SW REGION PATIENT CARE PROTOCOLS - CLARK COUNTY EMS

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Contents

Introduction

The following *PREHOSPITAL PATIENT CARE PROTOCOLS* are intended as treatment protocols for both basic and advanced life support technicians working under the advice of the Medical Program Director for Clark County. They represent a consolidation of recommendations for patient care from many local and national sources.

PURPOSE:

A. Standardize prehospital care for Clark County.
B. Provide the Emergency Medical Technician with a framework for prehospital care and an anticipation of supportive orders from Medical Control.
C. Provide hospital physicians and nurses with an understanding of what aspects of patient care have been stressed to the EMT/EMT-P and what their treatment capabilities may be.
D. Provide the basic framework on which the Medical Program Director can audit the performance of both basic and advanced life support personnel.
E. Differentiate between basic and advanced life support procedures. ALS procedures will be identified by a  preceding the procedure. A  is intended to identify an ALS therapy to be used only with Medical Control Physician concurrence.
F. Identify Pediatric specific treatment, procedures and medications. EMT's and Paramedics should consult Pediatric length-based guides to ensure appropriate dosing of medications.
F. Expedite patient delivery to institutions best equipped to handle their specific problems.

PROTOCOLS ARE NOT INTENDED TO:

A. Be absolute treatment doctrines, but rather guidelines with sufficient flexibility to meet the needs of complex cases.
B. Be a teaching manual for EMTs or Paramedics; it is assumed that each EMT is trained to his/her level of certification and understands the Scope of Practice appropriate to their certification, and that she/he will continue to meet the requirements of the State of Washington for continuing education for recertification. The Medical Program Director will provide continuing education based on the results of patient care audit and review.
C. Interfere with the wishes of the patient or family, or the wishes of the patient's physicians.
D. Dictate details of care to advising physicians.
E. Warrant the EMS Provider as an independent field practitioner.

It is expected that all Emergency Medical Technicians working within Clark County will be familiar with the portion of the PREHOSPITAL PATIENT CARE PROTOCOLS appropriate to their certification level and Scope of Practice. Written acknowledgement of the receipt of this document will be required.

Resource Phone List

MEDICAL CONTROL	
Medical Control PHSW	360-514-2044
MRH/TCC OHSU	503-494-7333
Cowlitz MC	360-636-4830
Medical Program Director	360-931-9213
Marc Muhr	360-931-9183
HOSPITALS	
PHSW Emergency Dept.	360-514-2064
Legacy Salmon Creek	360-487-1400
St. Vincent MC	503 216-2361
Kaiser Westside	971 310-9751
PH St. Johns	360-578-5606
ADMINISTRATION	
Jason Jensen – AMR	503-961-2672
Eric Simukka – FD 6	360-518-5668
Shaun Ford – Camas	208-867-8790
Doug Boyce – NCEMS	503-706-6501
Dustin Waliezer – FD 3	360-892-2331
Robb Milano – VFD	360-487-7211
Robert Harvey – C-CFR	360-619-8280
INTERPRETER	
AMR Language Line	800 523-1786
	800 874-9426
- ID #	942034
- Personnel Code	140820
POISON CONTROL	
Washington Poison Control	(800) 709-0911
CRESA	
Non Emergent	360-696-4461
CRISIS WORKER	
EMS USE ONLY	360-397-8198
Public line	360-696-9560
ADULT MOBILE CRISIS INTERVENTION	(360) 518-7368: Identify yourself and ask for AMCI

MENTAL HEALTH	
Rainier Springs	360-448-3619
Crisis Triage and Stabilization	360-798-3359

Scope of Practice By Certification Level

Approved Skills and Procedures for Certified EMS Providers

EMS Scope of Practice Guidance - Authorized EMS certified provider (EMR, EMT, AEMT, Paramedic) scope of practice provisions in law include: Medical Direction (18.71.205 RCW, 246.976.920 WAC), environment of practice (246-976-182 WAC) and training (18.73.081 RCW). In general, EMS certified providers are only authorized to provide care under the authority of the Medical Program Director (MPD) and in compliance with Department of Health (department) approved MPD patient care protocols. MPD's are appointed by the Secretary of the Department of Health. EMS certified providers are only authorized to provide care in the pre-hospital emergent environment unless practicing under programs authorized by RCW 35.21.930. EMS certified providers are authorized to perform skills and procedures listed in this guidance document if a department approved MPD patient care protocol is in place. Other regulations may apply.

Legend

N- National indicates the skill is listed in the interpretive guidelines of the National EMS Scope of Practice Model which defines the practice of EMS certified providers as a floor or minimum national standard. (National scope of practice)

W- Washington Initial Training indicates the skill is not listed in the interpretive guidelines of the National EMS Scope of Practice Model. However, Washington State Department of Health approves the skill to be in Washington State scope of practice and training for the skill is mandatory for inclusion in approved initial training and continuing education. (Not in national scope, required in all initial and continuing education).

W* - Washington Specialized Training Required indicates the skill is approved for use by Department of Health certified EMS providers through specialized training as authorized by WAC 246-976-024. Certified EMS providers must have completed a department and MPD approved training course and demonstrated knowledge and skills competency to the level of satisfaction of the MPD. The MPD authorizes the skill through department approved MPD patient care protocols. (Not in national scope, MPD option to implement, and specialized training required).

W - Washington State Endorsement on a Certification is Required** indicates the skill is approved for use by Department of Health certified EMS providers through specialized training as authorized by WAC 246-976-024. Certified EMS providers must have completed a department and MPD approved training course and demonstrated knowledge and skills competency to the level of satisfaction of the MPD. The MPD authorizes the skill through department approved MPD patient care protocols. The department requires a course application and approval for these skills and issues an endorsement to the provider's certification. The only authorized endorsements are EMT-IV and EMT-SGA. (Not in national scope, MPD option to implement, specialized training required, course application must be submitted and approved by the department, an endorsement added to the credential by department).

Blank space - If the space is blank, the skill is not authorized.				
Airway / Ventilation / Oxygenation	**EMR**	**EMT**	**AEMT**	**PARA**
Airway - Nasal		N	N	N
Airway Obstruction - dislodgement by direct laryngoscopy				N
Airway Obstruction - Manual dislodgement techniques	N	N	N	N
Airway -Oral	N	N	N	N
Airways not intended for insertion into the trachea (Esophageal / Tracheal Multi-Lumen Airways such as CombiTube, King LT, i-gel)		W / W**	N	N
Bag Valve Mask (BVM) Positive Pressure Ventilation	N	N	N	N
Bi-level Positive Airway Pressure (BiPAP)				N

Capnography (End Tidal CO2 waveform and/or numerical continuous monitoring)		W*	N	N
Capnometry (End Tidal CO2 colorimetric device)		W*	N	N
Chest Tube - Monitor and management				N
Chest Tube placement - Assist Only				N
Continuous Positive Airway Pressure (CPAP) Per Protocol		N	N	N
Cricothyrotomy - Percutaneous (needle) / Surgical				N
Endotracheal Intubation (Nasal and Oral)				N
Head Tilt/Chin Lift	N	N	N	N
Jaw Thrust	N	N	N	N
Mouth-to-barrier	N	N	N	N
Mouth-to-mask	N	N	N	N
Mouth-to-mouth	N	N	N	N
Mouth-to-nose	N	N	N	N
Mouth-to-stoma	N	N	N	N
NG Tube Placement				N
OG Tube Placement				N
Oxygen therapy - High Flow Nasal Cannula Per Protocol				N
Oxygen therapy - Humidifiers		N	N	N
Oxygen therapy - Nasal Cannula	N	N	N	N
Oxygen therapy - Non-rebreather Mask	N	N	N	N
Oxygen therapy - Partial Re-breather Mask		N	N	N
Oxygen therapy - Simple face mask		N	N	N
Oxygen therapy - Venturi Mask		N	N	N
Pharmacological facilitation of Intubation				N
Pleural Chest Decompression (needle)				N
Pulse Oximetry Per Protocol	W	N	N	N
Suctioning - tracheal bronchial suctioning of an already intubated patient		W*	N	N
Suctioning - upper airway	N	N	N	N
Suctioning of tracheostomy requiring modified technique		W*	W*	N
Ventilation - Positive Pressure Ventilation - Automatic Transport Ventilator (i.e. Auto Vent, CAREvent, Uni-Vent, Pneupac VR1). EMT & AEMT are limited to the initiation during resuscitative efforts of ventilators that only adjust rate and tidal volume.		W*	N	N
Ventilation - Positive Pressure Ventilation - Transport ventilator with adjustments beyond rate and tidal volume.				N
Cardiovascular Care	**EMR**	**EMT**	**AEMT**	**PARA**
Automated and Semi-Automated External Defibrillation (AED / SAED)	N	N	N	N
Cardiopulmonary Resuscitation - Mechanical CPR device		N	N	N
Cardiopulmonary Resuscitation (CPR)	N	N	N	N
Cardioversion electrical				N
Defibrillation - Manual				N
Semi-Automated External Defibrillation (SAED)	N	N	N	N
Transcutaneous Pacing				W*
Transvenous Cardiac Pacing, monitor and maintenance				N

Patient Assessment & Diagnostic Procedures	EMR	EMT	AEMT	PARA
Assess Pulse	N	N	N	N
Assess Respirations	N	N	N	N
Blood Pressure - Manual & Automated	W	N	N	N
Blood chemistry analysis - Glucometry (capillary puncture)	W*	N	N	N
Blood chemistry analysis - Cardiac Enzymes (i.e. iStat devices)				N
Cardiac Monitoring - 12 Lead ECG-lead placement, ECG acquisition, computerized analysis, and transmission		N	N	N
Cardiac monitoring - 12 Lead ECG-lead placement, ECG acquisition, computerized analysis or interpretation by EMS provider, and transmission				N
Telemetric monitoring - Per Protocol		N	N	N
Splinting, Spinal Motion Restriction (SMR), Patient Restraint, Trauma Care	**EMR**	**EMT**	**AEMT**	**PARA**
Cervical Collar	N	N	N	N
Emergency moves for endangered patients	N	N	N	N
Extremity splinting	N	N	N	N
Extremity stabilization - manual	N	N	N	N
Eye Irrigation	N	N	N	N
Eye Irrigation with Morgan Lens				N
Hemorrhage Control - Direct Pressure	N	N	N	N
Hemorrhage Control - Use of Hemostatic Gauze / Agent / wound packing	N	N	N	N
Hemorrhage Control - Use of Tourniquet	N	N	N	N
Manual Cervical Spine Protection / Restricted Spinal Motion	N	N	N	N
Mechanical patient restraint		N	N	N
Spinal Motion Restriction / Immobilization (from standing, seated, or supine position) including Long Spine board and KED	W	N	N	N
Splint traction	W*	N	N	N
Medical Care	**EMR**	**EMT**	**AEMT**	**PARA**
OB - Assisted Complicated Delivery		N	N	N
OB - Assisted Normal Delivery	N	N	N	N
Ventricular Assist Devices (VAD) - May transport patients with VAD in place		W*	W*	N
Vascular Access, Infusion, and Monitoring of Lines	**EMR**	**EMT**	**AEMT**	**PARA**
Central Venous Line - Access Existing Line / Port for Infusion				N
External Jugular Insertion and Infusion - Adult - per protocol				W*
Intraosseous Insertion and Infusion - Adult and Pediatric		W**	N	N
Operation and Management of a Controlled Delivery Device for IV Infusion (IV Pump)				N
Peripheral IV Insertion and Infusion - Adult and Pediatric		W**	N	N
Venipuncture to obtain venous blood sample		W**	N	N

Technique of Medication Administration	EMR	EMT	AEMT	PARA
Access indwelling catheters and implanted central IV ports				N
Buccal / Mucosal / Sublingual	W*	N	N	N
Endotracheal				N
Inhalation - Aerosolized/nebulized - EMT, limited to anticholinergics and beta agonist/bronchodilator.		N	N	N
Inhalation - Nitrous Oxide		W*	N	N
Inhalation - Unit-dosed, premeasured - EMR, limited to assisting patients with own prescribed medications such as bronchodilator for chronic respiratory condition. - per protocol	W*	N	N	N
Intradermal				N
Intramuscular - Auto Injector	N	N	N	N
Intramuscular - Syringe and needle - Draw medication using a needle from a vial into a syringe per protocol		W*	N	N
Intranasal			N	N
Intranasal - Mucosal atomization device	N	N	N	N
Intranasal - Unit-dosed, premeasured	N	N	N	N
Intraosseous Per Protocol		W**	N	N
Intravenous Per Protocol		W**	N	N
Nasogastric				N
Oral - per os (PO) - EMT (limited to aspirin, glucose, assist with patients nitroglycerine, ondansetron and OTC analgesics (ibuprofen and acetaminophen) for pain or fever.	W*	N	N	N
Oral - per os (PO) - EMR (limited to aspirin and glucose)	W*	N	N	N
Oral AEMT (limited to aspirin, glucose, nitroglycerine, ondansetron, and OTC analgesics ibuprofen and acetaminophen for pain or fever)	W*	N	N	N
Rectal				N
Topical				N
Transdermal				N
Medications - General Guidance	**EMR**	**EMT**	**AEMT**	**PARA**
Administration of Controlled Substances (FDA Scheduled)				N
Analgesic OTC for pain or fever per protocol		N	N	N
Antidotes for chemical / hazardous material / nerve agent exposures (auto-injector)	N	N	N	N
Aspirin - Oral	W*	N	N	N
Assisting a patient with his/her own prescribed medications (aerosolized/nebulized)	W*	N	N	N
Benzodiazepines for Sedation				N
Benzodiazepines for Seizures				N
Blood or Blood Products - Initiation / administration				W*
Blood or Blood Products - Maintenance of pre-existing infusion				N
Bronchodilator / Beta Agonist - Metered Dose Inhaler	W*	N	N	N
Bronchodilator / Beta Agonist - Nebulizer (EMT limited to anticholinergics and beta agonist/bronchodilator)		N	N	N
Depolarizing Agents for Pharmacological Facilitation of Intubation				N

Diphenhydramine (AEMT limited to IV, PO, IM with specialized training)		W*	W*	N
Diphenhydramine EMT (limited to PO with specialized training)		W*	W*	N
Emergency Cardiac Medications (AEMT limited to Epinephrine for cardiac arrest)			W*	N
Epinephrine (auto-injector) for anaphylaxis (supplied and carried by EMS agency or patients).	W	N	N	N
Epinephrine for Anaphylaxis Intramuscular - Syringe and Needle		W*	N	N
Expanded use of OTC medications - oral / topical per protocol				N
Glucose for hypoglycemia - Oral	W*	N	N	N
Hypoglycemic Medications (i.e. Glucagon, D50)			N	N
Naloxone for Suspected Opiate / Narcotic Overdose - Intranasal - Mucosal Atomization Device or autoinjector	N	N	N	N
Naloxone for Suspected Opiate / Narcotic Overdose Intramuscular - Syringe and Needle		W*	N	N
Naloxone for Suspected Opiate / Narcotic Overdose Intravenous			N	N
Nitroglycerine - Intravenous				N
Nitroglycerine - Sublingual (EMT limited to assist with patients prescribed nitroglycerine)		N	N	N
Nitroglycerine - Transdermal			N	N
Nitrous Oxide		W*	N	N
Non-depolarizing Agents for Pharmacological Facilitation of Intubation				N
Ondansetron (AEMT IV, IM, PO)			N	N
Ondansetron (EMT limited to PO)		W*	N	N
Opioid antagonist for suspected opioid overdose (auto-injector)	N	N	N	N
Other medications to facilitate sedation (I.E. Ketamine, Etomidate)				N
Oxygen Therapy	N	N	N	N
Thrombolytic (Initiation and Maintenance)				N

General Guidance

Authorized medications and routes for EMR, EMT, and AEMT are identified in this document. All medication administration requires a protocol to be established by the MPD and approved by the department for the level of certification indicated.

Authorized medications and routes for paramedic personnel are identified in this document. Additional medications may be approved for paramedic personnel if a department-approved MPD protocol is in place and providers have completed department-approved MPD supplementary training on the medication and protocol.

Administration of purified protein derivative (PPD) - People who have taken a PPD administration course administered by a local health agency may administer PPD if: the person is doing so in accordance with a formal TB program through the local health agency; is under the medical oversight of the local health officer, and is not doing so while performing as an EMS provider.

Administration of vaccine - AEMTs and paramedics may administer immunizations in a declared emergency only when all of the following exist: there is a local or state declaration of an emergency under the provisions of RCW 38.52; a local declaration must be declared by the local executive; an emergency incident mission number has been issued; the EMS providers are registered as emergency workers under state law (RCW 38.52); the EMS providers are acting under the direction of a county medical program director or the local health officer and the director of local or state emergency management or the appointed incident commander. Please contact the department for further guidance on how to use EMS personnel to provide emergency vaccines.

EMT personnel may use manual cardiac defibrillators in place of an AED for cardiopulmonary resuscitation provided the equipment is in AED mode.

Inter-Facility Specific Devices and Procedures
Inter-facility transport of patients must occur with a level of care recommended by the sending physician. Clarification on common devices and procedures not routinely seen by certified EMS personnel in the pre-hospital setting is provided below.
EMT and higher-level providers may transport medical devices and equipment that can be managed by the patient or patient's caregiver while in transport, and require no medical intervention or monitoring from the EMS provider if authorized by the MPD. Examples include but are not limited to: Peg tubes, J tubes, CSF shunts, ileostomy bags, insulin pumps, and feeding tubes that are not running during transport.
EMT personnel may transport patients with a pre-established saline lock or peripheral IV gravity fed infusion of normal saline, dextrose or lactated ringers or a combination of these solutions when: it has been determined by the sending physician to be a BLS level transport and a department approved MPD protocol is in place. EMTs are not authorized to establish an IV unless the EMT holds an endorsement for IV therapy. Transport of this equipment is limited to monitoring only and is optional for the MPD to implement.
EMT personnel may transport patients with a pre-established long term vascular access device such as a central line, PICC line, subcutaneous infusion, epidural with a patient-controlled analgesia device when: it has been determined by the sending physician to be BLS-level transport and the EMT has successfully completed a department approved MPD specialized training course, and a department approved MPD protocol is in place. Transport of this equipment is limited to monitoring only and is optional for the MPD to implement.
Paramedic personnel may transport patients with medications infusing if a department-approved MPD protocol is in place and providers have completed department-approved MPD supplementary training on the medication and protocol. MPDs may establish a generic protocol to address uncommon medications presented in urgent cases where a specific protocol does not exist. The generic protocol must include just-in-time training requirements, information the paramedic must have about the medication prior to transport, any additional transport considerations, any required contact with medical control, and any CQI requirements for uncommon medications.
Paramedic personnel may transport patients determined by the sending physician as requiring care of a specially trained paramedic and/or nurse as long as the provider has successfully completed a department-approved MPD specialized training course, and department-approved MPD inter-facility protocols within scope addressing the skills, procedures, and medications are in place.

Clark County Authorized Medications List

FOR PEDIATRIC DOSING, DO NOT EXCEED ADULT DOSE
ALL DOSES ARE SINGLE DOSE UNLESS OTHERWISE INDICATED

MEDICATION	DOSE	INDICATION
Acetaminophen Suppositories	*Peds 20mg/kg*	Fever >100.4°F
Activated Charcoal	50gm PO/NG *Peds 1g/kg Max 50gm*	Ingestion per Medical Control or Poison Center concurrence
Adenocard (Adenosine)	6 mg, 12mg prn *Peds 0.1 mg/kg, 0.2 mg/kg.* *Max peds single dose 12 mg*	NCT (dose 12, 18 if pt. on theophylline; ½ normal dose if hx of heart transplant, Persantine, or Tegretol)
Albuterol (Proventil)	5mg Nebulized repeat prn to sx resolution *Peds <15kg 2.5-5mg* *>15kg 5-10mg*	-Bronchospasm/wheezing -Hyperkalemia (Max 20mg)
Amiodarone (Cordarone)	a) 300mg IV/IO may repeat 150 mg in 3-5 min. *Peds 5mg/kg bolus Max 150mg* b) 150 mg over 10 min x 2 prn *Peds 2.5mg/kg IV/IO Max 150mg*	a) VF/pulseless VTach b) Stable V Tach
Atropine	a) 1mg max 3 mg b) 1-2mg q 5 min. *Peds 0.01-0.02mg/kg Max 2mg*	a) Bradycardia b) Organophosphate poisoning
Atrovent (Ipratropium Bromide)	0.5mg/2.5ml Nebulized	Bronchospasm/wheezing (initial nebulized treatment only. Do not repeat)
Aspirin	324 mg PO	Chest Pain/Acute Coronary syndrome
Calcium Gluconate 10%	3gm *Peds 0.6ml/kg max 30ml*	Hyperkalemia, Calcium Channel/Betaerse blocker OD
Calcium Chloride ALTERNATIVE	500mg *Peds 20mg/kg*	Hyperkalemia, Calcium Channel blocker OD
Dexamethasone (Decadron) ALTERNATIVE	10mg IV/IO/IM/PO *Peds (<40kg) 0.6mg/kg Max 10mg*	- Asthma/COPD, Anaphylaxis - Croup

Dextrose D10 D50 ALTERNATIVE	10gm (100ml) repeat 5gm prn to normal BGL max 25gm *Peds < 10 kg (birth to 1 year) with BGL < 40 mg/dl and children 10 kg – 35kg with BGL < 60 mg/dl give 1ml/kg by infusion not to exceed 250 ml total* 10 gm D50W (20 ml) IV. May repeat prn to total 25gm.	ALOC, Hypoglycemia
Diltiazem (Cardizem)	0.25 mg/kg (max 20mg) over 2min repeat 0.35 mg/kg (max 25mg) q 15min prn	Afib, Aflutter with rapid ventricular response PSVT refractory to Adenosine
Diphenhydramine (Benadryl)	1mg/kg IV/IM/PO Max 50mg	Allergy, Anaphylaxis, EPS
Droperidol (Inapsine)	5mg IM (1.25-5mg IV); q 15prn. 10mg max *Peds 0.1mg/kg IM/IV Max 5mg*	Agitated patient, Excited Delirium, Nausea/Vomiting (0.625 frail Vomiting pt.)
DuoNeb (0.5mg Ipratropium/ 3mg Albuterol) ALTERNATIVE	3ml via nebulizer q 20mins *Peds 0-5yrs 1.5ml via nebulizer*	-Bronchospasm/Wheezing -Hyperkalemia
Epinephrine	a) 1mg q 3-5 min. (1:10,000) *Peds 0.01mg/kg Max 1mg* b) 2-10mcg/min IV infusion *Peds 0.1mcg/kg/min* c) 0.3mg IM (1:1,000) *Peds 0.01mg/kg Max 0.3mg*	a) Cardiac Arrest b) Hypotension/profound bradycardia/status asthmaticus Anaphylaxis c) Anaphylaxis
Etomidate	0.3 mg/kg max 30 mg IV	Sedation during RSI
Fentanyl	1mcg/kg IV, IO, IM max 100mcg per dose (q 5-10 mins to 300mcg total prn) *Peds 1mcg/kg IV, IO, IN max 200mcg*	- Chest pain - Musculoskeletal pain - Sedation RSI
Glucagon	1mg IM *Peds 0.02mg/kg IM max 1mg*	Hypoglycemia
Haloperidol (Haldol) ALTERNATIVE	2mg – 5 mg IV/IM. May repeat q 15min to total 10mg max dose. *Peds 0.1 mg/kg Max 5mg*	Sedation, agitated patient
Ketamine	a) 2 mg/kg max 200 mg b) 0.5mg/kg IV/IO max 25mg	a)- Sedation during RSI b)- Sedation for CPAP, Pain control adjunct with Fentanyl

Ketorolac (Toradol)	30 mg IM OR 15 mg IV *Peds 1 mg/kg IM OR 0.5 mg/kg IV do not exceed adult dose*	Non-Cardiac pain management **NOT FOR TRAUMA SYSTEM PATIENTS**
Lidocaine	a) 1.5 mg/kg repeat prn to 3mg/kg max b) 40mg slow IO *Peds 0.5mg/kg*	a) VF, VT b) local pain control after IO insertion
Magnesium Sulfate	a) 2gm over 5-20 mins b) 2gm over 1-2 mins c) 2gm over 4-5 min d) 2-4gm slow IV over 20 min *Peds 25-50 mg/kg Max 2gm*	a) TCA OD, b) WCT, Torsades c) Status asthmaticus d) Eclampsia
Methylprednisolone (Solumedrol)	125mg IV *Peds 2 mg/kg Max 125mg*	- Asthma/COPD - Anaphylaxis - Addisonian Crisis
Midazolam (Versed)	2.5-5mg IV, IM, IO q 5mins prn *Peds 0.2 mg/kg IV, IO, IM, IN Max 10mg*	- Seizures - Sedation for procedure - Hyperadrenergic toxicity - Sedation, agitated patient
Naloxone (Narcan)	0.5-2mgx2 prn IV, IM, IN, IO *Peds 0.1mg/kg to max of 2mg*	- Narcotic OD w/ respiratory depression - ALOC w/ respiratory depression
Nitroglycerine	0.4mg tablets SL	- Chest pain, CHF/PE
Norepinephrine	4 mcg/min. increase 4 mcg/min q 5mins to max of 12 mcg/min. *Peds 0.1 mcg/kg/min. May increase to 0.2 mcg/kg/min then to max of 0.4 mcg/kg/min every 5 mins prn*	- Shock (not hypovolemic)
Olanzapine (Zyprexa)	10mg ODT	- Adult w/ psychotic sx or mild agitation
Racemic Epinephrine	*Peds 0.5cc if Peds 20-40kg* *0.25cc if Peds <20kg* Mix in 5cc NS via Med Neb	- Croup/Epiglottitis
Rocuronium ALTERNATIVE	1 mg/kg. May repeat 0.5 mg/kg if paralysis inadequate in RSI	Facilitate intubation; long term paralytic
Sodium Bicarbonate	1mEq/kg NCEMS ONLY repeat at 30 mins If worsening TCA OD, Hyperkalemia	TCA/Benadryl OD, Hyperkalemia

Sodium Thiosulfate	50ml 25% solution IV over 10 - 20 mins. *Peds - 1.6 mL/kg IV/IO infused over 10 to 20 minutes.*	Cyanide Poisoning
Succinylcholine	1.5mg/kg x 2 prn max single dose 200mg	Facilitate intubation
Tranexamic Acid (TXA)	1gm in 50cc over 10min	Traumatic shock/injury
Vecuronium (Norcuron)	0.1mg/kg	Long Term Paralytic
Verapamil ALTERNATIVE	5 mg IV may repeat q 15min max 20 mg	Afib, Aflutter with rapid ventricular response
Zofran (Ondansetron)	8 mg IV, PO *Peds >1 years 0.1 mg/kg*	- Nausea/Vomiting

Universal Patient Care Protocol

TREATMENT:

A. Assess scene safety; hazards; number of patients; mechanism of injury.
   1. Request additional resources as needed
   2. Consider declaration of Mass Casualty Incident if needed
B. Minimum PPE for all patient contacts will include gloves, eye protection and a surgical mask. Use N95 or higher level of mask during AGPs, transport if the patient cannot wear a mask due to EMS provided treatment, or when desired by the provider.
   1. **Assume all patient contacts are potentially infected, until assessed.**
      All patients will be asked to "come to us" if they are ambulatory by contacting the residence or facility through verbal contact from doorway, call into the residence/facility, or by CRESA who will direct staff to add the direction of – "If you are safe to do so, please make your way or assist the patient in getting to the front door of your residence or facility to meet the crews.".
C. Begin initial patient assessment, determine responsiveness and initial chief complaint.
   1. ABC or CAB if cardiac arrest (see Cardiac Arrest Guidelines).
   2. Secure airway and start oxygen as needed.
   3. Control any major external bleeding per Hemorrhage Control protocol
   4. Evaluate patient responsiveness, motor and sensory function in all extremities
   5. Expose patient as appropriate to complaint and to scene conditions.
D. Monitor vital signs, SpO2, ETCO2 and obtain CBG readings as appropriate.
E. Monitor ECG if appropriate to patient complaint/condition
F. Establish vascular access (IV or IO) as appropriate for patient's condition.
G. Obtain pain severity scale if applicable.
H. Perform secondary survey appropriate to patient presentation and complaint.
   1. May not be possible if patient has critical primary survey problems.
I OPQRST/SAMPLE HISTORY from patient or caregiver, if possible.
J. Follow appropriate Protocol if chief complaint or assessment findings change.

KEY CONSIDERATIONS:

A. If patient is unable to provide medical history, check for medical alert bracelets and necklaces, or other means of documenting medical history which can provide critical medical information and treatment.
   1. If disability present, reported, or suspected, see Ability Checklist reference
B. Pediatrics:
   1. Use a length/weight-based assessment tool to estimate patient weight and guide medication. **Do not exceed maximum adult dosing criteria.**
   2. Use pediatric assessment triangle to assist when first assessing a child.
C. Medications will need to be at the low end of the dosing scale in geriatrics (>65) and in patients with chronic renal disease or chronic liver disease
D. Critical Patient Care:
   1. For critical patient care scenes, every effort to perform an inter-agency review (hotwash) should be made as soon as possible after delivery of the patient to the ED.

Abdominal Pain/Acute Abdomen

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Place patient in a position of comfort.
C. If systolic blood pressure is < 90 mmHg systolic, follow Shock protocol and initiate rapid transport.
   1. If patient has a suspected abdominal aortic aneurysm, titrate IV to maintain systolic blood pressure of 90 mmHg (MAP 65).
D. Do not allow the patient to eat or drink.
E. Treat pain per Pain Management protocol.
F. Treat nausea/vomiting per Vomiting/Significant Nausea protocol.

PEDIATRIC PATIENTS:

A. Consider non-accidental trauma.
B. Closely monitor vital signs; blood pressure may drop quickly.
C. If systolic BP is inappropriate for age, treat per shock protocol.
   Lowest normal pediatric systolic blood pressure by age:
   - < one month: > 60 mmHg.
   - One month to 1 year: > 70 mmHg.
   - > 1 year: 70 + 2 x age in years.

Abuse and Maltreatment

PEDIATRIC/ADULT ABUSE:

A. Be alert to findings suspicious of abuse:
   1. Explanations of mechanisms of injury conflicting with actual injury.
   2. Suspicious injuries - cigarette burns, multiple bruises of varied age, belt marks, etc.
   3. History of repeated injuries.
   4. Blame placed upon others.
   5. Procrastination by caretaker(s) in seeking aid.
   6. Sexual abuse may accompany physical abuse or may be present without signs of apparent physical abuse.
   7. Evidence of medical neglect for injuries or infections.
   8. Unexplained trauma to genitourinary systems or frequent infections to this system.
   9. Evidence of malnourishment and/or serious dental problems.

B. Treat any injuries per protocols.
   1. Transport without delay for critical cases.

C. Document and Report as carefully as possible caretaker's descriptions of the event(s):
   1. Note the environment carefully including temperature.
   2. Note the reaction of all individuals on scene (include all caretakers).
   3. Note clothing, stains, conditions, bring clothing in with patient.
   4. Encourage the caretaker(s) to allow transport to the hospital for medical evaluation and/or treatment. If refusing, consult Medical Control for further instruction.
   5. Should caretaker(s) not allow recommended transport, notify Law Enforcement.

D. Support and reassure:
   1. Be non-judgmental; be supportive to family concerns.

E. Notify receiving physician of abuse, neglect, or potential of same.
   1. EMS providers are mandated to report suspected abuse of children and vulnerable adults:
      a. Child Protective Services: 1-866-363-4276
      b. Adult Protective Services: 1-800-562-6078

Altered Mental Status and Coma

TREATMENT:

A. Treat per Universal Patient Care protocol.
B. Treat underlying cause if known.
   - HYPERGLYCEMIA
     1. Monitoring:
        a. Check blood glucose level. Typical reading HI or well above normal.
     2. If glucose > 250 mg/dL with symptoms of dehydration, vomiting, abdominal pain, or altered level of consciousness:
        a. Fluid challenge NS: 1 L bolus IV; reassess and rebolus 1L if indicated.
   - HYPOGLYCEMIA
     1. Determine blood glucose level. If < 60 mg/dl (or <80mg/dl in a known diabetic patient):
        a. If patient can protect their own airway, give EMS oral glucose or complex carbohydrates.
        b. If patient is unable to protect their own airway infuse **Dextrose** 10 gm, may repeat **Dextrose** 5gm as needed to total 25gm.
     2. Check BGL after 5 minutes and repeat as above if blood sugar remains low and patient remains symptomatic.
     3. If no IV can be established, **Glucagon,** 1 mg (unit) IM.
   - SUSPECTED OPIOID OVERDOSE w Respiratory Depression
     1. If BLS provider OR difficult IV access, give **Naloxone** 2 mg IM/IN every 5 minutes up to 8 mg.
     2. **Naloxone** 0.5 - 2 mg IV. May repeat every two minutes up to 2 mg titrating to respiratory rate. If no improvement, repeat **Naloxone** 2 mg every 3-5 minutes up to a maximum of 8 mg total. Consider larger doses if Methadone overdose.
C. If patient is or becomes combative, consider sedation per Patient Restraint protocol.

PEDIATRIC MEDICATIONS:

A. **Dextrose** – For infants < 10 kg (birth to 1 year) with BGL < 40 mg/dl and children 10 kg – 35kg with BGL < 60 mg/dl give:
   1. **D10**, 1ml/kg by infusion not to exceed 250 ml total.
B. **Glucagon** 0.02 mg/kg IM to a maximum of 1 mg.
C. **Naloxone** 0.1 mg/kg IV/IO/IM/IN every 3-5 minutes to a maximum of 2 mg per dose. Max total dose 8mg. Do not give to newborns.
D. Pediatric fluid challenge: 20ml/kg repeat x 1 prn.

Allergic Reaction and Anaphylaxis

TREATMENT

A. Treat per Universal Patient Care protocol.
   - MILD REACTION - (Generalized Itching, Hives, Skin signs ONLY)
   1. **Benadryl** 1mg/kg IV (IM if unable to start IV)/PO max 50mg.
   - SEVERE REACTION - (Dyspnea, Wheezes, Laryngospasm, Angioedema, Shock)
      1. **Epinephrine** 1:1000 - 0.3 mg IM. OR **Epi Autoinjector** per manufacturers guidelines. May repeat IM dose in 10 mins if IV drip not available and patient still with severe symptoms.
      2. **Epinephrine** infusion - Start at 2 mcg/min IV drip and increase 2 mcg every 1 minute, prn. (titrate to clinical response).
      3. Fluid challenge for shock, as needed.
      4. **Benadryl** 1mg/kg IV (IM if unable to start IV)/PO max 50mg.
      5. **Albuterol** 5mg MedNeb for wheezes. ALTERNATIVE **DuoNeb**
      6. **Solumedrol** 125 mg IV. ALTERNATIVE **Dexamethasone** IV/IM/PO 10 mg.
      7. If refractory shock:
         a. **Norepinephrine** 4 mcg/min. Increase 4 mcg/min q 5mins to max of 12 mcg/min as needed.

