stroke (Ischemic or hemorrhagic), Dementia or CNS damage within 1 year
- Head trauma or brain surgery within last 6 months
- Brain tumor, arteriovenous malformation (abnormal connection between arteries and veins), or aneurysm
- Significant closed-head or facial trauma within the preceding 3 months
- Active bleeding or known bleeding disorder
- Confirmed or suspected aortic dissection
- Pregnancy or within 1 week post-partum

RELATIVE CONTRAINDICATIONS (If ***YES*** to any discuss with MD)

- CPR greater than 10 minutes
- Oral anticoagulation therapy
- Serious systemic disease (advanced/terminal cancer, severe liver or kidney disease, etc.)
- Puncture of non-compressible blood vessel within 2 weeks (Abdominal, thoracic, pelvic, etc.)
- TIA within last 6 months
- Uncontrolled hypertension, systolic BP > 180mmHg or diastolic > 110mmHg
- Intracardiac thrombi (Static blood in the heart develops into clots)

Paramedic: _____

Ordering Physician: _____

(If HEPARIN is given to the patient this form needs to be given to RN or Physician at transfer of care.)

Hydralazine **09/01/2014**	[PARAMEDIC]
CLASS/ACTIONS	Anti-Hypertensive. Reduces blood pressure via relaxation of arterial smooth muscle, resulting in vasodilation, decreasing peripheral resistance.
INDICATIONS	Hypertensive Emergencies
CONTRA-INDICATIONS	Known allergy or hypersensitivity, Cardiogenic shock, Mitral valvular rheumatic heart disease, Acute Coronary Syndrome.
SIDE EFFECTS	Dizziness, headache, transient paresthesias (eg. scalp tingling), numbness, postural hypotension, angina, palpitations, tachycardia, syncope, pulmonary edema, dysrhythmias (tachycardias) following IV administration, dyspnea, nausea, vomiting.
ADULT 	**Blood Pressure management for Ischemic Stroke patient receiving or received IV tPA for transfer AND Bradycardic:** • 10-20mg Slow IV push (over 2 minutes). May repeat as directed or every 2 hours to reduce BP within goal range (maximum dose 30 mg). Goal SBP <180 mmHg and DBP <105 mmHg. **Hypertensive Emergencies, Pregnancy Induced Hypertension.** • **MD order.** 10 mg Slow IVP. May repeat 10mg every 30 minutes as needed up to cumulative maximum dose of 30 mg.
PEDIATRIC 	**Hypertensive Emergency** (Rarely required) • **MD Order.** Typical Pediatric dose is 0.5mg//kg up to 0.9mg/kg, with a max single dose of 10mg.

KETAMINE **10/8/2015**	[PARAMEDIC]
ACTIONS	1. Dissociative anesthetic with minimal depression on respiration or blood pressure.
INDICATIONS	1. First line RSI induction agent for: Hypotension, Sever Respiratory Disease process, and Pediatrics. 2. Chemical Restraint.
CONTRA-INDICATIONS	1. Hypersensitivity to Ketamine. 2. Suspected elevated ICP (Cushing's triad, focal findings such as a blown pupil, etc.) 3. Acute globe injury 4. Known pregnancy
SIDE EFFECTS & PRECAUTIONS	1. May cause laryngospasm, which may often be controlled with BVM ventilation and time. May require advanced airway management. 2. Increased blood pressure due to catecholamine release. 3. My cause hyper-salivation, which can usually be controlled with suction. 4. Emerbence reaction, nightmares and frightening dreams, can occur in 5-30% of patients as the medication wears off. 5. Duration of action is 10-20 minutes. Continued sedation with midazolam must be provided before the induction agent has worn off.
ADULT and PEDIATRIC 	**RSI induction and Chemical Restraint:** • 2 mg/kg IV or IO – Max 300mg. Onset 30 sec, duration 5-10 minutes. • 4 mg/kg IM – Max 500mg. Onset 3-4 min, duration 12-25 minutes.
KEY POINTS	1. Administer immediately before paralytic agent for RSI. 2. Must receive midazolam post intubation if Ketamine administered.

Labetolol **09/01/2014**	[PARAMEDIC]
CLASS/ACTIONS	Anti-Hypertensive. (Beta-1, Beta-2, and Alpha-1 Blocker). Adrenergic-receptor blocking agent that combines selective alpha activity and non-selective beta-adrenergic blocking actions. Both activities contribute to reduce blood pressure. Alpha blockade results in vasodilation, decreasing peripheral resistance. Beta blocking effects on sinus node, AV node, and ventricular muscle lead to slower heart rates, delay in AV conduction, and depression of cardiac contractility.
INDICATIONS	Hypertensive Emergencies
CONTRA-INDICATIONS	Known allergy, Sinus Bradycardia, 2nd/3rd degree AV HB, Cardiogenic shock, Sick sinus syndrome, Asthma.
SIDE EFFECTS	Dizziness, headache, transient parasthesias (eg scalp tingling), numbness, postural hypotension, angina, palpitations, bradycardia, syncope, pulmonary edema, dysrhythmias (bradycardias) following IV administration, dyspnea, bronchospasm
ADULT 	**Blood Pressure management for Ischemic Stroke patient receiving or received IV tPA for transfer:** • 10 mg IV push (over 2 minutes). May repeat as directed every 10-15 minutes to reduce BP within goal range. (maximum dose 300 mg). Hold for HR <60. Goal SBP <180 mmHg and DBP <105 mmHg. **Hypertensive Emergencies, Pregnancy Induced Hypertension.** • **MD order.** 20mg Slow IVP. May repeat every 10 minutes as needed up to 300mg.
PEDIATRIC 	**Hypertensive Emergency** (Rarely required) • **MD Order.** Typical Pediatric dose is 0.3mg//kg up to 1mg/kg, with a max single dose of 20mg.

LIDOCAINE / XYLOCAINE® **09/10/2013**	[EMT-I, PARAMEDIC]
INDICATIONS	1. Premedication during RSI for patients at risk of increased intracranial pressure. 2. Anesthetic for EZ IO infusion.
SIDE EFFECTS	Lidocaine toxicity symptoms include: drowsiness, disorientation, decreased hearing, paresthesia, muscle twitching, and agitation.
ADULT	**RSI, Suspected Increased Intracranial Pressure:** 1.5 mg/kg IVP **EZ IO Infusion** 20-40 mg slowly prior to saline flush.
PEDIATRIC 	**RSI, Suspected Increased Intracranial Pressure:** 1.5 mg/kg IVP **EZ IO Infusion** 0.5 mg/kg slowly prior to saline flush.
KEY POINTS	1. For RSI lidocaine should be given approx 3 minutes before induction. 2. Can cause focal or grand mal seizures, increased heart block, decreased myocardial contractility, and rarely cardiovascular collapse.

MAGNESIUM SULFATE 10% **06/1/2015** [PARAMEDIC]	
ACTIONS	1. Affects impulse formation and conduction time in myocardium and thereby reduces incidence of dysrhythmias associated with hypomagnesaemia or prolonged QT interval. 2. Decreases acetylcholine in motor end terminals which produces anticonvulsant properties.
INDICATIONS	1. First line antiarrhythmic for torsades de pointes pattern in V-fib/pulseless VT. 2. Treatment and prevention of seizures due to pregnancy (Eclampsia). 3. Sever bronchospasm, refractory to beta agonist.
PRECAUTIONS	1. Since magnesium sulfate affects neuromuscular transmission in body it must be given carefully and monitored closely in the patient with a pulse. 2. Early warning that magnesium toxicity is developing is decrease in reflexes measured at patella, antecubital area or heel.
SIDE EFFECTS	1. In non-arrest patient, magnesium toxicity may cause hypotension, bradycardia and/or respiratory arrest. 2. Increased sweating, flushing and sensation of body warmth.
ADULT 	**Pulseless Arrest V-fib / V-Tach:** 1 – 2 Grams IVP over 1 minute. **Preeclampsia or Eclampsia: MD order** 2 – 4 Grams Slow IVP over 1 minute per gram. **Maintenance Drip: MD order** 0.5 - 4.0 Grams per hour.
PEDIATRIC 	**Pulseless Arrest V-fib/V-Tach:** 25mg/kg IV/IO rapid infusion, max dose 2 grams.

MAGNESIUM SULFATE 10% **06/1/2015** [PARAMEDIC]	
KEY POINTS	1. Pre-hospital use for preeclampsia or eclampsia is usually on interhospital transfers. 2. Patient status must be monitored closely. Decreased reflexes, hypotension or respiratory rate <12/minute are reasons to stop drug. 3. Antidote for Magnesium toxicity is Calcium Gluconate or Calcium Chloride. 4. Patients who are at risk to develop torsades include: a. Toxic level of certain antidysrhythmics including procainamide (Pronestyl) and quinidine. b. Electrolyte disorders including hypokalemia, hypomagnesemia, hypocalcemia. c. Hypothyroidism. d. Coronary artery disease including AMI, left ventricular failure. e. Pacemaker malfunction, tricyclic antidepressants, and some phenothiazines.

MIDAZOLAM /VERSED® **12/01/2015**	[PARAMEDIC]
ACTIONS	CNS depressant with amnesic effect.
INDICATIONS	1. Active seizure activity, status epilepticus. 2. For amnestic effect during uncomfortable external pacing. 3. Sedation of an awake patient prior to cardioversion. 4. Sedation after Rapid Sequence Intubation (RSI). 5. Chemical restraint of combative patient. 6. Acute alcohol withdrawal
PRECAUTIONS	1. Can cause marked respiratory depression. 2. Use with caution in patients who have ingested alcohol or other depressant medications. 3. Use with caution in patients that are hypotensive.
SIDE EFFECTS	1. Respiratory depression. 2. Fluctuations in vital signs, nausea, vomiting, ventricular ectopy, arrhythmias, and bronchospasm. 3. Excitement or stimulation may occur and may be manifested as agitation, involuntary movements, hyperactivity or combativeness.
ADULT	**Generalized Seizures/Status Seizures:** 2-4 mg IVP/IO/IM/IN • Repeat 2.0 mg. IV in 1-2 min as needed x 1. • Additional doses if seizure activity continues. **MD order** **Sedation for Cardioversion or Pacing:** 2-4 mg IVP over 1-2 minutes. • Repeat 2.0 mg. IV in 1-2 min as needed x 1. • Additional doses by **MD order** **Post RSI Sedation:** 0.1mg/kg IV/IO to a Max dose of 6 mg. **Combative Patient:** *Threat to self or others (after ketamine):* 2.5 - 5 mg IV/IO or 5 - 10 mg IM Repeat 1-2 mg IV/IO every 5 min as needed. *Agitated with no perceived threat:* 2.5 mg IV/IO or 5 mg IM Repeat once after 10 minutes as needed.