PEDIATRICS

A. Treat per Universal Patient Care protocol.
B. ALS Care as indicated above.
   - MILD REACTION - (Generalized Itching, Hives, Skin signs ONLY)
   1. IV - balanced salt solution - EKG monitor
   2. **Benadryl** 1mg/kg IV (IM if unable to start IV)/PO max 25mg.
   - SEVERE REACTION - (Dyspnea, Wheezes, Laryngospasm, Angioedema, Shock)
      1. **Epinephrine** 1:1000 - 0.01mg/kg IM max 0.3mg OR **Epi Autoinjector** per manufacturers guidelines. May repeat IM dose in 10 mins if IV drip not available and patient still with severe symptoms.
      2. **Epinephrine** infusion - Start at 0.1mcg/kg/min IV/IO infusion and increase every 1 minute, prn. (titrate to clinical response).
      3. Fluid challenge 20ml/kg IV/IO for shock, as needed.
      4. **Benadryl** 1mg/kg IV (IM if unable to start IV)/PO max 50mg.
      5. **Albuterol** Patient weight <15kg 2.5-5mg. >15kg 5-10mg MedNeb for wheezes. ALTERNATIVE **DuoNeb** Peds 0-5 years 1.5ml.
      6. **Solumedrol 2mg/kg** IV (Max 125 mg). ALTERNATIVE **Dexamethasone** 0.6 mg/kg IV/IM/PO (Max 10 mg).
      7. If refractory shock:
         a. **Norepinephrine** 0.1 mcg/kg/min. May increase by 0.1 mcg/kg/min every 5 mins prn to max of 0.4 mcg/kg/min.

Amputation

TREATMENT:

A. Universal Patient Care
B. Treat hemorrhage via Hemorrhage Control Protocol
C. Stump
    1. Cover with sterile dressing, saturate with sterile saline.
    2. Cover with dry dressing.
D. Severed Part
    1. Rinse gently with sterile saline to remove debris.
    2. Wrap severed part with moistened gauze; place in airtight bag.
    3. Place bag in ice water.
E. Partial Amputation
    1. Cover with sterile dressing, saturate with sterile saline.
    2. Cover with dry dressing.
    3. Splint in anatomical position, avoid torsion and angulation (reduce torsion into anatomical position).
F. Treat pain per Pain Control Protocol

GENERAL CONSIDERATIONS:

A. Do not use dry ice or put severed part in direct contact with ice.
B. Do not neglect total patient care in favor of caring for the amputation.
C. Time is of the greatest importance to assure viability.
D. Amputation above wrist or ankle meets trauma system entry criteria.

Behavioral Emergency

PROCEDURE:

A. Assess and assure scene safety. Utilize the "come to us" approach if the individual is in a building or enclosed area.
B. Approach the individual in a calm, slow, reassuring and honest manner. Have one direct point of contact with the individual, multiple people attempting to intervene may increase the patient's confusion and agitation. Remaining responders should quietly stand back and be ready to intervene as necessary.
C. Protect the individual, bystanders and rescuers from injury. Follow Agitated Patient Management Protocol, if indicated.
D. Obtain history, physical and mental status examination if safe to do so
E. **Assess and treat any medical conditions per EMS protocol**
F. Determine if individual is eligible for transport to alternative care as per Transport to Alternative Mental Health Facility protocol.
    1. Contact the receiving facility and advise them you have an EMS patient for consideration and establish they can accept the patient. See Resource Phone List
    2. Contact medical control for confirmation of assessment findings and appropriateness of transport to a non-medical facility.
    3. Document inclusion criteria and provide to receiving facility.
G. All individuals will be assessed and evaluated by EMS, if safe to do so, regardless of transport status.

ADULT MOBILE CRISIS INTERVENTION (AMCI)

A. Can respond to any call from EMS or law enforcement for consultation. See Resource Phone List Identify yourself and ask for AMCI

SPECIFIC PRECAUTIONS:

A. Red Flags that this might **not** be a psychiatric condition:
    1. Waxing and waning level of consciousness
    2. Abnormal vital signs
    3. Dilated or pinpoint pupils
    4. First psychotic episode over the age of 30
    5. Acute onset over hours/days (consider substance abuse)
B. Psychiatric signs/symptoms.
    1. Mood disorder: depression, mania, suicide ideation, anxiety
    2. Thought disorder: hallucinations, pressured speech, racing thoughts, grandiose or paranoid ideation, delusions.
C. Medical illnesses including hypoglycemia, hypoxia, stroke, head injury, CNS infection may mimic psychiatric illness. Do not assume the patient's condition is purely psychiatric.

MANAGEMENT OF AGGRESSIVE/VIOLENT PATIENT

A. Law enforcement will intervene only when an individual poses a threat to others or themselves or has brought harm to others or has committed a criminal offense. LE will focus upon using the least force necessary to secure the situation and may elect to disengage from the scene. EMS responders need to treat these encounters with the understanding that their and other responder's personal safety is paramount and cannot always rely on LE backup.
B. Use all means necessary to de-escalate the situation. If restraint is necessary and safe to do so, follow Agitated Patient Management Protocol
C. If at any time the individual becomes aggressive or violent and your and/or other responder's safety is at risk, remove yourself and fellow EMS/Fire responders from the scene. Notify LE via CRESA that the individual is violent and it is unsafe to continue evaluation and treatment. Request LE assistance prior to further contact. If none is forthcoming, see Unsecured Scene below.
D. YOUR SAFETY IS PARAMOUNT. Document all encounters and reasons for leaving scene.

UNSECURED SCENE

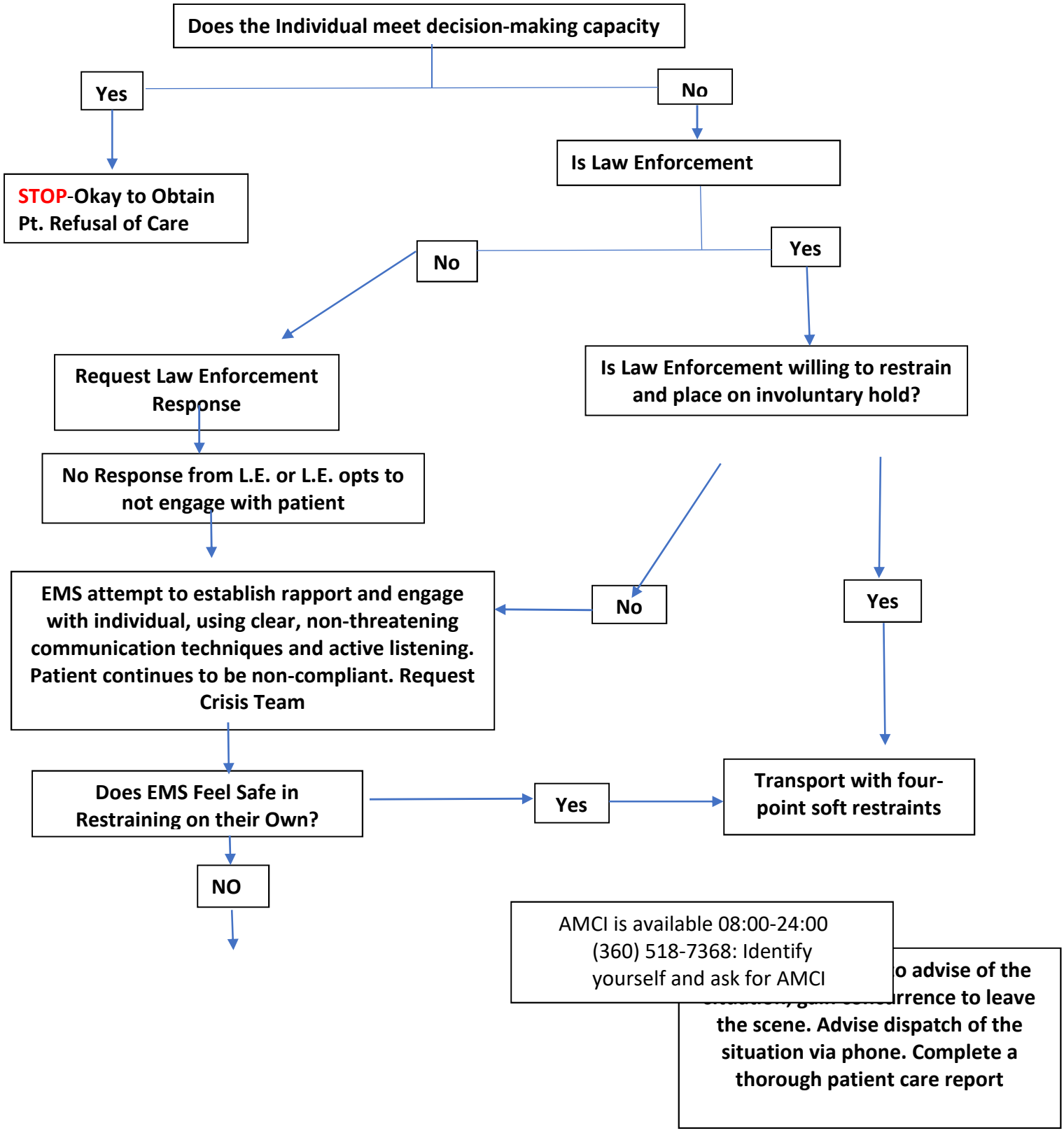
A. If law enforcement does not respond or will not engage in the incident:
    1. Contact your Supervisor or Battalion Chief (BC). Request additional resources (may include additional units, AMCI, DCR). Two-person crew will not attempt to manage incidents where safety is in doubt.
    2. Supervisor will review and confirm risk assessment and use this review to guide further actions.
B. If not already done, request a phone number from dispatch to call and ask the RP to come outside or meet EMS personnel at a location that provides a greater margin of safety. Any contact with the individual/RP (e.g., phone, verbal, etc.) will be documented as below.
C. Transport patient ONLY if safe to do so.
D. If the Supervisor/BC identifies you may not safely enter (or remain on) the scene or safely contact the individual, the Supervisor/BC will attempt to update the reporting party. Contact with the reporting party will be attempted prior to leaving the scene if no patient contact can be attempted. CRESA will be notified upon implementation of the decision to leave the scene and terminate the call. It is not necessary to notify medical control of intent to leave the situation.
E. Any response that is terminated for crew safety shall be reported to the EMS Supervisor or EMS Chief/Captain with a copy of the narrative and Behavioral Emergency Checklist. EMS Chief/Captain/Supervisor with forward these to the MPDs office for review.

DOCUMENTATION REQUIREMENTS.

A. In all cases of non-compliance with treatment and care, a complete and detailed health record will be written by the Lead EMS Provider. The minimum documentation requirements for such an encounter include:
   1. Disposition: Patient Refused Service
   2. Include the following elements in the narrative of the health care record:
      a. Descriptive overview of physical characteristics of the scene (e.g., "Responded to an unconscious person in a vehicle at intersection or street name")
      b. A complete description of the danger or safety elements involved
      c. List and describe the measures used to attempt to engage the patient
      d. List and describe measure used to attempt to create safety.
      e. Describe the reasons why safety could not be established
      f. Describe specifics of the exposure to violence or threats of violence to EMS response personnel. Whenever possible include specific quotes from the individual.
      g. Specify that Law Enforcement was requested to respond. Document that Law Enforcement did not respond or responded and chose not to engage with the individual.
      h. If medical control was contacted, name of the medical control physician and time of contact.
      i. When lack of capacity is identified, specific findings that contributed to that determination will be documented in the health care record (e.g., history of dementia confirmed by family, excessive exposure to heat conditions, slurred speech due to excessive alcohol intake, etc.).

SIGNS OF IMPENDING VIOLENCE	DE-ESCALATION (IF NEEDED TO MAKE SAFE WITHDRAWAL FROM THE SCENE)
Display/threat of a weapon	Remove irritating stimuli
Clenched fists	Discuss situation calmly/establish rapport
Wild/staring eyes	Express understanding of situation
Clenched fists	Reinforce positive aspects of situation
Threatening Posture	Explore patient's feelings
Threatening Gestures	Convey respect, don't judge
Muscle tension around jaw	Listen
Gritted teeth	Develop a solution, ask:
Reddened face	What helped with the last crisis?
Bulging neck veins	What would help now?
	Can I step outside?

EMS – PATIENT REFUSING TO COMPLY WITH CARE & TRANSPORT RECOMMENDATION (Restraints required or Involuntary Hold)



Blast Injuries

INJURY PATTERN:

A. Primary:
   1. Injury from over-pressurization force impacting the body surface.
   2. Tympanic membrane (TM) rupture, pulmonary damage and air embolization, hollow viscus injury.
B. Secondary:
   1. Injury from projectiles (bomb fragments, flying debris).
   2. Penetrating trauma, fragmentation injuries, blunt trauma.
C. Tertiary:
   1. Injuries from displacement of victim by the blast wind.
   2. Blunt/penetrating trauma, fractures, and traumatic amputations.
D. Quaternary:
   1. All other injuries from the blast.
   2. Crush injuries, burns, asphyxia, toxic exposures, exacerbations of chronic illness.

TREATMENT CONSIDERATIONS:

A. Manage hemorrhage per protocol.
B. Secure airway per protocol.
   1. If thermal or chemical burn to airway is suspected, early airway control is vital.
C. Breathing:
   1. Administer oxygen as appropriate with a target of achieving 94-98% saturation.
   2. Assist respirations as needed
   3. Cover any open chest wounds with semi-occlusive dressing
   4. If patient has evidence of tension pneumothorax, perform pleural decompression.
D. Circulation:
   1. Establish large bore IV access, treat Shock per protocol.
E. Disability:
   1. Treat traumatic brain injury and immobilize the spine as needed.
   2. Manage amputation per protocol.

NOTES/KEY CONSIDERATIONS:

A. Scene safety is of paramount importance when responding to an explosion or blast injury.
B. Patients sustaining blast injury may sustain complex, multi-system injuries including: blunt and penetrating trauma, shrapnel, barotrauma, burns, and toxic chemical exposure.
C. Consideration of airway injury, particularly airway burns, should prompt early and aggressive airway management.
D. Consider potential for barotrauma including: tension pneumothorax and tympanic membrane perforation.
E. Blast injury patients will be transported to a trauma center.

Brief Resolved Unexplained Event - BRUE

DEFINITION:

A. Event lasting <1 minute in an infant <1 year of age associated with at least one of the following:
   1. Cyanosis or pallor
   2. Absent, decreased, or irregular breathing
   3. Marked change in muscle tone (hypertonia or hypotonia)
   4. Altered level of responsiveness

TREATMENT:

A. Support ABCs. Follow Airway Management and Respiratory Distress protocols as needed.
B. Obtain and document any complications of pregnancy, birth date and gestational age at birth, fever or recent infection, prior BRUE episodes, underlying medical conditions.
C. Obtain and document description of event including symptoms, inciting event, any resuscitation attempts before EMS arrival.
D. Place on cardiac monitor and follow dysrhythmia protocol as needed.
E. Assess blood glucose.
F. Transport via ALS to an emergency department even if the infant currently appears in no distress.
G. OLMC contact is mandatory for any patient with a suspected BRUE where parent or guardian wishes to refuse.

NOTES & PRECAUTIONS:

A. BRUE is a group of symptoms, not a specific disease. BRUEs are most common in infants under one year of age, but may occur up to two years of age.
B. Many infants appear normal by the time EMS arrives.
C. Consider non-accidental trauma.
D. Serious underlying causes can include pneumonia, bronchiolitis, seizure, sepsis, intracranial hemorrhage, and meningitis.
E. BRUEs are more frequent in premature infants and infants with other health conditions such as cystic fibrosis, bronchiolitis and congenital heart disease.

Burns

TREATMENT:

A. Treat per Universal Patient Care. Apply Carbon monoxide monitor, if available
B. If systolic BP < 100 mmHg (MAP <65) follow Shock Protocol.
C. Remove jewelry and clothing that is smoldering or that which is non-adherent.
D. Burn Classifications:
    1. Superficial thickness: Epidermis only and looks like a sunburn; skin is erythematous and mildly painful.
    2. Partial thickness (superficial): Beyond the epidermis to include the superficial dermis. Blisters may occur; painful.
    3. Partial thickness(deep): Beyond the superficial dermis to include the deep dermis.
    4. Full Thickness: involves all layers of the skin and subcutaneous tissue, with involvement of underlying fascia.
E. Determine Total Body Surface Area (TBSA) involved using either Rule of Nines or the Palm Method. Do not include superficial thickness burns in TBSA.

If the patient has the following, prepare for transport to the Oregon Burn Center at Emanuel:

1. Partial thickness burns > 10% total body surface area (TBSA).
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Full Thickness burns in any age group.
4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. Transport to the closest appropriate trauma center if the underlying trauma poses the greater immediate risk. The patient may be initially stabilized at the trauma center before being transferred to the burn unit.
9. Burn patients who require special social, emotional, or rehabilitative intervention.

G. Cool burned areas (5 mins. max) then cover with sterile dressing. Discontinue cooling if patient begins to shiver. Leave unbroken blisters intact.
H. Treat pain per Pain Management protocol.

Continued: ⟶

I. Airway considerations in the burn and inhalation injury patient.
   1. Singed nasal hairs and facial burns alone are not indications for intubation
   2. Mild inhalation injuries in patients with normal O2 saturation and no respiratory distress can be safely observed.
   3. Indicators for early intubation.
      a. Signs of respiratory distress, stridor, accessory muscle use
      b. New onset of hoarseness
      c. Blisters or edema of oropharynx.
      d. Deep burns to lower face or neck

J. Establish IV access
   1. Burns greater than 20% TBSA should have two large bore IVs
   2. Initial fluid rates: Lactated Ringers preferred
      a. Less than 6 years old @125 ml/hr
      b. 6 years to 13 years old @ 250 ml/hr
      c. 14 years and older @ 500 ml/hr

K. If chemical burn:
   1. Consider Haz-Mat response; Protect yourself from contamination.
   2. Flush contaminated areas with copious amounts of water.
   3. If chemical is dry, carefully brush off prior to flushing. Do not use a neutralizer.

L. If electrical burn:
   1. Apply sterile dressings to entry and exit wounds.
   2. Treat any dysrhythmias per appropriate Cardiac Dysrhythmia protocol.
   3. Risk for rhabdomyolysis, provide adequate fluids, as above
   4. Report arc flash or contact, and voltage if known.

M. If Inhalation Injury:
   If Cyanide Toxicity is suspected based on location (closed space fire with plastics, wool or industrial chemicals), findings (soot in mouth, nose or oropharynx) and patient is comatose, in cardiac or respiratory arrest, or has persistent hypotension despite fluid resuscitation:
   1. **Sodium Thiosulfate** 50 mL of 25% solution IV/IO infused over 10 to 20 minutes.
   2. Treat other presenting symptoms per appropriate protocol.
   3. Initiate emergent transport to appropriate facility.
   4. Notify receiving facility of use of Sodium Thiosulfate

PEDIATRIC PATIENTS:

A. Treat pain per Pain Management protocol.
B. Consider possibility of non-accidental cause in children.
C. If Cyanide suspected: **Sodium Thiosulfate** dose is 1.6 mL/kg IV/IO infused over 10 to 20 minutes. Do not exceed adult dosing.
D. If systolic BP is inappropriate for age, treat per shock protocol.
   Lowest normal pediatric systolic blood pressure by age:
   - < One month: > 60 mmHg.
   - One month to 1 year: > 70 mmHg.
   - > 1 year: 70 + 2 x age in year

Cardiac Arrest – INITIAL MANAGEMENT

TREATMENT:

A. Establish unresponsiveness
B. Identify absence of pulse and respirations.
C. Continuous CPR for 2 minutes if down time estimated at > 5 minutes; if < 5 minutes or if bystander CPR, do CPR until AED/Monitor applied.
    1. Apply EKG Leads/Defib Pads A/P position. Use A/L position if unable to place A/P and document reasoning.
    2. Analyze and follow AED instructions or Paramedic interpretation (Defibrillate prn).
    3. Continuous CPR for 2 minutes; rhythm analysis:
        a. Goal is to get epinephrine in quickly in asystole/PEA
        b. Goal in shockable rhythm is: amiodarone after second or third shock and epinephrine after first dose of amiodarone
    4. SGA, 100% O2. Capnography throughout.
    5. IV TKO with balanced salt solution above the diaphragm preferred, in this order
        a. Arm vein, antecubital
        b. Humeral IO (not pediatric)
        c. IO Tibial or Femoral (pediatric)
D. Use a weight/age-based system for treatment of pediatric cardiac arrest, i.e., Broselow Tape, Handtevy.
E. If patient not responding to treatments as follows, consider Death in the Field.

Cardiac Arrest – ASYSTOLE

TREATMENT: – Determined by the Paramedic:

A. **Epinephrine** 1:10,000 1.0 mg IV/IO.
B. If asystole persists continue two-minute cycles of CPR and rhythm analysis.
C. Continue **Epinephrine** 1:10,000 1 mg IV/IO every 4 minutes.

PEDIATRIC PATIENTS:

A. Follow adult algorithm.
B. **Epinephrine** 1:10,000 - 0.01 mg/kg IV/IO as soon as possible after cardiac arrest is recognized. Repeat every 4 minutes. Do not exceed adult dose.

NOTES & PRECAUTIONS:

A. If unwitnessed arrest and no obvious signs of death, proceed with resuscitation and get further information from family/bystanders.
    1. If obvious signs of death, POLST form or history of traumatic event, follow death in the field per Death & Dying protocol.
B. Minimize interruptions to CPR when securing the airway. Preferred initial airway is SGA.
C. Continuously monitor effectiveness of CPR and oxygenation. Avoid hyperoxygenation, maintain O2 sat of 94-96% if ROSC.

TREAT OTHER POSSIBLE CAUSES:

A. Acidosis Oxygenation/Ventilation.
B. Cardiac tamponade – consider hospital transport.
C. Hyperkalemia –Hyperkalemia protocol. (Renal failure, rhabdomyolysis, crush injury, etc.)
D. Hypothermia – Treat per Hypothermia protocol.
E. Hypovolemia – Treat with fluids per Shock protocol.
F. Hypoxia – Oxygenate and ventilate.
G. Pulmonary embolus – consider hospital transport.
H. Tension pneumothorax – Needle decompression.
    - Toxins
        1. Tri-cyclic OR Benadryl overdose – **Sodium bicarbonate** 1 mEq/kg. – Peds 1 mEq/kg Max 50 mEq.
        2. Calcium Channel/Beta Blocker overdose- **Calcium Gluconate** 3 grams

Cardiac Arrest – PULSELESS ELECTRICAL ACTIVITY (PEA)

TREATMENT: – Determined by the Paramedic:

A. **Epinephrine** 1:10,000 1.0 mg IV/IO.
B. If PEA persists continue two-minute cycles of CPR and rhythm analysis.
C. Continue **Epinephrine** 1:10,000 1 mg IV/IO every 3-5 minutes.
D. Administer NS up to 2L rapid infusion.

PEDIATRIC PATIENTS:

A. Follow adult algorithm.
B. **Epinephrine** 1:10,000 dose - 0.01 mg/kg IV/IO as soon as possible after cardiac arrest is recognized. Repeat every 3-5 minutes. Do not exceed adult dose.
C. Administer NS up to 20ml/kg bolus infusion. May repeat prn to Max 60ml/kg.

NOTES:

A. Continuously monitor effectiveness of CPR and oxygenation. Avoid hyperoxygenation, maintain O2 sat of 94-96% if ROSC.

TREAT OTHER POSSIBLE CAUSES:

A. Acidosis - Oxygenation/Ventilation
B. Cardiac tamponade – consider hospital transport.
C. Hyperkalemia –Hyperkalemia protocol. (Renal failure, rhabdomyolysis, crush injury, etc.).
D. Hypothermia – Treat per Hypothermia protocol.
E. Hypovolemia – Treat with fluids per Shock protocol.
F. Hypoxia – Oxygenate and ventilate.
G. Pulmonary embolus – consider hospital transport.
H. Tension pneumothorax – Needle decompression.
I. Toxins:
    1. Tri-cyclic antidepressant OR Benadryl overdose – **Sodium bicarbonate** 1mEq/kg – Peds 1 mEq/kg Max 50 mEq.
    2. b. Calcium Channel/Beta Blocker ovedose- **Calcium Gluconate** 3 grams

Cardiac Arrest – VFIB/PULSELESS VTACH

TREATMENT: – Determined by Paramedic:

A. Defibrillate.
B. Immediately continue CPR for two minutes.
C. Assess heart rhythm; Defibrillate if Vfib, pulseless Vtach.
D. Immediately continue CPR for two minutes
1. **Amiodarone** 300 mg IV/IO (NOT in Torsades). Administer concurrently with CPR.
2. If Amiodarone contraindicated, **Lidocaine** 1.5 mg/kg IV/IO.
3. If multifocal WCT (Torsades) or Magnesium deficiency suspected, **Magnesium Sulfate** 2 grams bolus IV (dilute in 50cc NS wide open).

E. Assess heart rhythm; Defibrillate if Vfib pulseless Vtach.
F. Immediately continue CPR for two minutes.
1. **Epinephrine** 1 mg 1:10,000 IV/IO.

G. Assess heart rhythm; Defibrillate if Vfib pulseless Vtach.
1. Change defibrillation vector (A/P to A/L) after 3rd unsuccessful shock.

H. Immediately continue CPR for two minutes.
1. **Amiodarone** 150 mg IV/IO.
2. If Amiodarone contraindicated, **Lidocaine** 1.5 mg/kg IV/IO.

I. If Vfib/pulseless Vtach persists, continue two-minute cycles of CPR, rhythm analysis and defibrillation.
1. Continue **Epinephrine** 1 mg1:10,000 IV/IO every 3-5 minutes.

J. Continue above until ROSC or DIF criteria apply. If ROSC, target O2 sat of 94-96%, ETCO2 of 30-40 and monitor waveform. Follow ROSC protocol.
1. If DIF criteria, contact MC for concurrence.

PEDIATRIC PATIENTS:

A. Follow adult algorithm flow. Use the following dosing (do not exceed adult dose):
1. BLS provider: Use pediatric pads w/adult AED algorithm
2. ALS Providers: Defibrillation: 2 J/kg for the first attempt and 4 J/kg for subsequent attempts
3. Drugs:
   a. **Epinephrine** – 1:10,000 – 0.01 mg/kg IV/IO
   b. **Amiodarone** – 5 mg/kg IV/IO. May repeat once with 2.5 mg/kg IV/IO.
   c. **Lidocaine** – Follow adult dosing.

Continued: ⟶

NOTES & PRECAUTIONS:

A. Airway should be addressed with minimal interruption to CPR. Ventilation rate should be 8-10 breaths per minute.
B. If patient remains in persistent VF/pVT (> three shocks) reposition defibrillation force from A/P to A/L OR A/L to A/P if able.
C. **Sodium bicarbonate** is not recommended for the routine cardiac arrest sequence but should be used early in cardiac arrest of known cyclic antidepressant or Benadryl overdose or in patients with hyperkalemia. If used:
    1. Administer 1 mEq/kg IV/IO.
D. If there is a delay in getting IV/IO access Epinephrine could be given in the same sequence as Amiodarone.
E. If persistent VF/pVT, after 5th shock, contact MC for further instructions.

Cardiac Arrest – RETURN OF SPONTANEOUS CIRCULATION (ROSC)

TREATMENT:

A. Optimize ventilation and oxygenation
1. Intubate as needed. Majority of patients transported in cardiac arrest or have achieved ROSC may be managed with an SGA.
2. Titrate oxygen to the lowest level to achieve target SpO2 between 94 – 96%.
3. Monitor ETCO2 (normal is 35-45 mmHg), do not hyperventilate (ideal rate is 10-12 breaths/minute).
4. If hypotensive (systolic BP < 100 mmHg or MAP <65 mmHg) follow Shock protocol. Goal is to maintain a mean arterial pressure (MAP) > 65 mmHg.
5. Perform 12-lead ECG.
6. Transport all patients with ROSC to hospital with interventional capability per local criteria.
7. Notify receiving facility if LUCAS deployed during resuscitation.

NOTES:

A. If patient has ROSC, observe briefly to ensure sustained stability prior to transport. A 5-10 minute time while packaging and loading will be adequate.

Cardiac Dysrhythmia – BRADYCARDIA

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Obtain 12-lead ECG if feasible.
C. Observe and monitor patient.
D. Are signs or symptoms of poor perfusion (Altered mental status, acute heart failure, hypotension or other signs of shock) caused by the bradycardia present?

1. **Atropine** 1 mg IV, repeat every 2-5 minutes as needed (max 3 mg) to maintain MAP of 65 mmhg.; discontinue Atropine if chest pain increases.
2. If no response to Atropine:
    1. **Epinephrine** infusion - Start at 2 mcg/min IV drip and increase 2 mcg every 1 minute, prn. (titrate to clinical response).
3. Transcutaneous Pacemaker
    a. Primary initial treatment for symptomatic high degree heart block.
    b. Do not delay transcutaneous pacer if IV access difficult.
    c. Sedate as needed with **Midazolam** 2.5 mg IV, or 5 mg IM. Max 10 mg prn.
    d. Treat pain with Fentanyl per protocol.

NOTES & PRECAUTIONS:

A. Immediate TCP can be considered in unstable patients when vascular access is not available.
B. TCP is at best a temporizing measure and is not useful in asystole.
C. If TCP capture is not achieved, try repositioning pads.
D. If STEMI, refer to protocol.

Cardiac Dysrhythmia – STABLE TACHYCARDIA

CONSIDERATION:
Patient does NOT have signs or symptoms of poor perfusion caused by the dysrhythmia (AMS, ischemic chest discomfort, acute heart failure, signs of shock)

TREATMENT:

A. Treat per Universal Patient Care Protocol
B. Obtain 12 Lead
C. Narrow complex QRS (< 0.12 sec) NARROW COMPLEX TACHYCARDIA (NCT) > 180bpm:
    1. Regular Rhythm.
        a. Attempt vagal maneuvers.
        b. If refractory, **Adenosine** 6 mg rapid IV.
        c. If refractory, **Adenosine** 12 mg rapid IV.
    2. Irregular Rhythm:
        a. Monitor patient, consider causes of NCT (sepsis, shock, dehydration, etc.).
        b. If acute onset Afib, Aflutter rate >140 (symptomatic but not unstable):
            * **Diltiazem** 0.25 mg/kg (maximum 20 mg) given slow over 2 mins. after 15 mins. may repeat at 0.35 mg/kg (maximum 25 mg). Do not use in WPW.
            * ALTERNATIVE: **Verapamil** 5 mg IV slow over 2-3 mins. May repeat 5 mg every 15 min prn to max of 20 mg. Do not use in WPW.
D. Wide complex QRS (> 0.12 sec) WIDE COMPLEX TACHYCARDIA (WCT):
    1. Regular Rhythm and QRS Monomorphic:
        a. **Amiodarone** 150 mg IV/IO over 10 min.
        b. If no conversion, repeat **Amiodarone** 150 mg IV/IO over 10 min.
    2. Irregular Rhythm:
        a. If possibly Torsades give **Magnesium Sulfate** 2 grams IV over 1-2 minutes
        b. If acute onset Afib, Aflutter rate >140 (symptomatic but not unstable):
            * **Diltiazem** 0.25 mg/kg (maximum 20 mg) given slow over 2 mins. after 15 mins. may repeat at 0.35 mg/kg (maximum 25 mg). Not in WPW.
            * ALTERNATIVE: **Verapamil** 5 mg IV slow over 2-3 mins. May repeat 5 mg every 15 min prn to max of 20 mg. Not in WPW.
            * Calcium channel blockers contraindicated in WIDE COMPLEX TACHYCARDIA associated with WPW. Consult with Medical Control is mandatory.
        c. Other wide complex irregular rhythms, monitor patient consider causes.
E. Obtain post treatment 12-lead ECG.

Continued: ⟶

PEDIATRIC PATIENTS:

A. Treat per Universal Patient Care Protocol. Identify and treat underlying causes
B. Obtain 12-lead ECG
C. Narrow complex QRS (< 0.09 sec)
    1. Probable SVT (Compatible history Infants HR > 220; Children: HR > 180)
        a. Attempt vagal maneuvers
        b. **Adenosine** 0.1 mg/kg Max 6 mg rapid IV
        c. If no conversion may repeat **Adenosine** once at 0.2 mg/kg Max 12 mg rapid IV
    2. Probable Sinus Tachycardia Infants: HR < 220; Children: HR < 180
        a. Monitor patient, Consider causes
D. Wide complex QRS (> 0.09 sec)
    1. If regular and QRS monomorphic, consider **Adenosine** 0.1 mg/kg Max 6 mg rapid IV
    2. Possible VTach: **Amiodarone** 2.5mg/kg IV/IO Max 150 mg over 10 minutes.
        a. If no conversion, repeat **Amiodarone** 2.5mg/kg IV/IO Max 150 mg over 10 minutes

NOTES & PRECAUTIONS:

A. All doses of adenosine should be reduced to one-half (50%) in the following clinical settings:
    1. History of cardiac transplantation.
    2. Patients who are on carbamazepine (Tegretol) or dipyridamole (Persantine, Aggrenox).
    3. Administration through any central line.
B. **Do not use Adenosine OR Calcium Channel Blocker in patients with Wolff-Parkinson-White syndrome in atrial fibrillation with wide complex. May initiate rapid ventricular response (V Tach/V Fib)**.
C. Adenosine should be used with caution in patients with asthma as it may cause a reactive airway response in some cases.
D. In patients with tachycardia, particularly with history of AFib/AFlutter evaluate for possible causes of tachycardia, such as shock, sepsis, dehydration, hypovolemia, blood loss etc.
E. Calcium Channel blockers do not treat AFib/AFluttter but decrease ventricular rate. Consider underlying causes before using a rate reduction drug.

Cardiac Dysrhythmia – UNSTABLE TACHYCARDIA

CONSIDERATIONS:
Patient HAS signs or symptoms of poor perfusion caused by the dysrhythmia (AMS, pulmonary edema, acute heart failure, signs of shock)

A. In patient with underlying atrial fibrillation consider causes of instability other than rate.
B. Rate related symptoms uncommon if HR<150 bpm. Consider other causes.

TREATMENT:

A. Treat per Universal Patient Care Protocol
B. Immediate synchronized cardioversion. If patient is conscious, provide sedation. Do not delay cardioversion for sedation. (**Midazolam)** can be provided after cardioversion if not given prior)
    1. **Midazolam** 2.5-5 mg IV/IM prn.
C. Repeat cardioversion if refractory.
D. NO Conversion:
    1. **Amiodarone** 150 mg IV/IO slow push over 10 mins.
    2. Repeat synchronized cardioversion x 2 prn Max 200j.
    3. If recurrent; **Amiodarone** 150 mg IV/IO over 10 mins.
    4. If multi-focal (Torsades): **Magnesium Sulfate** 2 gm IV over 1-2 mins.
E. YES Conversion:
    1. Obtain 12-lead ECG if not already done.
    2. Consider contributing factors and other treatments.

PEDIATRIC PATIENTS:

A. Treat per Universal Patient Care Protocol; Identify and treat underlying causes.
B. Immediate synchronized cardioversion at 0.5-1 J/kg; If patient is conscious, consider sedation. Do not delay cardioversion for sedation.
    1. **Midazolam** 0.2mg/kg IV/IM. Max 10 mg.
C. Repeat cardioversion x 1 if refractory
D. NO Conversion:
    1. **Amiodarone** 2.5 mg/kg IV/IO Max 150 mg slow push over 10 mins.
    2. Repeat synchronized cardioversion at 0.5-1 J/kg two additional times if needed
    3. If repeatedly no conversion, rapid transport.
E. YES Conversion:
    1. Obtain 12-lead ECG if not already done.
    2. Consider contributing factors and other treatments.

Chest Pain/Acute Coronary Syndrome

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Administer oxygen if needed to achieve a SpO2 between 94 – 98%.
C. Obtain 12-lead ECG. This may be done concurrently with other treatment.
D. **Aspirin** 324 mg PO. Contraindicated in known allergy, active bleeding ulcer, severe liver failure or severe systemic disease.
E. If systolic BP > 110
    1. **Nitroglycerine** 0.4 mg. May repeat x 2 every 3-5 minutes.
        a. Caution in Right Sided Myocardial Infarction (positive changes in V3R or V4R).
        b. Contraindicated in patient taking phosphodiesterase inhibitor (Sildenafil, Viagra, Cialis, Levitra) in the past 48 hrs.
        c. Vascular access should be done prior to Nitro.
    2. **Fentanyl** 1mcg/kg IV, IO, IM max 100mcg per dose (q 5-10 mins to 300mcg total prn).
F. If hypotensive, follow Shock protocol.