MIDAZOLAM /VERSED® **12/01/2015**	[PARAMEDIC]
	Severe Pain Management (WLAD only): 0.5-2.0 mg slow IVP Additional doses. **MD order** **Acute Alcohol Withdrawal:** 1-2mg IVP/IM depending on severity if symptoms • Additional doses by **MD order**
PEDIATRIC	**Generalized Seizures/Status Seizures:** 0.1 mg/kg up to 2 mg IV / IM / IN / IO • Repeat in 1 min for continued seizure activity. • Additional doses if seizure activity continues. **MD order** **Post RSI Sedation:** 0.1 mg/kg up to 2 mg IV/IO
KEY POINTS	1. Dosage should be reduced in elderly or debilitated patients. 2. Most likely to produce respiratory depression in elderly or young patients and in patients who have taken other depressant drugs, especially alcohol and barbiturates.

MORPHINE **12/03/2013**	[EMT-I, PARAMEDIC]
ACTIONS	Narcotic analgesic
INDICATIONS	Management of acute pain
CONTRA-INDICATIONS	1. Known allergy 2. Hypotension
SIDE EFFECTS	1. May cause vomiting; administer slowly 2. Respiratory depression 3. Vasodilation/hypotension 4. Pupil constriction
SIDE EFFECTS	1. May cause nausea/vomiting. 2. Will cause pupillary constriction.
ADULT	**Acute Pain management:** (*EMT-I, Paramedic*) 0.1 mg/kg IV/IM/IO starting dose typically 5 mg May repeat every 5-10 minutes up to 20 mg IV or IM without MD consultation
PEDIATRIC 	**Acute Pain management:** 0.1-0.2 mg/kg IV/IM/IO
KEY POINTS	1. Side effects are more pronounced in elderly patients. 2. Give slowly and have BVM and naloxone available. 3. Preferentially, use fentanyl for patients with abdominal pain.

NALOXONE HCL / NARCAN® **03/03/2015**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	Opiate antagonist
INDICATIONS	1. Reversal of opiate effect, particularly respiratory depression. 2. Used diagnostically in **Unconscious/Unknown Protocol**
PRECAUTIONS	1. In patients physically dependent on opiates, frank and occasionally violent withdrawal symptoms may be precipitated, titrate to reversal of respiratory depression. 2. Be prepared to restrain the patient.
SIDE EFFECTS	May result in nausea, vomiting, sweating, tachycardia, increased BP, tremulousness or dysrhythmias and rarely flash pulmonary edema.
ADULT	**Unconscious/Unresponsive:** 1.0 mg IV, IM, IN, SQ • If no response is observed, may be repeated in 5 minute intervals up to 2mg max. Altered LOC - with suspected opiate OD: 0.5 mg IV, IM, IN, SQ • If no response is observed, may be repeated in 5 minute intervals up to 2mg max.
PEDIATRIC	**Opiate OD, Unconscious/Unknown:** 0.1 mg/kg IV, IM, IN, IO, ET bolus every 2 minutes PRN (max 2.0 mg)
KEY POINTS	1. Overall time difference between IV and other routes is negligible. 2. The duration of some opiates (methadone, MS Contin®, Oxycontin®, and fentanyl patches) is longer than naloxone's half-life. Repeated doses of naloxone may be required. 3. With an advanced airway in place and assisted ventilation, opiate overdose patients may be safely managed without naloxone.

NITROGLYCERIN **02/03/2015**	[EMT, A-EMT, EMT-I, PARAMEDIC]
ACTIONS	1. Dilation of coronary arteries. 2. Reduced venous tone and decreased peripheral resistance. 3. Generalized smooth muscle relaxation.
INDICATIONS	1. Angina. 2. Chest, arm, or neck pain thought possibly to be related to coronary ischemia 3. Pulmonary edema. 4. Food impaction located in the esophagus.
CONTRA-INDICATIONS	Systolic BP < 90 mmHg.
PRECAUTIONS	1. Generalized vasodilatation may cause reflex tachycardia. 2. Erectile dysfunction drugs within 24 hours. **MD order** 3. Use with caution with inferior MI, may cause severe hypotension.
SIDE EFFECTS	1. Headache, flushing, dizziness, and burning under the tongue. 2. Hypotension, particularly orthostatic.
ADULT	**Angina Pectoris, MI, Pulmonary Edema: Tablet or Spray** 0.4 mg SL spray or tablet; may repeat after 5 min x 2 (total of 3) ***AEMT, EMT-I, Paramedic*** • >3 doses: **MD order** • Nitro drip start at 20mcg/min and titrate to effect or dose per transfer orders. Decrease rate if hypotension develops. ***EMT*** Assist the patient to self-administer their own nitroglycerin up to 3 doses **Esophageal Food Impaction:** 0.4 mg SL spray or tablet, may repeat by **MD order**

ONDANSETRON / ZOFRAN® **09/09/2014**	[EMT-I, PARAMEDIC]
ACTIONS	Antiemetic
INDICATIONS	Prevention and control of nausea and vomiting.
CONTRA-INDICATIONS	1. Known allergy 2. Patient is <one month of age
SIDE EFFECTS	1. Possible QT prolongation. 2. Headache, localized redness at injection site, dizziness/lightheadedness, drowsiness, and hypoxia can occur rarely.
ADULT	**Acute Nausea:** 4 mg PO/IM or slow IVP (over 1-2 min.) May repeat once in 5 min prn. Max total dose 8mg.
PEDIATRIC 	**Acute Nausea:** For children age 4-11, 4 mg tab may be given PO. For IM, administer 0.1 mg/kg up to 4 mg. For IV, administer 0.1 mg/kg up to 4mg slow IVP (over 1-2 min.)

OXYTOCIN / PITOCIN® **09/10/2013** [PARAMEDIC]	
ACTIONS	Increases electrical and contractile activity in uterine smooth muscle.
INDICATIONS	Control of postpartum hemorrhage.
PRECAUTIONS	1. Prior to its administration, the presence of a second fetus must be considered. Administration with fetus in uterus can cause rupture of uterus and/or death of fetus. 2. Administration should follow delivery of placenta whenever possible.
SIDE EFFECTS	1. May cause transient but marked vasodilation and reflex tachycardia. 2. Cardiac arrhythmias, hypertension, and uterine tetany may be precipitated or aggravated by oxytocin.
ADULT	**Postpartum Hemorrhage: MD order** 10-20 units added to 1000 ml NS, IV Infusion • Use standard tubing and titrate to severity of hemorrhage and uterine response. • **Rarely** 10 units (1 ml) IM only if unable to start IV.

PROMETHAZINE THEOCLATE/ PHENERGAN® **09/10/2013** [PARAMEDIC]	
ACTIONS	Antiemetic
INDICATIONS	Nausea/Vomiting
SIDE EFFECTS	Sedation, confusion, sleepiness, dizziness, disorientation, drowsiness, blurred vision, N&V, dry mouth
ADULT 	**2nd Line Antiemetic:** • 25 mg IM • IV, Mix 12.5 mg into 100 ml NS and run wide open. • Repeat dose by **MD order**
PEDIATRIC 	Absolutely contraindicated in children < 2 y.o Children older than 2 y.o by **MD order**
KEY POINTS	When given IV, may cause severe irritation to the vein.

PROPARACAINE HCL / ALCAINE® 09/10/2013 [PARAMEDIC]	
ACTIONS	Topical ophthalmic anesthetic
INDICATIONS	1. To provide anesthesia prior to placement of the Morgan Therapeutic Lens®. 2. Acute eye pain due to burn, abrasion or foreign body.
CONTRA-INDICATIONS	1. Ruptured globe. 2. Allergy to proparacaine.
PRECAUTIONS	Warn patient not to rub or touch the eye while it is anesthetized, since this may cause corneal abrasion and greater discomfort when the anesthesia wears off.
SIDE EFFECTS	Transient stinging, burning, and conjunctive redness may occur.
ADULT	**Anesthesia:** 1 – 2 drops in the effected eye(s). May repeat if needed.
PEDIATRIC 	**Anesthesia:** 1 – 2 drops in the effected eye(s). May repeat if needed.
KEY POINTS	Bottle should be considered for single patient use only.

Protamine Sulfate **04/28/2016**	[PARAMEDIC]
CLASS **ACTIONS**	• Heparin Antagonist • When administered alone, protamine has an anticoagulant effect. However, when it is given in the presence of Heparin, a stable salt is formed which results in the loss of anticoagulant activity of both drugs.
INDICATIONS	• Heparin Overdose
CONTRA-INDICATIONS	• Known intolerance • Hypotension (BP < 100 systolic) • DO NOT Infuse in same line of Antibiotics (*Cephalosporins, Penicillins)*
PRECAUTIONS	• Too-rapid administration of Protamine Sulfate can cause severe hypotensive and anaphylactic-like reactions.
SIDE EFFECTS	• Anaphylaxis • Hypotension
ADULT **MD ORDER**	• 1 mg per 100 units Heparin given < 30 min. ***OR*** • 0.5 mg per 100 units Heparin given > 30 min. up to 4 hrs. • Max dose 50mg • Mix in 100 ml NaCl & infuse over 10 minutes.
NOTES	• Heparin has a short half-life, around 30 minutes. A smaller Protamine dose of 0.5 mg/100 units is needed after initial bolus is > 30 minutes.

ROCURONIUM / ZEMURON® **1/6/2014** [PARAMEDIC]	
ACTIONS	Non-depolarizing paralytic
INDICATIONS	1. Maintenance of paralysis of an intubated patient. 2. First line paralytic drug to be administered in dialysis patients, patient with a wide QRS (> 0.12 seconds), or any other time succinylcholine is contraindicated. 3. Shivering associated with induced hypothermia.
CONTRA-INDICATIONS	Known allergy to rocuronium. Children < 1 year.
ADULT 	**Paralytic for dialysis pt. and/or pt. w/ wide QRS:** 1 mg/kg IV or IO • Maintenance dose: 0.1-0.2 mg/kg IV/IO bolus as paralysis wears off, if sedation with midazolam and fentanyl is not adequate. **Maintain Paralysis / Induced Hypothermia**: **MD order** see dosing as above
PEDIATRIC 	**Paralytic: MD order** 1 mg/kg IV or IO for paralysis. • Maintenance dose: 0.1-0.2 mg/kg IV or IO bolus every 30 minutes if sedation with midazolam and fentanyl is not adequate.
KEY POINTS	1. Has no effect on consciousness or pain threshold. 2. Administration of succinylcholine may prolong effect. 3. Pediatric patients may require larger doses of rocuronium, when calculated on a weight basis.

SODIUM BICARBONATE **12/11/2013** [PARAMEDIC]	
ACTIONS	1. Acid buffer 2. Decreases circulating potassium level in the blood
INDICATIONS	1. Cardiac arrest or dysrhythmias due to hyperkalemia. a) Dialysis patient b) Suspected metabolic acidosis (i.e. DKA, sepsis) c) Suspected acute renal failure d) Prolonged cardio-respiratory arrest 2. Tricyclic antidepressant overdose (e.g. tachycardia/QRS widening). 3. Suspected acidosis associated with crush injury - prolonged entrapment of torso, pelvis, or lower extremities >1 hour.
PRECAUTIONS	Should not be given in mixture with epinephrine, norepinephrine, dopamine, or calcium.
ADULT	**Cardiac arrest:** 1 mEq/kg or 50 mEq (50 ml) IVP • VF/Pulseless VT give after 1 shock & first vasopressor • Asystole/PEA give after first dose of vasopressor **Dysrhythmias due to hyperkalemia or ECG changes in tricyclic antidepressant OD (including sinus tachycardia with widening QRS):** 1 mEq/kg or 50 mEq (50 ml) IVP **Crush Injury:** 50 mEq IVP • Administer immediately prior to release of entrapped body part. • Give additional 50 mEq for each hour of entrapment to a maximum of 150 mEq (adult)

SODIUM BICARBONATE **12/11/2013** [PARAMEDIC]	
PEDIATRIC 	When administered to pediatric patients <1 year of age, should be diluted 1:1 with NS. **Cardiac arrest:** 1 mEq/kg IVP • VF/Pulseless VT give after 1 shock & first vasopressor • Asystole/PEA give after first dose of vasopressor
	**Dysrhythmias due to hyperkalemia or ECG changes in tricyclic antidepressant OD (including sinus tachycardia with widening QRS)**: **MD order** 1 mEq/kg IVP
	**Crush Injury: MD order** 1 mEq/kg IVP • Administer immediately prior to release of entrapped body part. Give additional 1mEq/kg max of 50 mEq for each hour of entrapment to a maximum of 150 mEq (adult)

SOLU-MEDROL /METHYLPREDNISOLONE **02/03/2015** [PARAMEDIC]	
ACTIONS	Steroid used as an anti-inflammatory drug.
INDICATIONS	1. Severe respiratory distress due to suspected asthma/COPD 2. Allergic reaction/anaphylaxis 3. Acute Adrenal Insufficiency
CONTRA-INDICATIONS	Allergy to steroids
PRECAUTIONS	1. Do not delay other interventions that will have more immediate effects. 2. Do not use in mild cases that respond to nebulizer treatments.
ADULT 	**Allergic Reaction / Respiratory Distress:** 125 mg IVP administer over at least 1 minute or IM. **Adrenal Insufficiency: MD Order** 125 mg IVP administer over at least 1 minute or IM.
PEDIATRIC 	**Allergic Reaction / Respiratory Distress: MD order** ~~1~~ 2 mg/kg IVP administer over at least 1 minute or IM. Max dose is 125mg. **Adrenal Insufficiency: MD Order** ~~1~~ 2 mg/kg IVP administer over at least 1 minute or IM. Max dose is 125mg.

SUCCINYLCHOLINE / ANECTINE®, QUELICIN® **12/13/2013** [PARAMEDIC]	
ACTIONS	Short acting depolarizing paralytic
INDICATIONS	Temporary paralysis for endotracheal intubation
CONTRA-INDICATIONS	1. Known allergy to succinylcholine. 2. Documented hyperkalemia from physician's office and EKG changes (peaked T-waves and QRS widening.) 3. Suspected hyperkalemia: • Signs of hyperkalemia: Peaked T waves, lowered P wave amplitude, prolonged P-R interval, second degree AV blocks, and widened QRS complexes. • Causes of hyperkalemia: • Renal failure/insufficiency (acute or chronic) • Addison's Disease (Adrenal Insufficiency) • Sepsis/DKA (acidosis) • Severe Dehydration • Transplant rejection • Rhabdomyolysis • Muscular dystrophy patients • Paraplegia/quadriplegia patients • Crush injuries • Serious burns (onset after several hours) • Angiotensin-converting enzyme (ACE) inhibitors • Excessive use of potassium supplements 4. Known personal or family history of malignant hyperthermia or pseudocholinesterase deficiency.
PRECAUTIONS	1. May cause bradycardia especially with repeat doses and in patients < 5 years. This will usually respond to oxygenation and atropine. 2. Burn > 72 hours.
SIDE EFFECTS	1. Tachycardia, hypotension, hypertension and cardiac arrest. 2. Transient hyperkalemia 3. Increases intracranial pressure, pre-medication with lidocaine or fentanyl will blunt this effect.
ADULT	**RSI:** 2 mg/kg IVP/IO, Max Dose 200mg. **Post Intubation Paralysis:** • Initial dose may be repeated once

SUCCINYLCHOLINE / ANECTINE®, QUELICIN® **12/13/2013** [PARAMEDIC]	
PEDIATRIC	**RSI:** 2 mg/kg IVP/IO • Consult **MD** prior to use on pediatric patient if possible. **Post Intubation Paralysis:** • Initial dose may be repeated once.
KEY POINTS	1. Pre-oxygenation prior to use is essential. 2. Perform cricoid pressure once paralytic is administered and until patient is intubated and cuff inflated. 3. Has no effect on consciousness, pain threshold or cerebration.

AUTOMATIC TRANSPORT VENTILATORS
09/10/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]

The ATV provides an automatic specific tidal volume, respiratory rate, and minute ventilation to a patient.

INDICATIONS	1. Use of the Automatic Transport Ventilator (ATV) is appropriate for patients weighing over 20 kg requiring short-term ventilatory support while being monitored by an EMT trained in its use. 2. The Automatic Transport Ventilator (ATV) may be used as a method of ventilating the patient once airway control has been established by other means (intubation, BVM, or King Airway®).
CONTRA-INDICATIONS	1. Patient weight of <20Kg. 2. Pneumothorax/Tension pneumothorax.
PROCEDURE	1. Determine the need for ATV and assure a clear airway using approved methods. 2. Insure all tubing is free from kinks, and all components are properly attached. 3. Set tidal volume (8-10 ml/kg). Begin with the Tidal Volume (TV) setting at the lower limit appropriate to the patient. 4. Set the inspiratory time control knob to the desired adult or child position. Rotate the control knob to either position until it is against the end stop. 5. Set the Breaths Per Minute (BPM) control to the desired rate of 12 for an adult and 20 for a child. 6. Occlude the outlet port of the patient valve assembly (or non-rebreathing valve). The audible pressure limit alarm should sound as the ventilator cycles through the delivery phase indicating proper operation. 7. Connect patient valve assembly to the resuscitation mask, endotracheal tube, tracheostomy tube or King Airway®. *NOTE: follow approved methods for opening and maintaining a patent airway. 8. When assisting the unintubated patient, the rescuer may use both hands on the face mask to maintain a seal and proper airway position. Cricoid pressure may be applied with one hand as the other maintains a mask seal. 9. Check the following parameters immediately after connecting the device to the patient: • BPM - verify the number of breaths delivered to the patient for one full minute as indicated on the BPM knob. Adjust accordingly to achieve the desired rate.

AUTOMATIC TRANSPORT VENTILATORS **09/10/2013** [EMT, A-EMT, EMT-I, PARAMEDIC]	
	Verify after each adjustment. • Tidal Volume (TV) - Observe patient's chest rise and fall. Expansion should appear normal and equal on both sides. Observation of adequate chest rise and fall is the desired goal. Do not rely solely on ATV setting. Verify TV occasionally. • Inspiratory Time (IT) - Verify the IT setting is set to the appropriate position and against the end stop. 10. If ventilating by mask, check oral cavity frequently for emesis. If vomiting occurs, clear airway by approved manner.
PRECAUTIONS	1. Automatic Transport Ventilators (ATVs) augment staffing by allowing personnel to perform tasks other than ventilation. The patient must always be attended while an auto-vent is in use. 2. If the pressure limit alarm sounds during the inspiratory phase and adequate chest movement does not occur, an increase in airway resistance, a blocked airway and/or stiff lung is probable. Discontinue the use of the device and attempt to ventilate via other means. 3. Monitor the compressed gas cylinder frequently. The cylinder should be changed at or near 200 psi. The ATV may not operate properly at cylinder pressures of less than 200 psi. 4. Biomedical service checks and maintenance of the ATV should be performed on a schedule to be developed by each agency using the ATV.