IF ACUTE MI SUSPECTED SEE STEMI EARLY RESPONSE PROTOCOL

Crush Injury/Entrapment

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Spinal immobilization if indicated and feasible.
C. Consider pain management.
D. Evaluate degree of entrapment and viability of extremities (absent pulse, blanched skin, capillary refill, diminished sensation, extremely cold to the touch).
E. During extrication, administer 1000 - 2000 cc fluid bolus (NS preferred), then maintain at 500 cc/hr.
F. Monitor cardiac rhythm for signs of hyperkalemia throughout patient contact as feasible. If present, treat per Hyperkalemia protocol.
G. Wound care:
    1. Remove all restrictive dressings (clothing, jewelry, etc.).
    2. Monitor distal pulse, motor and sensation in involved extremity.
    3. Bandage all open wounds (irrigate if needed).
    4. Stabilize all protruding foreign bodies (impaled objects).
    5. Splint/immobilize injured areas.
    6. For suspected pelvic crushing injuries, follow the Pelvic Immobilization procedure if indicated.

Drowning – Near Drowning

TREATMENT:

A. Universal Patient Care protocol.
B. Protect cervical spine if diving accident.
C. Establish and maintain airway
    1. Clear mouth and pharynx, suction liberally with tonsil tip.
    2. Advanced Airway management prn.
D. Monitor lung sounds frequently.
    1. Institute CPAP or PEEP for pulmonary edema.
E. Altered Mental Status patient protocol, as indicated.

GENERAL CONSIDERATIONS:

A. All near-drowning patients should be transported to the hospital for evaluation.
B. Protect against and/or treat hypothermia per protocol

Heat Syndromes

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Heat Cramps, Heat Exhaustion
   1. Move to cooler environment, remove excess clothing. Tepid compresses to forehead, neck, extremities.
   2. Oral fluids, if possible.
   3. Initiate IV with balanced salt solution, if unable to take oral fluids or if hypotensive. Fluid challenge with 200-500 cc rapidly.
   4. Transport as necessary.
C. Heat Stroke
   1. Move to cooler environment, remove clothing, aggressive cooling with wet sheets, cool packs, evaporative airflow.
   2. IV with balanced salt solution / fluid challenge with 200 cc over 20 minutes unless pulmonary edema develops.
   3. **Midazolam** 2.5 - 5 mg IV/IM q 5 min prn for seizures or to control shivering when cooling.
   4. Treat cardiac dysrhythmias per protocols. Rapid transport to hospital.
   5. Altered mental status protocol, as indicated.

Hemorrhage Control

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. External bleeding - Control with direct pressure and elevation.
    1. If direct pressure not effective or practical, apply commercially available tourniquet
        a. Apply tourniquet as per manufacturer's recommendation.
        b. Note time and date on the tourniquet label.
        c. Do not remove tourniquet prior to arriving at definitive care.
    2. Utilize improvised tourniquets only if commercially designed tourniquets unavailable.
    3. Remove and/or replace improvised tourniquets as time allows.
    4. If direct pressure and tourniquet application ineffective or impractical, i.e. junctional wound/bleeding, follow procedure for wound packing.
    4. If amputation, follow Amputation Protocol.
    5. If shock, follow Shock Protocol.

Hyperkalemia

RECOGNITION, SIGNS & SYMPTOMS:

A. Suspect in known renal failure or dialysis patient.
B. Other patients who are predisposed to hyperkalemia are those who have muscular dystrophy, paraplegia/quadriplegia, crush injury, prolonged immobilization or patients who have sustained serious burns > 48 hours.
C. Obtain a 12-lead ECG.
D. Signs/Symptoms: tingling, numbness, paresthesias, flaccid weakness, EKG changes (peaked T waves, prolonged P-R interval, wide QRS, PVCs, Bigeminy, VT, VF).

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Establish IV (Fluid of choice is NS and NOT LR)
    1. **Calcium Gluconate** 3 gm slow IV/IO. Flush tubing
    2. **Sodium bicarbonate** 1mEq/kg slow IV push.
    3. **(NCEMS ONLY)** – May repeat Calcium/Bicarb after 30 mins if signs of worsening hyperkalemia (worsening bradycardia, QRS prolongation or T waves appear more peaked)
C. **Albuterol** 5mg via continuous Med Neb Max 20mg. ALTERNATIVE **DuoNeb**
D. Follow protocols for dysrhythmias.
E. Rapid transport

Hypothermia/Cold Exposure

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Gently remove wet clothes and protect patient from further environmental exposure.
C. Assess ABC's. Allow up to 60 seconds to confirm respiratory arrest, pulseless cardiac arrest or bradycardia that is profound enough to require CPR.

PATIENT PERFUSING:

A. Monitor ECG and pulse oximetry. Handle patient gently to avoid VF.
B. Institute rewarming procedures:
    1. O2 warmed and humidified, warm packs, heated blankets, warmed ambulance, etc.
    2. Truncal rewarming:
        a. Warmed IV fluids (200 – 300 ml); avoid over-hydration
        b. Heat packs to groin, axilla

CARDIAC ARREST:

A. Begin CPR, Treat per Cardiac Arrest Guidelines.
    1. The hypothermic heart may be unresponsive to cardiovascular drugs, pacer stimulation or defibrillation. **Rewarming is paramount**.
    2. If core temperature ≤30^{o} C consider no more than 3 defibrillation attempts prior to rewarming. The interval for medication administration should be doubled until normothermic.
B. Continue rewarming procedures during transport.

OTHER TREATMENT CONSIDERATIONS:

A. Unconscious patient:
    1. Altered Mental Status and Coma protocol.
B. Frostbite present:
    1. Protect with dry dressings, do not rub frostbitten areas, and permit only gradual warming by room temperature out of hospital.
C. At-risks groups for hypothermia include trauma victims, alcohol and drug abuse patients, homeless persons, elderly, low-income families, infants and small children, and entrapped patients.
D. Hypothermia may be preceded by other disorders (alcohol, trauma, OD) look for and treat any underlying conditions while treating the hypothermia.
E. If death in the field is suspected, online Medical Control will be consulted prior to DIF determination.

Newborn Resuscitation

TREATMENT:

A. Prevent heat loss from the infant.
   1. Quickly dry infant, remove wet linens from contact with the infant.
   2. Maintain warm environment, place in mother's arms if condition warrants.
B. Airway.
   1. Wipe nose and mouth if needed.
C. Breathing Control:
   1. Stimulate respirations by gently flicking heels, rubbing spine.
   2. Face mask with 6L O2 or Blow-by O2
   3. Positive pressure ventilation for:
      a. Apnea or gasping respirations - APGAR score 5 or less – HR <100.
   4. Intubation for persistent apnea, HR <100, or APGAR < 5 after 10 minutes.
D. At 30 to 60 seconds after delivery, clamp and cut the umbilical cord about 6 inches from infant. If resuscitation is needed, cord may be clamped and cut as soon as necessary.
E. CPR if heart rate <80bpm at ratio of 3:1 compressions to ventilations.

FURTHER CONSIDERATIONS

A. Persistent bradycardia (rate < 80) or asystole despite PPV
   1. **Epinephrine** 0.01 mg/kg (1:10,000), IV, IO, or ET tube.
B. Neonatal fluid resuscitation: 10 ml/kg balanced salt solution.

POST RESUCITATION CARE:

A. Continue to provide assisted ventilation as needed.
B. Closely monitor respiratory effort, heart rate, blood glucose and pulse oximetry.
C. Keep newborn normothermic. Hypothermia significantly increases risk of morbidity.

Obstetrical Emergencies and Childbirth

TREATMENT:

A. Treat per Universal Patient Care Protocol. Start O2 in all abnormal deliveries.
B. Transport third-trimester females in left lateral decubitus (protect spine if indicated).
C. If multiple or precipitous delivery request additional ambulance.

TOXEMIA OF PREGNANCY:

A. Moderate to Severe Pre-Eclampsia (third trimester or post-partum) Any of the Following:
    1. Hypertension - >160 systolic or >110 diastolic
    2. Headache; Cerebral disturbances (changes in behavior)
    3. Visual disturbances (flashes of light)
    4. Epigastric pain
    5. Dyspnea/Cyanosis
B. Eclampsia [Toxemia] any one of the above plus:
    1. Seizure or Post-ictal
C. Seizure treatment.
    1. **Midazolam** 2.5-5 mg IV/IM q 5 min prn.
    2. **Magnesium Sulfate** 2-4 gm IV slow (over 20 min.).

NORMAL CHILDBIRTH:

A. Use sterile or clean technique. Guide/control but do not retard or hurry delivery.
B. Delivery:
    1. Check for cord around neck and gently remove if found.
    2. Apply gentle counterpressure to baby's head as it delivers.
    3. Assist delivery of shoulders and rest of body.
C. After delivery, assess infant per Neonatal Resuscitation protocol. If no resuscitation is needed (term infant, breathing or crying, good muscle tone), proceed as below.
D. Wipe nose and mouth if copious secretions.
E. Briefly dry infant and place on mother's chest, in skin-to-skin contact. Cover both with a clean, dry blanket.
F. Assess infant using APGAR at one minute after birth and five minutes later. (Documentation will describe infant using criteria rather than giving a numerical score).
G. At 30 to 60 seconds after delivery, clamp and cut the umbilical cord about 6 inches from infant. If resuscitation is needed, cord may be clamped and cut as soon as necessary.
H. Do not delay transport to deliver the placenta. After the placenta has delivered, gently externally massage uterus to encourage contraction and prevent bleeding.
I. If mother has significant postpartum hemorrhage (> 500ml), continue uterine massage, treat for shock, and update receiving facility.
J. Unless infant needs treatment, keep on mother's chest for transport.
K. Monitor vital signs of mother and infant during transport.

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ABNORMAL CHILDBIRTH:

A. General Considerations
   1. Transport to nearest appropriate hospital, notify early.
   2. Transport in position as described in General treatment above.
   3. Altered Mental Status protocol for newborn.

B. Breech Presentation:
   1. Allow mother to push - do not pull the baby - gently extract.
   2. Support delivered body and extremities on your hand and arm.
   3. If head not delivered, place gloved hand in vagina to form a "V" around baby's mouth and nose should it begin to breathe.

C. Prolapsed Cord:
   1. Place mother in knee-chest position or extreme Trendelenburg.
   2. Insert gloved hand into vagina and gently lift head/body off of cord.
   3. Observe cord for pulsations and continue until relieved by hospital staff.
   4. Rapid transport.

D. Cord Wrapped Around Neck
   1. With two fingers behind baby's neck, try to slip cord forward, over baby's upper (anterior) shoulder and head. If unsuccessful, attempt to slip under lower shoulder and over the head.
   2. If unsuccessful, clamp cord with two clamps, cut between clamps, and carefully unwrap cord from around neck.

E. Abruptio Placentae
   1. Occurs in the third trimester of pregnancy when the placenta prematurely separates from the uterine wall leading to intrauterine bleeding.
   2. The patient experiences lower abdominal pain and the uterus becomes rigid. Shock may develop without significant vaginal bleeding.
      a. Treat per Shock protocol
      b. Rapid transport for emergent C-section

F. Placenta Previa
   1. Occurs when the placenta covers the cervical opening, which can result in vaginal bleeding and prevents delivery of the infant through the vagina. The infant needs to be delivered via caesarian section.

Pain Control (Acute)

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Determine location of pain and severity using numeric scale 1-10.
C. Consider and treat underlying causes of pain.
D. Use non-pharmacological pain management (i.e., position of comfort, hot/cold pack, elevation, splinting, padding, wound care, therapeutic calming and communication).

PHARMACOLOGIC INTERVENTION

A. **Ketorolac** (Toradol)
   1. 30 mg IM or 15 mg IV. DO NOT REPEAT.
   2. Not for cardiac chest pain OR Trauma System patient.
   3. Use in patients 2-64 years of age. Contraindicated in pt. w/ known renal/liver disease, allergy to ASA/NSAID, possible pregnancy, anticoagulant use, bleeding disorder, Trauma System Entry or altered mentation.
B. **Opiates -** AVOID USE OF OPIATES IN CHRONIC PAIN SYNDROMES, INCLUDING MIGRAINE HEADACHES. USE IN ACUTE PAINFUL SITUATION ONLY.
   1. **Fentanyl**
      a. 1mcg/kg IV, IO, IM max 100 mcg per dose (q 5-10 mins to 300mcg total prn)
      b. Rapid injection may cause respiratory arrest or chest rigidity – administer slowly, over 30-60 seconds.
C. **Ketamine**
   1. Adjunct with Fentanyl MUST HAVE GIVEN AT LEAST TWO DOSES OF FENTANYL.
      a. 0.5mg/kg IV/IO over 2-3 minutes. Max 25mg. May repeat every 10 mins prn to control pain UNLESS pt develops nystagmus, agitation, or ventilatory compromise.
   2. Precautions:
      a. In adults treat Emergence Reaction side effects with low dose **Midazolam** 2.5mg IV/IM.
D. **Nitrous Oxide**
   1. See Nitrous Oxide protocol for specific permissions.

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INDICATIONS FOR ACUTE PAIN CONTROL:

A. Facilitate packaging and transport, prevent exacerbation of symptoms, and alleviate discomfort.

ASSOCIATED NAUSEA/VOMITING DUE TO PAIN OR OPIATE ADMINISTRATION:

A. **Droperidol** 1.25 mg IV (0.625mg IV, if frail/elderly)

PEDIATRIC PATIENTS:

A. **Ketorolac** (age 2-16 years) – 1 mg/kg IM to a max of 30 mg or 0.5 mg/kg IV to a max of 15 mg. Do not repeat.
B. **Fentanyl** (not to exceed adult dose) - 1 mcg/kg max 25 mcg (may be given IN)
C. Do not administer opiates if patient's systolic blood pressure is lower than what is normal for child's age.
    1. Lowest normal pediatric systolic blood pressure by age:
        a. < one month: > 60 mmHg.
        b. One month to 1 year: > 70 mmHg.
        c. > 1 year: 70 + 2 x age in years

ADULT PAIN SCALE:

PEDIATRIC PAIN SCALE:

Poisoning and Overdose

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Treat shock per Shock Protocol as needed.
C. If patient has decreased mentation, treat per Altered Mental Status protocol.
D. Manage airway per the Airway Management protocol.
E. Contact MC and/or Washington Poison Control (800) 709-0911 for advice.

SPECIFIC POISONING/OVERDOSE TREATMENTS:

A. Aspirin or Acetaminophen:
   1. **Activated charcoal** (Actidose) 50 gm PO per Poison Control or Medical Control
B. Beta Blocker/Calcium Channel Blocker:
   1. **Calcium Gluconate** 3 grams slow IV/IO
   2. Treat Bradycardia and/or Shock per protocol.
D. Carbon Monoxide:
   1. CO poisoning suspected (e.g., AMS w/ multiple patients and/or sick pets at same location):
      a. 100% O2 NRM or CPAP if possible.
      b. Determine CO level w/ commercial device.
      c. SpCO between 3% and 25% with neurologic symptoms (HA, dizziness, nausea, syncope, LOC, seizures, coma) – treat and transport to ED.
      d. Treat symptoms per protocol (12 Lead indicated to r/o ischemia).
E. Cyanide:
   1. Signs of poisoning: AMS, seizures/coma, tachypnea/apnea, shock, vomiting
      a. **Sodium Thiosulfate** 50 mL of 25% solution IV/IO infused over 10 to 20 minutes.
F. Hyperadrenergic (Cocaine, Methamphetamine, MDMA, etc.):
   1. Hyperadrenergic induced arrhythmias
      a. **Midazolam** 2.5-5 mg IV/IM q 5 min prn
      b. Stable V-tach: **Amiodarone** 150 mg
      c. V-fib: treat per protocol, limit Epi to 1 mg every 5 min
G. Organophospates/Nerve Agent(Salivation/Lacrimation/Urination/Defecation/GI/Emesis = SLUDGE):
   1. Prepare to handle copious secretions.
   2. Administer **Atropine** 1 – 2 mg IV/IO every 5 mins until symptoms improve.
   3. If Nerve Agent see procedure for DuoDote Auto-Injector.
H. Phenothiazine – Dystonic Reaction and/or Akathesia:
   1. **Benadryl** 1mg/kg IV/IM max 50mg, usually complete relief in 1-2 minutes IV and 15-20 minutes IM.

Continued: ⟶

I. Opiates w Respiratory Depression
   1. If BLS provider OR difficult IV access, give **Naloxone** 2 mg IM/IN every 5 minutes up to 8 mg.
   2. **Naloxone** 0.5 - 2 mg IV. May repeat every 3-5 minutes up to 2 mg titrating to respiratory rate. If no improvement, repeat **Naloxone** 2 mg every 3-5 minutes up to a maximum of 8 mg total. Consider larger doses if Methadone overdose.

J. Tricyclic Antidepressant and/or Benadryl:
   1. If tachycardia >110, dysrhythmia, widening QRS, or if seizures:
      a. **Sodium Bicarbonate** 1 mEq/kg slow IV push. (**NCEMS ONLY**) – May repeat Bicarb after 30 mins if signs are worsening (worsening bradycardia, QRS prolongation or T waves appear more peaked)
      b. **Magnesium Sulfate** 2 gm IV, slow push (5-20 min.) for wide QRS.
      c. **Midazolam** 2.5-5mg IV, IM q 5 min prn for seizure.

K. Riot Control Agents – (Mace, pepper spray, tear gas, lacrimators):
   1. Move affected individuals from contaminated environment into fresh air if possible.
   2. Irrigation with water or saline may facilitate resolution of symptoms and is recommended for decontamination of dermal and ocular exposure.
   3. Treat for Respiratory Distress as appropriate.
   4. Symptoms begin within seconds of exposure, are self-limited and are best treated by removing patient from ongoing exposure. Symptoms frequently decrease over time (15-45 minutes) after exposure ends.
      1. Exposed individuals who are persistently symptomatic warrant further transport for further intervention.

PEDIATRIC PATIENTS:

A. **Activated Charcoal** 1gm/kg max 50g per MC or Poison Center concurrence
B. **Atropine** 0.02mg/kg Max 2mg for bradycardia in calcium channel/Beta blocker OD and Organophosphate poisoning.
C. **Benadryl** 1mg/kg Max 25mg for dystonia.
D. **Calcium Gluconate** 0.6 ml/kg max 30 ml for calcium channel blocker OD.
E. **Magnesium Sulfate** 25mg/kg for TCA/Benadryl OD.
F. **Naloxone** 0.1 mg/kg IV/IO/IM/IN every 3-5 minutes to a maximum of 2 mg per dose. Max total dose 8mg. Do not give to newborns.
G. **Sodium Thiosulfate** 1.6ml/kg slow IV over 10 minutes
H. **Midazolam** 0.2mg/kg IV/IO/IM/IN for hyperadrenergic syndrome or seizure due to poisoning.
I. Consider possibility for neglect/abuse.

SPECIAL CONSIDERATIONS:

A. Symptoms of dystonic reaction include the following:
   1. Contractions of face, neck, back.
   2. Protrusion/fasciculations tongue common.
   3. Oculogyric crisis (eyes looking upwards).
   4. Laryngospasm sometimes present.
   5. Akathesia (agitation, distress, twitching, excitement)

POISONING AND OVERDOSE TOXIDROME TABLE

Toxidrome	Examples	Clinical Features	Antidotes
Sympathomimetic	Cocaine Methamphetamine	Agitation Diaphoresis Hypertension Hyperthermia Dilated pupils Tachycardia	Midazolam
Opioid	Heroin Hydromorphone Methadone Oxycodone	Depressed mental status Hypoventilation Constricted pupils	Naloxone
Cholinergic (Anti-cholinesterase)	Pesticides • Carbamates • Organophosphates Nerve Agents	Muscarinic* Nicotinic** Central***	Atropine Pralidoxime (2-PAM) (Hazmat)
Sedative-Hypnotic	Barbiturates Benzodiazepines	Depressed mental status Hypotension Hypothermia	Supportive treatment
Cardiotoxic Drugs	Beta-blockers Calcium channel blockers	Bradycardia Conduction issues Hypotension	Glucagon Calcium
Anticholinergic	Atropine Jimson Weed Scopolamine Benadryl	Delirium Hyperthermia Tachycardia Warm, dry skin	Supportive treatment Physostigmine (ED)
Sodium channel blockade	Tricyclic antidepressants, Benadryl Antiarrhythmics • Type IA – quinidine, procainamide • Type IC – flecainide, propafenone	Altered mental status Hypotension Seizures Wide complex tachycardia	Sodium Bicarbonate Magnesium Midazolam (Seizures)

*Muscarinic	**Nicotinic	***Central
Diarrhea, Urination, Miosis, Bradycardia, Bronchospasm, Bronchorrhea, Emesis, Lacrimation, Salivation, Sweating	Mydriasis, Tachycardia, Weakness, Hyperglycemia, Fasciculations	Confusion, Convulsions, Coma

Respiratory Distress

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Follow appropriate Airway Management or Cardiac Dysrhythmia protocol if indicated.

CLINICAL IMPRESSION:

A. Upper Airway Obstruction
   1. Partial Obstruction
      a. Sit patient up and have him/her cough.
      b. Transport if obstruction is not cleared or if suspicious of aspiration.
   2. Complete Obstruction
      a. AHA protocol for complete obstruction.
      b. Laryngoscopy in unconscious with attempt to remove with Magill forceps.
      c. If obstruction not removed and unable to ventilate, consider cricothyroidotomy (or needle jet insufflation in pediatric).
B. Asthma
   1. If known asthmatic having recurrent attack:
      a. **Albuterol** 5 mg with **Atrovent** 0.5 mg via MedNeb. May repeat Albuterol only prn. ALTERNATIVE **DuoNeb**
      b. **Solumedrol** 125 mg IV. ALTERNATIVE **Dexamethasone** IV/IM/PO 10 mg.
      c. Status asthmaticus: **Epinephrine** 2-10mcg/min IV infusion
      d. Status asthmaticus: **Magnesium Sulfate** 2 gm in 50-100cc over 4-5 min IV.
      e. Consider CPAP 100% FiO2 per protocol
C. COPD
   1. If cyanotic or suspected MI or severe respiratory distress: high flow O2 by mask. Be prepared to assist respiration.
   2. Consider CPAP 100% FiO2 per protocol.
   3. **Albuterol** 5 mg with **Atrovent** 0.5 mg via MedNeb. May repeat Albuterol only prn. ALTERNATIVE **DuoNeb**
   4. **Solumedrol** 125 mg IV. ALTERNATIVE **Dexamethasone** IV/IM/PO 10 mg.
D. Insufficient Respiration Or Arrest
   1. Rule out obstruction. Ventilate with bag-valve mask.
   2. **Narcan** 2.0 mg IV, if narcotics possible.
E. Pulmonary Edema
   1. Sit patient up if possible; dangle legs.
   2. If patient in extremis: CPAP 100% FiO2. Use PEEP valve if assisting ventilation.
   3. If systolic BP > 110:
      a. **Nitroglycerine** 0.4 mg sublingual every 3-5 minutes prn
      b. Caution in Right Sided Myocardial Infarction
      c. Contraindicated in patient taking phosphodiesterase inhibitor (Sildenafil, Viagra, Cialis, Levitra)
   4. If suspected MI with chest pain treat per protocol.

Continued: ⟶

PEDIATRIC PATIENTS:

A. Upper Airway

1. Audible stridor at rest
   a. Patient 20-40 kg **Racemic Epinephrine** 0.5 cc in 5 cc NS by nebulizer and mask. ALTERNATIVE: 0.5ml **Epinephrine** 1:1,000 via nebulizer.
   b. Patient <20kg 0.25ml **Racemic Epinephrine via nebulizer** ALTERNATIVE: 0.25ml **Epinephrine** 1:1,000 via nebulizer.
2. Croup (barky cough) + URI: **Dexamethasone** 0.6 mg/kg IV/IM/PO (max dose 10 mg)
   a. Pt may also have stridor (**Racemic Epinephrine** as above)**.**
3. Treat anaphylaxis and foreign body obstruction per adult guidelines.
4. If the child deteriorates, ventilate with a BVM.
5. If you cannot effectively ventilate with BVM perform intubation.
6. If complete obstruction is present and you cannot effectively BVM ventilate the patient consider needle cricothyrotomy.

B. Asthma

1. **Albuterol** - Patient weight <15kg 2.5-5mg. >15kg 5-10mg with **Atrovent** 0.5 mg via MedNeb MedNeb for wheezes. ALTERNATIVE **DuoNeb**
2. **Solumedrol** 2mg/kg (max 125mg). ALTERNATIVE **Dexamethasone** 0.6 mg/kg IV/IM/PO (Max 10 mg).
3. **Magnesium Sulfate** 25mg/kg.
4. **Epinephrine** 0.1mcg/kg/min IV for status asthmaticus

C. Insufficient Respiration or Arrest

1. Rule out obstruction. Ventilate with bag-valve mask.
2. **Narcan** 0.1mg/kg max 2mg IV/IO/IM if narcotics possible.

D. Acute Bronchiolitis (< 2 years old)

1. Mild-moderate respiratory distress:
   a. O2 via blow-by, nasal cannula or mask to keep SpO2 > 92%. Monitor ETCO2.
   b. If wheezing, **Albuterol** 2.5 mg via neb. If improvement may use every 10 mins.
2. Severe respiratory distress.
   a. If wheezing, **Albuterol** 2.5 mg via neb. If improvement may use every 10 mins.
   b. Prepare for positive pressure ventilation with BVM and intubation for apnea, ETCO2 > 55 or inability to maintain SpO2 > 85%.

NOTES AND PRECAUTIONS:

A. Aggressive airway management, including early intubation, is appropriate for the patient who does not respond to treatment or is rapidly deteriorating.
B. Hyperventilation may be a response to an underlying medical problem and should only be considered after these other causes have been excluded. Do not treat hyperventilation by rebreathing CO2. Reassurance and oxygen via mask are appropriate.
C. Considerations for all Patients:
   1. Capnography- combine with patient presentation to ascertain ventilatory status.
      a. ETCO2 normal range is 35-45 mm/Hg.
      b. Normal ETCO2 may be higher in COPD patient.

Seizures

TREATMENT:

A. Treat per Universal Patient Care protocol.
B. If patient is in status seizure (continuous seizure or repetitive seizures without regaining consciousness):
   1. **Midazolam** 2.5-5mg IV/IO. Repeat every 5 minutes until seizure stops.
   2. If no IV access, **Midazolam** 10mg IM. Repeat every 5 minutes until seizure stops.
   3. Monitor patient's respiratory status closely after midazolam administration.
C. Check blood glucose and treat per Altered Mental Status protocol.
D. **Magnesium Sulfate** 2-4 gm IV over 10-20 minutes for Eclampsia.
E. Place patient on their left side for transport.
F. All first-time seizure patients require medical evaluation by a physician.

PEDIATRIC PATIENTS:

A. If patient is in status seizure (continuous seizure or repetitive seizures without regaining consciousness):
   1. **Midazolam** 0.2 mg/kg IV/IO/IM/IN. Repeat every 5 minutes until seizure stops.
   2. Monitor patient's respiratory status closely after Midazolam administration.
B. If fever >100.4 treat seizure as above:
   1. Cool patient and give **Acetaminophen** 20mg/kg suppository.
C. If, on arrival, the patient is not actively seizing (post-ictal) an IV is not required.
D. All hypoglycemic or first time pediatric seizure patients should be transported.

CONSIDERATIONS:

A. BE PREPARED TO MANAGE RESPIRATORY DEPRESSION.
B. Seizures that self-terminate in known epileptic may not require treatment or transport.
C. Seizures may be a sign of cerebral hypoxia from cardiac arrest.
D. Seizures may be caused by dysrhythmias.

Sepsis

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Maintain O2 sat above 95%.
C. Known or suspected infection with two or more of the following:
    1. Temperature > 38° C (100.4° F) OR < 36° C (96.8° F)
    2. Respiratory rate > 20 breaths/min
    3. Heart rate > 100 beats/min
    4. ETCO2 ≤ 25 mmHg
D. If two or more of the above AND:
    1. SBP ≤ 100 (MAP < 65)

    OR

    2. Altered Mental Status

    Notify receiving facility of "Septic Shock Alert" and transport emergently.
E. Give up to 2 liters fluid (Lactated Ringers preferred) as rapidly as possible or until:
    1. MAP > 65.
    2. Neck vein distention develops.
    3. Pulmonary rales develop.
F. If not responding to fluid and SBP <100 (MAP <65):
    1. **Norepinephrine** 4 mcg/min. If no response, increase every 5 minutes in 4 mcg/min increments to max of 12 mcg/min. Goal is MAP >65.
    2. ALTERNATIVE **Epinephrine** 2-10mcg/min IV/IO infusion.
G. If patient normotensive and not altered, transport non-emergent and notify hospital personnel of possible sepsis.

Shock

TREATMENT:

A. Hypovolemia:
   1. Control external bleeding.
   2. Give up to 2 liters Isotonic fluid as rapidly as possible or until:
      a. BP systolic is 100 (MAP > 65).
      b. Neck vein distention and/or Pulmonary rales develop.
      c. Normal mentation.

B. If Head Injury and Shock:
   1. Fluid challenge as above. Target BP 100 systolic. (MAP > 65)
   2. Maintain normal ventilation rate, Target ETCO2 35 mm/Hg.

C. Distributive (sepsis, neurogenic):
   1. If septic see Sepsis protocol
   2. Begin 500- 1,000 mL fluid challenge to maintain a systolic BP of > 100 mm/Hg. (MAP >65) Repeat to max of 2000mL if signs of shock and no pulmonary edema.
   3. **Norepinephrine** 4 mcg/min. If no response, increase every 5 minutes in 4 mcg/min increments to max of 12 mcg/min. Goal is a systolic blood pressure of > 100 mmHg (MAP >65). ALTERNATIVE **Epinephrine** 2-10mcg/min IV/IO infusion.

D. Cardiogenic (STEMI, cardiomyopathy):
   1. Follow appropriate dysrhythmia protocol.
   2. Give 250 - 500 mL fluid challenge to maintain a systolic BP of > 100 mm/Hg. Repeat once if continued signs of shock and no pulmonary edema. Max of 1,000 mL.
   3. **Norepinephrine** 4 mcg/min. If no response, increase every 5 minutes in 4 mcg/min increments to max of 12 mcg/min. Goal is a systolic blood pressure of > 100 mmHg (MAP >65). ALTERNATIVE **Epinephrine** 2-10mcg/min IV/IO infusion.

E. Hypoadrenal Shock (Addisonian Crisis):
   1. Known Hypoadrenal state (Medic Alert, Parent or caregiver).
   2. Suspected: patient on high dose, chronic steroid.
   3. Fluid challenge as above
   4. **Solumedrol** 125. ALTERNATIVE **Dexamethasone** 10 mg IV/IM/PO.

PEDIATRIC PATIENTS:

A. Treat per Universal Patient Care protocol and prepare for rapid transport.
B. General shock treatment as above:
   1. Pediatric fluid challenge 20ml/kg repeat x 1 prn to appropriate BP for age or sx of pulmonary edema.
   2. **Norepinephrine** 0.1 mcg/kg/min. May increase by 0.1 mcg/kg/min every 5 mins prn to max of 0.4 mcg/kg/min**.** ALTERNATIVE **Epinephrine** 0.1mcg/kg/min IV/IO infusion.
   4. **Solumedrol** 2mg/kg IV (max 125mg) ALTERNATIVE **Dexamethasone** 0.6 mg/kg IV/IM/PO (Max 10 mg).

Continued: ⟶

TRANEXAMIC ACID (TXA) - NORTH COUNTRY/CAMAS/TRT ONLY:

A. Adult trauma patients only; Not for Patients <15 (50kg and above if age unknown)
B. Penetrating or Blunt Trauma <1hr from injury
    1. SBP<70 mmHg (MAP< 55), HR >SBP or both
    OR
    2. GCS between 3 and 12 with reactive pupil
C. **TXA** 2gm in 50 cc NS, administer over 10 – 20 minutes

GENERAL CONSIDERATIONS:

A. IV large bore (Two lines recommended for trauma/sepsis) above the diaphragm preferred, in this order
    1. Arm vein, antecubital
    2. Humeral IO (not pediatric)
    3. IO Tibial or Femoral (pediatric)
B. Tachycardia is first sign of shock. Pulse pressure often narrows prior to fall in systolic BP.
C. Changing level of consciousness important clue.
D. Always document time and amount of fluid given.

Stroke – CVA

TREATMENT:

A. Treat per Universal Patient Care protocol.
B. If CBG is low, treat per Altered Mental Status guidelines.
C. Conduct Stroke evaluation as per the following:

BE-FAST ASSESSMENT – Positive Findings:	
BALANCE	Sudden loss of balance or coordination
EYES	Loss of vision in one or both eyes
FACE	Lack of facial symmetry when smiling
ARMS	Arm drift or falling when holding arms outstretched
SPEECH	Not able to repeat simple phrase without slurring or memory loss
TIME	Note time last known normal; time awoken; time of symptom onset.

LOS ANGELES MOTOR SCALE (LAMS)			Total: _____
Facial droop	Absent 0	Present 1	
Arm drift	Absent 0	Drifts down 1	Falls rapidly 2
Grip strength	Normal 0	Weak grip 1	No grip 2

D. If bleed suspected, maintain normal ventilation rates and target ETCO2 of 35 mm/Hg
E. Titrate O2 at lowest level to achieve SpO2 94–98%. Maintain ETCO2 35-40mm/Hg
F. Reassure patient if conscious; patient may understand and hear all conversation even though he/she appears comatose or confused.
G. Transport Emergently if the patient meets the following criteria:
    1. ANY positive BE-FAST findings < 24 hours
    2. Critical: profound paralysis, aphasia, comatose.
    3. Notify receiving facility of Code 3 Stroke Alert.
H. Patients meeting stroke/CVA criteria will be transported as follows:
    1. PHSW
        a. ANY pt. with LAMS 4 or 5
            i. Always check HOSCAP status for availability of Neurointerventionalist.
            ii. If unavailable, divert to closest appropriate facility Emanuel, Providence Portland, Kaiser Sunnyside or OHSU.
            iii. Contact MC if divert not practical due to traffic, etc.
        b. ANY pt. 80 years old or greater
        c. Symptoms more than 3 hours but < 24 hours.
        d. Suspected intracranial hemorrhage
        e. Signs of profound paralysis, aphasia, or comatose
    2. Closest Stroke Center
        a. Symptoms 3 hours or less, above criteria not met

GENERAL CONSIDERATIONS:

A. It is preferred family or caregiver be present when the patient arrives at the hospital. If this is not feasible, obtain a phone number that may be used by the Stroke Team for further information.

Syncope

DEFINITION:

A. Syncope is loss of consciousness and postural tone, resolving spontaneously without medical interventions. Laypersons describe as “fainting”.
B. Typically is abrupt in onset and resolves quickly. May find the patient awake and alert on initial evaluation.
C. Presyncope is the prodromal symptoms of syncope, described by the patient as “nearly blacking out” or “nearly fainting.”