BLOOD SPECIMEN COLLECTION **01/15/2014** [A-EMT,EMT-I, PARAMEDIC]	
INDICATIONS	Blood collection is indicated for: • Source patient testing in the event of an exposure in a patient that is not transported. • The discretion of the medic, any patient who requires the initiation of an I.V in the field may have blood specimens collected Blood collection is at the discretion of the medic, and requires the initiation of an I.V in the field. The collection of blood should not delay care to the patient.
PROCEDURE	1. Collect specimens in the following order: a. Blue Top b. Green top c. Lavender 2. All specimens must be placed in a properly labeled collection kit. 3. Label to include: a. Patient Name: Last, first, middle initial (Smith, Sally A.) b. Date and Time Collected 04/24/2012, 1500 hrs c. Control number: Pre-labeled P0001 Deliver Collection kit to nurse assigned to that patient. For exposures, when the patient is not transported, agencies should ensure that the blood is delivered to a lab for exposure testing. If taking the blood to PHH or RBH, the charge nurse should be alerted. All agencies should follow their established procedures.
SPECIAL INFORMATION	1. It is understood that there will be occasions in which the patient's critical condition will necessitate the omission of obtaining a blood specimen in the field. In the event that this was an exposure the medic should contact the charge nurse to ensure that source patient testing is completed. 2. The minimum size IV catheter which can be used to collect a blood specimen is a 20 gauge.

CAPNOGRAPHY/$ETCO_2$ **12/03/2013**	[EMT, A-EMT ,EMT-I, PARAMEDIC]
INDICATIONS	Capnography/End Tidal Carbon Dioxide ($ETCO_{2)}$ is used to measure effectiveness of ventilation by measuring the amount of carbon dioxide in exhaled air. It may be helpful for the following: 1. Monitoring severity of pulmonary disease and evaluating response to therapy 2. Determining tracheal vs. esophageal intubation. 3. Predicting outcomes in cardiac arrest patients. A sudden rise in $ETCO_2$ can indicate an increase in metabolic activity/ROSC. Conversely, after working a cardiac arrest using ALS guidelines ≥ 20 minutes and having an $ETCO_2$ of ≤ 10 the likelihood of ROSC is poor and is used as a benchmark for stopping resuscitation efforts. 4. Guiding ventilation in patients with acidosis or increased intracranial pressure.
PROCEDURE	1. Apply $ETCO_2$ device. 2. If patient is being mechanically ventilated, attempt to maintain $ETCO_2$ output between 35-45 mm Hg. If patient is suspected to be acidotic and/or compensating with hyperventilation prior to RSI target $ETCO_2$ to 15-20 range. This may require ventilatory rate in the range of 20-30 /min. This does not apply to patients suspected of head injury. In patients suspected of increased ICP (head injury/stroke) ventilate at rate to maintain $ETCO_2$ value of 35-40. 3. In patients with signs of herniation, ventilate at a rate to maintain an $ETCO_2$ value of 30-35. 4. Document $ETCO_2$ values
KEY POINTS	1. A sudden drop in $ETCO_2$ with wave form changes may indicate any of the following events: a. A change in the minute volume (increased respiratory rate & increase in tidal volume.) b. Decrease in metabolic rate c. Decrease in cardiac output. d. Possible pulmonary embolus. e. ET tube misplaced 2. DO NOT rely on $ETCO_2$ monitoring solely to determine the efficacy of intubation.

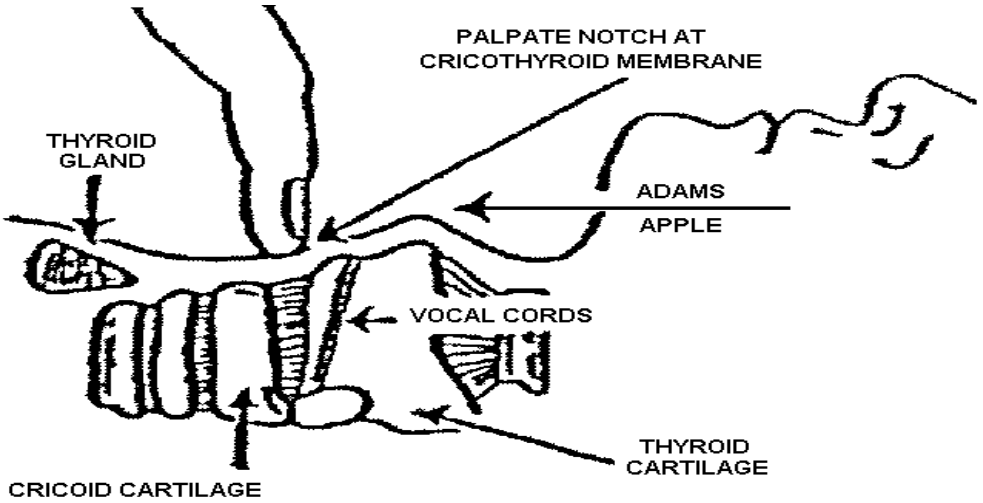
CARDIOVERSION **09/10/2013** [PARAMEDIC]	
• Synchronized cardioversion is only for rhythms generating a pulse - **See Cardiac Tachyarrhythmia with A Pulse**	
INDICATION	• Supraventricular or Ventricular tachyarrhythmia with hemodynamic compromise
PROCEDURE	1. Place defib pads on patient 2. Consider midazolam for sedation, if time and patient condition permits 3. Turn on synchronization 4. Charge monitor to 100J 5. Deliver shock 6. Check patient 7. If patient is shocked into V-Fib, turn off synchronization and defibrillate the patient. 8. If patient does not convert, check that synchronization is still on, increase the energy (120J, 150J, 200J) and shock again.

CPAP **12/13/2013**	[EMT, A-EMT, EMT-I, PARAMEDIC]
INDICATIONS	1. CHF 2. COPD 3. Respiratory Distress 4. Bariatric patients with respiratory distress or hypoxia (SpO2<92%) when placed in a supine position or LBB.
INCLUSION CRITERIA	Respiratory distress with any of the following: 1. Retractions or accessory muscle use 2. Pulmonary edema 3. Hypoxia despite supplemental oxygen (SpO2 <92%) 4. Respiratory fatigue 5. Respiratory rate>25
EXCLUSION CRITERIA	1. Resp./ Cardiac Arrest 2. BP < 90 Systolic 3. Unresponsive to speech 4. Inability to maintain patent airway 5. Major Trauma/Pneumothorax 6. Vomiting or active GI bleeding 7. Asthma 8. Not indicated for pediatric patients.
PROCEDURE	1. Monitor vital signs every ten minutes, • 1st set with SpO_2 at room air or home oxygen 2. Oxygen therapy, NRB Mask 3. Administer CPAP using max. FiO_2 • COPD 5cm H_2O • CHF 10cm H_2O 4. If patient is stable/improving, continue CPAP, reassess and consider decreasing FiO_2 to maintain $SpO_2 \geq 94\%$ 5. If patient is deteriorating, consider intubation– **See RSI Protocol**

CRICOTHYROTOMY **06/10/2014** [PARAMEDIC]	
INDICATIONS	Used when other attempts to establish an airway have been unsuccessful and definite airway compromise exist such as: • Foreign body obstruction • Facial or laryngotracheal trauma • Inhalation, thermal, or caustic injury of the upper airway • Oropharyngeal/tongue swelling with airway compromise (angioedema) • Upper airway hemorrhage • Epiglottitis or croup ****CRICOTHYROTOMY BY ANY MEANS IS NOT RECOMMENDED FOR ANY PATIENT < 10 kg (22 lbs)**
PROCEDURE: SURGICAL CRICOTHYROTOMY (Patients ≥ 8 years)	1. Assemble equipment: Antiseptic, #15 Scalpel, Trach Hook, #6 cuffed ETT with stylet, 4 x 4 sponges, umbilical tape. 2. Cleanse the site. 3. Stabilize the trachea with non-dominant hand and locate cricothyroid membrane. 4. Make a generous vertical incision through the skin to expose/locate the trachea and cricothyroid membrane. 5. Make a horizontal/stab incision into the cricothyroid membrane. 6. Insert tracheal hook and provide inferior traction to open incision and stabilize trachea. 7. Insert #6 cuffed ETT with a stylet or bougie and inflate cuff. 8. Confirm placement. 9. Secure tube.
PROCEDURE: NEEDLE CRICOTHYROTOMY (Patients < 8 years)	1. Assemble equipment. Antiseptic, 14g or 16g Angiocath, 5ml Syringe, 3.0 mm ETT adapter, oxygen, BVM. 2. Expose the neck. 3. Identify cricothyroid membrane. 4. Prep area. 5. Stabilize trachea by holding the thyroid cartilage between the thumb and fingers. 6. Attach syringe to needle. Insert at 45 degree angle caudally into trachea. 7. Aspirate with syringe. 8. Advance the catheter over the needle until hub is resting on skin then remove needle. 9. Attach 3.0 mm ETT adapter and ventilate with BVM. 10. Confirm placement 11. Secure device.

CRICOTHYROTOMY
06/10/2014

[PARAMEDIC]



DEFIBRILLATION
12/16/2013 [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]

Defibrillation with either an Automatic External Defibrillation (AED) device or a manual defibrillator involves the delivery of non-synchronized direct electric current to the myocardium.

INDICATIONS	Patients who are unconscious and are not breathing normally that have: • Ventricular fibrillation. • Ventricular tachycardia without a pulse. • Ventricular tachycardia with inadequate perfusion, and for whom effective and rapid synchronized cardioversion is impossible.
SPECIAL INFORMATION	• Always check the leads if clinical findings are at odds with monitor rhythm. • Avoid direct contact with the patient during defibrillation. • Ensure no one else is in contact with the patient. • Dry chest wall if wet. • Defibrillation may not be successful in ventricular fibrillation due to severe hypothermia until core temperature is above 86°F (30°C). • Patients with Automatic Implantable Cardioverter-Defibrillators (AICD) will need external defibrillation if the AICD is ineffective. • If defibrillation is needed on a patient with a permanent implanted pacemaker or AICD, the defibrillator pads should be placed at least 1 inch from the device.
DEFIBRILLATION DELIVERY DEVICE	
ADULT (AED) EMR, EMT, A-EMT, EMT-I, PARAMEDIC	1. Establish unresponsiveness. 2. Turn the AED on 3. Follow the prompts of the device 4. Place pads on the chest as recommended by the manufacturer.
PEDIATRIC (AED) EMR, EMT, A-EMT, EMT-I, PARAMEDIC 	1. Establish unresponsiveness. 2. Turn the AED on 3. Switch the AED to Pediatric Mode if possible. 4. Follow the prompts of the device 5. Place pads on the chest as recommended by the manufacturer. If pediatric mode is unavailable place pads anterior posterior.

DEFIBRILLATION **12/16/2013**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
MANUAL DEFIBRILLATOR ADULT EMT-I, PARAMEDIC	1. Establish unresponsiveness 2. Turn the defibrillator on 3. Place pads on the chest as recommended by the manufacturer 4. Select the energy to be delivered as per the defibrillator manufacturer or agency specific guidelines 5. Charge the defibrillator 6. Clear the patient 7. Deliver the defibrillation
MANUAL DEFIBRILLATOR PEDIATRIC EMT-I, PARAMEDIC 	1. Establish unresponsiveness 2. Turn the defibrillator on 3. Place pediatric pads on the chest as recommended by the manufacturer or anterior posterior 4. Initial energy selection should be 2 J/kg 5. Charge the defibrillator 6. Clear the patient 7. Deliver the defibrillation 8. Subsequent energy selection should be 4 J/kg until conversion.

ECG MONITORING -12 LEAD
12/13/2013 [EMT-I, PARAMEDIC]

Single Monitoring leads help establish the rate and regularity of the heartbeat. They also help identify if there is an arrhythmia.

The 12-Lead ECG is used to evaluate patients for the possibility of acute myocardial infarction (AMI) and improve the evaluation of arrhythmias.

INDICATION

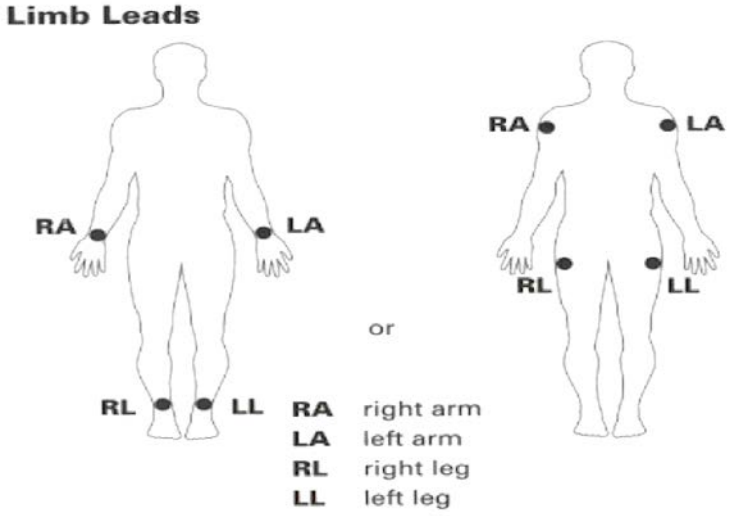
1. Evaluate patient for the possibility of acute myocardial infarction (AMI), with or without chest pain.
2. Evaluation of arrhythmias (including trauma, electrical electrolyte abnormalities (e.g. hyperkalemia), and many other conditions.)

PROCEDURE

Limb Leads

The Limb Leads record activity from a vertical plane of reference.

Lead	Placement
RA/White	Right mid-clavicular line (MCL), below clavicle; or above anterior wrist
LA/Black	Left (MCL), below clavicle; or above anterior wrist.
LL/Red	Between 6th and 7th intercostal space, left MCL line; or ankle or thigh.
RL/Green	Between 6th and 7th intercostal space, right MCL line; or ankle or thigh.



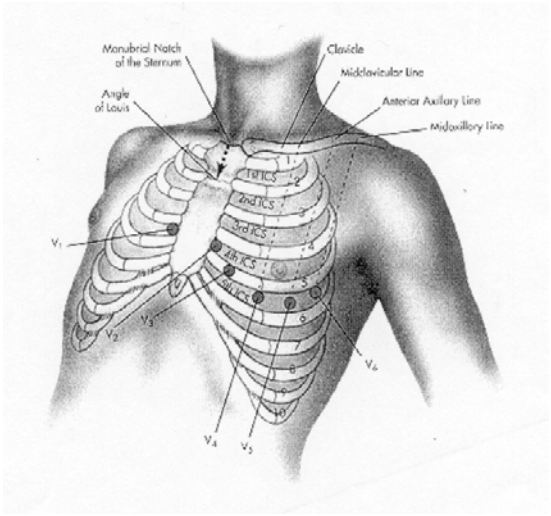
ECG MONITORING -12 LEAD
12/13/2013 [EMT-I, PARAMEDIC]

Precordial Leads

Certain landmarks help with the location of electrode placement

- Angle of Louis - this structure is a ridge on the sternum directly below the manubrial notch at the top of the sternum. Directly below and to the sides of the Angle of Louis is the second intercostal space. Use this to count down two more spaces for placement of V1 & V2.
- Mid-Clavicular Line - from MCL runs down to 5th intercostal space for V4.
- Axilla - left armpit, point where axilla meet the chest determines the Anterior Axillary line. V5 is positioned in horizontal alignment with V4 on the left Anterior Axillary line. Midway down the axilla is the Mid-Axillary Line. V6 is placed in horizontal alignment with V5 on the Mid-Axillary Line.

	Placement
V1	4th Intercostal space to the right of the sternum.
V2	4th Intercostal space to the left of the sternum
V3	Midway between V2 and V4
V4	On the mid-clavicular line, at the 5th intercostal level.
V5	On the anterior axillary line, at the 5th intercostal level.
V6	On the mid-axillary line, at the 5th intercostal level.



ECG MONITORING -12 LEAD
12/13/2013 [EMT-I, PARAMEDIC]

AMI Recognition

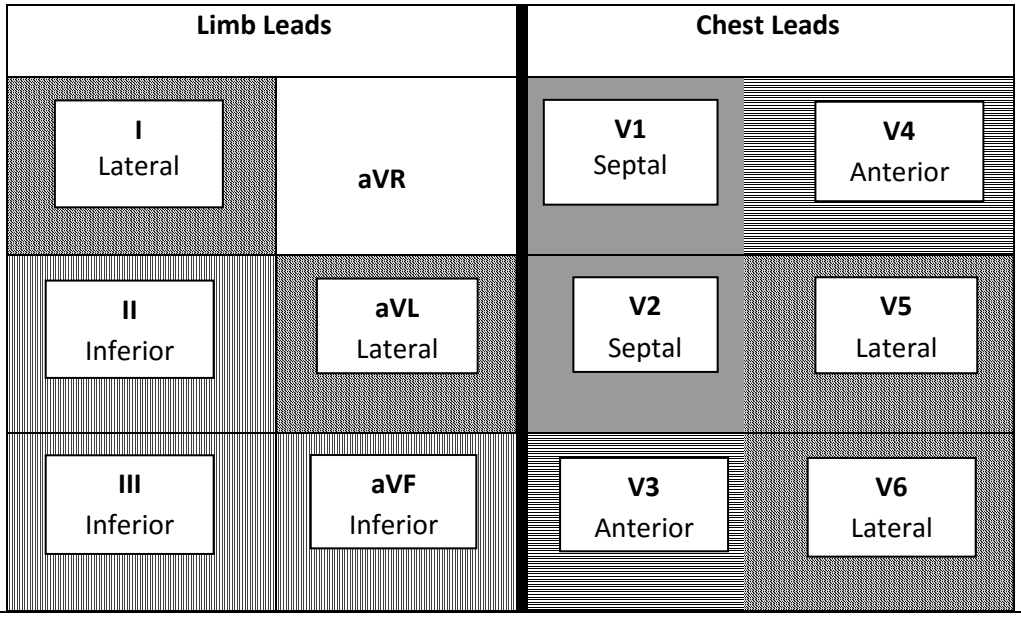
1. Common abnormal findings:
   - ST Elevation (presumptive evidence of AMI)
   - ST Elevation with Q Waves
   - ST Depression (ischemia)
   - T wave inversion (Subendocardial infarct or ischemia)
   - Peaked T wave (Hyperacute Infarction)
   - The presence of Q waves with ST elevation usually indicates an old infarction.

2. Basic Lead Groups

Leads	Areas of the Heart Muscle Seen
II, III, aVF	Inferior leads - lower portion of the heart.
V1 & V2	Septal leads - muscle between right & left ventricles.
V2, V3, V4	Anterior leads - front of the heart.
V4, V5, V6	Lateral pre-cordial leads - lateral aspects of the heart.
I & aVL	High lateral leads - lateral aspect from above

3. Location:

AMI Recognition



EZ-IO/IO INFUSION
09/10/2013 [EMT-A, EMT-I,PARAMEDIC]

Any substance which can be given intravenously can be administered via Intraosseous Infusion (I.O)

INDICATIONS	1. Peripheral IV cannot be established in 2 attempts or 90 seconds **AND** the patient exhibits one or more of the following: a. An altered mental status (GCS ≤ 8) b. Respiratory compromise(SaO_2 80% after appropriate oxygen therapy) c. Respiratory rate < 10 or > 40 min d. Hemodynamic instability (Systolic BP of < 90) 2. May be considered PRIOR to peripheral IV attempts in the following situations: a. Cardiac Arrest b. Profound hypovolemia with altered mental status c. Patient in extremis with immediate need for delivery of medications and or fluids
CONTRA-INDICATION	1. Fracture of the bone selected for IO insertion 2. Excessive tissue at insertion site with the absence of anatomical landmarks 3. Previous orthopedic procedures near insertion site 4. IO within 24 hours at the same site 5. Infection at the site selected for insertion
PROCEDURE	1. Preferred site is proximal tibia, alternate site is proximal humerus 2. Gather and assemble equipment from the EZ-IO/IO Kit 3. Insert IO 4. Slowly administer lidocaine 2% IO to **conscious patients** **Adult:** 20-40 mg slowly prior to saline flush **Pediatric:** 0.5 mg/kg slowly prior to saline flush 5. Rapid flush immediately with NS • **Adult:** 10cc • **Pediatric:** 5cc 6. Secure the device

GASTRIC DECOMPRESSION
12/16/2013 [EMT-I, PARAMEDIC]

Gastric decompression relieves gastric distention.