TREATMENT:

A. Patient with identified underlying cause for syncope, treat per specific protocol.
    1. Continued neurologic derangement consider Stroke guidelines.
    2. If ongoing mental status changes or coma should be treated per the Altered Mental Status protocol.
B. Treat per Universal Patient Care Protocol
C. Should be directed at abnormalities discovered in the physical exam or on additional examination and may include management of cardiac dysrhythmias, cardiac ischemia/infarct, hemorrhage, shock, etc.
    a. Manage airway as indicated
    b. Oxygen as appropriate
    c. Evaluate for hemorrhage and treat for shock if indicated
    d. Establish IV access
    e. Fluid bolus if appropriate
    f. Cardiac monitor
    g. 12-lead EKG
    h. Monitor for and treat arrhythmias (if present refer to appropriate guideline)

NOTES AND CAUTIONS:

A. All patients suffering from syncope deserve hospital level evaluation, even if they appear normal with few complaints on scene.
B. High risk causes of syncope include the following:
    1. Cardiovascular
        a. Myocardial infarction
        b. Aortic stenosis
        c. Hypertrophic cardiomyopathy
        d. Pulmonary embolus
        e. Thoracic aortic dissection
        f. Lethal dysrhythmia
    2. Neurovascular
        a. Intracranial hemorrhage
        b. Transient ischemic attack or stroke

Traumatic Brain Injury

TREATMENT:

A. Treat per Universal Patient Care Protocol.
B. Patient evaluation should include best GCS to help categorize injury severity.
    1. Mild injury GCS of 13-15.
    2. Moderate GCS 9-12.
    3. Severe GCS 8 or less.
C. Always avoid hypoxia. Goal is SPO2 94-98.
D. Prevent hypotension (Goal SBP > 100 [MAP >65]).
    1. Begin 500-1,000 mL fluid challenge to maintain a systolic BP of > 100 mm/Hg. Repeat to max of 2000mL if continued signs of shock and no pulmonary edema..
    2. If SBP < 100 after 2 l fluid follow shock protocol.
E. Follow Advanced Airway protocol if patient unable to protect airway.
F. If the patient has an airway placed, carefully manage ventilations in order to minimize hyperventilation.
    1. Monitor ETCO2 with goal of 35 mmHg.
    2. If sx of herniation (blown pupil, posturing) maintain ETCO2 35mmHg.

TRANEXAMIC ACID (TXA) - NORTH COUNTRY/CAMAS/TRT ONLY:

A. Adult trauma patients only; Not for Patients <15 (50kg and above if age unknown)
B. Penetrating or Blunt Trauma <1hr from injury
    1. SBP<70 mmHg (MAP< 55), HR >SBP or both
    OR
    2. GCS between 3 and 12 with reactive pupil
C. **TXA** 2gm in 50 cc NS, administer over 10 – 20 minutes

Vomiting/Significant Nausea

TREATMENT:

A. Treat per Universal Patient Care Protocol
B. Fluid challenge if hypotensive. Treat per Shock protocol.
C. **Ondansetron** 8 mg PO orally dissolving tablets (Zofran ODT) If unable to tolerate oral route and IV available **Ondansetron** 8 mg IV SLOW.
D. **Droperidol** 1.25 mg IV/IM/IO
    1. 0.625 mg IV/IM/IO in older, frail persons
E. May give alternative medication if no relief after 10 minutes.

PEDIATRIC PATIENT WITH SIGNIFICANT VOMITING:

A. **Ondansetron** 0.1mg/kg Max 8mg. Children over 1 year only.
B. Contact MC for significant vomiting for pediatric patients under 1 year of age.

SPECIAL CONSIDERATIONS:

A. Obtain history and consider underlying cause.
    1. Head injury/Increased intracranial pressure.
    2. Shock/hypotension.
    3. Stroke.
    4. Communicable disease, e.g., Norovirus.
    5. Other disease process.
B. Consider offering patient an **Isopropyl Alcohol** swab and allowing the patient to self-administer the swab by inhalation. Emphasize slow deep inhalation. May be repeated up to 2 times (total of 3 administrations).
C. **Droperidol** may cause somnolence, especially in older persons. Consider half dose in patient >65.

PROCEDURE – Airway Management Overview

INDICATIONS:

A. Airway control and protection.
B. Inadequate ventilation and/or oxygenation.

OXYGENATION, MAINTENANCE OF AIRWAY AND VENTILATION:

A. Supplemental oxygen:
    1. A Nasal cannula is useful for small amounts of supplemental oxygen.
    2. Partial Rebreather masks (PRB) are recommended when higher flow and concentrations of oxygen need to be delivered.
    3. Blow-by oxygen should be used for infants and toddlers.
B. Nasopharyngeal Airway (NPA) or Oropharyngeal Airway (OPA) should be used for patients who are unable to maintain their own airway.
C. A Bag-Valve-Mask (BVM) should be used when inadequate ventilation is present.
D. CPAP should be considered for MEDICAL patients complaining of moderate to severe respiratory distress meeting ALL the criteria described in Continuous Positive Airway Pressure (CPAP) procedure.
E. End-tidal CO2 shall be utilized on all intubated patients.
F. PEEP valve should be considered when mechanically ventilating a patient with COPD or CHF.

NOTES & PRECAUTIONS:

A. Trauma patients: airway maintenance with cervical spine control is the primary concern. If unable to establish or maintain an airway, transport the patient to the closest hospital. This includes patients entered into the Trauma System.
B. If unable to control the airway and/or oxygenation via the above methods, follow the Advanced Airway protocol

PROCEDURE – Advanced Airway - Intubation/RSI/DSI

INTUBATION – Patient Perfusing, Requires Sedation and Paralysis:

A. Assess scene safety issues prior to considering Advanced Airway Procedures/Intubation.
B. Analyze risks of the procedure against the benefits.
C. Establish adequate 360-degree access to the patient. NOTE: this is very difficult to accomplish in the back of an ambulance.
D. Note and document the patient's GCS and Neurologic exam prior to administration of sedatives or paralytics.
E. Monitoring and Equipment:
   1. Pulse oximetry AND Capnography
   2. Cardiac monitor
   3. BP on arm contralateral to medication injection site. Cycle every 2 minutes.
   4. Ideally Two O2 tanks and regulators with Nasal Cannula
   5. IV/IO secured and flushes easily, 2 sites as soon as possible
   6. Suction, BVM with PEEP valve, CPAP
   7. ET tubes, Bougie, SGA, Surgical airway equipment
F. Treat hypotension with fluids and Epinephrine drip as needed; goal of MAP>65 mmHg (SBP >100 mmHg)
G. Positioning: patient with ear at level of sternal notch, face parallel to floor/ceiling, head of gurney elevated to 15 degrees.
H. **PRE-OXYGENATION**:
   1. PATIENT BREATHING ADEQUATELY; Apply a NRBM at maximum flow rate **OR** CPAP to achieve target SpO2 ≥94% for three minutes prior to RSI.
   2. PATIENT NOT BREATHING ADEQUATELY: use a BVM with high flow O2 with NPA or OPA. Perform 2 person BVM to get good seal. Goal is SpO2 ≥94% for three minutes prior to RSI
   3. If SpO2 ≥94% for three minutes (denitrogenation), proceed to RSI.

IF UNABLE TO ACHIEVE AN SPO2 94% OR GREATER, PROCEED TO DSI

RAPID SEQUENCE INDUCTION (RSI):

A. Induction medications:
   1. **Ketamine** 2 mg/kg slow push, max 200 mg single dose (Status asthmaticus, RAD,)
      OR
      Etomidate 0.3 mg/kg max 30 mg
   2. If patient in shock (MAP<65) the dose for the induction agent should be cut in half
   3. **Succinylcholine** 1.5 mg/kg IV push max 200 mg single dose.
      ALTERNATIVE - **Rocuronium** 1 mg/kg if Succinylcholine contraindicated (Hyperkalemia, myasthenia gravis, etc).

Continued: ⟶

B. Intubation procedure:
   1. Nasal cannula to 15L/min for apneic oxygenation once paralytic pushed
   2. Apply jaw thrust while awaiting paralysis (if no NPA or OPA in place)

   ROUTINE USE OF CRICOID PRESSURE IS NOT RECOMMENDED.
   3. Prepare for continuous suction prn.
   4. If using Succinylcholine, after fasciculations stop (or ~30 seconds), begin intubation. If using Rocuronium, wait 60 seconds before proceeding as there will be no fasciculations.
      a. If relaxation inadequate in 90 seconds:
         i. Ensure oxygenation: NC running at 15L/min with jaw thrust,NPA, or OPA.
         ii. Verify patency of IV/IO.
         iii. Repeat dose of paralytic: **Succinylcholine** 1.5mg/kg OR **Rocuronium** 0.5 mg/kg
   5. Visualize the epiglottis via direct or video laryngoscopy. Intubation should be routinely performed with the bougie.

C. If intubation repeatedly unsuccessful (defined as TWO attempts):
   1. Insert SGA and ventilate.
   2. Perform cricothyroidotomy if unable to oxygenate or ventilate patient, or no other means of airway management appears possible (severe facial trauma, blast, burns, angioedema, etc). Needlejet if patient < 12 years.

D. Treat bradycardia : Temporarily halt intubation, ventilate with BVM and 100% O2 PEEP@15. Atropine per protocol if needed.

E. Upon successful intubation, confirm ET tube placement by CAPNOGRAPHY and secure. Ventilate with BVM and 100% O2, maintain ETCO2 35-45mm/Hg.

F. If no ETCO2 reading or deteriorating waveform, check the clinical status of the patient (i.e. pulses, rhythm on monitor, etc.), then verify tube placement by repeat laryngoscopy. If any doubt of successful tube, pull it and manage airway as above.

G. Post-intubation
   1. Document a repeat set of vital signs as soon as tube is confirmed and secured.
   2. ANALGESIA:
      a. **Fentanyl** 1mcg/kg IV, IO max 100 mcg per dose (repeat q 5-10 mins prn).
   3. SEDATION:
      a. **Ketamine** 2 mg/kg slow push, max 200 mg single dose. Begin 15 minutes after induction dose unless signs of inadequate sedation after adequate analgesia. May repeat q 15 mins PRN.

      ALTERNATIVE ONLY if ketamine not available- **Midazolam** 5 - 10 mg IV/IO for post intubation sedation. Repeat every 15 mins PRN.

H. Ventilation Rates:
   1. Once intubated, O2 via Bag-valve-ET at 10-12 per minute (assist peds at normal ventilation rates per age). Maintain SPO2 between 94% - 98%. For the patient with closed head injury maintain BP of 100 systolic (MAP 65) and ETCO2 35 mm/Hg.

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DELAYED SEQUENCE INTUBATION (DSI)

A. If SpO2 still < 94% after preoxygenation (agitated hypoxic/hypercarbic patient or one that will not tolerate conventional preoxygenation attempts):

1. **Ketamine** 2 mg/kg max 200 mg single dose slow push over 60 seconds.
2. PATIENT BREATHING ADEQUATELY: Apply a BVM with 2 person mask seal with PEEP@10 at maximum flow rate (do not ventilate) OR CPAP to achieve target SpO2 ≥94% for three minutes prior to RSI.
3. PATIENT NOT BREATHING ADEQUATELY: VENTILATE with BVM high flow O2 with OPA/NPA and 2 person mask seal with PEEP@10; increase PEEP if unable to achieve SpO2 ≥94%. May insert SGA if adequate ventilations not achieved. Monitor EtCO2.
4 Upon reaching SpO2 ≥94% begin three-minute countdown to allow for complete denitrogenation; **proceed to RSI sequence above beginning with paralytic administration**.

IF UNABLE TO ACHIEVE SpO2 ≥94%: consider use of SGA with or without paralytic.

INTUBATION – Patient in Cardiac Arrest:

A. Initial management as per Pit Crew protocol with an SGA.

B. **Majority of patients transported in cardiac arrest or have achieved ROSC may be managed with an SGA.**

C. A decision to intubate may be made due to need for further airway control, oxygenation/ventilation, ROSC, etc. DO NOT INTERRUPT CPR:

1. Apneic oxygenation with nasal cannula in place at 15L/min
2. Direct or video laryngoscope
3. Suction
4. Bougie
5. Endotracheal tube and size smaller - Syringe for cuff
6. Tube holder
7. BVM with ETCO2

D. If the patient has trismus, a paralytic may be administered.

1. Should the patient achieve ROSC or become responsive after intubation, give analgesia and sedation immediately per Post-Intubation guideline.

LONG-ACTING PARALYTIC

A. Need for long term paralytic defined:

1. Unable to ventilate patient due to chest rigidity.
2. Patient successfully intubated (confirmed by capnography), not respondingto maximum sedation/pain medication and risk of losing patent airway exists.

B. **Rocuronium** 1.0 mg/kg IV (Duration of Action 60-90 minutes)

ALTERNATIVE - **Vecuronium** 0.1 mg/kg IV (Duration of Action 25-40 minutes)

C. Use post intubation sedation guidelines as above

D. Notify receiving physician of long acting paralytic use.

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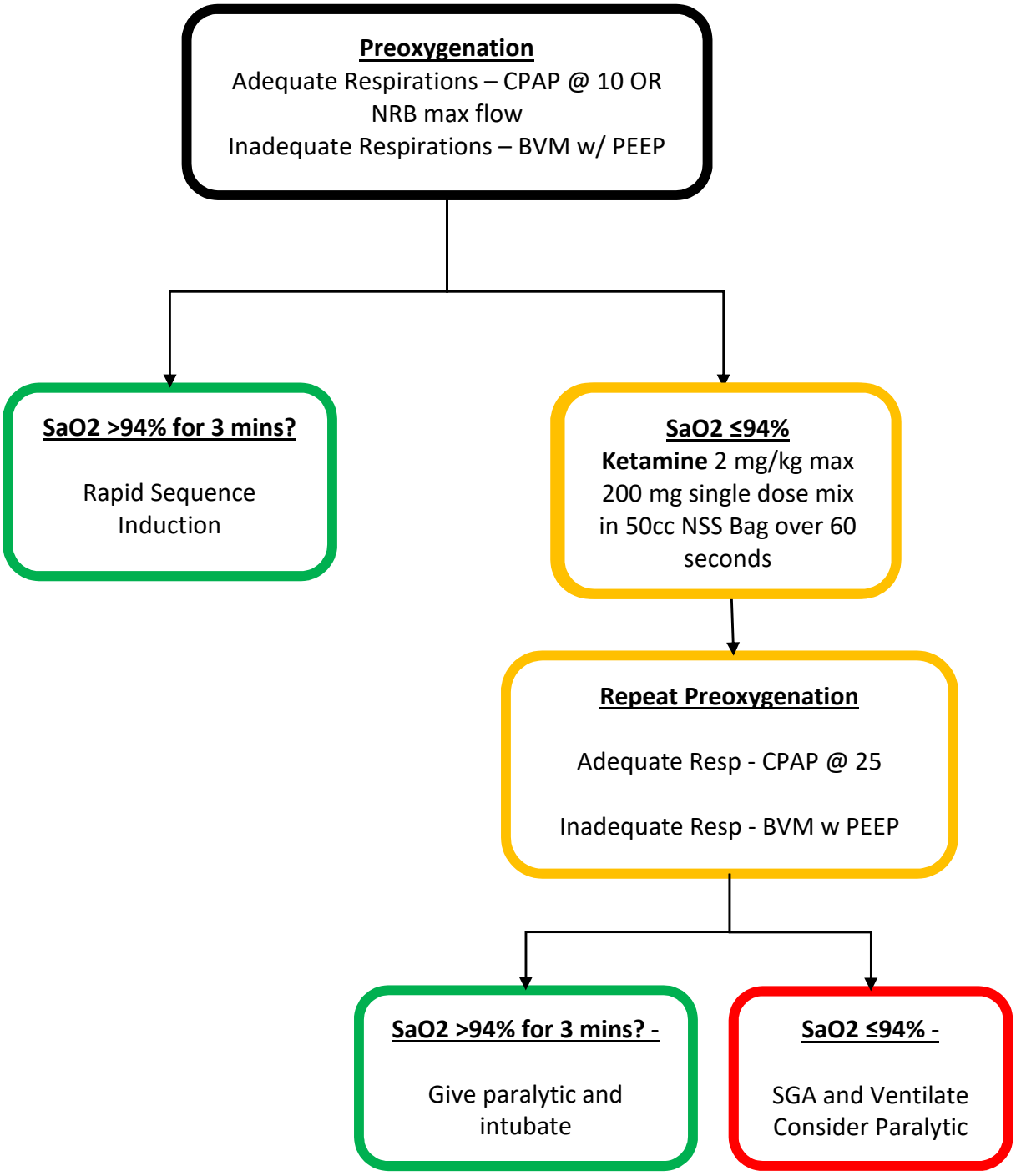
NOTES & PRECAUTIONS:

A. If unable to establish and/or maintain an adequate airway and ventilations, transport ANY patient (including trauma) to the nearest hospital for definitive airway control.
B. If intubation unsuccessful after two attempts:
    1. Change operator OR
    2. Place SGA and ventilate. Should also be done if 2nd operator is unsuccessful after two attempts.
C. Continuously monitor vital signs, cardiac rhythm, perfusion, end-tidal CO2, and ease of bagging.
D. If glottic visualization sub-optimal then do the following to improve view:
    1. Remove cricoid pressure if applied. Perform extra laryngeal manipulation (ELM).
    2. Change operator position or height of the stretcher.
    3. Change patient position or elevate head off the bed with intubator's right hand.
    4. Use better suction where secretions or blood block the view
    5. The laryngoscope can be inserted deeply and slowly withdrawn until identifiable anatomy is seen.
    6. Change laryngoscope blade size or type
    7. Change operator
    8. Video Laryngoscope with stylet or bougie.
E. Recheck and document ET tube placement after every move or change in vital signs.
F. Paralytics do not affect the level of consciousness and should always be used with analgesia and sedation.
G. Etomidate not to be used for sedation in DSI.
H. Long-acting paralytic procedure is not to be used for patient in Status Seizures.
I. Documentation
    1. Visualization of the cords (if applicable).
    2. Number of attempts.
    3. 5-point check and equal chest expansion.
    4. ETCO2 numeric value and capnograph.
    5. Reconfirmation of placement via capnography after patient movement.
    6. GCS and neurologic exam prior to RSI
J. If C-spine precautions are necessary then the patient should have manual cervical in- line stabilization with the cervical collar open during laryngoscopy.
    1. C-spine precautions are not a contraindication to appropriate positioning as described above.
K. Monitor for signs of inadequate sedation. Provide analgesia/sedation prn as above.

PATIENT REQUIRING INTUBATION/RSI



PROCEDURE – Advanced Airway Emergency RSI Checklist

Airway Plan Verbalized ☐
Optimal Hemodynamics ☐
Optimal position: Off ground, Occiput elevated, Head up, Shade ☐
Oxygen Source – 2 including 1 for apneic oxygenation ☐
Preoxygenation: BVM inflating, PEEP, Nasal Cannula ☐
Suction Available and Functioning. Consider 2nd Suction Unit ☐
ECG, Serial BP (NIBP cycling), SpO2, waveform ETCO2 Recorded ☐
IV Patent ☐
Spare Cannula ☐
Drugs and doses verbalized ☐
C-spine Stabilized ☐
SGA Available ☐
Laryngoscope/King Vision Functional ☐
Tube size and Spare Tube ☐
Syringe ☐
Bougie ☐
ETCO2 Circuit Functional and Ready ☐
ETT Securing Device ☐
Surgical Cric Materials Available ☐

PROCEDURE – Agitated Patient Management

PURPOSE:

A. Should only be used if the patient is a danger to self or responders.
B. Use all other means available to de-escalate the situation. Consider reversible causes of combativeness (such as hypoglycemia or post-ictal phase).

PSYCHOTIC SYMPTOMS OR MILD AGITATION:

A. If patient has psychotic symptoms or mild agitation and willing to take an oral agent, **Olanzapine** 10mg ODT.
    1. Only in ages 18-65.
    2. May administer prior to transport to alternative mental health facility.

PHYSICAL RESTRAINT:

A. Use the minimum level of restraint required to ensure patient care and safe transport. Call for law enforcement as necessary. Do not endanger yourself or your crew.
B. Avoid placing restraints that preclude evaluation of the patient's medical status.
C. Physical Restraint Procedure:
    1. Place patient face up on LBB or gurney, NOT PRONE. Monitor respiratory status.
    2. Secure ALL extremities (ankles then wrists/arms) to LBB or gurney with soft restraints. NO Handcuffs/Chains unless police in attendance.
    3. May use C-spine precautions to control violent head or body movements.
    4. Secure LBB onto gurney using additional straps if necessary.
    5. ALWAYS evaluate respiratory and cardiac status. Monitor SpO2 and EtCO2 as soon as able.
    6. DO NOT tighten chest straps to the point that they restrict breathing.

SEDATION FOR MODERATE AGITATION:

A. Evaluate the personnel needed to safely restrain the patient.
B. Treat medical causes of combativeness.
C. If cause of patient's agitation is unknown or suspected to be psychiatric:
    1. **Droperidol** 5 mg IM (2.5- 5 mg IV); may repeat q 15 min to total 10 mg max.
    ALTERNATIVE: **Haldol** 2.5 - 5 mg IV/IM. May repeat q 15 min to total 10mg max.
D. If cause of agitation is drug ingestion, withdrawal or postictal state:
    1. **Midazolam** 2.5–5.0 mg IV/IM. May repeat prn to max 10 mg.
E. If 10 minutes after administration of the maximum dose of Droperidol, Haldol, or Midazolam, and the patient remains combative, administer a different class of sedative medication as described above.
F. **Do NOT use Haldol and Droperidol concurrently.**
G. Record and monitor vitals and EKG after administration every 5 minutes.
H. Treat EPS with **Benadryl** 1mg/kg IV/IM Max 50mg.

Continued: ⟶

SEVERE AGITATION

A. **Droperidol** 10 mg IM with 5 mg **Midazolam** IM to achieve and maintain sedation.
   1. **Haldol** 10mg IM may be substituted for Droperidol
B. Institute full cardiopulmonary monitoring as soon as possible.
C. Physical findings consistent with hyperadrenergic syndrome.
D. Treatment for excited delirium CAN NOT be directed by law enforcement.
E. Notify agency supervisor and MPD about case after hospital transfer.

PEDIATRIC PATIENTS:

A. Follow above guidelines for management of combative patient.
B. **Droperidol** 0.1 mg/kg IM Max 5 mg
   OR Haldol 0.1mg/kg IM Max 5mg.
D. **Midazolam** 0.2 mg/kg IV/IO/IM/IN Max 10mg.
E. **Benadryl** 1mg/kg IV/IM Max 25mg.

PROCEDURE – ALS Assist

EMT ASSISTANCE WITH ALS PROCEDURES:

A. Properly trained EMTs are allowed to assist Paramedics with performance of the following procedures while on scene:
    1. Placement of 12 Lead ECG monitoring electrodes
        a. EMT may notify responding Paramedic of the monitor 12 lead interpretation.
    2. Insertion of drip tubing into fluid resuscitation bags
    3. Performance of blood glucose determination via finger stick
    4. SGA supraglottic airway
    5. **Narcan** Intranasal/Intramuscular (IN/IM)
    6. **Epinephrine** IM for Anaphylaxis; draw from vial to syringe.
B. These procedures may be performed by EMTs after MPD approved training has occurred.
C. Usually a Paramedic will be present during these procedures, but this is not required in emergent situations.
D. **Any EMT administering medication will verify the correct medication prior to administration**.

PROCEDURE – Automated External Defibrillator (AED)

TREATMENT:

A. Establish unresponsiveness
B. Identify absence of pulse and respirations.
C. Continuous CPR for 2 minutes if down time estimated at > 5 minutes; if < 5 minutes or if bystander CPR, do CPR until AED/Monitor applied.
    1. Apply EKG Leads/Defib Pads.
    2. Analyze and follow AED instructions or Paramedic interpretation (Defibrillate prn).
    3. Continuous CPR for 2 minutes; rhythm analysis:
        a. SGA, 100% O2. Capnography throughout.
        b. IV TKO with balanced salt solution.
D. Use a weight based system for treatment of pediatric cardiac arrest, i.e. Broselow Tape

DEFIBRILLATION SEQUENCE:

A. If shock advised, defibrillate.
    1. Continuous CPR for 2 minutes then Analyze.
    2. Defibrillate as prompted.
B. Continuous CPR for 2 minutes then Analyze
    1. Defibrillate as prompted.
C. Repeat CPR, analyze, defibrillate sequence until “No Shock Advised” or arrival of ALS personnel.

ROSC:

A. If the patient regains pulse or pulse present during the above sequence:
    1. Assess vital signs.
    2. Support airway and breathing, follow ROSC protocol.

OTHER CONSIDERATIONS:

A. “No Shock Advised” and no pulse present
    1. Resume CPR and Re-Analyze after 2 min.
B. If patient not responding to treatment for cardiac arrest, consider Death in the Field.

SUBMIT RECORD TO THE MPD’S OFFICE.

PROCEDURE – Blood Draws of Impaired Driver

REQUEST FOR BLOOD DRAW:

A. Blood for legal alcohol, marijuana, or other drug determination may be drawn at request of law enforcement:
    1. When the officer has reasonable grounds to believe that the person is in violation of RCW 46.61.502 or 46.61.504: driving or being in actual physical control of a motor vehicle while under the influence of intoxicating liquor and/or drugs.
    2. The Officer may request blood be drawn pursuant to:
        a. A search warrant
        b. Valid waiver of the warrant (patient consent)
        c. Exigent circumstances to be articulated by Officer

PROCEDURE FOR BLOOD DRAW:

A. Requesting Officer will provide the blood draw kit:
    1. Utilize universal precautions as per OSHA.
    2. The law enforcement officer will remove the parts of the kit and hand them to the Paramedic as needed.
    3. The Paramedic drawing the blood will swab the site with betadine and allow to air dry for one minute.
        a. Draw appropriate tubes of blood for testing.
        b. When done doing blood draw apply gauze until hemostasis obtained.
    4. Hand the vials back to the Law enforcement officer as they are filled.
    5. Label tubes with patient name, DOB and current date. Document blood draw on ePCR.

SPECIAL CONSIDERATIONS:

A. Patient care needs are the first priority when considering a blood draw per request of Law Enforcement. Do not delay necessary patient care and/or transport to draw blood.

PROCEDURE – Cardiopulmonary Resuscitation (CPR)

CONTINUOUS CPR DEFINED:

A. 110 compressions per minute for two-minute cycles.
   1. Minimize interruptions off chest for analysis and changing rescuers.
   2. Ensure adequate depth of compressions and full chest recoil.
   3. Interpose ventilations, do not interrupt compressions.
   4. Ensure EKG MONITOR in "paddles" mode for proper CPR process recording.

PIT CREW CPR MODEL (Pending enough personnel):

A. Each position is assigned tasks that are listed by priority. If arrival of personnel delayed, the tasks will be accomplished by fewer personnel but in the same order.
   1. Position 1 (Compressions):
      a. Determine cardiac arrest, Expose chest, Begin compressions
      b. Announce compression 180, 190, and 200
   2. Position 2 (Monitor/Defibrillator):
      a. Turn on the Monitor/Defibrillator to time stamp the beginning of CPR.
      b. Start metronome; Apply defibrillation patches.
      c. Monitor compression quality, speed and time intervals
      d. Charge the monitor at compression 190
      e. Interpret rhythm and shock if indicated after compression 200. Dump charge if shock NOT indicated.
      f. Alternate doing compressions if needed until additional resources arrive
   3. Position 3 (Airway):
      a. Place a nasal cannula at 10LPM
      b. Set Up BVM and begin ventilation after the 1st defibrillation
         * Insert an SGA after the 1st or 2nd defibrillation
         * Provide ventilations on the upstroke
      c. Attach ETCO2 monitoring
      d. Provide suctioning as needed
      e. Intubation should only be done if required for airway control or after ROSC.
   4. Position 4 (Compressions):
      a. Alternate compressors every 200 compressions (2min cycles).
   5. Position 5 (IV/IO/Meds):
      a. Establish IV or IO access
      b. One (1) IV attempt should be made prior to IO insertion. IO insertion can be done 1st if IV success is unlikely. IV/IO should be placed above the diaphragm.
      c. Administer any required medications
   6. Position 6 (Strategic IC):
      a. Safety
      b. Liaison with family and/or other agencies
      c. Develop egress plan

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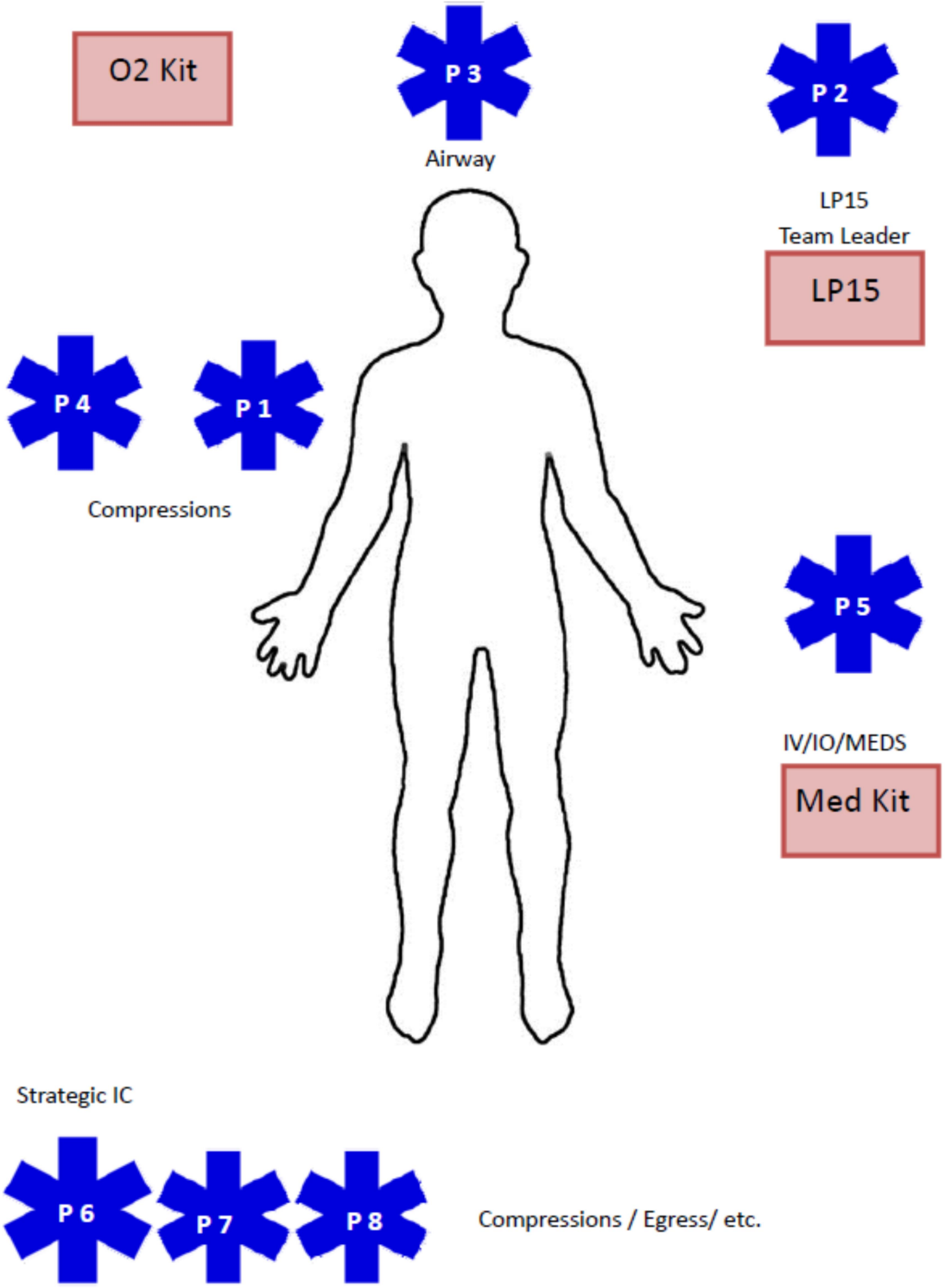
7. Position 7 – (Back up):
   a. Assigned as needed
8. Position 8 – (Backup):
   a. Assigned as needed. Additional personnel will be assigned as needed.



PROCEDURE – Cardioversion (Synchronized)

- TREATMENT:
  - A. The initial recommended synchronized cardioversion voltage doses are as follows:
    1. Wide irregular: defibrillation dose (not synchronized)
    2. All other pathologic tachydysrhythmias start at **100 J**; then **200 J** as necessary.
  - B. If refractory unstable tachycardia, may double the initial dose (**Max 200j**). Other options include:
    1. Manufacturer recommended placement of pads for synchronized cardioversion is Anterior/Posterior
    2. Adjust the location of the pads to change the electrical vector.

- PEDIATRIC PATIENTS:
  - A. Atrial Fibrillation, Atrial Flutter, Atrial Tach, and Symptomatic VT.
    1. Used if drug therapy and vagal maneuvers fail when patient has a pulse.
    2. Pediatric shock energy level:
       a. Monophasic or Biphasic: **0.5-1.0 J/kg**
       b. Ensure the patient is sedated and comfortable during shock delivery.

PROCEDURE – Continuous Positive Airway Pressure (CPAP)

INDICATIONS:

A. Congestive heart failure/Pulmonary edema
B. Noncardiogenic pulmonary edema of any cause
C. Respiratory insufficiency, any; e.g., Asthma/COPD/Pneumonia/CO poisoning.
D. Submersion injury with hypoxia, shortness of breath, respiratory insufficiency.
E. May use in Peds if able to cooperate and tolerate the procedure

CONTRAINDICATIONS:

A. Absolute: Respiratory Arrest, Agonal Respirations, Unconscious, Pneumothorax, Facial Anomalies (e.g., burns, fractures, etc.), Facial trauma
B. Relative: Decreased LOC, Claustrophobia, Patient Intolerance to equipment, Tracheostomy (If lacking the adaptor), Peds unable to tolerate procedure

HAZARDS:

A. Gastric distension, corneal drying, hypotension, pneumothorax
B. COPD and asthmatic patients do not respond predictably to CPAP;
    1. Higher risk of pneumothorax – frequently assess lung sounds.
    2. Increased intra-thoracic pressure with resultant hypotension – reduce ventilation rate/volume. In asthma should not exceed 5 cm pressure

PROCEDURE:

A. Place facemask and apply O2 device as per manufacturer recommendation.
B. Pressure should be set at 5 cm/H2O and adjusted prn. Do not exceed 10 cm/H2O.
C. Reassess patient every 5-10 minutes.
D. Consider mild sedation prn if patient has difficulty tolerating device.
    1. **Midazolam** 2.5mg (preferred in the elderly or hx of CHF/CAD).
    OR
    2. **Ketamine** 0.5 mg/kg Max 25mg.
E. If unable to maintain SPO2 > 90%, administer PPV via BVM and PEEP valve.
F. Remove face mask for suctioning and/or nitroglycerine administration.
G. May use with med-neb attachment for bronchodilator administration

PROCEDURE – DuoDote Auto-Injector Nerve Agent Antidote Kit

INTRODUCTION

A. EMS providers should not enter any contaminated area if there is any suspected hazardous materials contamination, EMS providers should immediately activate a Hazmat Response.
B. DuoDote Auto-Injectors Nerve Agent Antidote Kit, involves the administration of Atropine (2.1 mg) and 2-PAM (Pralidoxime Chloride – 600 mg) via auto injectors to a victim of nerve agent exposure.
C. The DuoDote Auto-Injector can be self-administered or administered to others by trained EMT's and Paramedics.

EXPOSURE SYMPTOMS

A. Mild/Moderate - localized sweating, lacrimation, muscle fasciculations, nausea, diarrhea, vomiting, weakness, dyspnea.
B. Severe - unconsciousness, convulsions/seizures, apnea, flaccid paralysis.
C. Symptoms can rapidly progress if patient not removed from source of exposure.

INDICATION FOR ADMINISTRATION

A. Symptomatic exposure to nerve agent.

CONTRAINDICATIONS

A. None in the setting of life-threatening exposure.

PROCEDURE

A. Nerve agent antidote medications are only given if the patient is showing signs and symptoms of nerve agent poisoning. THEY ARE NOT TO BE GIVEN PROPHYLACTICALLY.
B. Determine number of previous antidote administrations to patient if applicable. No more than three doses of DuoDotes should be given.
C. Determine injection site. Mid-lateral thigh or upper, outer quadrant of buttocks if patient thin.
    1. Place green safety tip over injection site and remove gray safety cap. Push firmly until you feel the auto-injector trigger.
    2. After the DuoDote Auto-Injector triggers, hold it firmly in place against the injection site for 10 seconds.
D. Administration:
    1. Mild Exposure Symptoms – administer one dose IM. If after 10 to 15 minutes, the patient does not develop any severe symptoms, no additional doses needed.
    2. Moderate Exposure Symptoms – administer two doses IM.
    3. Severe Exposure Symtoms – administer three doses.
    4. No more than three doses of DuoDotes.
E. Note number of antidotes administered and report to Medical Command or the receiving hospital.