INDICATIONS	1. To alleviate gastric distention with either an ET tube or King airway in place. 2. Persistently hypotensive patients with obvious gastric distention secondary to BVM ventilation (time permitting).
CONTRA-INDICATIONS	Patients with: • known esophageal varices • caustic ingestion • obvious skull fracture • severe head/facial injuries • suspected skull fracture
PROCEDURE	1. Assemble equipment: • Proper size gastric tubes (12 or 18 Fr), lubricant, 30 or 60 cc syringe, tape and suction unit. 2. Measure tube length from mouth to earlobe, then down to tip of xiphoid process. 3. Lubricate end of tube. 4. Slightly flex head if not in spinal precautions. 5. In intubated patient: • Have partner manually stabilize ET tube • Gently insert laryngoscope to move tongue out of the way. • Insert gastric tube gently and advance toward stomach to premeasured depth. 6. In patient with King Airway: • Have partner manually stabilize King Airway, • Gently advance the gastric tube through the accessory port adjacent to the ventilation port. 7. Confirm placement by: • Aspirating gastric contents and by auscultation over the epigastrium while injecting 20-30 cc of air into the tube. 8. Secure the tube. 9. Mark and document tube size and depth.
PRECAUTIONS	1. Never forcefully advance gastric tubes. They should advance easily and with minimal resistance. 2. Monitor oxygen saturation carefully to ensure gastric tube was not passed into the trachea.

GCS
09/10/2013

[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]

Glasgow Coma Score (GCS) should be evaluated on all patients

Activity	Score	Infants	Children & Adults
Eye Opening	4	Spontaneous	Spontaneous
	3	To Speech	To Verbal Stimuli
	2	To Pain	To Pain
Total_____	1	No Response	No Response
Best Verbal Response	5	Coos, babbles	Oriented
	4	Irritable, cries	Confused
	3	Cries to pain	Inappropriate words
	2	Moans to pain	Incomprehensible sounds
Total_____	1	No Response	No Response
Best Motor Response	6	Normal Movement	Obeys commands
	5	Withdraws to touch	Localizes pain
	4	Withdraws from pain	Withdraws from pain
	3	Abnormal Flexion	Abnormal Flexion
	2	Abnormal Extension	Abnormal Extension
Total_____	1	No response	No response

Total GCS is the three categories added together. The best possible is 4/5/6=15, the lowest possible is 1/1/1=3.

INTRA MUSCULAR MEDICATION ADMINISTRATION **05/14/2014**	[EMT, A-EMT, EMT-I, PARAMEDIC]
INDICATIONS	Intramuscular administration of medication is indicated in patients where an IV is unable to be initiated or where in medic judgment it is in the best interest of the patient. See medication protocols for reference of which medications may be administered IM.
PROCEDURE	1. Draw the medication into a syringe. 2. Attach a 21 – 23 gauge needle to the syringe. 3. Select an appropriate site(s) based on access, muscle mass and volume: • Deltoid - 0.5 -2.0 ml • Quadricep - 0.5 -5.0 ml • Gluteal - 0.5 -5.0 ml • For infants and toddlers, IM medication administration is only recommended in the quadriceps 0.5 -3.0 ml 4. Prep site and administer the medication.

INTRA NASAL MEDICATION ADMINISTRATION

05/14/2014 [A-EMT, EMT-I, PARAMEDIC]

Intra-nasal (IN) medications may be administered with a Mucosal Atomizer Device (MAD). Intranasal medications are absorbed through the nasal mucosa.

INDICATIONS	Patients in whom the intranasal route of administration is preferred. Unable to obtain intravenous (IV) access and the medication is authorized to be administered IN. Any of the following medications may be given IN • Fentanyl • Midazolam • Narcan
CONTRAINDICATIONS	• Epistaxis (nose bleed) • Nasal trauma • Nasal septal abnormalities • Nasal congestion or discharge
PROCEDURE	1. Patient should blow their nose if possible to clear the nares 2. The dose of the medication should be drawn into a syringe with a MAD device attached. 3. One half (1/2) the total dose is administered in each nare. 4. Administer medication by briskly compressing the plunger to expel and atomize the medication.

INDUCED HYPOTHERMIA POST RESUSCITATION
09/10/2013 [PARAMEDIC]

Paramedic must be with patient to start and continue this procedure

Inclusion Criteria:

- ROSC > 5 mins
- > 12 yo
- > 100 SBP
- Neuro exam reveals no purposeful movement (does not localize pain)
- Advanced airway with waveform capnography must be in place – **See RSI Protocol**

Exclusion Criteria:

- Hypothermia already suspected
- Known or suspected pregnancy
- Pulmonary edema
- Suspected internal bleeding or head trauma
- Arrest related to blunt or penetrating trauma or significant hemorrhage

****If at any time loss of pulse occurs, discontinue hypothermia protocol and continue with the appropriate therapy.**

EMR/EMT	• Assess and support ABC's, • Expose patient, • Ice packs to the groin and axilla (protect skin) • Obtain 12 lead
A-EMT/EMT-I	• IV – NS with chilled saline 30cc/kg, max 2 liters

PARAMEDIC 	• If 12 lead positive – Activate Cath lab
	• If shivering occurs
	  • Fentanyl
	  • Rocuronium (2nd line prn) - **By MD Order**

INTUBATION **09/10/2013**	[PARAMEDIC]
INDICATIONS	Endotracheal Intubation is indicated in the following: 1. Inadequate oxygenation (persistent O_2 sat < 85% despite maximal assistance with adjuncts/CPAP) 2. Inadequate ventilation (respiratory rate <8 or $ETCO_2$ >50) despite maximal assistance with adjuncts/CPAP 3. Patient expected to deteriorate, i.e. airway burns, etc. 4. Inability to maintain adequate airway, i.e. clenched jaw with airway obstruction, copious blood/emesis with evidence of aspiration despite maximal suctioning/positioning efforts, etc.
CONTRA-INDICATION	1. Airway can be adequately maintained by alternative means. 2. Any situation in which the paramedic feels that a King Airway would be a safer alternative for the patient, i.e., unstable c-spine injury
PROCEDURE	1. Assess for difficult intubation and have a fallback plan 2. Open airway and place oral/nasal airway 3. Pre-oxygenate with NRM or BVM with cricoid pressure 4. Suction if necessary – **See Suctioning Protocol** 5. Assemble equipment including: monitor, suction, pulse ox, and $ETCO_2$ 6. Consider RSI - **See RSI Protocol** 7. Intubate using controlled but timely technique 8. Maximum tube depths are 23 cm for men, 21 cm for women 9. Verify placement with $ETCO_2$ device, chest rise, and auscultation of epigastrium and lung fields 10. Secure tube, consider cervical collar 11. Document the following: a. Pre-oxygenation/adjuncts used b. Number of attempts/operator(s) c. SaO_2 before, during, and post intubation d. $ETCO_2$ post intubation e. Visualization of cords f. Tube size and depth g. Method of confirmation (primary and secondary) h. Medications used if RSI i. Any patient changes during contact j. Reconfirmation of tube placement after movements

IV THERAPY
09/10/2013 [A-EMT, EMT-I, PARAMEDIC]

Patients showing signs of distress or with an appropriate mechanism of injury should have IV access initiated as a precautionary measure.

With the exception of hyperthermia patients, use warmed fluid if available.

INDICATIONS	**Fluid replacement** 1. 16-18 gauge preferred in trauma or hypotensive adult 2. Use a standard drip set with 10-15 gtts/ml 3. Initiate a second IV line during transport if the patient is exhibiting obvious signs of volume loss 4. If the patient is showing signs of **shock** give a fluid challenge of up to 20 ml/kg except neonates (< 1 month of age), give 10 ml/kg **Medication line** (Patient not suspected of having fluid loss) 1. 18-20 gauge preferred in adult 2. Use a standard set with 10-15 gtts/ml with a TKO (to keep open) rate or establish a saline lock

KING AIRWAY
12/13/2013 [EMT, A-EMT, EMT-I, PARAMEDIC]

INDICATIONS

1. Acute airway compromise
2. First line advanced airway in medical cardiac arrest patient ≥15 years of age
3. Second line advanced airway in medical cardiac arrest patients <15 years of age and meets size appropriate criteria

CONTRA-INDICATIONS

1. Patients with an intact gag reflex
2. Patients with a known esophageal disease
3. Patients who have ingested caustic substances
4. Patients less than 35 inches tall

PROCEDURE

1. Choose the Correct Size

Size	Height	Cuff Volume
2	35-45 Inches	25-35 cc
2.5	41-51 Inches	30-40 cc
3	4-5 Feet	60 cc
4	5-6 Feet	80 cc
5	6+ Feet	90 cc

2. Pre-oxygenate with NRB Mask for 1-2 min. when conditions permit.
3. Test cuffs for leaks.
4. Lubricate using water soluble lubricant.
5. Pull tongue and jaw forward using gloved hand.
6. Suction if necessary – **See Suctioning Protocol**
7. Insert with blue orientation line touching corner of mouth.
8. Advance past base of the tongue.
9. As tip passes tongue, rotate tube to midline (blue orientation line faces chin).
10. Do not force tube. If the tube does not advance easily, redirect it or withdraw and reinsert.
11. Advance until base of connector is aligned with teeth or gums.
12. Inflate cuffs.
13. Ventilate, verify placement with $ETCO_2$ device, chest rise, and auscultation of epigastrium and lung fields
14. Document method of confirmation.
15. Consider insertion of a Gastric Decompression Tube. **– See Gastric Decompression Protocol**

MORGAN LENS **09/10/2013**	[PARAMEDIC]
INDICATIONS	Removal of chemical splash from the eye, especially when the agent is caustic.
PRECAUTIONS	Use only on an intact globe
PROCEDURE	Follow directions included with the Morgan Lens for Insertion and removal.
SPECIAL INFORMATION	1. To help prevent corneal abrasions, change IV solution bag or DC lens as soon as bag runs dry 2. Coach patient to avoid blinking with lens in place 3. If only one eye is being irrigated, tilt head to keep from contaminating other eye
KEY POINTS	Rapid initiation of eye irrigation is the most important aspect of chemical eye injury care.