PROCEDURE – Gastric Decompression

INDICATIONS OG/NG TUBE:

A. Inability to adequately ventilate due to gastric distension, ETT or SGA in place.
B. Contraindications
    1. Head/face injured trauma patient – orogastric decompression only
    2. Anatomic anomalies preventing correct placement

PROCEDURE:

A. Determine correct size and depth of tube.
    1. Size
        a. Pediatric size consult length-based reference.
        d. Adolescents/Adults 14-18 Fr
    2. Depth
        a. Nasogastric: Tip of nose, over ear to xyphoid process
        b. Orogastric: lip, around angle of mandible to xiphoid process
B. Insert tube
    1. Nasogastric:
        a. Pass lubricated tube along nasal floor into stomach.
        b. Instill air into tube w/ 20cc syringe and auscultate epigastrium.
        c. Secure tube.
    2. Orogastric:
        a. Visualize posterior pharynx, pass lubricated tube over tongue into stomach.
        b. Instill air into tube w/ 20 cc syringe and auscultate epigastrium.
        c. Secure tube.
C. Aspirate/suction stomach contents until patient can be adequately ventilated.

PRECAUTIONS/COMPLICATIONS

A. In head trauma patient where gastric decompression would benefit ventilation, gastric tube placement will be through the mouth.
B. Complications associated with NG tube placement
    1. Epistaxis
    2. Intracranial placement
C. Complications associated with NG/OG tube placement
    1. Bronchial placement
    2. Pharyngeal perforation, esophageal obstruction or rupture
    3. Bronchial or alveolar perforation
    4. Pneumothorax
    5. Gastric or duodenal rupture

PROCEDURE – Intraosseous (IO) Access

DEFINITION:

A. IO cannulation is an alternative for establishing vascular access in critical adult or pediatric patients when peripheral IV access is difficult or time sensitive.

INDICATIONS:

A. If a peripheral IV cannot be established after two attempts or within 60–90 seconds of elapsed time and in:
    1. Cardiac arrest.
    2. Hemodynamic instability.
    3. Imminent respiratory failure.
    4. Status epilepticus > 10 minutes, and refractory to IM anticonvulsants.
    5. Toxic conditions requiring immediate vascular access for antidote.
B. Humeral IO placement may be considered prior to peripheral IV attempts in cases of cardiac arrest and critical trauma to prevent delay of life-saving fluids or drugs.

EZ-IO™ PROCEDURE:

A. Determine patient's weight.
B. Assemble all necessary equipment
    1. The 25 mm Blue needle can be utilized for patients who weigh > 3kg.
    2. The 45 mm Yellow needle can be used for adult insertions (larger individuals) where the Blue needle is not adequate. Should be used for all humeral IOs.
    3. EZ-Stabilizer should be used to secure the needle.
C. Site Selection
    1. Proximal Humerus is preferred in adult patients to achieve the following:
        a. Increased flow rates
        b. Decreased pain
        c. Closer access to central circulation during cardiac arrest and for resuscitation.
    2. Proximal Tibia – not effective in cardiac arrest
    3. Distal Tibia – not effective in cardiac arrest
D. Site Landmarks
    1. Proximal Humerus (contraindicated in children <16 years)
        a. Ensure that the patient's hand is resting on the abdomen and that the elbow is adducted (close to the body).
        b. Insertion site is located directly on the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site.

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2. Proximal Tibia
    a. Palpate the landmarks at the proximal tibia (patella and tibial tuberosity).
    b. Insertion site should be approximately one finger width (2cm) medial to the tibial tuberosity, along the flat aspect of the tibia.
3. Distal Tibia
    a. Two finger widths proximal to the medial malleolus along the tibial midline.

E. Needle Insertion
1. Prep the surface with antimicrobial agent and wipe dry with a sterile gauze pad.
2. Stabilize patient's extremity and begin insertion from a 90-degree angle to the insertion site. Push the needle set through the skin until the tip touches the bone.
3. With the needle tip against the bone, assure adequate needle length by ensuring at least one black line (5 mm) is visible outside the skin.
4. Gently advance the needle set into position–do not force. Stop when you feel the "pop" or "give" on smaller patients.
5. When needle is in proper position, remove stylet, place the EZ-Stabilizer on the hub, but do not secure EZ-Stabilizer yet.
6. Connect tubing, primed with saline, to IO hub.
7. Rapid bolus or "power" flush with approximately 10 ml normal saline
    a. If the procedure is performed on a conscious patient, immediately following placement of the IO needle, administer **Lidocaine** 40mg over 2 minutes. Wait approximately 30–60 seconds before flushing with normal saline.
    b. If fluids do not flow freely, flush IO site with an additional 2-3 cc normal saline.
8. Confirm the catheter position
    a. Catheter is stable at a 90-degree angle to the bone, able to aspirate blood, and fluids flow without evidence of extravasation.
    b. If insertion fails, leave the needle in place and clamp the EZ-Connect; do not attempt second insertion on same extremity.
9. Secure the EZ-Stabilizer when patency is confirmed.
10. Consider additional bolus of saline if flow rates slower than expected.
11. Utilize a blood pressure cuff or pressure bag around the IV bag to help infuse fluids.
12. Monitor for patency frequently.

PEDIATRIC EZ-IO™ PROCEDURE

A. Assemble all equipment
1. The 15 mm Pink needle should be used for patients who weigh < 3kg (approximately 6 lb.). Primarily used for newborns and neonates.
2. The 25 mm Blue needle can be utilized for pediatric patients who weigh > 3 kg when the 15 mm Pink is deemed inadequate.
3. EZ-Stabilizer should be used to secure the needle.

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B. Site Selection
   1. Distal Femur
      a. Secure the selected leg in the outstretched position to ensure the knee does not bend.
      b. Identify the patella by palpation.
      c. The insertion site is just proximal to the patella (maximum 1 cm) and approximately 1-2 cm medial to the midline.
   2. Proximal Tibia
      a. Palpate the landmarks at the proximal tibia (patella and tibial tuberosity).
      b. Insertion site should be one finger width below and one finger width medial of the tibial tuberosity.

C. Needle Insertion
   1. Prep the surface with antimicrobial agent and wipe dry with a sterile gauze pad.
   2. Stabilize patient's leg and begin insertion from a 90-degree angle to the plane of the bone. Push the needle set through the skin until the tip touches the bone.
   3. With the needle tip against the bone, assure adequate needle length by ensuring at least one black line (5 mm) is visible outside the skin.
   4. Gently advance the needle into position. Stop when you feel the "pop" or "give".
   5. When needle is in proper position, remove stylet, place the EZ-Stabilizer on the hub, but do not secure EZ-Stabilizer yet.
   6. Connect tubing, primed with saline, to IO hub.
   7. Rapid bolus or "power" flush with approximately 5 ml normal saline.
   8. Confirm the catheter position:
      a. Catheter is stable at a 90-degree angle to the bone, able to aspirate blood, and fluids flow without evidence of extravasation.
      b. If insertion fails, leave the needle in place and clamp the EZ-Connect; do not attempt second insertion on same extremity.
   9. Secure the EZ-Stabilizer when patency is confirmed.
   10. Consider additional bolus of saline if flow rates slower than expected, no more than 2-3 cc normal saline.
   11. Consider a blood pressure cuff or pressure bag to help infuse fluids.
   12. Monitor for patency frequently.

D. Pain Management
   1. If the procedure is performed on a conscious patient, immediately following placement of the IO needle, administer **Lidocaine** 0.5 mg/kg slowly over 2 minutes, not to exceed adult dose of 40 mg. Wait approximately 30–60 seconds before flushing with normal saline.
   2. If fluids do not flow freely, flush IO site with an additional 2-3 cc normal saline.

Continued: ⟶

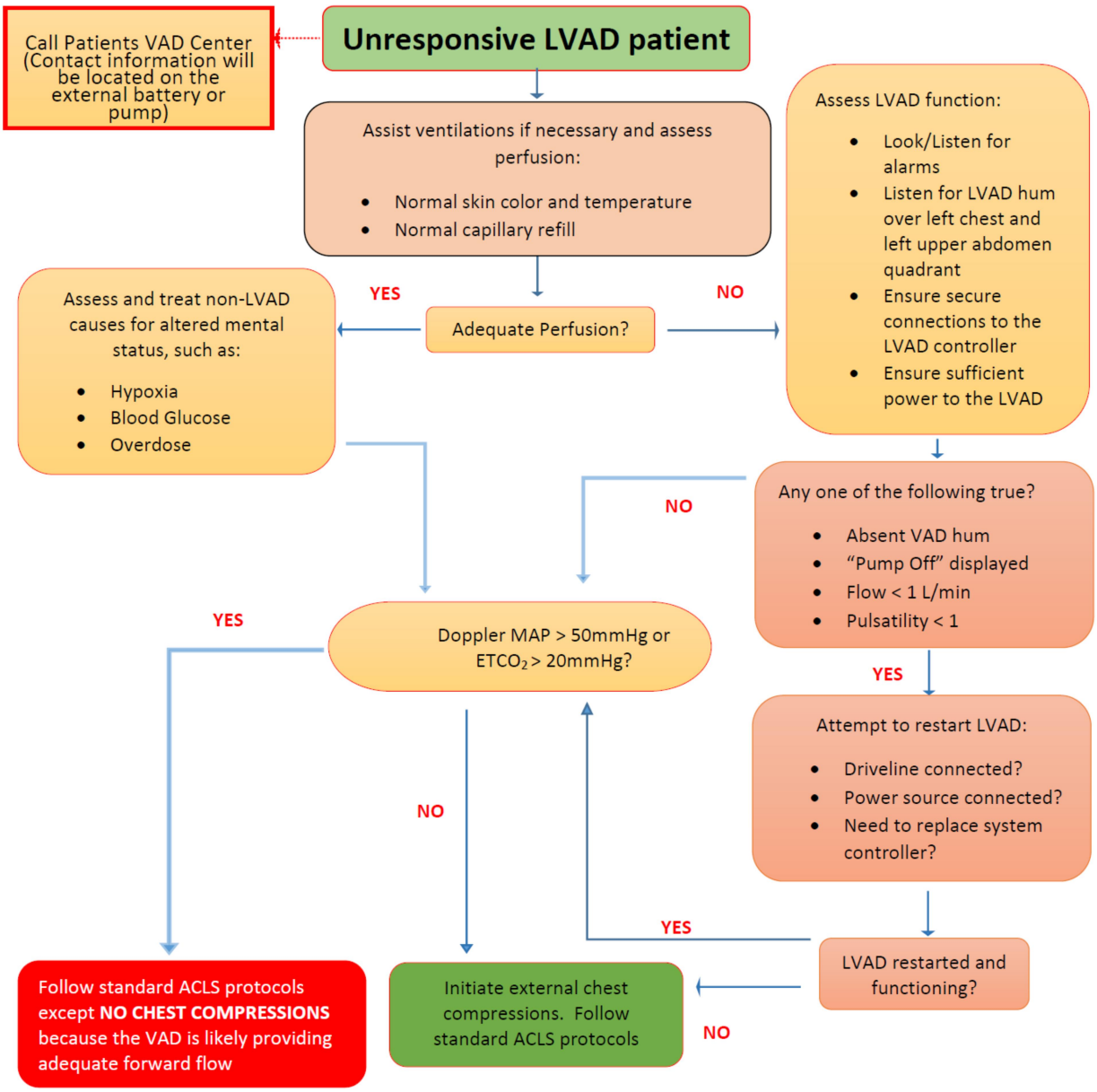
CONTRAINDICATIONS:

A. Suspected fracture of the bone selected for IO insertion.
B. Prior prosthetic joint replacement involving bone selected for IO insertion.
C. Previous significant orthopedic procedures (IO within 48 hours, surgery, etc.).
D. Infection at the site of insertion.
E. Excessive tissue at insertion site with the absence of landmarks.
F. Tibial placement in patients with suspected pelvic fractures.

NOTES & PRECAUTIONS:

A. Osteomyelitis, growth plate injury (in pediatric patients), and extravasation of fluid with compression of popliteal vessels or the tibial nerve may occur.
B. Airway and breathing should be established first in accordance with other protocols.
C. Do not perform more than one attempt in each tibia.
D. Any ALS medication may be administered IO.

PROCEDURE – Left Ventricular Assist Device (LVAD)



- In the non-invasive assessment of the BP of a patient with a continuous flow LVAD, use a manual BP cuff with Doppler when available, with NIBP as a secondary option.
- Waveform capnography can be used to track perfusion in patients in whom more common physical findings used to assess perfusion are not reliable.
- Transport LVAD patients in cardiac arrest to the nearest hospital.
- If ROSC is achieved, transport the patient to the closest VAD center.
- Chest compressions can be performed on all LVAD types (e.g. Heartmate II/III, Heartware)

PROCEDURE - LUCAS Chest Compression Device

INDICATIONS:

A. The LUCAS device may be used in patients who have suffered non-traumatic cardiac arrest, where manual CPR would otherwise be used. Notify receiving facility if LUCAS deployed.

CONTRAINDICATIONS:

A. Patients who do not fit within the device.
   1. Too small patient: If LUCAS alerts with 3 fast signals when lowering the SUCTION CUP, and you cannot enter the PAUSE mode or ACTIVE mode.
   2. Too large patient: If you cannot lock the upper part of LUCAS to the backplate without compressing the patient's chest.
B. Traumatic arrest.
C. Pregnancy.
D. LVAD or HVAD patients.

USING THE LUCAS DURING RESUSCITATION:

A. Rhythm Analysis
   1. Push the PAUSE BUTTON. Pause should not be > 10 seconds. There is no need to interrupt chest compressions other than to analyze the rhythm.
B. Defibrillation
   1. Defibrillation can be performed with the LUCAS device in place and in operation. There is no need to stop LUCAS to deliver a shock.
C. Pulse Checks/Return of Spontaneous Circulation (ROSC)
   1. Pulse checks should occur intermittently while compressions are occurring.
   2. Pause the LUCAS device and evaluate the patient If there is a change in rhythm, the patient becomes responsive or pulses are noted pause the LUCAS device. If the pulse remains, reassess the patient. If the pulse disappears, immediately restart the LUCAS device.
C. Disruption or Malfunction of LUCAS Device
   1. If disruption or malfunction of the LUCAS device occurs, immediately revert to manual CPR.

PROCEDURE - Nitrous Oxide (Nitronox)

CAMAS AND NORTH COUNTRY EMS ORDERS ONLY

INDICATIONS:

A. Pain control to include:
   1. Trauma patients: fractures, burns, abrasions and contusions, etc.
   2. Renal colic (kidney stone)
   3. Pain not contraindicated as below

CONTRAINDICATIONS:

A. Will include, but may not be limited to:
   1. Patient unable to self-administer
   2. Shock state, or likely possibility of shock
   3. Impaired consciousness (head injury, intoxication with alcohol or other drugs)
   4. Chest injuries, blunt or penetrating - possible pneumothorax
   5. COPD
   6. Decompression sickness
   7. Pregnant patients
   8. Cardiac chest pain
   9. Unable to make a good seal (maxillofacial injuries, young Peds, etc.)

PROCEDURE:

A. Advise patient that the gas is an analgesic and explain the procedure.
B. The patient will hold the mask in one hand.
C. Have the patient breathe the gas until pain is relieved.
D. Repeat the procedure if the pain returns.
E. Discontinue the administration if the patient is unable to self-administer the gas (e.g., becomes stuporous).
F. Monitor vital signs frequently (e.g., every 10 minutes).
G. Nausea and vomiting may occur.
H. If patient supine, instruct patient to remove mask to exhale.

PROCEDURE - Pelvic Immobilization

PURPOSE:
The initial reduction of an unstable pelvic fracture (to lessen ongoing internal bleeding and to ease the pain by splinting the fracture) using either a specifically applied sheet or another approved device.

INDICATIONS:

A. To be applied in all trauma patients who have appropriate mechanism(s) of injury and who present with pelvic instability.
B. Consider pelvic wrap in trauma patients who have appropriate mechanism(s) of injury and who are in shock.

PELVIC SLING PROCEDURE (SAM Pelvic Sling):

A. Remove objects from patient's pocket or pelvic area. Place SAM Pelvic Sling gray side up beneath patient at level of trochanters (hips).
B. Place BLACK STRAP through buckle and pull completely through.
C. Hold ORANGE STRAP and pull BLACK STRAP in opposite direction until you hear and feel the buckle click. Maintain tension and immediately press BLACK STRAP onto surface of SAM Pelvic Sling to secure.

PELVIC WRAP PROCEDURE:

A. Fold the sheet smoothly lengthwise to about 9 inches wide (do not roll) and apply underneath the pelvis, centered on the greater trochanters. Assure the patient's pockets are empty to avoid placing pressure on the objects into the patient.
B. Tighten the sheet around the pelvis and adjust the tension to try to return the pelvis to normal anatomical position.
C. Secure using a knot or clamps if available.

NOTES & PRECAUTIONS:

A. Always re-check the position of the sheet (in terms of up and down). You should still be able to feel the anterior superior iliac spines after placement. If not, the sheet may be too high on the pelvis and must be repositioned.
B. If the pelvis is unstable on initial exam, do not repeat the exam.
C. Blood loss in a pelvic fracture can be significant. Monitor closely and treat per Shock Protocol.
D. Consider placing prior to extrication from a vehicle if feasible.
E. **The pelvic sling/wrap is contraindicated for suspected isolated hip or lateral pelvic fractures, i.e., ground level falls.**

PROCEDURE – Pleural Decompression

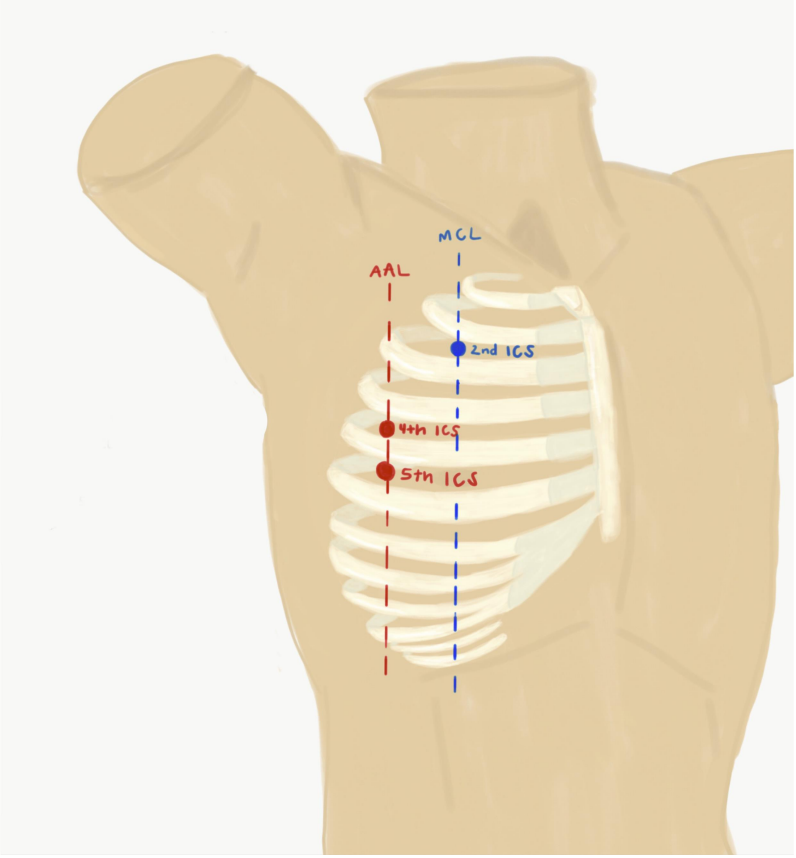
INDICATION:

A. Rapidly deteriorating patient with history of:
   1. Chest trauma, COPD, Asthma with any of the following:
      a. Decreased or absent breath sounds.
      b. Distended neck veins.
      c. Asymmetrical movement on inspiration.
      d. Hyper-expanded chest on affected side.
      e. Hyperresonance to percussion.
      f. Increased resistance to positive pressure ventilation, especially if intubated.
      g. Any of the above and signs of shock.

MANAGEMENT:

A 2nd intercostal space, midclavicular line in average size adults and pediatrics.
OR 4th or 5th Intercostal space, just above midaxillary line if patient large or heavily muscled.

B. Insert large bore, at least 4-inch OTN catheter over superior rib margin, remove needle and leave catheter inserted.
C. This procedure to be used only in life-threatening situations.
D. Complications include local hematomas, cellulitis, cardiac laceration, pneumothorax.



PROCEDURE – Positive End Expiratory Pressure (PEEP)

INDICATIONS:

A. Hypoxia, pre-or post-intubation despite appropriate positive pressure ventilation with 100% O2.
B. May apply PEEP to prepare patient with low SpO2 for RSI.

CONTRAINDICATIONS:

A. Absolute: Cardiac arrest
B. Relative: hypotension

PROCEDURE:

A. Apply PEEP device to bag valve device
    1. Dial PEEP to 5 cm/H2O and bag as usual; may increase by 5 cm every 3-5 minutes until hypoxia resolves. MAX: 15 cm/H2O
B. MAX Pediatric pressure 5 cm/H2O
C. Maintain MAP >65

PRECAUTIONS:

A. Hyperventilation will result in increased intrathoracic pressure and hypotension.
B. PEEP increases the risk of barotrauma, e.g., pneumothorax.

PROCEDURE – Spinal Immobilization Algorithm

PATIENT SELECTION:

A. Appropriate Patients for Full Spinal Immobilization:
    1. Blunt trauma with ALOC
    2. Spinal pain/tenderness
    3. Neurologic complaint
    4. Anatomic spinal deformity
    5. High energy MOI with any of the following:
        a. Intoxication
        b. Inability to communicate
        c. Distracting injury

PATIENT ASSESSMENT:

A. Patient Mentation:
    1. Decreased Level of Consciousness?
    2. ETOH/Drug Ingestion?
    3. Loss of Consciousness Involved?
B. Subjective Assessment:
    1. Cervical, Thoracic, Lumbar Spinal Pain?
    2. Numbness/Tingling/Burning/Weakness?
C. Objective Assessment:
    1. Cervical, Thoracic or Lumbar Deformity or Tenderness.
    2. Other Severe/Distracting Injury?
    3. Pain w/ Cervical Range of Motion?
D. **IF YES TO ANY, IMMOBILIZE.**
E. If no to all, may treat/transport without full spinal immobilization.
F. If penetrating neck injury without neurologic deficit; may Treat/Transport without spinal immobilization.

MODIFIED SPINAL PRECAUTIONS:

A. Consider Spinal Precautions with C-collar and Immobilization to the Gurney without LBB:
    1. Ambulatory at scene.
    2. Long transport, i.e., interfacility
    3. LBB not otherwise indicated
B. **MINIMIZING MOVEMENT AND ATTENTION TO SPINAL PRECAUTIONS IS STILL PARAMOUNT!**
C. All patients who meet Trauma System Activation criteria due to Blunt Trauma mechanism will have, at the minimum, application of a cervical collar. If immobilization to a LBB is impractical and/or leads to patient deterioration, apply a cervical collar and immobilize to the gurney in a supine position.

PROCEDURE – Surgical Airway

SEVERE FACIAL TRAUMA AND/OR UNABLE TO VENTILATE AN ADULT:

A. Cricothyroidotomy
   1. Life-threatening upper airway obstructions where other measures to establish an airway and ventilation have failed and endotracheal intubation is not feasible.
   2. Management:
      a. Identify cricothyroid membrane with non-dominant hand, incise skin with a vertical incision.
      b. Make a small (1 cm.) horizontal incision through the cricothyroid membrane, insert gloved little finger into incision to dilate incision; insert bougie into trachea.
      c. Place appropriately sized Trach Tube over bougie into trachea.
      d. Confirm tube placement as per advanced airway protocol.
      e. Maintain normal ventilation rates with BVM.
      f. NOT TO BE USED IN PEDIATRIC PATIENT!
   3. This procedure to be used only in life-threatening situations.
   4. Complications include hemorrhage, false passage, etc.

SEVERE FACIAL TRAUMA AND/OR UNABLE TO ORALLY INTUBATE IN A CHILD <12 YRS:

A. Needle Jet Cricothyroidotomy
   1. Identify cricothyroid membrane, direct #10-14 gauge over the needle catheter caudally into the trachea.
   2. When the needle is through the membrane, stop and aspirate for air to ensure tracheal entry.
   3. Attach to high-flow O2 source with on/off control device.
   4. This procedure to be used only in life-threatening situations.
   5. Complications include hemorrhage, false passage, etc. Temporizing airway maneuver. CAN BE USED ONLY IN PEDIATRIC PATIENTS!

PROCEDURE – Taser Dart Removal

DEFINITION:

A. A non-lethal neuromuscular interruption weapon deployed by law enforcement officers designed to create temporary motor skill dysfunction to a violent, combative subject.
   1. A taser works by firing two wire-attached darts that can strike a suspect from up to 15 feet or more. It delivers 50,000 volts of electricity but is not harmful to vital body functions such as heart rhythm, pacemaker function or respirations. However, it should instantaneously incapacitate the person. Each electric discharge can last a total of 5 seconds or more and is controlled by the officer who fires the device.

PROCEDURE:

A. To be done only upon request by law enforcement officers:
   1. Ensure cartridge has been removed from the weapon or wires are cut.
   2. Place one hand on the patient where the probe is embedded and stabilize the skin surrounding the puncture site.
   3. Place your other hand firmly gripping the probe and in one quick, fluid motion pull the probe straight out of the puncture site.
   4. Check probe to make sure entire probe was removed and repeat procedure with remaining probes.
   5. Darts are a sharps hazard – treat as contaminated needle and dispose in sharps container or taser cartridge.
B. CONTRAINDICATIONS to field removal:
   1. Probes embedded in the face, neck, groin or female breast should not be removed in the field. Transport for removal.

SPECIAL CONSIDERATIONS:

A. Transport patients demonstrating any of the following:
   1. Evidence of excited delirium. See Restraint of Combative Patient protocol for treatment.
   2. Persistent, abnormal vital signs.
   3. Abnormal subjective complaints including chest pain, shortness of breath, nausea or headaches.
B. Burn Hazard -- When a TASER is used in the presence of flammable liquid or vapor (e.g., pepper spray), there is a burn hazard. Electrical arcing from imperfect (but effective) dart contact can ignite the propellant.

PROCEDURE – Transcutaneous Pacing

INDICATIONS:
Primary initial treatment for symptomatic high degree heart block. Consider in bradycardia with evidence of inadequate perfusion, (e.g. altered mental status, chest pain, hypotension, other signs of shock).

PROCEDURE:

A. Ensure ECG pads are attached and monitor displays a rhythm.
B. Attach pacing electrodes to anterior and posterior chest just to the left of the sternum and spinal column.
    1. Alternatively, pads may be placed in the standard anterior and lateral position as with defibrillation.
    2. If there is difficulty in obtaining capture, try alternative position.
C. Begin pacing at a rate of 80 beats per minute and 30mA current output.
    1. Increase current by increments of 10mAs while observing monitor for evidence of electrical capture.
    2. Confirm mechanical capture by checking pulses and BP.
D. **Midazolam** 2.5-5mg IV/IM q 5mins prn.
    1. May give Midazolam prior to pacing if IV already established and Midazolam readily available. Do not delay pacing for Midazolam administration.
    2. Treat pain with Fentanyl per protocol.
E. If the patient remains unconscious during pacing, assess capture by observing the monitor and evaluating pulse and blood pressure changes.
    1. In the event of electrical capture and no pulses, follow PEA protocol.

NOTES & PRECAUTIONS:
Transcutaneous pacing should not be used in the following settings:

A. Asystole.
B. Patients meeting Death In The Field criteria.
C. Patients in traumatic cardiac arrest.

PROCEDURE – Wound Packing

INDICATIONS:

A. To be used when conventional methods for hemorrhage control have failed, i.e. direct pressure, pressure dressing, tourniquet placement.
    1. May be the most effective method for controlling junctional bleeding (groin, axilla).
    2. Wounds of Head (scalp), Back and Extremities may be gauze-packed.
    3. Neck, Chest, Abdomen and Pelvis should not be gauze-packed.

PROCEDURE:

A. Use direct pressure to stop bleeding:
    1. Gauze roll
    2. Weighted pressure with hand, elbow or knee.
    3. Insert gloved hand into wound to tamponade bleeding source.
B. If not already done, insert gloved hand into wound and apply pressure.
    1. Be cautious in head or extremity injuries if bony fragments possible.
C. Begin packing wound with roll or Z-fold gauze (Combat gauze preferred but not absolute):
    1. Pack gauze around finger and exert force to tightly fill the wound.
    2. Continue packing gauze into wound until wound is filled or bleeding stopped.
D. Apply direct pressure to wound:
    1. Use the remainder of the roll gauze as a bolster to localize pressure to the wound.
E. Bleeding controlled?
    1. Yes: place pressure wrap and continue transport to trauma center.
    2. No: continue packing or apply greater pressure with hand, elbow or knee; continue transport to surgical intervention.

NOTES/PRECAUTIONS:

A. Appropriate PPE is mandatory:
    1. Gloves
    2. Face/Eye protection
    3. Gown
B. If wound continues to bleed or ooze, continue packing and exerting direct pressure.
C. Note the number of gauze rolls used for wound packing and inform the receiving physician.

COPS - Abandoned Newborns

INTRODUCTION:

A. RCW 13.34.360 allows for the relinquishment of newborn children at hospitals or fire stations. The key provisions of this law include:
    1. Protecting parental anonymity.
    2. Gathering the medical history of the parents and child.
    3. Providing referral information to the parent about adoption options, counseling, medical and emotional aftercare services, domestic violence, and the legal rights of the transferring parent.
    4. Notifying and releasing the newborn to child protective services (CPS).
        a. Newborn defined as < 72hours old.

PROCEDURE:

A. If delivery has not occurred and appears imminent follow Emergency Delivery protocol. Provide appropriate care to mother per protocol. Follow agency SOP.
B. If EMS is presented with a newborn child in extremis:
    1. Follow NEWBORN RESUSCITATION protocol.
C. Patient not in immediate need for medical care:
    1. Ascertain child's medical history as appropriate:
        a. History of birth including complications, date, time, etc.
        b. Known congenital anomalies.
    2. Paternal/Maternal medical history
        a. Prenatal care.
        b. Drug use during pregnancy.
        c. Other factors influencing child's health.
D. Transport to local hospital.
    1. Notify staff en route of need for CPS referral.
E. Maintaining parent confidentiality is paramount. Ascertain as much history as appropriate while providing a non-judgmental environment.
F. Provide the following referral information to the parent(s) as time allows (patient care is the priority).
    1. Medical and emotional aftercare (i.e., TIP, Chaplaincy, etc.).
    2. CPS.

COPS - Acute MI Suspected; STEMI Early Response Protocol:

PATIENT SELECTION

A. Active chest pain <12 hours
B. 12 lead EKG w/ ST elevation (1 mm or greater) in @ least 2 contiguous leads – ST Elevation MI (STEMI)
C. No LBBB or paced rhythm – EXCEPTION: LBBB with concordance in 1 or more leads

TREATMENT

A. Notify ED of Acute MI ASAP
B. Provide above care prn including ASA, NTG, and analgesia per Chest Pain protocol.
C. Transport Emergently (Code 3) to closest PCI-capable hospital for emergent cath lab capability.
    1. Always check HOSCAP status for availability to accept suspected STEMI patient.
    2. If Clark County hospital unavailable, divert to closest appropriate facility: Emanuel, Providence Portland, Portland Adventist, Kaiser Sunnyside, or OHSU.
    3. Contact MC if divert not practical due to traffic, etc.
D. If initial 12 lead negative or inconclusive, repeat every 3-5 min if symptoms persist.
E. If 12 lead indicates inferior MI (ST elevation in II, III, and aVf), **do V3r and V4r to evaluate for Right Sided MI.**

COPS - Transport to Alternative Mental Health Facility: Prehospital Checklist:

INCLUSION CRITERIA:

_____ 9-1-1 Dispatch
_____ Age 18 - 55
_____ Voluntary/willing to go to alternative destination
_____ Cooperative and non-combative
_____ Normal level of consciousness
_____ No dementia
_____ Patient able to perform activities of daily living.

EXCLUSION CRITERIA:

_____ NO new onset of mental illness
_____ NO overdose
_____ NO trauma requiring more treatment than bandaging
_____ NO loss of consciousness or seizure in the last 24 hours
_____ NO pregnancy
_____ NO evidence of acute medical or traumatic problem
_____ NO anticoagulants

VITAL SIGNS:

All must be within the given range:

_____ HR (50 - 100) _____ BP systolic (100 - 180) _____ BP diastolic (< 100)

_____ RR (12 - 24) _____ SPO2 (> 92%) _____ Temp (97 - 100.3°) _____ BGL (70 - 300)

PROCEDURE:

1. Perform a full assessment
2. Ask patient if transport to alternative destination is acceptable/desired
3. Contact the receiving facility, ask if they can receive an EMS patient.
4. Contact MC for confirmation of assessment findings and appropriateness of transport to an alternative facility
5. A checklist documenting inclusion/exclusion criteria must be left at the receiving facility.
6. If Alternative Transport refused, transport to ED

Incident #:
_____
Dept name:
_____
Provider name:
_____

NOTES:

1. Document full patient chart to include receiving facility. Refusal form is not necessary.
2. Instruct patient to bring any prescribed medications and/or medical equipment.
3. If any doubt, transport to the appropriate ER.