OXYGEN THERAPY **11/05/2013**	[EMR,EMT,A-EMT,EMT-I,PARAMEDIC]
INDICATIONS	1. Suspected hypoxemia 2. Respiratory distress 3. Shock 4. Major trauma 5. Acute chest pain 6. Carbon monoxide poisoning
SPECIAL INFORMATION	1. COPD patients use low flow oxygen initially (2L/min-3L/min) by nasal cannula but do not withhold additional oxygen from a patient who needs it. If possible, use capnography to guide ventilatory rates. 2. Maintain spinal precautions during airway maneuver in trauma patients. 3. Assist ventilations as needed. 4. Suction as necessary – See Suctioning Protocol 5. Monitor pulse oximeter if available. 6. Do not hyperventilate the head injured patient, if possible, use capnography to guide ventilatory rates.
OXYGEN DELIVERY DEVICE	
PASSIVE VENTILATION EMR, EMT, A-EMT, EMT-I, PARAMEDIC	Passive ventilation is used in CCR during the initial phase of resuscitation. Passive ventilation is defined by the Medical Control Board as a NRB with O_2 flow set at 15LPM.
NASAL CANNULA EMR,EMT,A-EMT, EMT-I, PARAMEDIC	1. Used with O_2 flow of 2-6 liters/min. 2. Patients who would benefit from a cannula may include a. CVA b. Mild to moderate chest pain or respiratory distress c. Postictal or post syncope d. Minor trauma
NON-REBREATHER (NRB) MASK EMR,EMT,A-EMT, EMT-I, PARAMEDIC	1. Used with O_2 flow of 10-15 liters/min. 2. NRB Masks are for severely ill patients with suspected hypoxemia who have adequate respiratory effort and can protect their own airway. a. Major trauma b. Shock c. Inhalation injury d. Exposure to toxins e. Altered consciousness f. Severe respiratory distress

OXYGEN THERAPY **11/05/2013**	[EMR,EMT,A-EMT,EMT-I,PARAMEDIC]
BAG VALVE MASK (BVM) EMR, EMT,A-EMT, EMT-I, PARAMEDIC	1. Patients needing ventilatory support (for rate or volume) 2. Used with O_2 flow of 10-15 liters/min. 3. Requires secure face to mask seal. 4. Use of oropharyngeal or nasopharyngeal and/or chin tilt, jaw thrust maneuvers may be required.
CPAP EMT,A-EMT, EMT-I, PARAMEDIC	**Refer to CPAP Protocol**
KING AIRWAY EMT, A-EMT, EMT-I, PARAMEDIC	**Refer to King Airway Protocol**
ENDOTRACHEAL INTUBATION PARAMEDIC	**Refer to Endotracheal Intubation Protocol**

PACING, EXTERNAL TRANSCUTANEOUS 09/10/2013	[PARAMEDIC]
INDICATION	Symptomatic bradyarrythmia
CONTRA-INDICATIONS	1. Weight under 25 kg (55 lbs.) 2. Patients with penetrating or blunt thoracic trauma 3. Severe hypothermia
PROCEDURE	1. Attach cardiac monitor leads 2. Place defib pads on patient as recommended by manufacturer 3. Set monitor to PACER 4. Increase pacer output (mA) until capture is obtained. 5. Once capture is obtained, adjust pacer output to ensure capture is not lost. 6. When capture is obtained, check for pulse with each beat. 7. On Zoll Monitor, use 4:1 button to view underlying rhythm. 8. If patient is uncomfortable during pacing consider midazolam for sedation or consider fentanyl for pain analgesic. 9. If capture is not obtained with increased current, replace pads and place anterior posterior. 10. If no response to pacing and ACLS drugs, **consult MD**. 11. No capture and no pulse, follow **Cardiac Pulseless Arrest CCR Protocol**. 12. Monitor and document vital signs every 5 minutes. 13. Document ECG rhythm pre and post pacing.

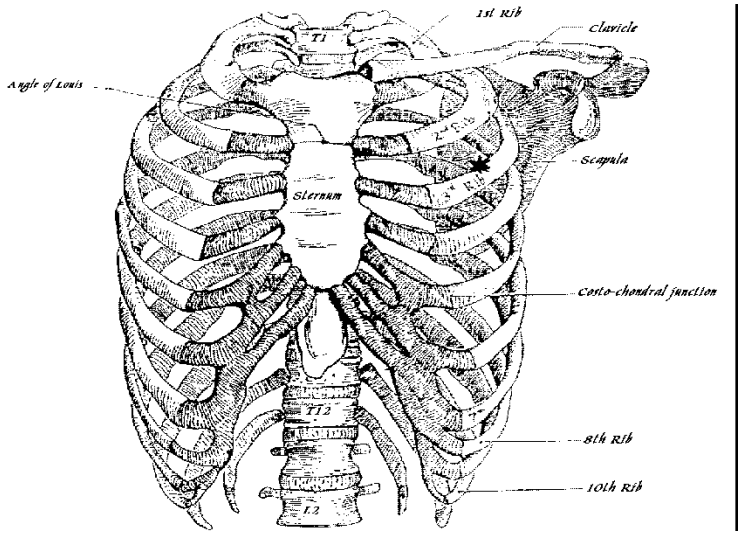
PHYSICAL / CHEMICAL RESTRAINT

02/03/2016 [EMR, EMT, AEMT, EMT-I, PARAMEDIC]

****EMS personnel should withdraw to a safe location immediately if the patient has any type of weapon or potential weapon and await law enforcement to secure the scene.**

INDICATIONS	Combative or disoriented patients who present a physical danger to themselves or the crew.
EQUIPMENT/ PROCEDURE	1. Gurney/backboard straps: The patient may be placed in standard full C-spine precautions. 2. Commercial restraints: Roll gauze, soft-restraints, or leather restraints may be utilized on patients who are mildly combative or disoriented. 3. Flexi-cuffs: Offer a quick and effective restraint for more combative or strong patients. Flexi-cuffs should not be used on patients with fragile skin conditions (e.g., elderly or patients on prednisone). 4. Sheets or blankets may be used to restrain a patient's torso or legs. 5. Law enforcement applied handcuffs: are acceptable as long as a police officer accompanies the patient to the hospital. When handcuffed, the patient should be positioned to be able to easily treat the patient. Consider securing the patient to a LBB. 6. To prevent a patient from spitting, oxygen, surgical masks or spit sock may be used; but the patient's airway must be constantly and carefully monitored. 7. Adhesive tape will not be used to restrain patients except as part of cervical immobilization. 8. If a patient becomes violent while being transported and ambulance personnel are unable to restrain the patient, the driver should immediately stop the ambulance, notify dispatch of the situation and location, and all EMS personnel should leave the vehicle. When leaving the vehicle under such circumstances, personnel should attempt to take the ignition keys and portable radio(s). 9. Immediately following any use of physical restraints, monitor airway status, vital signs, and neurocirculatory status distal to restraints frequently and document every 15 minutes.

PHYSICAL / CHEMICAL RESTRAINT **02/03/2016** [EMR, EMT, AEMT, EMT-I, PARAMEDIC]	
	10. If verbal defusing and physical restraint fails to achieve the goal of patient and care giver safety, sedative medications may be utilized. **- ~~Refer to Behavioral Emergencies Protocol~~**
CHEMICAL RESTRAINT **(PARAMEDIC ONLY)**	Chemical Restraint • May be used to restrain the agitated or violently combative patient who presents a danger to themselves or others. • Once the treatable causes are ruled out, follow necessary chemical restraint. Pharmacological agents: • Ketamine (1st Line) • Midazolam (2nd Line as needed) • Once a patient is in the process of being chemically restrained, the medics must continually monitor the patient for respiratory depression. Pulse oximeter and $ETCO_2$ monitoring should be done along with vitals, including level of consciousness every 5 minutes.
KEY POINTS	1. Law Enforcement should be requested and present if possible prior to restraining patient. 2. When approaching these patients and attempting to gain voluntary compliance, the following standard shall be utilized and clearly documented: a. Request for compliance b. Explanation of why compliance is necessary c. Actions taken: - Voluntary Compliance - Chemical/Physical restraint - Retreat and wait until law enforcement arrives to place patient on a police officer hold. 3. The patient shall not be restrained in a face-down or prone position, nor shall a backboard or scoop stretcher be placed on top of him/her.

PLEURAL DECOMPRESSION **09/10/2013** [PARAMEDIC]	
INDICATIONS	Known or suspected tension pneumothorax
PLACEMENT PARAMEDIC	1. Second intercostal space, mid-clavicular line on the side of the tension pneumothorax 2. Insert just over third rib 3. Use 10 or 14 gauge over-the-needle catheter (2-6 inches long) 4. Use 18 gauge for young child and infants 5. Secure catheter 6. Reassess patient status 

RSI (Rapid Sequence Intubation) **11/09/2015** [[PARAMEDIC]	
INDICATIONS	Rapid Sequence Intubation (RSI) is used for facilitation of endotracheal intubation or advanced airway placement that cannot be accomplished without the use of paralytics.
KEY POINTS	1. Trauma and Medical Patients by standing order
PROCEDURE	**1. PRE-OXYGENATE** with 100% FiO_2 **2. PRE-TREATMENT** a. Pediatric patients < 10 years: Atropine (If bradycardic). b. Head injury/suspected increased ICP: • Lidocaine • Fentanyl **3. INDUCTION/ PARALYSIS** For All RSI patients: • Induction Agent – Etomidate/Ketamine • Ketamine is first line for hypotension, severe respiratory disease process, and pediatrics. • Paralytic –Succinylcholine/Rocuronium • Rocuronium is first line for patients suspected of hyperkalemia or any other time succinylcholine is contra-indicated. **4. TUBE PLACEMENT – See Endotracheal Intubation Protocol** **5. POST INTUBATION MANAGEMENT** a. Post intubation continued sedation • Midazolam • Fentanyl b. Post intubation continued paralysis: • Rocuronium c. Post intubation hypotension: • Normal Saline: 500 ml bolus

RSI (Rapid Sequence Intubation)
11/09/2015 [[PARAMEDIC]