COPS – BLS Transport Unit Response to and Transport of 911 Calls

APPROVED RESPONSE DETERMINANTS

A. Only those calls prioritized as 5 or 6 that have been pre-approved by the MPD's office
B. Interfacility transfers, not prioritized 1 through 4
C. See BLS Unit Response Call Types reference for complete list

SCOPE OF PRACTICE

A. A BLS Transport Unit will be staffed by tenured, experienced personnel with, at minimum, EMT certification. An EMT with IV and/or SGA endorsement will provide care at the EMT scope of practice. See Scope of Practice by Certification Level with questions.
B. BLS staff may institute care as per protocols herein

PATIENT ASSESSMENT

A. BLS - If the patient meets the below BLS criteria, they may be transported by a BLS crew.
    1. Warm, dry, pink skin at rest.
    2. Awake, alert, or at baseline mental status.
    3. Pulse 60 to 100 regular when at rest, peripheral pulses present.
    4. Respiratory rate 10 to 30 at rest.
    5. Blood pressure > 100 systolic (>110 if 65 or older) unless symptomatic due to BP.
    6. Blood pressure < 180 systolic unless symptomatic due to BP.
    7. Blood pressure < 100 diastolic unless symptomatic due to BP.
    8. Patients with Ventricular Assist Device (VAD) not requiring ALS interventions.
    9. Patients with medical devices/equipment managed by the patient/caregiver requiring no medical intervention or monitoring (e.g. peg tubes, CSF shunts, colostomy/ileostomy bags, insulin pumps, feeding tubes that are not running during transport).
B. ALS - If patient meets below ALS criteria, crew will immediately summon ALS response via CRESA.
    1. Cool, clammy skin.
    2. Pulse < 60 or > 100 at rest, in adults.
    3. Respiratory rate < 10 to > 30 shallow or labored at rest.
    4. Blood pressure < 100 systolic (<110 if 65 or older) if symptomatic due to BP.
    5. Blood pressure > 180 systolic if symptomatic due to BP.
    6. Blood pressure > 100 diastolic if symptomatic due to BP.
    7. Altered LOC or confirmed loss of consciousness now or prior to arrival.
    8. Chest pain/shortness of breath/signs of a stroke/TIA.
    9. Impending/recent childbirth/neonate care.
    10. Medication reaction/drug overdose/suicide attempt resulting in ALS symptoms, requiring ALS intervention or if decompensation may occur.
    11. Severe bleeding, amputation; including fingers/toes resulting in shock.
    12. Significant mechanism of injury resulting in ALS symptoms.
    13. Supra-umbilicus abdominal and/or back pain when atypical cardiac origin is suspected.
    14. Anytime a BLS crew is unsure of the patients presentation or believes the patient may deteriorate

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TRANSPORT

A. If patient meets BLS criteria as above, transport patient as per the following:
    1. Universal Patient Protocol
    2. Interfacility Transport
    3. Prehospital Communications
    4. Receiving Hospital

REQUESTING ALS RESPONSE

A. Should patient meet any of the above ALS criteria, crew will immediately summon ALS first response and ALS transport via CRESA
    1. If ALS first response already on scene, the BLS crew will follow direction of the Paramedic in charge of patient care while awaiting ALS Ambulance
B. Begin treatments as necessary:
    1. Administration of O2 and any necessary airway adjuncts
    2. Provision of any lifesaving intervention as per scope of practice
        a. If cardiac arrest, see Cardiac Arrest Initial Management
C. Prepare to provide complete report to arriving ALS crew(s) including reasons for upgrading.
D. The arriving Paramedic, after report and patient evaluation, will determine need for ALS care and transport.
    1. Should the Paramedic determine the patient does not require ALS treatment or care, the Paramedic may ask the BLS crew to transport the patient. The BLS crew will transport as per above guidelines.
    2. Clear documentation of reasons for determining BLS transport will be done and the incident will be forwarded to the agency training department for review. A full assessment will be completed in the Paramedics EHR.
E. If patient condition warrants imminent transport and the ALS Ambulance is delayed, the first response Paramedic will maintain patient care and transport in the BLS ambulance.
    1. Notification to Supervisor or Battalion Chief shall be made as soon as possible.

COPS – Crime Scene Response

PROCEDURE:

A. Response and Arrival
   1. Be conscious of physical and weather conditions around the site. Tire tracks of suspect vehicles are often located in or adjacent to a driveway.
   2. Limit the number of personnel allowed onto the scene. Consult with law enforcement to direct placement of vehicles and route of personnel onto the scene.

B. Access and Treatment
   1. Select a single route to the victim. Maintaining a single route decreases the chance of altering or destroying evidence or tracking blood over a suspect's footprints.
   2. Note the location of furniture, weapons, and other articles, and avoid disturbing them. If they need to be moved, someone should note the location the article was moved from, by whom it was moved, and where it was placed.
   3. DO NOT Remove from the scene any EMS generated debris that is contaminated with blood or body fluid.
   4. Be conscious of any statements made by the victim or other persons at the crime scene. Write down what these statements were and report to the investigating officers.
   5. Note the specific garments worn by the patient at the time of treatment. It is also important not to tear the clothing off or cut through any holes.
   6. The victim should be placed on a clean sheet when ready for transport. At the hospital, please try to obtain the sheet once the victim is moved off of it, fold it carefully in on itself, and give it to the investigating officers. This is especially important in close contact crimes such as rape, serious assault and death cases.
   7. Provide your name, agency and contact information to the investigating officer.

C. Documentation
   1. A detailed report is important in case you are later called to testify in court. An incident report should be completed and should cover your observations, conversations with family or witnesses, location of response vehicles and equipment, furniture, weapons, clothing that has been moved, items that were handled and your route to the victim.
   2. An Incident Report may be helpful for you to complete. This is a protected document and if you are called to court may be used by you to refresh your memory of aspects of the call that are not included in the Patient Care Report.
   3. Do not offer your opinions or evaluations about the crime scene.

REMINDER:

A. Any location can be, or become, a crime scene. When responding, and upon arrival, if something does not appear to be right, notify police. If you suspect a crime scene and law enforcement is not present, secure area and document what you see.

COPS – Death In The Field

WITHHOLD RESUSCITATION IF:

A. POLST, DNR, Living Will, HOSPICE:
   1. There is a POLST form present (Photocopies are authorized per WSMA). Oregon patients will be in the Oregon POLST Registry and can be confirmed by calling (1-888-476-5787)
   2. The patient is in a skilled nursing facility and there is a DNR order signed by a physician.
   3. There is a signed and notarized Living Will present, and consultation has occurred with Medical Control.
   4. Patient in HOSPICE in cardiac arrest is considered DNR, withhold resuscitation.

B. Obvious Sign of Death:
   1. Rigor mortis, decomposition, decapitation, dependent lividity, evisceration of heart or brain, or incineration.

C. Limited Resources:
   1. The patient is a pulseless, apneic victim of a multiple casualty incident where resources of the EMS system are required for stabilization of other patients.

TRAUMATIC DEATH IN THE FIELD:

Unwitnessed traumatic arrest is almost uniformly fatal while EMS witnessed arrest due to severe hypovolemia, hypoxia, or tension pneumothorax may respond to resuscitation.

A. **HAT** Resuscitation: Treatable causes of witnessed traumatic arrest.
   1. **Hypovolemia**: Control external bleeding, apply pelvic binder/wrap if pelvic trauma, Administer 1000 ml of Lactated Ringers.
   2. **Airway**/Oxygenation: Ensure airway patency and effective oxygenation.
   3. **Tension** Pneumothorax: Perform bilateral needle chest decompression if indicated.

B. Trauma patients who are pulseless and apneic on EMS arrival are considered dead in the field unless there are extenuating circumstances (e.g. hypothermia, medical cause).

C. For patients found in VF or Pulseless VT on EMS arrival, suspect a medical event and treat per the VF/pulseless VT protocol.

D. For patients who deteriorate to PEA or asystole on scene, begin CPR while instituting HAT resuscitation (CPR should not interfere with HAT procedures):
   1. If ROSC is obtained, transport to trauma center.
   2. If ROSC is not achieved, declare the patient dead or contact OLMC for guidance.

E. If the mechanism of injury appears inconsistent with the patient's condition and not severe enough to induce traumatic arrest, consider a primary medical cause for the patient's cardiac arrest and treat accordingly.

Continued: ⟶

DETERMINING DEATH IN THE FIELD:

A. The victim of a medical (non-traumatic) arrest should be determined to be dead in the field and should not be transported if:

1. Asystole upon initial monitoring and the patient has not responded to 3 cycles of ACLS for asystole (3mg Epinephrine). This patient may be determined to be dead in the field after consultation with Medical Control.
2. Asystole upon initial monitoring and who in the Paramedic's best judgment is not resuscitatable (ET CO2 ≤9 and not improving). This patient may be determined to be dead in the field after consultation with Medical Control or the patient's physician.
3. Pulseless Electrical Activity (PEA):
   a. Resuscitation of at least 30 minutes has been accomplished with a complete evaluation of causes of PEA (H's & T's)
   b. Resuscitation of at least 30 minutes and not responsive and ET CO2 <9 may be determined to be dead in the field only after consultation with Medical Control or the patient's physician.
4. Full ACLS resuscitative efforts have been instituted and the patient's ETCO2 remains at ≤9 mm/Hg.
5. The patient who has been shown to be unresponsive to appropriate and prolonged advanced cardiac resuscitative measures and who will require continuous CPR during transport may be determined to be dead in the field by the Paramedic in charge after consultation with Medical Control.

DOCUMENTATION:

A. All patient encounters will be recorded on a MIR with time and procedures documented.
B. All non-resuscitation and termination of resuscitation will have an ECG strip documenting cardiac rhythm with time and date recorded on the strip. (Exception: traumatic arrest and/or obvious death as noted above).
C. All conversation with Medical Control to be documented, to include time, physician's name, nurse's name, and instructions.
D. Law Enforcement will be notified by the PIC on all cases of DIF. Clark County Medical Examiner must be contacted prior to Paramedic leaving the scene.
   1. The ME may choose not to respond to the scene and allow for decedent retrieval by a local funeral home. In such cases, document who was spoken to at the ME's office (must be the ME or Deputy ME) to include name and phone number. This information releases the body to the funeral home. Provide this information to the family and/or law enforcement.

PRECAUTIONS:

A. All hypothermic patients, possible drug overdose, victims of electrocution, lightning, and drowning should have resuscitative efforts begun.
B. Consider the needs of survivors when discontinuing a code.
C. If any doubt exists about the resuscitation of a patient, consult Medical Control.

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CONSIDERATIONS FOR CHILD/INFANT DEATH SCENES:

A. In addition to noting the Suspicions for Child Abuse:
    1. Notify appropriate agencies if not already on-scene including law enforcement and the Medical Examiner.
B. Document the following:
    1. Position of infant when originally found
    2. Where infant originally found, i.e., crib, waterbed, bassinet, etc.
    3. Position of face and was it covered by blankets/bedding, etc.
    4. Was infant/child sleeping alone
    5. Any airway obstruction or secretions in airway
    6. Any secretions noted on child's bedding (purge)
    7. Treatments rendered PTA including CPR, etc.
C. Be very cognizant of evidence preservation. RESUSCITATION ATTEMPTS TAKE PRECEDENCE. Take special care to document all attempts at invasive procedures including IVs, intubations, etc.

COPS – Do Not Resuscitate (DNR) Orders

DEFINITIONS:

A. A DNR Order is an order issued by a physician directing that in the event the patient suffers a cardiopulmonary arrest, cardiopulmonary resuscitation will not be administered. DNR orders are only valid when a patient is under the care of skilled nursing personnel.
   1. Patient in HOSPICE in cardiac arrest is considered DNR, withhold resuscitation.

B. A Living Will is a legally executed document expressing the patient's wish for future health care, which includes patient preference for resuscitation.

C. Portable Orders for Life Sustaining Treatment (POLST): Legal document signed by patient and physician indicating patient preference for life sustaining treatment. Includes preference for resuscitation.

D. Resuscitation includes attempts to restore failed cardiac and/or ventilatory function by procedures such as endotracheal intubation, mechanical ventilation, chest compressions, defibrillation, and use of ACLS cardiac medications.

GUIDELINES:

A. When the patient's family, friends, or nursing home personnel state that the patient is not to be resuscitated:
   1. BLS protocols will be followed while attempts to determine if a written POLST form, DNR order, or a Living Will is present.
   2. In the absence of the above, call MC.
   3. The POLST form, DNR order, or Living Will must be documented in the patient care report.

B. No BLS or ALS procedures should be performed on a patient who is the subject of a confirmed POLST form, DNR order, or has a Living Will and who is PULSELESS AND NONBREATHING.

C. See DEATH IN THE FIELD Protocol for further information.

COPS – EMS RESPONSE: MPDS, Unit Delayed, Ambulance Closer

MEDICAL PRIORITY DISPATCH SYSTEM (MPDS):

A. Once a call is received by an ALS transport unit, the unit will respond as rapidly as possible and make patient contact to determine and administer emergency medical care as needed.
B. All Fire and Medic units will follow the Clark County MPDS EMS Response Modes and the respective response determinants. At times deviation from these modes may be appropriate. Any deviation by responding units shall be documented in writing and submitted to the unit's agency and Medical Program Director for review.

Response Determinant	**Response Priority**	**Response Mode**	
		First Response	Ambulance
ECHO	1	Hot	Hot
DELTA	2	Hot	Hot
CHARLIE	3	Hot	Hot
BRAVO	4	Hot	Cold
ALPHA	5	Cold	Cold
	6	Cold (no-response option)	Cold
	7	Cold	Cold (no-response option)

FIRST RESPONSE UNIT DELAYED:

A. The first response unit shall advise CRESA to notify the responding ambulance of the delay.
B. CRESA shall advise the responding ambulance of the delayed response.
C. The responding ambulance shall upgrade to the First Response EMS Response Mode.
D. Delayed response is defined as any response time (time of dispatch to time of arrival) exceeding an EMS agency's response time standard for the incident location.

AMBULANCE CLOSER TO A CALL:

A. When a responding ambulance unit realizes it is closer to a call:
    1. The ambulance crew shall advise the first responder of their location and respond according to the First Response EMS Response Mode;
    2. The first responder shall decide if it will respond according to First Response or Ambulance Response Mode.

COPS – EMS RESPONSE: Cancellation/Slowdown/Higher Priority Call/Staging

CANCELLING OF RESPONSE:

A. CRESA reports the original caller has canceled the request for service. The Paramedic will make the decision to cancel or continue the call based on information from CRESA.
B. A first-in responding unit reports that no patient is present.
C. A first-in responding unit with an EMT, Paramedic, or EMS agency known to the responding unit arrives and reports that the patient does not want or need contact by ALS transport unit. This cancellation can be due to:
    1. No need for treatment or minor care administered by the first-in units.
    2. Patient/Guardian desires POV transport (should be conveyed to transport unit). If first-in unit feels ALS transport Paramedic should continue in for evaluation, this should be conveyed to responding medic unit.
        a. It shall be the discretion of the Paramedic on the responding medic unit whether to continue to the scene.
        b. If the ALS transport unit does not respond, the first-in unit will obtain a waiver form signed by the patient or other responsible person stating that based on his/her own initiative they do not desire transport.

SLOWDOWN:

A. Transport units may be slowed by first-in units, staffed by a Paramedic or EMT, after evaluating the patient and determining a slower response is appropriate.
B. It would be more appropriate for the first-in unit to convey patient information to the medic unit so the responding Paramedic can decide if a slower response is appropriate.

DIVERSION TO HIGHER PRIORITY CALL:

A. An ALS transport unit may be diverted to another call when:
    1. It is obvious the second call is a life-threatening emergency and first-in units known to ALS transport unit as EMTs and/or Paramedics report that first call can await a second ambulance.
    2. A second ambulance is dispatched to the first call.
    3. The first ambulance is decidedly closer to the second call and the response by it to the second call might conceivably be vital to the patient's outcome.

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STAGING:

A. Stage/standby will be done only when responding to scenes involving acts of violence or other scene safety issues until the scene is secured by law enforcement or other means. Items to consider:
    1. Information from CRESA indicating violence or potential for violence, i.e., assault with weapon, violent individual(s), hostage situation.
    2. Information that raises questions regarding the safety of responders, i.e., hazardous material or other special rescue situation.
B. Units will advise CRESA of intent to stage and request Law Enforcement (or other appropriate agency) response (if not already done). CRESA will notify all responding units of intent to stage.
    1. The responsibility to stage rests with the responding agency. Communication of intent to stage will be shared between multiple responding agencies.
C. CRESA has no authority to tell a unit to stage. They should provide ALL pertinent information to the responding units so they can make the appropriate determination as to whether to stage. This should be the same complete information as provided to law enforcement responding units

COPS – Interfacility Transport

GUIDELINES:

A. It is the responsibility of the transferring facility to ensure the medical necessities for safe patient transfer are met including stabilization.
B. Follow instructions of the Physician and RN's unless contrary to standing orders.
C. Attendance of the patient during transport:
    1. Physician - he or she will direct all care regardless of standing orders.
    2. RN – he or she will direct care of the patient via orders from the physician at transfer or the receiving physician. The RN may defer emergency care to the Paramedic.

STABILIZATION PRIOR TO TRANSFER:

A. Patients will not be transferred without first being stabilized. Stabilization includes adequate evaluation and initiation of treatment to assure that transfer of a patient will not, within reasonable medical probability, result in material deterioration of the condition, death, or loss or serious impairment of bodily functions, parts, or organs.
B. Stabilization of patients prior to transfer to include the following:
    1. Establish and assure an adequate airway and adequate ventilation.
    2. Initiate control of hemorrhage.
    3. Stabilize and splint the spine or fractures, when indicated.
    4. Establish and maintain adequate access routes for fluid administration.
    5. Initiate adequate fluid and/or blood replacement.
    6. Determine that the patient's vital signs are sufficient to sustain adequate perfusion.
C. ALS patient and Above Criteria Not Met:
    1. You may initiate prehospital protocols and guidelines including the establishment of intravenous lines, airway control, etc.
    2. You may refuse to transfer the patient until the facility has complied with the above evaluation and/or treatment. Should you decide this is necessary, contact MC for concurrence and consultation or contact the MPD directly.

OTHER CONSIDERATIONS:

A. If a BLS transport is requested and the BLS crew determines the patient needs to be transported by ALS ambulance, it is mandated that dispatch be contacted and an ALS crew dispatched. Under no circumstances should a BLS crew transport an ALS patient. (Exception: mass casualty incidents.)
B. Emergencies en route:
    1. Prehospital protocols immediately apply.
    2. MC should be contacted as appropriate; the receiving facility should be contacted as soon as possible to inform them of changes in the patient's condition.
C. Specific transport provider (AMR) protocols exist for ALS transfer between medical facilities. See AMR ALS Transfer Protocols, Clark County Washington.
D. Any deviation from this guideline or from the transport protocols should be reported to the MPD on an incident report within 24 hours of occurrence.

COPS – Life Flight/Air Ambulance Transport

GENERAL CONSIDERATIONS

A. Air transport is appropriate for critical trauma patient if transport time can be reduced by at least 10 minutes vs. ground. Consider the following:
   1. Factors affecting the **10-minute** reduction include:
      a. Transfer of patient care to Life Flight personnel.
      b. Establishing and transporting to the landing zone.
      c. Transferring patient from helicopter to receiving medical team.
   2. In general, incidents occurring within **20 miles** of the trauma center do not necessitate helicopter transport.

STANDBY

A. LIFE FLIGHT may be placed on standby by:
   1. 1st Responder, EMT, Paramedic
   2. Any Physician
   3. Any Police Officer
B. When LIFE FLIGHT is put on standby status, the helicopter is readied but remains available for any other requests on a priority basis. If another agency requests activation and you have LIFE FLIGHT on standby, LIFE FLIGHT will check with you for activation or stand-down.
C. LIFE FLIGHT should be placed on standby by trained personnel on scene after patient assessment has been done. It would be appropriate to place LIFE FLIGHT on standby prior to personnel arrival based on the following guidelines:
   1. If first response unit arrival will be > 10 minutes and the information dispatched purports to be the type of patient who will benefit from LIFE FLIGHT.

ACTIVATION:

A. The decision to activate rests with a responding Paramedic (or a physician on scene):
   1. As Paramedic arrives on scene and evaluates patient.
   2. Based upon information relayed to Paramedic by people on scene.
B. In some cases, LIFE FLIGHT can be immediately dispatched (activated) to the scene prior to the arrival of a first-in unit or Paramedic, when:
   1. Travel time for that first-in unit will be over 20 minutes and the situation as known purports to be the type of patient who will benefit from LIFE FLIGHT.
   2. Where it is known that difficult terrain will be encountered rendering ground access difficult but where the helicopter can get near the patient easily.
   3. Reporting party relates some other special circumstance indicating the need for its immediate activation.
   4. On scene EMS responders relay to the Paramedic the need for activation of LIFE FLIGHT prior to that Paramedic's arrival.
C. Activation shall be done through CRESA with concurrence of responding Paramedic.

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ACTIVATION (Cont.):

D. Criteria for Activation
   1. Patient(s) meet criteria for trauma system entry and extrication and/or ground transport will be prolonged (>10 minutes).
   2. Type of injury may dictate immediate transport to level I (Emanuel Hospital, OHSU).
      a. Medical Control will be contacted as soon as possible for instruction and/or concurrence for diversion to Portland of adult patients.
      b. Situations that may result in diversion include but are not limited to:
         * Burns (major).
         * Pregnancy with multi-system trauma in shock, unresponsive to aggressive resuscitation, or where surgery is anticipated immediately.
         * Pediatric patient meeting trauma entry criteria. Can consider rendezvous with LifeFlight at PHSW or LSC landing pad.
   3. Multiple victims meeting trauma team criteria.
   4. Diversion to Portland by Medical Control due to hospital resources (PHSW down for trauma).
   5. LIFE FLIGHT should not be used for situations where the outcome is an obvious fatality. (Refer to DEATH IN THE FIELD protocol.)

E. Destination Hospital
   1. Unless diversion criteria above applies, the destination hospital shall be indicated to LIFE FLIGHT by the Paramedic in charge (PIC). The PIC will consult with Medical Control and TCC to determine destination

CANCELLATION

A. LIFE FLIGHT may be cancelled by the Paramedic responsible for the patient upon examination of the patient and it is apparent that air transport is not necessary.

CASE REVIEWS:

A. LIFE FLIGHT calls will be reviewed by Clark County QA Committee and reported to the Medical Program Director.

COPS – MASS CASUALTY INCIDENT (MCI)

THE NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS) WILL BE USED TO MANAGE ALL INCIDENTS.

A. Incident Command (IC) is the responsibility of the agency having jurisdiction (AHJ).
B. Each assisting agency shall retain full authority to operate within the scope of its agency operational and administrative protocols and procedures.
C. Agencies that are assisting in the support of a single jurisdiction will function under the direction of that jurisdiction's designated Unified Incident Command.
D. Incident Command of a multi-discipline event should be predicated on the "Primary Hazard" of the event.
E. In a Unified Command, the "Lead Agency" may change as priorities change.

MCI PROTOCOL

A. Tool that may be used in part or whole as determined by the on-scene Incident Commander in situations where the number of patients exceeds the resources of the on-scene responders. There is no set number of patients that will automatically initiate this protocol. If the Incident commander determines that additional resources or incident structure is needed to better manage due to the complexity of the incident, he/she shall announce to dispatch that an MCI is being declared. This may be done upon arrival or at any time during the incident.
    1. If the incident involves multiple asymptomatic patients (HazMat exposure) set up secure evaluation area.
    2. During a declared MCI, the Trauma System is not in effect.
    3. "Licensed ambulances" are not needed for transport.
    4. If transport resources are limited, more than one critical patient may be placed in an ambulance.

For detailed description of roles and responsibilities during an MCI please reference MCI Protocol – Detailed Operation

COPS - Medication Administration Guidelines

CONTROLLED MEDICATIONS:

A. Controlled medications are maintained at each agency utilizing approved protocols and security, to include lot number and vial number. Agency operating procedures for controlled medication ordering, receipt, storage and administration may be individualized but they must follow these general guidelines:
   1. When a controlled substance is used, the MPD approved controlled medication proof of use form will be completed by the Paramedic administering the medication and the agency officer authorized to replace the medication. Wastage will be documented in the same fashion.
   2. Each agency will maintain the Controlled Drug Proof of Use form as a permanent record.
B. Paramedics only are authorized to administer controlled drugs.
C. Ordering of controlled medications, (to be done ONLY by the authorized agency officer):
   1. The DEA order form (222) will be completed by the agency authorized officer and submitted to the MPD for signature.
   2. The MPD will retain a copy of the order form (222) and the authorized officer will submit the form to the vendor.
   3. A scanned copy will be provided to allow for quarterly audits with the controlled medication vendor.
   4. Electronic forms (e222) will be used when approved by DEA (Agency application)
D. Receipt and storage of controlled medications:
   1. Receipt of controlled medication from the vendor will be done by approved agency personnel and overseen by the authorized agency officer in charge of controlled medications.
   2. Storage and disbursement of controlled medications will include records of lot and vial numbers and amounts distributed to ALS personnel.
   3. Controlled medications will be stored under double lock.
E. Inventory of controlled medications will be monitored for security by no less than two authorized agency officers to ensure compliance with these guidelines.
F. All ALS agencies with controlled medications must have operating procedures on file with the MPD's office.
G. All agencies will monitor controlled medication utilization by each Paramedic on a quarterly basis. This data will be submitted to the MPD for review.

ALLERGIES TO MEDICATIONS:

A. All medications are administered only after ascertaining the patient is not allergic to them.

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IV FLUIDS:

A. Intravenous access is to be established on all ALS patients unless unable.
B. The purpose for IV access:
    1. Fluid resuscitation for hypotension.
    2. Administration of IV medications per protocol.
    3. The anticipation of need for the above.
C. IV fluid of choice is a balanced salt solution (NS). If fluid is not needed for resuscitation, this will be TKO or a saline lock.
    1. Lactated Ringers is the fluid of choice if significant volume replacement is required, i.e. hypovolemia shock, Sepsis. LR is NOT indicated for shock associated with hyperkalemia (End-stage renal disease, crush syndrome, rhabdomyolysis).

BLOOD PRODUCTS:

A. Blood may be administered en route, during interfacility transfer to unstable patients who are actively bleeding or in shock.
    1. Blood will be provided by transferring facility and be administered via large bore IV blood tubing.
    2. Stop infusion if patient develops signs of allergic reaction and treat pt. accordingly.

INTRAOSSEOUS (IO) ACCESS:

A. Indications:
    1. Attempts at peripheral sites unsuccessful (after ~1 minute), patient obtunded and requiring vascular access, i.e., trauma resuscitation, code 99.
B. See IO Insertion procedure

PEDIATRIC MEDICATION ADMINISTRATION:

A. Use a length-based system for determining the correct dose of any medication.
B. As pediatric dosing is weight dependent, DO NOT exceed the adult dose for any medication delivered to a pediatric patient.

COPS – Medical Control (MC)

INTRODUCTION:

A. PeaceHealth Southwest Medical Center (PHSW) is Medical Control Base Station:
   1. Consult for:
      a. Clarification of orders or patient disposition
      b. Disparity between the prehospital protocols and private physician wishes.
      c. General medical information
      d. Controlled substances or treatment.

PROCEDURE:

A. If a patient is being transported to a facility outside of Clark County, MC must be utilized for treatment concurrence while the EMS unit is within Clark County. When the transport unit is operating in Multnomah County, MC is at Medical Resource Hospital (MRH), OHSU.

B. In cases where life-threatening conditions exist or when communication is impossible, controlled medical treatment(s) can be given without base station physician concurrence, or with the concurrence of the patient's private physician.

C. MC will be contacted on all trauma patients if diversion to a Level I facility is anticipated. Occasionally, contact with MC may be impossible prior to diversion/transport by Life Flight. In this instance, MC will be contacted as soon as possible before leaving the scene by the Paramedic with patient/scene information.

PARAMEDIC CONSULT WITH MEDICAL CONTROL AT PHSW REQUIRED FOR THE FOLLOWING:

A. FIELD TERMINATION OF ACLS.
B. DIVERSION to Portland area hospital for trauma, burn patient.
C. PEDIATRIC BRUE AND PARENT/CAREGIVER REFUSING.
D. PATIENT REFUSING CARE AGAINST MEDICAL ADVICE.

COPS - Pandemic Protocol Modified EMS Response - January 2022

PURPOSE:

A. To provide EMS personnel with information and guidance for treating patients during the current declared pandemic, Coronavirus SARS-Cov-2 caused COVID-19.

CURRENT PANDEMIC – COVID 19 INFECTION INFORMATION:

A. Human coronaviruses most commonly spread by respiratory droplets and aerosols, close personal contact such as touching or shaking hands, touching an object or surface with the virus on it and then touching your mouth, nose or eyes before washing your hands.
    1. Spreads easily and sustainably
    2. People are most contagious when they are most symptomatic
    3. Some spread may be possible when people are asymptomatic

PPE DEFINITIONS:

A. Standard PPE: Gloves, EyePro, N-95 or APR or P100
B. COVID Probable with AGP PPE: Gloves, EyePro, APR/P100, Face Shield and Gown or Tyvek Suit or Alternative approved by MPD.

SYMPTOMS/SEVERITY OF THIS DISEASE:

A. May appear 2-14 days after exposure and include any or all of the symptoms below. Mortality is about 2% with greatest risk among the elderly (60 plus) and those with comorbid conditions (CV disease, Diabetes, Chronic Respiratory disease, hypertension, obesity and cancer) or those with reduced immune status.
B. COVID SCREENING:
    1. Fever, subjective or confirmed
    2. Cough
    3. Nasal congestion, rhinorrhea
    4. Sore throat
    5. Shortness of breath
    6. Body aches (myalgias)
    7. Nausea, vomiting, diarrhea
    8. Loss of smell or taste
    9. Headache

ONGOING SURVEILLANCE:

A. CRESA will use protocol 26 (sick person) for patients whose primary chief complaint is flu-like non-priority symptoms (fever, nausea, and vomiting).
B. CRESA will use the Emerging Infectious Disease Surveillance (EIDS) Tool.
C. CRESA will use protocol 36 (Pandemic/Epidemic/Outbreak) when a communicable disease outbreak has been declared by Clark County Public Health.
D. CRESA will instruct all callers to meet responders outside if they are able.

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SCENE OPERATIONS:

A. HOT: 6ft radius around the patient. Only responders and necessary equipment for patient treatment shall be in this radius. Required PPE is defined as: N95 or APR, eye pro, gloves and gown.
B. WARM: Area immediately outside the HOT zone. Equipment and responders' stage and ready to respond into the HOT zone if needed.
C. COLD: Area that has been defined by situational awareness and factors of the scene. PPE shall be ready to don if needed.

ASSESSMENT AND TREATMENT OF POSSIBLE COVID-19 INFECTED PATIENT:

A. **Assume all patient contacts are potentially infected**.
    1. All patients will be asked to "come to us" if they are ambulatory by contacting the residence or facility through verbal contact from doorway, call into the residence/facility or by CRESA who will direct staff to add the direction of – "If you are safe to do so, please make your way or assist the patient in getting to the front door of your residence or facility to meet the crews.".
B. A triage "SCOUT" shall make contact with the patient while the remainder of the responders stay in the cold zone. Limit number of personnel in attendance unless necessary for patient care.
    1. Perform initial interview of **all** patients from at least 6 feet away as able, avoid standing directly in front of the patient.
C. Consider patient to have a fever if they report feeling feverish or they report a temperature of 100.4 or greater.
D. Place a surgical mask (or equivalent) or non-rebreather mask (when oxygen is required) on all patients before performing a detailed examination. If a nasal cannula or NRM is in place, a surgical mask should be worn over the device.
E. Reduce the use of aerosol-generating procedures to the extent possible
    1. Bronchodilator treatments by nebulizer (see below "bronchodilator")
    2. CPAP; Best to do on scene; If possible, discontinue CPAP before loading to ambulance; if CPAP necessary during transport, notify ED to meet on tarmac of Emergency Department and/or discontinue and deliver to ED room on 6 L flow nasal oxygen. (If used must have a HEPA filter and straps attached)
    3. BVM (If used must have a HEPA filter)
    4. Suctioning
    5. Endotracheal intubation (If done must have a HEPA filter)
    6. Examination of the oropharynx
    7. High flow 02 treatment by any route, e.g., nasal cannula (6 L max flow)
F. The use of a viral filter/HEPA filter on BVM/IGel/ETT/CPAP/MedNeb is mandatory.

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G. If patient requires bronchodilator (Do not withhold MedNeb from known asthmatic in status asthmaticus or known chronic respiratory disease exacerbation):
   1. Consider IV drip epinephrine per protocol
   2. Give the MedNeb treatment outside of the ambulance prior to transport
   3. Patient may use their own MDI, strong preference prior to transport and in open air: coughing may occur. If the patient is prescribed a rescue inhaler (albuterol or combivent), bring the MDI to the hospital to preserve hospital MDI supply.
   4. If MedNeb necessary/used, notify ED to meet on arrival; discontinue MedNeb on tarmac of Emergency Department, if possible, and deliver patient to ED room on 6 L flow nasal cannula with a surgical mask in place.

H. If patient requires airway support:
   1. First line: BVM with proper seal and in-line HEPA filter (two-person technique advised)

I. If intubation is required:
   1. Provider should have maximal PPE (N95/P100/APR, gown, gloves, face shield and eye pro or goggles)
   2. Minimize the number providers in immediate area to only those needed to perform the procedure
   3. Preferably in best ventilated available area. If in the ambulance, open rear doors as possible
   4. Pharmacological adjuncts should be used to optimize the attempt. (Paralyzed or apneic patient is not aerosol generating)
   5. Mechanical ventilation requires in-line HEPA filter.
   6. Special precautions for Intubation:
      a. In cardiac arrest, if an I-gel is in place and functioning well, there is usually no need to use an endotracheal tube
      b. Intubation should be done preferentially with a VIDEO laryngoscope (VL). Direct laryngoscopy (DL) increases the risk of aerosol contamination.
      c. The most experienced operator should do the intubation and aim for first pass success.
      d. Do not pause compressions for intubation in Cardiac Arrest.

PATIENT IN CARDIAC ARREST:

A. Do not alter the Cardiac Arrest protocol for the majority of cardiac arrest victims. History with SARS Cov-2 has shown the best prevention is being <u>vigilant with use of PPE and exposure precautions</u>. Ask screening questions of family or bystanders attending patient to confirm presence of Covid Like Illness (CLI). **If recent history unknown or unavailable, assume COVID.**
B. Patients in continuous cardiac arrest WILL NOT BE TRANSPORTED regardless of LUCAS device except at direction of Medical Control
C. For cardiac arrest patients **without** known recent fever, respiratory illness, or COVID suspicion, follow General Cardiac Arrest Protocol.

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D. For cardiac arrest patients **with** known previous symptoms of respiratory illness, fever or known Covid exposure or Covid positive test, or if history unavailable:
   1. Follow guidelines for HOT Zone PPE. No CPR without proper PPE.
      a. Apply patches before beginning CPR, analyze early. Defibrillate shockable rhythm. Patients in cardiac arrest with an initial rhythm of ventricular fibrillation should have efforts at resuscitation including CPR, defibrillation and ACLS drugs. Consider termination of effort after 20 minutes after first drug given, with Medical Control consult
      b. Consider early termination of effort (20 minutes after first drug given) for unwitnessed arrest with asystole or PEA as initial rhythm, no shocks given and no ROSC. All field pronouncement with Medical Control concurrence.
      c. Preferred airway is I-Gel with HEPA filter; plug or tape gastric decompression port. If ETT required, do not stop CPR while intubating (see intubation guidelines above).
      d. Limit number of personnel in Hot Zone (Modified Pit Crew)
      e. If no ROSC in 20 minutes contact Medical Control for possible termination orders.
      f. Patients in continuous cardiac arrest WILL NOT BE TRANSPORTED regardless of LUCAS device. Terminate Resuscitation on scene with MC concurrence.
      g. TRANSPORT PATIENT If ROSC (defined as pulse and systolic BP > 60 for 10 mins) do not move patient into the ambulance unless ROSC for at least 10 mins.

PATIENT REQUIRING AEROSOL PROCEDURE:

A. APPROPRIATE PPE:
   1. A single pair of disposable examination gloves, changing to a new pair if you are performing procedures in or around the airway such as rescue breaths, changing out a med neb, or intubation.
   2. A disposable isolation gown/Tyvek suit/reusable EMS suit shall be worn on all patients.
   3. Eye Protection: Face Shield with eye protection, or goggles.
   4. N95, AP respirator or Powered Air Purifying Respirator (PAPR) is required for aerosol-generating procedures (intubation, MedNeb, BVM, etc.)

STABLE PATIENT (NON-AEROSOL) BUT SUSPECTED COVID-19:

A. To minimize exposure, only one provider in proper PPE is needed for direct patient contact.
B. APPROPRIATE PPE:
   1. A single pair of disposable gloves, changing to a new pair if you are performing procedures in or around the airway such as changing out a med neb, or if they become soiled.
   2. Eye Protection: Face Shield with eye protection, or goggles.
   3. N95, AP respirator or Powered Air Purifying Respirator (PAPR)

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C. If COVID-19 suspected and patient wishes to stay at home (and meets criteria to leave at home) contact MC for direction of home isolation and treatment vs transport to the hospital.
   1. **This does NOT apply** if the patient has another chief complaint requiring treatment and transport.
   2. **This is NOT intended to be an EMS refusal of service protocol**. It is intended for the patient who can be appropriately left at home by their own decision after consult with MC.
   3. If MC Physician states to leave at home and patient agrees, obtain a refusal and document orders in ePCR

DOCUMENTATION:

A. All electronic or written reports shall include all PPE worn by responding agency.
B. COPS Documentation protocol shall be followed

TRANSPORT:

A. Limit the number of providers in the patient compartment to essential personnel to minimize possible exposures.
B. Family members and other contacts of patients with possible COVID-19 should not ride in the transport vehicle, if possible. If riding in the transport vehicle, they should wear a facemask. Preferred that family support person to meet (via POV) at the hospital.
C. Isolate the driver from the patient compartment and keep pass-through doors and windows tightly shut.
D. When possible, use vehicles that have an isolated driver and patient compartment that can provide separate ventilation to each area. If the vehicle does not have an isolated driver compartment, open the outside air vents in the driver area and turn on the rear exhaust fans to the highest setting.
E. Alert the hospital of the impending arrival of a possible COVID-19 patient.
F. Documentation of patient care should be done after EMS clinicians have completed the transport, removed their PPE, and performed hand hygiene.
G. See COPS - Viral Respiratory Disease Pandemic (PANFLU) for cleaning EMS Transport Vehicles prior to using the vehicle for another transport.

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CDC DONNING SEQUENCE P.P.E.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist

2. MASK OR RESPIRATOR

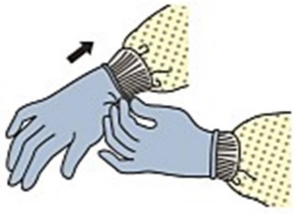
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

CDC

COPS - Patient Treatment Rights

CONSENT:

A. These prehospital care protocols are intended for use with a conscious, consenting patient, or an unconscious (implied consent) patient.
B. If the condition warrants, treatment of a minor (under age 18) is done via implied consent.

RIGHT TO MAKE DECISIONS REGARDING CARE:

A. If a conscious patient is rational and refuses treatment, the Paramedic should document the refusal (see guidelines for refusing care).
B. If a conscious patient is irrational (or impaired by alcohol or drugs) refuses treatment, the Paramedic should contact Medical Control and police as well as county mental health professional, if necessary (see guidelines for refusing care).
C. If a patient's family, patient's physician, or nursing home refuses treatment for a patient, protocols are contained herein to deal with those situations.
D. A rational patient has the right to select a hospital to which to be transported in a non-emergent situation.
E. If a patient is a minor (under age 18), no consenting adult is available and the minor refuses treatment, the EMT should contact Medical Control (and police, etc.)
F. When in doubt, contact the Medical Control and fully document all of your actions

COPS - Prehospital Communications

HOSPITAL DIVERT STATUS:

A. Responding units (including dispatch) shall not contact MC to inquire the divert status of PHSW when en route to the scene; divert status will be given to the Paramedic by CRESA, electronic hospital status application, or the receiving facility after evaluation of the patient.
B. PHSW will accept Trauma Entries, STEMI, Cardiac Arrest, Stroke and Sepsis Alerts when on ED divert. LSC will accept Sepsis Alerts and Stroke patients that meet criteria.

HOSPITAL NOTIFICATION OF PATIENT ACUITY:

A. Acuity Definitions
    1. RED - Patient presents with symptoms of a life-threatening illness or injury with a high probability of mortality if immediate intervention is not begun to prevent further airway, respiratory, hemodynamic and/or neurologic instability.
    2. YELLOW - Patient presents with symptoms of an illness or injury that may progress in severity or result in complications with a high probability for morbidity if treatment is not begun quickly.
    3. GREEN - Patient presents with symptoms of an illness or injury that have a low probability of progression to more serious disease or development of complications.

HOSPITAL PRE-ARRIVAL NOTIFICATION REPORT FORMAT AND PATIENT ACUITY:

A. RED or YELLOW Acuity Report Format:
    1. Unit identification
    2. Age and sex of patient
    3. Patient Acuity
    4. Chief complaint or reason for transport
    5. Very brief pertinent medical history
    6. Vital signs
    7. Pertinent treatment rendered
    8. Request for additional information or treatment
    9. Estimated time of arrival (ETA)
B. GREEN Acuity Report Format:
    1. Unit identification
    2. Age and sex of the patient
    3. Patient Acuity and reason for transport
    4. Estimated time of arrival (ETA)
C. The prehospital report should be provided to the receiving facility as soon as practical once transport has begun. The pre-arrival report is not meant to be a full patient report and should relay only pertinent patient care information. (Patient identification information is inappropriate to be given in the radio report.).
D. Advise MC or receiving ED of changes in patient's condition en-route and request for further treatment.

Continued: ⟶

VERBAL REPORT UPON HOSPITAL ARRIVAL:

A. This should contain more detail than the radio report. Present thorough details of the scene, complete patient assessment, and complete report on patient care and the result of your efforts.
    1. Name, age, sex
    2. Chief complaint or injuries
    3. If trauma, describe the trauma scene
    4. Pertinent medical history
    5. Physical examination findings
    6. Explain patient treatments and results of such

WRITTEN REPORTS/DOCUMENTATION:

A. An approved EMS Medical Incident Report (MIR) must be appropriately documented and filed for any call for EMS assistance resulting in patient contact within Clark County regardless of patient transport. This will apply to all responding agencies and includes public assist calls.
    1. Patient contact occurs when a provider contacts/sees/hears a patient. When more than one agency is on scene, each agency is responsible for documentation of an EMR . The treatments and evaluations provided, while said provider is in contact with the patient, shall be documented as per this dictate.
    2. Public Assist/Lift Assist: These patient encounters will include documentation of, at minimum, the patient's mental status (GCS), vitals, as well as any treatment or assistance provided. Documentation will be done as per above MIR guidelines.
    3. Provide Manpower/Assist Other Agency: Units requested to assist with patient movement and/or packaging ONLY will document as per agency policy.
B. Documentation format:
    1. If a written format is used, SOAP narrative charting is the most acceptable method of report writing. This is a LEGAL record and may be called upon as evidence in any court of law. (IF IT IS NOT WRITTEN, IT WAS NOT SEEN OR DONE.)
    2. If an electronic report format is used then it is necessary to follow the MPD approved documentation guidelines for that particular charting application.
C. Documentation of Response Determinant/Priority:
    1. Complete documentation of patient care will include the determinant and/or priority assigned at initial dispatch and any upgrades received while en route.
D. Documentation of Procedures:
    1. Performance of any procedure will be documented in the MIR to include reason for procedure and patient response.
    2. For all intubated patients, documentation of end tidal CO2 numeric value AND waveform will be Uploaded to the chart
    3. Whenever an EKG monitor is used, a copy of the EKG recording will be affixed to the chart. This includes 12 lead tracings, the electronic monitor file (.pco) and code summary reports.
E. The patient care report is a legal document and should reflect the patient care incident as accurately as possible. As such, the report will be completed as soon as feasible after the patient encounter to ensure an accurate accounting of the incident. ALL REPORTS MUST BE COMPLETED PRIOR TO THE END OF SHIFT.

1. Transporting units will leave a completed report or Field Worksheet at the receiving facility upon delivery of the patient.
2. Transport agencies are required to provide a completed (final) MIR to the receiving facility within 24 hrs. of patient arrival

COPS - Prehospital Exposure And Infectious Disease Control

KNOWN OR SUSPECTED EXPOSURE:

A. If exposure occurs, follow agency SOP for notification of agency administrators.
    1. DO NOT WAIT TO REPORT. Should be done as soon as possible.
B. Upon hospital arrival with patient, notify ED charge nurse of potential exposure. Also inform the charge nurse of all other prehospital personnel who made patient contact. The nurse will document this information in the "Prehospital Exposure Log." If you work for a non-transporting agency, contact administrative personnel as per your agency SOP.
    1. If communicable disease suspected, all personnel in contact with the patient will be documented on the prehospital exposure log and be contacted (or their agency contact person) by the charge RN or his/her designate upon confirmation of communicable disease.
C. Treatment/prophylaxis will be provided as per "Guidelines for Prophylaxis of Occupational Exposure to Common Infectious Diseases."
    1. If indicated, prehospital personnel will be required to sign in to FasTrack and complete workers compensation form.

UNKNOWN EXPOSURE:

A. Prehospital personnel (or their designated agency representative) will be contacted by the charge nurse upon confirmation of communicable disease.
B. All prehospital personnel will be documented on the "Prehospital Exposure Log."
C. Treatment/prophylaxis will be provided as per "Guidelines for Prophylaxis of Occupational Exposure to Common Infectious Diseases."
    1. If indicated, prehospital personnel will be required to sign in to FasTrack and complete workers compensation form.

EXPOSURE DEFINED:

A. Exposure(s) of any bodily fluids into body openings, mucous membranes or cuts/wounds.

FLU VACCINATION:

A. During flu season per declaration by Clark County Public Health, the following procedure will be applied:
    1. Prehospital personnel receiving flu vaccine will follow standard infectious disease prevention during patient encounters.
    2. Personnel who are NOT vaccinated will follow standard infectious disease prevention during patient encounters including wearing a mask for:
        a. ANY patient contact.
        b. Entering enclosed space containing sick patient to include private residence, SNF, clinic, patient transport vehicles (ambulances).
        c. Entering all hospital facilities.

Continued: ⟶

STANDARD INFECTIOUS DISEASE PREVENTION

A. Gloves, eye protection and masks when contamination with body fluids or aerosol droplets is possible including response to ANY sick person at a care facility.

COPS - Prehospital Research

INTRODUCTION:

A. Prehospital research will be regularly conducted in Clark County. This may involve retrospective and concurrent data extrapolation from CAD and patient care documentation and will not influence current patient care protocols or clinical practice. However, some prospective projects will require modification of protocols and procedures and require prehospital personnel to become informed of the alterations in practice prior to study involvement. In the event of a prospective prehospital study the following guidelines should be used:
    1. No study will be done without full vetting of the project, including any financial implications, with all agencies affected. Each agency agreeing to participate will enter into an agreement.
    2. All involved personnel must attend necessary didactic and clinical skills training sessions pertaining to the research project, as per guidelines set forth by the MPD and the research team.

ALTERATIONS IN PATIENT CARE PROTOCOLS/PROCEDURES:

A. Alterations in patient care protocols/procedures, i.e., institution of new procedures/medications, change in destination procedures, addition of new devices, etc. will be followed as per guidelines set forth in the education programs.
B. These alterations will be adhered to and supersede current protocols during the time of the study.
C. When feasible and length of research project warrants, modified guidelines will be provided to participating personnel in the form of addenda to these protocols.

TIME STAMP FOR PROTOCOLS AND PROCEDURES:

A. Consistent and synchronized documentation of treatment and intervention time is paramount to the success of a research project. Time documentation will be done using the cardiac monitor, where applicable, or CAD supported time stamp.
B. Any device used for documentation of treatment/intervention time will be synchronized with CRESA daily if necessary.

UPLOAD OF CARDIAC MONITOR/CPR PROCESS FILES:

A. If applicable to a study, electronic cardiac monitor and/or CPR process files will be acquired and submitted in accordance with EMS agency policy, software, and cardiac monitoring equipment.

COPS - Private Physician And/Or Medical Professionals At The Scene

PRIVATE PHYSICIAN AT THE SCENE:

A. When the patient's private physician is in attendance and has identified themselves, the ALS team will comply with that physician's instructions for the patient. If orders are given which are inconsistent with established protocols, clearance must be obtained through the MC Physician.
   1. Physicians must provide proof of their identity, if they wish to assume or retain responsibility for the care given the patient after the arrival of the Paramedic unit.
B. The Physician at the Scene:
   1. May request to talk directly to the Medical Control Physician to offer advice and assistance;
   2. Can offer assistance to the ALS Team with another pair of eyes, hands, or suggestions, leaving the ALS team under Medical Control;
   3. May take total responsibility for the patient with the concurrence of the Medical Control Physician.
C. Transport:
   1. If during transport, the patient's condition should warrant treatment other than that requested by the private physician, MC will be contacted for information and concurrence with any treatment, except in cases of cardiopulmonary arrest (follow appropriate cardiac arrest protocol).
D. The above protocol will also apply to cases where a physician may happen upon the scene of a medical emergency and interacts with the ALS team.

OTHER MEDICAL PROFESSIONALS AT THE SCENE:

A. Medical professionals at the scene of an emergency may provide assistance to Paramedics and should be treated with professional courtesy. Medical professionals who offer their assistance must identify themselves.

MIDWIFE AT SCENE OF HOME/COMMUNITY DELIVERY:

A. If EMS is contacted, this is a true emergency, and expedited transport to a hospital is required. In general, there are three primary reasons for an emergent transport;
   1. Fetal distress during labor
   2. Maternal post-partum hemorrhage
   3. Newborn respiratory distress or complex resuscitation
B. Midwife will likely be the most experienced person on scene. Be aware of their expertise. Midwife has training for medications to assist labor, manage hemorrhage and carries equipment for neonatal resuscitation, including I-gel, BVM etc.
C. The Midwife should be in attendance of the patient in the ambulance, with EMS assistance.
D. Midwife does not direct EMS but EMS can and should assist the Midwife. EMS can perform *procedures within their scope of practice* at the request of the Midwife. None of the EMS protocols should be in conflict with the Midwife's request; if there are any questions contact Medical Control.

COPS – Patients Refusing Care

GUIDELINES:

A. Establish if medical need exists. If the patient is refusing or resisting care, determine:
   1. Patient or decision-maker capable of making informed decision
   2. Patient or decision-maker not capable (in EMT's opinion) of making informed decision.

PATIENT OR DECISION-MAKER CAPABLE OF MAKING INFORMED DECISION:

A. No medical need exists:
   1. A refusal form is not necessary.
   2. MIR documentation will include the events necessitating the call to EMS as well as all criteria for no medical need. Disposition: Patient Evaluated, no Treatment/Transport Required

B. Non-emergent medical need exists:
   1. If transport is recommended by the EMT, refusal form and MIR must be completed by EMT or Paramedic attending patient.
   2. If transport is not recommended by the EMT; complete MIR with all the necessary elements. Explain decision-making. Give callback precautions signed by patient.
   3. MIR documentation shall include necessary elements. Disposition: Patient Treated, Released (per protocol)
   4. If MPD HAS DECLARED CRISIS STANDARDS OF CARE
      a. Non-emergent medical need and transport not necessary see Non-Transport, Crisis Standards of Care protocol

C. Immediate medical care and/or ambulance transport necessary:
   1. A refusal form is necessary. Form and MIR must be completed by Paramedic attending patient.
   2. Every effort will be made to convince these patients/decision-makers to accept necessary prehospital intervention and transport to definitive care. Options available to the Paramedic include:
      a. Solicit assistance from family, friends, and/or other close associates to persuade the patient to accept necessary treatment and transport.
      b. Solicit assistance from law enforcement (police hold), mental health professional (psychiatric hold), and/or clergy as the situation directs.
   3. CONSULTATION WITH MEDICAL CONTROL IS MANDATORY.
   4. MIR documentation shall include necessary elements. Disposition: Patient Treated, Released (AMA)

D. If the patient still refuses treatment/transport, the attending Paramedic will be responsible for explaining the CLARK COUNTY EMS REFUSAL INFORMATION FORM and documenting the conversation in the MIR. Completion of the form includes:
   1. Explanation of instructions and release of liability to the patient/decision-maker.
   2. Receipt of signature (dated) from patient/decision-maker, or documentation of telephone conversation with decision-maker.
   3. Completion of patient assessment, Medical Control consult, and patient disposition sections.

Continued: ⟶

NO ONE CAPABLE OF MAKING INFORMED DECISION:

A. Medical care and/or ambulance transport necessary:
   1. MIR must be completed by Paramedic attending patient.
   2. Every effort will be made to convince these patients to accept necessary prehospital intervention and transport to definitive care. Options available to the Paramedic include:
      a. Solicit assistance from family, friends, and/or other close associates to persuade the patient to accept necessary treatment and transport.
      b. Solicit assistance from law enforcement (police hold), mental health professional and/or clergy as the situation directs.
      c. Consider physical restraint and/or sedation per Medical Control concurrence based on the patient's condition and current situation.
      d. Physical restraint and/or sedation can occur only when the Paramedic believes the patient poses a danger to him/herself or others.
   3. CONSULT WITH MEDICAL CONTROL IS MANDATORY.
   4. MIR documentation shall include necessary elements. Disposition: Patient Treated, Released (AMA).
   5. Should the above efforts prove fruitless, it may be necessary to leave these patients at the scene. Aforementioned documentation guidelines will be adhered to.

PATIENT IN CUSTODY AND/OR INCIDENT INVOLVING LAW ENFORCEMENT:

A. If patient has capacity, follow protocol outlined above regarding medical need. The patient will require a full medical exam, pertinent to the nature of the chief complaint and mechanism of injury. If the patient refuses care and/or transport a refusal form must be signed by the patient and the conversation documented.
B. If patient in custody of police, under arrest and/or restrained by officers who are refusing transport for a minor medical need, document refusal in MIR with signature of arresting police officer on refusal form.
C. All other patients will be transported to the hospital by ambulance. It is not appropriate to allow transport by police if a patient has obvious medical need.

NECESSARY ELEMENTS

A. The patient's chief complaint.
B. Events prior/reason for call to EMS.
C. Pertinent medical history.
D. Description of scene (if relevant to patient's c/c).
E. Physical exam including vital signs
F. Clinical impression.
G. Prehospital interventions.
H. Consultation with Medical Control or patient’s MD (PMD) as necessary.
I. Patient's response to medical care and/or transport attempts.
J. Instructions to patient and/or family including risks/benefits of treatment/transport.

COPS - Non-Transport of Patients

CRITERIA FOR NO TRANSPORT:

A. The EMT may recommend no transport if no emergent medical need. Under routine operations, the patient or decision-makers' request for transport will be honored. Patients may be left on scene if:
    1. EMT recommends transport, and a patient or decision-maker with decision-making capacity has been informed of the risks of refusal and has signed a refusal form.
    2. The EMT and the patient or decision-maker agree transport is not required.
    3. The patient is dead on arrival or resuscitation efforts have been terminated.
B. **EXCEPTION: MPD HAS DECLARED CRISIS STANDARDS OF CARE**
    1. EMT recommends no transport and patient/decision-maker is requesting transport, consult medical control. If EMT and physician agree there is no medical benefit to transport, the patient will be left on scene.

PATIENTS REFUSING CARE AND/OR TRANSPORT (CLASSIFIED AS FOLLOWS):

A. No medical need exists. Patient cancels EMS.
B. A person with normal decision-making capacity who, after having been informed of risks and benefits of treatment/transport, voluntarily declines further services.
C. Any other person is assumed to require a medical screening evaluation and EMS personnel will use all resources available to have that person treated and transported.

IMPAIRED DECISION-MAKING CAPACITY DEFINED:

A. Inability to understand the nature of his/her illness/injury.
B. Inability to understand risks or consequences of refusing care/transport.
C. Individuals impaired by:
    1. Alcohol/drugs
    2. Psychiatric conditions
    3. Injuries (head injury, shock, etc.)
    4. Organic Brain Syndromes (Alzheimer's, developmental delays, etc.)
    5. Minors (<18 years old)
    6. Language/communication barrier (incl. deafness)

CRITERIA FOR INFORMED CONSENT FOR REFUSAL:

A. Person is given accurate information about possible medical problems and the risk/benefits of treatment or refusal.
B. Person is able to understand and verbalize these risks and benefits.
C. Person is able to make a decision consistent with his/her beliefs and life goals.

COPS – Patient Transport Mode

PURPOSE:

A. Transport Mode – Lights and Sirens.
    1. The following will define situations when it is appropriate to transport patients with lights and sirens (L&S). L&S may be used if the patient requires a time-sensitive treatment that is not available pre-hospital. The transporting ambulance will be operated as per RCW 46.61.035 and local company policies and procedures for emergent operation of a vehicle.
B. Transport Mode – No Lights and Sirens
    1. All other transports will be no lights and sirens, without use of emergency warning systems or traffic control devices. All local traffic laws will be followed.

COPS - Receiving Hospital

TRIAGE CRITERIA:

A. Non-Life Threatening Injuries or Illness – preference is for the closest, most-appropriate facility. Can go to a further appropriate Hospital at the discretion of patient, family, or the patient's physician.
B. Life Threatening Injuries or Illness – transport to the closest appropriate facility unless diversion criteria in effect.
C. Transport to PHSW:
    1. Acute MI/STEMI
        a. Always check HOSCAP status for availability to accept suspected STEMI patient.
        b. If unavailable, divert to closest appropriate facility Emanuel, Providence, Portland Adventist, Portland, Kaiser Sunnyside or OHSU.
        c. Contact MC if divert not practical due to traffic, etc.
    2. Cardiac Arrest with return of spontaneous circulation.
    3. Trauma Activation (unless the following diversion criteria apply)
    4. Severe GI Bleed (Active bleeding, pt. in shock with suspected esophageal varices w/ hx of alcoholism and/or liver failure.)
D. Patients meeting stroke/CVA criteria will be transported as follows:
    1. PHSW
        a. ANY pt. with LAMS 4 or 5
            i. Always check HOSCAP status for availability of Neurointerventionalist.
            ii. If unavailable, divert to closest appropriate facility Emanuel, Providence Portland, Kaiser Sunnyside or OHSU.
            iii. Contact MC if divert not practical due to traffic, etc.
        b. ANY pt. 80 years old or greater
        c. Symptoms more than 3 hours but < 24 hours
        d. Suspected intracranial hemorrhage
        e. Signs of profound paralysis, aphasia, or comatose
    2. Closest Stroke Center
        a. Symptoms 3 hours or less, above criteria not met

COPS – Receiving Hospital Diversion

COUNTY HOSPITAL DIVERSION PROTOCOL:

A. Diversion may occur at either PHSW or LSC. Destination hospital will generally be the other Clark County hospital. If both hospitals are on divert, transport patient to the closest, most- appropriate Clark County hospital.
   1. Notify receiving hospital that the County Hospital Diversion Protocol is in effect and theirs is the most appropriate receiving facility.
   2. This notification should be made as soon as possible once transport determination is made.

DIVERSION CRITERIA:

A. Trauma Diversion - The final decision for diversion to Emanuel or OHSU of adult patients rests with Medical Control at PHSW. Contact MC as soon as possible with patient information; if diverted, contact Trauma Communications Center (TCC) at OHSU for further instructions. Includes LifeFlight transport.
   1. Criteria for trauma diversion may include:
      a. Major burns.
      b. Pregnancy with multi-system trauma in shock, unresponsive to aggressive resuscitation or immediate surgery anticipated.
      c. PHSW MC advised diversion.
   2. Medical Control at PHSW contact is NOT required for transport to Portland allowed by County Operating Procedure (burns, pediatric trauma entry, pregnancy with multisystem injury). Document on the MIR.

B. Pediatric Trauma Diversion – Transport all Pediatric (less than 15years) trauma entry patients to Pediatric Level I (Emanuel/OHSU) unless closest hospital necessary for airway control, vascular access or arrest.
   a. For long transport, or traffic issues, consider activation of LifeFlight: helipad at PHSW/LSC can be an appropriate rendezvous.

C. Diversion Based on Patient Request, Private Physician, and/or Primary Care/Health Plan:
   1. If patient condition critical (emergent/Code 3 transport) divert to closest appropriate facility.
   2. Potential for further diversions, i.e., receiving hospital on divert to another hospital. If intended hospital on divert, Paramedic may divert to closest facility.
   3. Other Considerations:
      a. Weather - traffic patterns, time of day, etc. - ambulance levels in the county (all agencies)
      b. If, in the Paramedic's judgment, diverting to a Portland hospital will result in a prolonged out-of-service time, divert to the closest facility. The receiving ED physician will be informed of the criteria and reason for the diversion; these shall also be documented in the MIR and be included in the criteria for MPD review.

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COPS – Sudden Infant Death Syndrome (SIDS)

SUDDEN INFANT DEATH SYNDROME:

A. General Considerations
   1. Infants usually < six (6) months of age.
   2. Sudden, without apparent cause, during sleep.
   3. It may be impossible to differentiate SIDS from suspected child abuse.

B. Interventions
   1. CPR, follow protocol for cardiac arrest unless there are obvious signs of death (rigor, lividity, etc.).
   2. Resuscitation may be terminated only by order of base station physician or family physician at the scene.

C. Support the parents. Avoid questions or comments suggesting blame.

D. Observe carefully and note:
   1. Location and position of child
   2. Objects immediately surrounding the child
   3. Behavior of all adults present
   4. The explanations provided
   5. Vomitus in mouth or foreign body present

E. Report all observations to Medical Control and Medical Examiner.

COPS - Transfer Of Care/Time On The Scene

TRANSFER OF CARE:

A. In many situations, two or more ALS units will respond. When more than one Paramedic is on scene they will work cooperatively in making patient care decisions. If a disagreement exists on the correct course of action, Medical Control will be contacted for direction.
B. In many situations it is appropriate for the first-arriving fire Paramedic to maintain continuity of patient care through both scene and transport, and he/she may choose to do so if in their judgment the patient will benefit from that continuity or scene times will be positively impacted in a clinically significant way.
C. In less critical situations an orderly and efficient transfer of patient care responsibilities from first-responding ALS Paramedics to the transport team must occur, including:
    1. Transfer of patient care responsibility that does not interfere with or lengthen scene times.
    2. Written and/or verbal report that includes: vital signs, findings, and all treatment(s) rendered.
    3. In cases of Multiple Patient Incident, protocol is established as per the Incident Command System and Fire Operations.
D. A patient's condition may warrant attendance during transport by both the first responding Paramedic and the transport Paramedic. In these situations, the first responding Paramedic may choose to accompany the patient during transport if in their judgment the patient will benefit from the additional attendance and/or if their attendance will positively affect scene times in a clinically significant way.
E. A working cooperation when making patient care decisions is paramount and shall not be influenced by agency affiliation. Resources shall be utilized to the fullest for the benefit of patient care.

TIME ON SCENE:

A. Any time an airway cannot be provided to a patient within 2 minutes after initiating emergency medical care, transport the patient immediately, unless there are extenuating circumstances.
B. Medical – 30 minutes or less after initial encounter.
C. STEMI/CVA – 15 minutes or less after initial encounter.
D. Full Trauma Activation - 10 minutes or less once extrication has been accomplished.
E. Modified Trauma Activation- 15 minutes or less.
F. Code 99 - 30 minutes or less after initial encounter.
G. Document extenuating circumstances.

COPS – Trauma System Activation Criteria

RED CRITERIA

High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	All Patients • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% Age 0–9 years • SBP < 70mm Hg + (2 x age in years) Age 10–64 years • SBP < 90 mmHg or • HR > SBP Age ≥ 65 years • SBP < 110 mmHg or • HR > SBP

Patients with any of the above RED criteria should be transported to PHSW unless Trauma Diversion Criteria exist.

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury

- High-Risk Auto Crash
  - Partial or complete ejection
  - Significant intrusion (including roof)
    - >12 inches occupant site OR
    - >18 inches any site OR
    - Need for extrication for entrapped patient
  - Death in passenger compartment
  - Child (age 0–9 years) unrestrained or in unsecured child safety seat
  - Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
- Pedestrian/bicycle rider thrown, run over, or with significant impact
- Fall from height > 10 feet (all ages)

EMS Judgment

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be transported to PHSW unless Trauma Diversion Criteria exist

COPS - Viral Respiratory Disease Pandemic (PANFLU)

TRIGGERS:

A. Activation of the EMS Viral Respiratory Disease, Pandemic SOPs is made by Incident Command in consultation with Clark County Public Health.

ONGOING SURVEILLANCE:

A. CRESA will use protocol 26 (sick person) for patients whose primary chief complaint is flu-like non-priority symptoms (fever, nausea, and vomiting).
B. CRESA will use the Severe Respiratory Infection (Flu-Like) Symptoms checklist on all patients with illness caused by the flu.
C. CRESA will use protocol 36 (Pandemic/Epidemic/Outbreak) when a communicable disease outbreak has been declared.

WORKER SAFETY/INFECTION CONTROL

A. Enhanced Protective Equipment (PPE) Procedures:
    1. All Patient Contact – PPE including: gloves, N95 mask (surgical mask is appropriate if N95 is not available), and eye protection.
    2. Patients with Respiratory/GI symptoms – PPE outlined above, plus: cover patient with surgical face mask; disposable gown/overalls and shoe covers.
    3. Minimize personnel exposure at each call.
    4. Every job not involving patient contact – PPE including: Regular hand washing, and cleaning of work surfaces (minimum prior to each shift/staff change).
B. Vaccination / Antiviral Therapy:
    1. Emergency Responder Points of Distribution (POD) – Agency management in consultation with the Clark County Health Department will consider/coordinate activation of the Emergency Responder PODs for appropriate vaccination/antiviral therapy.
C. Staff Entry Control Process:
    1. All Fire/EMS agencies shall establish health care screening sites to clear employees prior to entering the work site at the start of each shift.
D. Decontamination and Cleaning of Equipment/Work Areas:
    1. Clean off all surfaces and equipment (including glasses and stethoscope) using the approved bio-spray or alcohol based hand cleaner.
    2. Dispose of all cleaning supplies in red hazardous waste bag.
    3. Use bio-wipes or alcohol based hand cleaner to clean hands and forearms until soap and water are available.
    4. Driver Prior to Transport and Technicians at end of Transport and Decontamination of Ambulance and Equipment - Remove disposable gown/overalls, face mask, gloves and disposable BP cuff into hazardous waste bag and secure.
    5. First Responders - Place all equipment used during the call in a red hazardous waste bag until decontamination prior or en route to next call.

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6. Driver on Arrival at Receiving Facility - Use new suit, gloves, face mask, and eye protection.
7. Once patient has been transferred, decontaminate inside of ambulance patient care area and equipment prior to arrival at next call.

PATIENT CARE AND TRANSPORT (RESPIRATORY DISTRESS (FLU LIKE) SYMPTOMS)

A. PPE
B. Assess Patient for Priority Symptoms
    1. Chief Complaint
    2. Vital Signs (including temperature)
    3. Medical History/ Travel History
C. Incident Command will advise 9-1-1 and Fire/EMS agencies which of the following Care and Transport options to use:
    1. Care and Transport to ED
        a. Allow patient to achieve position of comfort.
        b. Cover patient with surgical face mask, or administer O2 via face mask, to reduce aerosolization of virus .
        c. EKG, IV TKO (if patient is dehydrated provide fluid challenge based on shock guidelines).
        d. Proper cooling techniques based on temperature.
        e. Provide “Infection Control Guidance for Families.”
        f. Use patient isolation techniques.
            - Close off ambulance driver’s compartment.
            - Drape patient compartment.
        g. Early EMS Report.
    2. Care and No Transport
        a. Provide a handout explaining the demand of limited resources and decision of no transport.
        b. Provide “Home Care and Protective Equipment for Families Packet” and explain contents and use.
        c. Advise to call 9-1-1 should priority symptoms occur.
        d. Advise Home Health Care of patient condition and location for in-home support.

MEDICATIONS – Acetaminophen

PHARMACOLCOGY AND ACTIONS:

A. Acetaminophen targets the cyclooxygenase enzymes that produce prostaglandins responsible for pain and fever. It has little anti-inflammatory effect. It is metabolized into toxic and non-toxic products in the liver.
B. Toxicity is multiplied when combined with alcoholic drinks, and very likely in chronic alcoholics or patients with liver damage.

INDICATIONS:

A. Fever > 100.42 degrees F.

CONTRAINDICATIONS:

A. Known liver disease
B. Current alcohol abuse
C. Acute intoxication
D. Has taken acetaminophen in last 4 hours

MEDICATIONS – Activated Charcoal

PHARMACOLOGY AND ACTIONS:

A. Activated charcoal adsorbs toxic substances ingested and inhibits GI adsorption by forming an effective barrier between the particulate material and the gastrointestinal mucosa. The effect is greatest if used within one hour of ingestion.

INDICATIONS:

A. Management of poisoning or overdose of some substances.
B. To be administered ONLY per MC or Poison Center concurrence.

CONTRAINDICATIONS:

A. Patients with altered mental status or the inability to maintain their own airway.
B. Patients who have aspirated or with a potential for aspiration.

PRECAUTIONS:

A. Activated charcoal may be ineffective in some ingestions.
B. Milk, ice cream and other dairy products will decrease the adsorption capacity substantially.

SIDE EFFECTS AND NOTES:

A. May cause nausea, vomiting, and constipation.

MEDICATIONS – Adenosine (Adenocard)

PHARMACOLOGY AND ACTIONS:

A. Slows conduction through the AV node. Since most cases of PSVT/Narrow Complex Tachycardia (NCT) involve AV nodal re-entry, adenosine is capable of interrupting the AV nodal circuit and stopping the tachycardia, restoring normal sinus rhythm.

INDICATIONS:

A. To convert PSVT/NCT to a normal sinus rhythm.

CONTRAINDICATIONS:

A. Second or third degree heart block.
B. Sick Sinus Syndrome.
C. Known hypersensitivity.
D. WPW

PRECAUTIONS:

A. When doses larger than 12 mg are given by injection, there may be a decrease in blood pressure secondary to a decrease in vascular resistance.
B. The effects of adenosine are antagonized by methylxanthines such as theophylline and caffeine. Larger doses of adenosine may be required.
C. Adenosine is potentiated by dipyridamole (Persantine) resulting in prolonged asystole.
D. In the presence of carbamazepine (Tegretol), high degree heart block may occur.
E. Adenosine is not effective in converting A fib, A flutter or V tach.
F. Dose of adenosine should be reduced to one-half (50%) in the following clinical settings:
    1. History of cardiac transplantation.
    2. Patients who are on carbamazepine (Tegretol) or dipyridamole (Persantine).
    3. Administration through any central line.
G. Use with caution in patients with asthma as it may cause a reactive airway response.

SIDE EFFECTS AND NOTES:

A. May cause facial flushing, SOB, chest pressure, nausea, headache and lightheadedness.

MEDICATIONS – Albuterol (Proventil, Ventolin)

PHARMACOLOGY AND ACTIONS:

A. Potent, relatively selective beta-2 adrenergic bronchodilator. Relaxation of bronchial smooth muscle and inhibition of release of mediators of immediate sensitivity from cells, especially mast cells. The onset of improvement in pulmonary function is within 2 – 15 minutes after the initiation of treatment and the duration of action is from 4 – 6 hours. Albuterol has occasional beta-1 overlap with clinically significant cardiac effects.

INDICATIONS:

A. To treat bronchospasm/wheezing due to asthma, COPD, anaphylaxis, etc.
B. To treat hyperkalemia.

CONTRAINDICATIONS:

A. None in the prehospital setting.

PRECAUTIONS:

A. The patient's rhythm should be observed for arrhythmias. Stop treatment if frequent PVC's develop or any tachyarrhythmias, other than sinus tachycardia, appear or if heart rate increases by more than 20 beats/minute.
B. Paradoxical bronchospasm may occur with excessive administration.

SIDE EFFECTS AND NOTES:

A. Clinically significant arrhythmias may occur, especially in patients with underlying cardiovascular disorders such as coronary insufficiency and hypertension.

MEDICATIONS – Amiodarone (Cordarone)

PHARMACOLOGY AND ACTIONS:

A. Amiodarone depresses automaticity of the SA node. It slows conduction and increases refractoriness of the AV node. Amiodarone increases atrial and ventricular refractory period and prolongs the QT interval. When given IV it is rapidly distributed.

INDICATIONS:

A. V fib, pulseless V tach.
B. V tach with pulses.

CONTRAINDICATIONS:

A. None in cardiac arrest.
B. Long QT (Torsades)

PRECAUTIONS:

A. In high concentrations (> 3 mg / ml), amiodarone can cause phlebitis. Infusion concentrations should not exceed 2 mg / ml.
B. Amiodarone will precipitate if administered in the same IV line as sodium bicarbonate.

SIDE EFFECTS AND NOTES:

A. In perfusing patients, may cause hypotension, prolonged QT interval, pro-arrhythmic effects (Torsades and ventricular fibrillation), severe bradycardia and AV block.