RSI Medication Doses by volume

	10kg	20kg	30kg	40kg	50kg	60kg	70kg	80kg	90kg	100kg
Lidocaine(20mg/ml) (1.5mg/kg)	0.75ml	1.5ml	2.25ml	3.0ml	3.75ml	4.5ml	5.25ml	6.0ml	6.75ml	7.5ml
Fentanyl(50mcg/ml) (3mcg/kg)	0.6ml	1.2ml	1.8ml	2.4ml	3.0ml	3.6ml	4.2ml	4.8ml	5.4ml	6.0ml
Etomidate(2mg/ml) (0.3mg/kg)	1.5ml	3.0ml	4.5ml	6.0ml	7.5ml	9.0ml	10.5ml	12.0ml	13.5ml	15.0ml
Ketamine (100mg/ml) (2mg/kg)	0.2 ml	0.4ml	0.6ml	0.8ml	1.0ml	1.2ml	1.4ml	1.6ml	1.8ml	2.0ml
Succinylcholine (2mg/kg) (20mg/ml)	1.0ml	2.0ml	3.0ml	4.0ml	5.0ml	6.0ml	7.0ml	8.0ml	9.0ml	10.0ml
Versed (1mg/ml) (0.1mg/kg)	1.0ml	2.0ml	3.0ml	4.0ml	5.0ml	6.0ml max dose	6.0ml	6.0ml	6.0ml	6.0ml
Rocuronium **Paralyzing dose:** (10mg/ml) (1 mg/kg)	1.0ml	2.0ml	3.0ml	4.0ml	5.0ml	6.0ml	7.0ml	8.0ml	9.0ml	10.0ml
Rocuronium **Maintenance dose:** 0.2 mg/kg bolus	0.2 ml	0.4ml	0.6ml	0.8ml	1.0ml	1.2ml	1.4ml	1.6ml	1.8ml	2.0ml

RSI (Rapid Sequence Intubation)
11/09/2015 [[PARAMEDIC]

RSI Medication Doses (in mgs or mcgs)

	10kg	20kg	30kg	40kg	50kg	60kg	70kg	80kg	90kg	100kg
Lidocaine(20mg/ml) (1.5mg/kg)	15 mg	30 mg	45 mg	60 mg	75 mg	90 mg	105 mg	120 mg	135 mg	150 mg
Fentanyl(50mcg/ml) (3mcg/kg)	30mcg	60mcg	90mcg	120mcg	150mcg	180mcg	210mcg	240mcg	270mcg	300mcg
Etomidate(2mg/ml) (0.3mg/kg)	3 mg	6 mg	9 mg	12 mg	15 mg	18 mg	21 mg	24 mg	27 mg	30 mg
Ketamine (100mg/ml) (2mg/kg)	20mg	40mg	60mg	80mg	100mg	120mg	140mg	160mg	180mg	200mg
Succinylcholine (2mg/kg) (20mg/ml)	20 mg	40 mg	60 mg	80 mg	100 mg	120 mg	140 mg	160 mg	180 mg	200 mg
Versed (1mg/ml) (0.1mg/kg)	1 mg	2 mg	3 mg	4 mg	5 mg	6 mg (max dose)	6 mg	6 mg	6 mg	6 mg
Rocuronium **Paralyzing dose:** (10mg/ml) (1 mg/kg)	10mg	20mg	30mg	40mg	50mg	60mg	70mg	80mg	90mg	100mg
Rocuronium **Maintenance dose:** 0.2 mg/kg bolus	2 mg	4 mg	6 mg	8 mg	10 mg	12 mg	14 mg	16 mg	18 mg	20 mg

SPINE TRAUMA
02/03/2015 [EMT, AEMT, EMT-I, PARAMEDIC]

Immobilize using a Long Backboard (LBB) if the patient has a mechanism with the potential for causing spinal injury and meets ANY of the following clinical criteria:

- Altered mental status.
- Evidence of intoxication. **– See Intoxicated Patient Protocol**
- Distracting pain/injury (extremity fracture, drowning, etc.).
- Neurologic deficit (numbness, tingling, paralysis).
- Spinal pain or tenderness.
- Comorbid age factors (< 12 or > 65 yrs) may impact the EMS Provider's ability to assess the patient's perception and communication of pain. A conservative approach to immobilizing these patients is strongly recommended.
- Distracting situation (communication barrier, emotional distress, etc.).
- Inability to communicate.
- For isolated penetrating head/neck trauma when there is neurologic deficit or an adequate physical exam cannot be performed, e.g., the unconscious patient.

Special Considerations	• If the patient is complaining of neck pain and is ambulatory on scene, a C-Collar alone is adequate. • If extricating a patient using a LBB would cause excess spine manipulation, possibly causing more harm, consider having patient self-extricate with C-Collar in place to gurney. • If any immobilization techniques cause an increase in pain or neurologic deficits, immobilize patient in the position found or position of greatest comfort. • Stabilize C-Spine manually until the patient is fully immobilized on a LBB. • Carefully assess the patient's respiratory status during transport. Loosen straps as needed to avoid respiratory compromise. • Patients in the third trimester of pregnancy should have the right side of the backboard elevated six inches. • Obese patients should have the head of the LBB elevated to decrease respiratory compromise. • Pad backboards for all inter-facility transports. If feasible, especially in prolonged scene transports, pad backboards. • ~~Elderly~~ Patients felt at low risk for spinal injuries but meeting above criteria, may be transported with C-Collar only.

SPLINTING **1/11/2014**	[EMR, EMT, A-EMT, EMT-I, PARAMEDIC]
INDICATIONS	Immobilization due to suspected fracture, sprain, or injury
SPECIAL INFORMATION	Splint the following injuries as directed: • Poor neurovascular status – make one attempt to realign to anatomical position and improve circulation. Splint in anatomical position • Joint injury – splint in position found
SPLINTING DEVICES	
EXTREMITY SPLINT EMR, EMT, A-EMT, EMT-I, PARAMEDIC	1. Used for suspected limb injuries 2. Traction splint – EMT, A-EMT, EMT-I, PARAMEDIC a. Suspected closed femur fracture with no evidence of pelvic fracture b. Traction is to be no more than 15lbs or 10% of the patient's body weight whichever comes first
PELVIC SPLINT EMR, EMT, A-EMT, EMT-I, PARAMEDIC	1. Used for suspected pelvic fracture a. Splint with sheet or pelvic sling
KED EMR, EMT, A-EMT, EMT-I, PARAMEDIC	1. Used for suspected spinal injury in stable seated patients a. Can be used in place of LBB – **See Spine Trauma Protocol**
FULL BODY SPLINT EMR, EMT, A-EMT, EMT-I, PARAMEDIC	1. Used for suspected spinal injury as an alternative to LBB – **See Spine Trauma Protocol** a. Patients who would benefit from a full body splint: • Elderly • Kyphosis • Extended transport 2. Used for suspected hip fracture/dislocation

SUCTIONING **12/03/2013**	[EMR,EMT,A-EMT,EMT-I,PARAMEDIC]
INDICATIONS	Patients that have signs of respiratory distress or hypoxia due to secretions or blood in the airway, or when there is concern for aspiration.
SPECIAL INFORMATION	Suctioning of the oropharynx and tracheal suctioning are crucial skills in maintaining a patient's airway and optimizing ventilatory status. When possible, suctioning should be performed prior to initiating positive pressure ventilation (i.e. bag-valve-mask ventilation) to minimize the risk of aspiration.
ORAL SUCTIONING [EMR, EMT, A-EMT, EMT-I, PARAMEDIC]	1. Pre-oxygenate patient with high-flow O_2. 2. Attach pulse oximeter and establish baseline. 3. Don appropriate PPE. 4. Prepare and assemble suction equipment: • Check suction unit for mechanical suction. • Tonsil tip or soft catheter in place. 5. Suction: • Insert tip without suction. • Cover aperture to begin suctioning. • Apply suctioning for <15 seconds. • Stop immediately if significant desaturation event occurs (O_2 sat <90% or drop >5% from baseline during suctioning) or significant increase in respiratory distress. 6. Re-oxygenate patient for at least 2-3 minutes between suction attempts.
TRACHAEL SUCTIONING [EMT, AEMT, EMT-I, PARAMEDIC]	Tracheal suctioning may be achieved via oral, nasal, endotracheal or tracheostomy routes. 1. Pre-oxygenate patient with high-flow O2 for at least 3 minutes (or 5 tidal-volume breaths with BVM). 2. Attach pulse oximeter, ECG and establish baseline 3. Don appropriate PPE. 4. Prepare and assemble suction equipment • Check suction unit for mechanical suction. • Measure for correct size suction catheter. • Open sterile rinse. 5. If patient is being ventilated prior to suctioning, have partner remove BVM or ventilator tubing prior to suction attempt

SUCTIONING **12/03/2013**	[EMR,EMT,A-EMT,EMT-I,PARAMEDIC]
	6. Insert catheter maximally without applying suction. 7. Withdraw catheter slowly using intermittent suction while rotating catheter. 8. Limit suctioning for no more than 15 seconds. Stop if a significant desaturation event occurs or significant dyspnea. 9. Rinse catheter in sterile rinse. 10. Re-oxygenate patient for at least 2-3 minutes between suction attempts.
MECONIUM SUCTIONING [PARAMEDIC]	Suctioning with meconium aspirator is only indicated if there is thick meconium and the infant is in extremis (ie. hypoxic, bradycardic, or under CPR). A trial of oral suctioning may be attempted first. However, if meconium is light and newborn is vigorous do not suction infant. 1. Don appropriate PPE. 2. Prepare and assemble equipment: • Check suction unit for mechanical suction, • Gather appropriate size ET tube(s) • Gather meconium aspirator. 3. Intubate infant with a non-cuffed ET tube, or do not inflate if cuffed. 4. Attach meconium aspirator to the ET tube and immediately begin suctioning by covering the thumb hole. 5. Suction while slowly withdrawing the ET tube. 6. Do not suction for more than 3-5 seconds. 7. Re-oxygenate patient for at least 2-3 minutes with BVM and high-flow O_2. 8. Attach full monitoring equipment. 9. Repeat procedure if O_2 sat is persistently low and/or if patient remains under CPR. 10. If patient stabilizes, consider simply assisting ventilation with BVM (intubation not necessary for ventilation).

TRIAGE
09/10/201 [EMR, EMT, AEMT, EMT-I, PARAMEDIC]