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MEDICATIONS – Aspirin

PHARMACOLOGY AND ACTIONS:

A. Aspirin inhibits prostaglandins and disrupts platelet function for the life of the platelet. It is also a mild analgesic and anti-inflammatory agent.

INDICATIONS:

A. In unstable angina and acute myocardial infarction, aspirin has been shown to lower mortality and is indicated in patients with suspected ischemic chest pain.

CONTRAINDICATIONS:

A. Allergy to aspirin or aspirin induced asthma.
B. History of bleeding disorder (i.e. hemophilia)
C. Current ulcer or GI bleeding.
D. Suspected aortic dissection.
E. Severe liver failure
F. Severe systemic disease

SIDE EFFECTS AND NOTES:

A. High doses of aspirin can cause ringing in the ears.
B. May cause heartburn, nausea and vomiting.

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MEDICATIONS – Atropine

PHARMACOLOGY AND ACTIONS:

A. Increases heart rate and conduction through the AV node by blocking vagal influences.
B. Reduces motility and tone of the GI and urinary tract.
C. Dilates pupils.

INDICATIONS:

A. To increase the heart rate in bradycardia or pacemaker failure.
B. To improve conduction in second and third degree heart block.
C. As an antidote for anti-cholinesterases, organophosphates and nerve gases.
D. To counteract excessive vagal response causing some bradysystolic and asystolic arrests.
E. For bradycardia not due to hypoxia when using succinylcholine.

CONTRAINDICATIONS:

A. Afib and Aflutter: increased conduction may speed ventricular rate excessively.
B. Not used in neonatal resuscitation.

PRECAUTIONS/NOTES:

A. Bradycardia with AMI is common and probably beneficial. Do not treat unless there are signs of poor perfusion (low blood pressure, mental confusion).
B. Atropine blocks cholinergic (vagal) influences already present. If there is little cholinergic stimulation, effects will be minimal.
C. Remember in cardiac arrest situations, atropine dilates pupils.

MEDICATIONS – Calcium Gluconate

PHARMACOLOGY AND ACTIONS:

A. Calcium is the most common cation in the human body. The majority of the body stores of calcium are located in bone. It plays an important role in many physiologic functions and is essential for proper nerve and muscle function.

INDICATIONS:

A. Suspected calcium channel blocker overdose.
B. Hyperkalemia.
C. Cardiac arrest (PEA, Asystole) from suspected hyperkalemia.

CONTRAINDICATIONS:

A. Hypercalcemia and hypercalciuria (hyperthyroidism, Vitamin D overdose, bone metastases).
B. Patients on digoxin.

PRECAUTIONS:

A. Extravasation of calcium salts will cause necrosis of tissue. The IV should be secured and free blood return into the syringe should be checked 2-3 times during administration. If extravasation does occur, immediately stop administration.
B. Administer slowly (no faster than 2ml/min) and stop if patient complains of distress. Inject using a small needle in a large vein.
C. Calcium gluconate will precipitate if mixed with sodium bicarbonate. Flush catheter completely before administering one medication after another.

SIDE EFFECTS AND NOTES:

A. Rapid injection of calcium gluconate may cause vasodilatation, decreased blood pressure, bradycardia, cardiac arrhythmias, syncope or cardiac arrest.
B. One vial of 10 ml calcium gluconate 10% contains 1 gram of calcium gluconate salt (= 93 mg elemental calcium or 4.6 mEq calcium or 2.3 mmol calcium).

MEDICATIONS – Dexamethasone (Decadron)

PHARMACOLCOGY AND ACTIONS:

A. Glucocorticosteroid
B. Controls/prevents inflammation by modifying body's immune responses to diverse stimuli

INDICATIONS:

A. Moderate to severe reactive airway disease
B. Severe allergic reaction
C. Croup

CONTRAINDICATIONS:

A. Hypersensitivity to corticosteroids
B. Concomitant live virus vaccines in patients receiving immunosuppressive doses of corticosteroids
C. Systemic fungal infection

MEDICATIONS – Dextrose 10% (D10)

PHARMACOLOGY AND ACTIONS:

A. Glucose is the body's basic fuel. It produces most of the body's quick energy. Its use is regulated by insulin which stimulates storage of excess glucose outside the bloodstream, and glucagon, which mobilizes stored glucose into the bloodstream.

INDICATIONS:

A. Hypoglycemia.
B. Altered patient when history is unobtainable.

CONTRAINDICATIONS:

A. Hyperglycemia
B. Diabetic Ketoacidosis

PRECAUTIONS:

A. Extravasation may cause necrosis of tissue. Secure patency of the IV.
B. Report any extravasation to receiving hospital personnel and document on the Prehospital Care Report.

SIDE EFFECTS AND NOTES:

A. Hyperglycemia may complicate or worsen a number of medical conditions (e.g. myocardial infarction and stroke). Dextrose should be given whenever hypoglycemia is documented by glucometer. If these findings are not available, the EMT should use judgement based on signs and history.

MEDICATIONS – Diltiazem

PHARMACOLOGY AND ACTIONS:

A. IV calcium-channel blocker; primarily used for ventricular rate control in AFIB; slows AV conduction; vasodilatory properties; less negative inotropic effects than verapamil or nifedipine.

INDICATIONS:

A. Atrial fibrillation, Atrial flutter with rapid ventricular response.
B. Paroxysmal supraventricular tachycardia (PSVT) refractory to Adenosine

CONTRAINDICATIONS:

A. Patients with acute myocardial infarction and pulmonary congestion and should not be used in patients with acute myocardial infarction and associated left ventricular dysfunction or congestive heart failure.
B. Cardiogenic shock, any hypotensive state.
C. Heart block
D. Wide complex tachycardia due to WPW.

PRECAUTIONS:

A. Decreases peripheral resistance and can worsen hypotension. Should not be used in patients with systolic blood pressures of less than 90 mm Hg (i.e., severe hypotension) and used with caution in patients with mild to moderate hypotension.
B. Blood pressure should be monitored carefully in all patients receiving diltiazem.

MEDICATIONS – Diphenhydramine (Benadryl)

PHARMACOLOGY AND ACTIONS:

A. Antihistamine which blocks the action of histamines released from cells during an allergic reaction. It has direct CNS effects, which may be stimulant, or more commonly depressant, depending on individual variation. Diphenhydramine also has an anticholinergic and antiparkinsonian effect which is used to treat acute dystonic reactions to antipsychotic drugs (e.g. Haldol®, Thorazine®, Compazine®, Inapsine®). These reactions include oculogyric crisis, acute torticollis, and facial grimacing.

INDICATIONS:

A. The second-line drug in anaphylaxis and severe allergic reactions (after epinephrine).
B. To counteract acute dystonic and dysphoric reactions to anti-psychotic drugs.

CONTRAINDICATIONS:
None

PRECAUTIONS:

A. May have an additive effect with alcohol or other CNS depressants.
B. Although useful in acute dystonic reactions, it is not an antidote for anti-psychotic toxicity or overdose.
C. May cause hypotension when given IV.

MEDICATIONS – Droperidol (Inapsine)

PHARMACOLOGY AND ACTIONS:

A. Neuroleptic agent produces tranquilization and sedation. Reduces motor activity, anxiety and causes sedation. Adrenergic blocking, anti-fibrillatory, antihistaminic & anticonvulsive properties.
B. Antiemetic by causing dopamine receptor blockade in brain, causing a strong antidopaminergic antiserotonin response.
    1. Onset of action 5-10 minutes IM and 3-10 minutes IV; full effects in 10-30 minutes. Duration 2-4 hours

INDICATIONS:

A. Sedation of agitated patients to facilitate management
B. Antiemetic

CONTRAINDICATIONS:

A. Known allergy.

PRECAUTIONS:

A. Orthostatic hypotension may occur.
B. Caution with use of other CNS depressant drugs (tranquilizers, narcotics, alcohol)
C. Cardiac monitor during transport.

SIDE EFFECTS AND NOTES:

A. Hypotension usually responds to positioning and fluid bolus.
B. Dysphoria (restlessness, Akathesia) and dystonic reactions have been reported and can be treated with Benadryl

MEDICATIONS – Epinephrine

PHARMACOLOGY AND ACTIONS:

A. Catecholamine with alpha and beta effects resulting in increased heart rate, increased myocardial contractile force, increased systemic vascular resistance, increased arterial blood pressure, increased myocardial oxygen consumption, increased automaticity. Epinephrine is also a potent bronchodilator.

INDICATIONS:

A. Cardiac arrest; Anaphylaxis; Status Asthmaticus; Profound Bradycardia.

CONTRAINDICATIONS:

A. None

PRECAUTIONS:

A. Epinephrine increases cardiac work load and can precipitate angina, MI, or major dysrhythmias in individuals with ischemic heart disease.

SIDE EFFECTS AND NOTES:

A. May cause anxiety, tremor and headache.
B. Cardiac side effects include tachycardia, PVC's, angina and hypertension.

MEDICATIONS – Etomidate (Amidate)

PHARMACOLOGY AND ACTIONS:

A. Etomidate is a hypnotic drug without any analgesic activity. Intravenous injection of Etomidate produces hypnosis characterized by rapid onset of action; usually within one minute. Duration of hypnosis is dose dependent but relatively brief, usually 3-5 minutes.

INDICATIONS:

A. As an induction agent for use in rapid sequence intubation.

CONTRAINDICATIONS:

A. Etomidate is contraindicated in patients who have a known hypersensitivity to the drug.
B. Pediatric patient in Septic Shock

SIDE EFFECTS AND NOTES:

A. The most frequent adverse reactions are transient injection site pain and transient skeletal muscle movements (myoclonus).
B. Etomidate may also cause nausea and/or vomiting.

MEDICATIONS – Fentanyl

PHARMACOLOGY AND ACTIONS:

A. Synthetic opioid analgesic that produces analgesia and sedation. It is about 50-100 times more potent than morphine on a weight basis. Onset of action when given is 2-3 minutes. Peak effect occurs at 3-5 minutes and lasts 15-45 minutes.

INDICATIONS:

A. Pain due to musculoskeletal injury or burns.
B. Suspected ischemic chest pain.
C. Analgesia after RSI

CONTRAINDICATIONS:

A. Known allergy to fentanyl.
B. Moderate to severe respiratory depression.

PRECAUTIONS:

A. Fentanyl can cause respiratory depression that is reversible with naloxone. Respiratory depression can also be exacerbated by underlying lung disease and the use of other respiratory depressant drugs. Have naloxone and respiratory support available.
B. If administered rapidly and in very large doses, fentanyl can cause muscle spasm and chest wall rigidity. The only reliable treatment for this is neuromuscular blockade.
C. The action of fentanyl is prolonged and its elimination is slower in the elderly. Smaller maintenance doses are advisable.

SIDE EFFECTS AND NOTES:

A. If hypotension develops, it is usually responsive to naloxone administration and Trendelenburg position. If hypotension continues, follow Shock protocol.
B. Check and document vital signs and patient response after each dose.
C. The goal of fentanyl administration is patient comfort, not the total elimination of pain but the reduction in the perception of pain by the patient.

MEDICATIONS – Glucagon

PHARMACOLOGY AND ACTIONS:

A. Glucagon is a hormone that causes glucose mobilization in the body. It works opposite to insulin, which causes glucose storage. It is released at times of insult or injury when glucose is needed and mobilizes glucose from body glycogen stores. Return to consciousness should be within 20 minutes of an IM dose if patient is hypoglycemic.

INDICATIONS:

A. Known hypoglycemia (preferably demonstrated by blood glucose determination) when patient is confused or comatose and dextrose is not available or an IV cannot be started.

CONTRAINDICATIONS:

A. None

PRECAUTIONS:

A. IV Dextrose is the treatment of choice for hypoglycemia in the patient who cannot tolerate oral glucose. The use of glucagon is restricted to patients who are seizing, comatose, combative, or with collapsed veins and in whom an IV cannot be started.

SIDE EFFECTS AND NOTES:

A. Nausea and vomiting may occur with administration.
B. Persons with no liver glycogen stores (malnutrition, alcoholism) may not be able to mobilize any glucose in response to glucagon.

MEDICATIONS – Haloperidol (Haldol)

PHARMACOLOGY AND ACTIONS:

A. Neuroleptic agent, produces marked tranquilization and sedation. It allays apprehension and provides a state of mental detachment and indifference while maintaining a state of reflex alertness. It produces mild alpha-adrenergic blockade, peripheral vascular dilation, reduction of the pressor effect of epinephrine, and has an anti-emetic effect. Onset of action is from 5-15 minutes following administration, and the peak effect may not be apparent for up to 30 minutes. Duration is generally from 2-6 hours.

INDICATIONS:

A. Sedation of combative patients to facilitate restraint.

CONTRAINDICATIONS:

A. Known allergy.

PRECAUTIONS:

A. Hypotension may occur, manage as appropriate.
B. Use caution when administering haloperidol to patients who have taken other CNS depressant drugs (barbiturates, tranquilizers, alcohol).
C. Haloperidol may induce Torsade de Pointes. Monitor the patient's ECG Q-T interval following use.

SIDE EFFECTS AND NOTES:

A. The most common side effects are hypotension and tachycardia, which usually responds to a fluid bolus.
B. Dysphoric (restlessness) and dystonic reactions have been reported following administration. These symptoms can be treated with the administration of diphenhydramine.
C. Use with caution in patients with a seizure disorder or condition that causes seizures; other similar neuroleptics are known to lower the seizure threshold.

MEDICATIONS – Ipratropium Bromide (Atrovent)

PHARMACOLOGY AND ACTIONS:

A. Ipratropium is an atropine derivative used for inhalation therapy. For severe asthma, Ipratropium taken in addition to a short acting beta agonist (such as Albuterol) can provide greater bronchodilation and clinical benefit than the beta agonist alone. It has no anti-inflammatory effects and does not decrease bronchial hyper-responsiveness.

INDICATIONS:

A. As a supplement to albuterol in patients with asthma and COPD.

CONTRAINDICATIONS:

A. Do not use in patients with severe glaucoma.
B. Only for single use. Do not repeat

SIDE EFFECTS AND NOTES:

A. Dry mouth.
B. Pharyngeal irritation.
C. Increased intra-ocular pressure in glaucoma patients.

MEDICATIONS – Ketamine

PHARMACOLOGY AND ACTIONS:

A. Ketamine is a dissociative anesthetic agent, structurally similar to phencyclidine (PCP), which interrupts the connection between the thalamo-neocortical tracts and the limbic system. In addition, it stimulates many different receptors, including the opioid and catecholamine receptors. It is unique among sedative agents in that it also provides analgesia in addition to the amnestic and sedative effects. The sympathomimetic effects cause an increase in heart rate, blood pressure, and cardiac output. It is also a bronchodilator, may be beneficial in patients with bronchospasm requiring intubation.

INDICATIONS:

A. As an induction agent for use in rapid sequence intubation.
B. Pain control refractory to standard treatment with fentanyl.

CONTRAINDICATIONS:

A. Eye pain or trauma.
B. Known pregnancy.
C. Non-traumatic chest pain.

SIDE EFFECTS AND NOTES:

A. Increased blood pressure due to catecholamine release.
B. Emergence reaction can occur in 5-30% of patients. Duration of action is 10-20 minutes and continued sedation must be provided before the induction agent has worn off when used for RSI.

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MEDICATIONS – Ketorolac (Toradol)

PHARMACOLOGY AND ACTIONS:

A. Ketorolac works by inhibiting cyclooxygenase-1 and 2 enzymes to block the synthesis of prostaglandins and reduces inflammation and pain.

INDICATIONS:

A. Musculoskeletal pain.
B. Flank pain from suspected kidney stone.

CONTRAINDICATIONS:

A. Age < 2 or > 64.
B. History of renal disease or kidney transplant.
C. History of liver disease.
D. Allergies to aspirin or other NSAIDs.
E. Pregnancy, or lactating females.
F. On anticoagulant, such as vitamin K antagonists (e.g. warfarin) or directing agents such as rivoraxaban, apixaban, edoxaban, lovenox, and dabigatran.
G. Bleeding or clotting disorder or history of ulcer.
H. Suspected cardiac chest pain.
I. Any trauma system entry patient.
j. Altered mental status.

SIDE EFFECTS AND NOTES:

A. Burning or pain at the injection site
B. Nausea and vomiting
C. Dizziness
D. Headache
E. Itching
F. Flushing

MEDICATIONS – Lidocaine

PHARMACOLOGY AND ACTIONS:

A. Lidocaine depresses the automaticity of Purkinje fibers, raising stimulation threshold in the ventricular muscle fibers which makes the ventricles less likely to fibrillate. It has little antiarrhythmic effect on the atrial muscle. Local anesthetic properties.

INDICATIONS:

A. Recurrent V fib, V tach, WCT.
B. Pain management following insertion of IO needle.

CONTRAINDICATIONS:

A. Do not use in perfusing pts in the following situations:
    1. Systolic BP is < 90 mmHg.
    2. Heart rate is < 50 beats per minute.
    3. Periods of sinus arrest are present.
    4. Second or third degree heart block are present.

PRECAUTIONS:

A. Lidocaine is not recommended in the treatment of supra-ventricular arrhythmias.
B. If the patient begins seizing, stop the Lidocaine dosing and treat per Seizure protocol.

SIDE EFFECTS AND NOTES:

A. CNS side effects include sleepiness, dizziness, disorientation, confusion, and convulsions.
B. Hypotension
C. Lidocaine is metabolized in the liver and, therefore, patients with hepatic disease, shock or congestive heart failure will have decreased metabolism. All doses after the initial dose must be decreased to one-quarter of the initial dose.
D. Toxicity is more likely in elderly patients.

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MEDICATIONS – Magnesium Sulfate

PHARMACOLOGY AND ACTIONS:

A. Magnesium is a cation that is present in human cells and intercellular fluids. It acts as an antiarrhythmic agent and is useful in the treatment of polymorphic ventricular tachycardia due to an underlying prolonged QT interval, ventricular fibrillation and ventricular tachycardia. Also has bronchial smooth muscle relaxation properties.

INDICATIONS:

A. Polymorphic Ventricular Tachycardia (Torsade de Pointes).
B. For the treatment of seizures in women with pre-eclampsia/eclampsia.
C. In severe asthma as a smooth muscle relaxant and inhibitor of histamine.
D. Tricyclic antidepressant (TCA) and Benadryl overdose.
E. Seizures associated with alcohol (ETOH) withdrawal.

CONTRAINDICATIONS:

A. None in the emergency setting.

PRECAUTIONS:

A. Hypotension, bradycardia, decreased reflexes and respiratory depression.

MEDICATIONS – Methylprednisolone (Solu-Medrol)

PHARMACOLOGY AND ACTIONS:

A. Synthetic glucocorticoid, Corticosteroid. It inhibits acute & chronic inflammation, stabilizes cell membranes. Additionally, it potentiates vascular smooth muscle relaxation by beta-adrenergic agonists and may alter airway hyperactivity.

INDICATIONS:

A. Asthma/COPD
B. Anaphylaxis
C. Addisonian Crisis

CONTRAINDICATIONS:

A. TB
B. Cushing's disease

PRECAUTIONS:

A. None in the emergency setting

MEDICATIONS – Midazolam (Versed)

PHARMACOLOGY AND ACTIONS:

A. Midazolam is a benzodiazepine with potent sedative, anti-anxiety, and anticonvulsant properties. It also causes significant antegrade amnesia when administered IV.

INDICATIONS:

A. Status seizure.
B. Relieve anxiety and produce amnesia during cardioversion, pacing or paralytic intubation.
C. To facilitate restraint in patients whose cause of agitation is likely drug ingestion (especially stimulants), withdrawal, or from a postictal state.
D. Hyperadrenergic toxicity, Excited Delirium.

PRECAUTIONS:

A. Midazolam causes respiratory depression and/or hypotension especially if administered rapidly. Monitor patient closely.

SIDE EFFECTS AND NOTES:

A. Drowsiness, hypotension, respiratory depression or apnea. These are more likely to occur in the very young and the elderly.
B. Respiratory depression is more likely in patients who have taken other CNS depressant drugs such as opioids alcohol and barbiturates, or when given rapidly.
C. Midazolam is metabolized in the liver and excreted by the kidney. Doses should be adjusted accordingly in patients with underlying hepatic or renal diseases and low flow states such as congestive heart failure.

MEDICATIONS – Naloxone (Narcan)

PHARMACOLOGY AND ACTIONS:

A. Naloxone is an opioid antagonist which competitively binds to opioid receptor sites but which exhibits almost no pharmacologic activity of its own. Duration of effect is 1-4 hours.

INDICATIONS:

A. Reversal of opioid effects with respiratory depression, due to opioid drugs either ingested or injected or administered in the course of treatment.

PRECAUTIONS:

A. In patients physically dependent on opioids, violent withdrawal symptoms may occur. Be prepared to restrain the patient.
B. Some opioid intoxications may require up to 8 mg of naloxone to reverse symptoms (e.g. Methadone, designer drugs).

SIDE EFFECTS AND NOTES:

A. The duration of some opioids is longer than naloxone, repeat doses may be necessary. Monitor the patient closely. Patients who have received naloxone must be transported to the hospital because coma may reoccur when naloxone wears off.
B. Can cause seizures in neonates. Can cause tachycardia, hypotension and seizures.
C. Be aware of signs of withdrawal.

MEDICATIONS – Nitroglycerine

PHARMACOLOGY AND ACTIONS:

A. Nitroglycerin is an organic nitrate and is a vasodilating agent. Its cardiovascular effects include: reduced venous tone (causing pooling of blood in the peripheral veins and decreased return of blood to the heart), decreased peripheral resistance, and dilation of coronary arteries. It also is a general smooth muscle relaxant.

INDICATIONS:

A. Chest pain thought to be related to cardiac ischemia.
B. Pulmonary edema.

CONTRAINDICATIONS:

A. Blood pressure < 110 mmHg systolic.
B. Patients taking phosphodiesterase inhibitor: Viagra® (sildenafil citrate), Levitra® (vardenafil HCl), Cialis® (tadalafil).

PRECAUTIONS:

A. Generalized vasodilatation may cause profound hypotension and reflex tachycardia.
B. IV should be established prior to administration in patients who have not taken Nitroglycerin previously, or who have a potential for hemodynamic instability.
C. Patients with an inferior/right sided myocardial infarction.

SIDE EFFECTS AND NOTES:

A. Common side effects are headache, flushing or dizziness.
B. Because nitroglycerin causes generalized smooth muscle relaxation, it may be effective in relieving chest pain caused by esophageal spasm.

MEDICATIONS – Norepinephrine (Levophed)

PHARMACOLOGY AND ACTIONS:

A. Norepinephrine stimulates alpha receptors in the peripheral vasculature, producing vasoconstriction related increase in systemic blood pressure. Concurrent beta receptor stimulation may produce increases in heart rate and mild bronchodilation.

INDICATIONS:

A. Obstructive, cardiogenic and distributive shock unresponsive to fluid administration.

CONTRAINDICATIONS:

A. Hypovolemic shock.

PRECAUTIONS:

A. Norepinephrine should be given in a large, patent vein (i.e. antecubital or larger). Do not administer through a hand or leg vein, as these are more likely to be affected by vaso-occlusive diseases and more prone to ischemic complications.
B. Extravasation of norepinephrine into tissue may cause necrosis. The IV should be checked for patency prior to administration and monitored continuously.
C. Norepinephrine is a potent vasoconstrictor and may cause hypertension. The rate of flow should be carefully monitored and blood pressures checked often.
D. Consider hypovolemia and treat this with appropriate fluids before administration of norepinephrine.

SIDE EFFECTS AND NOTES:

A. Symptoms may include headache, palpitations, tachycardia, chest pain and eventual hypertension.
B. Reflex bradycardia can result from an increase in blood pressure.

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MEDICATIONS - Olanzapine (Zyprexa)

PHARMACOLOGY AND ACTIONS:

A. Atypical Antipsychotic. Dopamine and serotonin (5-HT) antagonist, along with anticholinergic, antihistaminic, and anti-alpha adrenergic effects.

INDICATIONS:

A. Patient with psychotic symptoms or mild agitation who is willing to take an oral agent.
B. To begin early treatment for psychosis and/or agitation.

CONTRAINDICATIONS:

A. Known hypersensitivity. Pregnancy is considered a relative contraindication.

PRECAUTIONS:

A. For use in patients between 18-65 years old.
B. May prolong QT but unlikely in single dose. Obtain EKG before administration if known history or suspicion for prolonged QT.
C. Can cause orthostatic hypotension or bradycardia.
D. Do not use Olanzapine in suspected drug overdose.
E. Not indicated if the primary symptoms is anxiety in the absence of psychotic symptoms.

SIDE EFFECTS AND NOTES:

A. Low incidence of extrapyramidal effects.
B. Elderly patients with dementia-related psychosis are at increased risk of death with most deaths attributed to cardiovascular events including heart failure and sudden death.
C. Administer tablet (ODT) immediately once it is removed from the blister unit. Tablets disintegrate in the mouth and can be swallowed subsequently with saliva or with liquid. Onset of action is 15-30 minutes.
D. Patients who receive olanzapine may be transported to behavioral health facilities.

MEDICATIONS – Ondansetron (Zofran)

PHARMACOLOGY AND ACTIONS:

A. Ondansetron is a potent, highly selective serotonin (5-HT3) receptor agonist. Its precise mode of action in the control of nausea is not known. Pharmacologic agents and other triggers may cause release of 5-HT3 receptors. Ondansetron blocks the initiation of this reflex. Ondansetron is commonly used in the treatment of nausea in patients who are receiving chemotherapy or as a postoperative nausea treatment. Peak plasma concentrations of the drug occur 10 minutes after IV administration, and 40 minutes after IM injection. Both routes have the same elimination half-life of 4 hours.

INDICATIONS:

A. Prevention and control of uncomplicated nausea and vomiting.

CONTRAINDICATIONS:

A. Known hypersensitivity to Zofran or similar medications.
B. Children <1 years old.

PRECAUTIONS:

A. Patients with bowel obstruction should be monitored closely following administration.
B. Ondansetron may precipitate if mixed with alkaline solutions.
C. ECG changes including QT interval prolongation and Torsade de Pointes have been observed in patients receiving ondansetron. Monitor pts ECG closely.

SIDE EFFECTS AND NOTES:

A. The most common side effects include headache, dizziness, drowsiness, constipation and shivers.
B. Body aches, agitation, dysuria, hypotension and rash have also been reported in a very small number of patients.

MEDICATIONS – Racemic Epinephrine

PHARMACOLOGY AND ACTIONS:

A. Nebulized racemic epinephrine is a 1:1 mixture of dextro (D) isomers and levo (L) isomers of epinephrine with the L form (L-epinephrine) as the active component. Epinephrine works by adrenergic stimulation, which causes constriction of the precapillary arterioles, thereby decreasing capillary hydrostatic pressure. This leads to fluid resorption from the interstitium and improvement in the laryngeal mucosal edema. [Epinephrine's beta2-adrenergic activity leads to bronchial smooth muscle relaxation and bronchodilation. Its effectiveness is immediate with evidence of therapeutic benefit within the first 30 minutes and then, a lasting effect from 90-120 minutes (1.5-2 h).

INDICATIONS:

A. To treat croup and epiglottitis.

CONTRAINDICATIONS:

A. None in the prehospital setting.

PRECAUTIONS:

A. The patient's rhythm should be observed for arrhythmias. Stop treatment if frequent PVC's develop or any tachyarrhythmias, other than sinus tachycardia, appear or if heart rate increases by more than 20 beats/minute.
B. Paradoxical bronchospasm may occur with excessive administration.

SIDE EFFECTS AND NOTES:

A. Clinically significant arrhythmias may occur, especially in patients with underlying cardiovascular disorders such as coronary insufficiency and hypertension.

MEDICATIONS – Rocuronium (Zemuron)

PHARMACOLOGY AND ACTIONS:

A. Non-depolarizing neuromuscular blocking agent. Rocuronium produces a pure reversible competition between antagonist molecules and acetylcholine (Ach) for occupancy at the Ach binding site. Neuromuscular blockade occurs within 90 seconds for induction dose and 1 to 3 minutes for maintenance dose. Time to recovery is 20 to 30 minutes. Metabolism is 5 to 35% renal and the remainder by the liver.

INDICATIONS:

A. For sustained neuromuscular blockade in the intubated patient.
B. For induction intubation (RSI) in the patient when succinylcholine is contraindicated or unavailable

PRECAUTIONS:

A. Use of pulse oximetry is required.
B. Rocuronium does not substantially affect heart rate or rhythm, systolic or diastolic blood pressure, mean arterial pressure, cardiac output or systemic vascular resistance.
C. Rocuronium has no effect on consciousness and must be used with a sedative or induction agent.
D. Rocuronium should not be administered simultaneously with furosemide, methylprednisolone, or sodium bicarbonate.

MEDICATIONS – Sodium Bicarbonate (NaHCO3)

PHARMACOLOGY AND ACTIONS:

A. Sodium bicarbonate is an alkalotic solution which neutralizes acids found in the blood. Acids are increased in the blood when body tissues become hypoxic. Acidosis depresses cardiac contractility and cardiac response to catecholamines and makes the heart more likely to fibrillate and less likely to defibrillate. In the non-perfusing patient sodium bicarbonate has been shown to increase the intracellular acidosis and worsen acid/base balance, thus it is not recommended in the routine cardiac arrest sequence.

INDICATIONS:

A. To control arrhythmias or asystole in TCA/Benadryl overdose or hyperkalemia.

PRECAUTIONS:

A. Addition of too much bicarbonate may result in alkalosis that is difficult to reverse and may cause as many problems in resuscitation as acidosis.
B. May increase cerebral acidosis, especially in diabetics who are ketotic.
C. Do not mix sodium bicarbonate with calcium preparations. Slowly flush one drug from the catheter before administering the other.

SIDE EFFECTS AND NOTES:

A. Each amp of sodium bicarbonate contains 50 mEq of sodium. This may increase intravascular volume and hyperosmolarity resulting in cerebral impairment.

MEDICATIONS – Sodium Thiosulfate

PHARMACOLOGY AND ACTIONS:

A. Sodium Thiosulfate is used as an antidote for cyanide poisoning. The primary mechanism of cyanide detoxification involves the conversion of cyanide to the thiocyanate ion, which is relatively non-toxic. This reaction involves the enzyme rhodanese which is found in many body tissues but with the major activity in the liver. The body has the capability to detoxify cyanide, however, the rhodanese enzyme system is slow to respond to large amounts of cyanide. The rhodanese enzyme reaction can be accelerated by supplying an exogenous source of sulfur. This is commonly accomplished by administering sodium thiosulfate.

INDICATIONS:

A. Cyanide poisoning.

CONTRAINDICATIONS:

A. Do not administer to a patient who has been given hydoxocobalamin (Cyano-Kit).

PRECAUTIONS:

A. It is not known whether Sodium Thiosulfate can cause fetal harm when administered to a pregnant woman and should only be administered in this setting if clearly needed.

MEDICATIONS – Succinylcholine

PHARMACOLOGY AND ACTIONS:

A. Succinylcholine is a short acting motor nerve depolarizing skeletal muscle relaxant. It competes with acetylcholine to combine with cholinergic receptors in the motor end plate causing depolarization inhibiting neuromuscular transmission. After intravenous injection, paralysis is obtained within 1-2 minutes and persists for approximately 4-6 minutes. Effects then start to fade and return to normal. Succinylcholine is hydrolyzed by plasma pseudocholinesterase and is excreted by the kidneys.

INDICATIONS:

A. To achieve temporary paralysis where endotracheal intubation is indicated.

CONTRAINDICATIONS:

A. Hypersensitivity to the drug.
B. Major burns and crush injuries between 48 hours and 6 months old.
C. Neuromuscular disease (e.g. muscular dystrophy, multiple sclerosis).
D. Suspected hyperkalemia (e.g. end-stage renal disease patients who have missed dialysis).

PRECAUTIONS:

A. Succinylcholine shall not be administered unless personnel trained and authorized in this procedure are present and ready to perform the procedure.
B. Oxygen, ventilation equipment and resuscitation drugs should be readily available.
C. Succinylcholine produces paralysis but does not alter a person's level of consciousness. Sedation will be provided to the patient during the procedure.

SIDE EFFECTS AND NOTES:

A. In rare individuals, because of pseudocholinesterase deficiency, paralysis may persist for a prolonged period of time. Be prepared to continue to assist ventilations as needed.

MEDICATIONS - Tranexamic Acid (TXA or Cyklokapron)

PHARMACOLOGY AND ACTIONS:

A. Produces an antifibrinolytic effect by competitively inhibiting the activation of plasminogen to plasmin. It is also a weak non-competitive inhibitor of plasmin. These properties make possible its clinical use as an antifibrinolytic in the treatment of both general and local fibrinolytic hemorrhages.

INDICATION:

A. Penetrating or blunt trauma associated with signs of significant hemorrhage
   1. Must administer within 3 hour of injury
   2. SBP <70 mmHg (MAP <55), HR >SBP or both

   OR
   3. GCS between 3 and 12 with reactive pupil

CONTRAINDICATIONS:

A. Hypersensitivity to medication
B. Suspected CVA, MI, or PE
C. Time since trauma > 1hours
D. Pediatric patients < 15 years of age or < 50kg if age unknown
E. Drowning, hanging
F. GCS = 3 with unreactive pupil
G. Any chest compressions (mechanical or manual)

PRECAUTIONS:

A. Hypotension (with rapid IV injection), giddiness, allergic dermatitis, diarrhea, nausea, vomiting, blurred vision.

MEDICATIONS – Vecuronium (Norcuron)

PHARMACOLOGY AND ACTIONS:

A. Vecuronium is a non-depolarizing neuromuscular blocking agent causing skeletal muscle relaxation. It reversibly binds the acetylcholine receptor, blocking the action of acetylcholine. Neuromuscular blockade occurs within 2-3 minutes. Time to recovery is 30-45 minutes. Vecuronium metabolism is 5-35% renal with the remainder done in the liver.

INDICATIONS:

A. For sustained neuromuscular blockade in the intubated patient.

PRECAUTIONS:

A. Patients with renal or hepatic failure may experience prolonged paralysis.
B. Vecuronium has no effect on consciousness and must be used with a sedative or induction agent.

SIDE EFFECTS AND NOTES:

A. Vecuronium exhibits minimal side effects and does not substantially affect heart rate or rhythm, systolic or diastolic blood pressure, mean arterial pressure, cardiac output, or systemic vascular resistance.

MEDICATIONS – Verapamil

PHARMACOLOGY AND ACTIONS:

A. Calcium ion influx inhibitor (slow-channel blocker) that exerts its pharmacologic effects by modulating the influx of ionic calcium across the cell membrane of the arterial smooth muscle as well as in conductile and contractile myocardial cells. Decreases rate and systemic vascular resistance.

INDICATIONS:

A. NARROW complex supraventricular tachycardia.
B. Alternative medication to Diltiazem

CONTRAINDICATIONS:

A. Hypotension.
B. WPW, presence of delta wave.
C. Severe left ventricular dysfunction.

PRECAUTIONS:

A. Calcium channel blockers contraindicated in WIDE COMPLEX TACHYCARDIA associated with WPW. Consult with Medical Control is mandatory.
B. Patients taking beta blockers at higher risk for hypotension.
C. Use with caution in patients with liver failure, congestive heart failure.

SIDE EFFECTS:

A. Hypotension – treat with calcium gluconate per protocol. If refractory, treat per shock protocol.

.

REFERENCE – Abbreviations, Approved

ABD	Abdomen
AED	Automated External Defibrillator
AFib	Atrial fibrillation
AGP	Aerosol Generating Procedure
ALS	Advanced life support
AMA	Against medical advice
AMI	Acute myocardial infarction
ASA	Aspirin
ATF	Arrived To Find
ASHD	Arteriosclerotic heart disease
BID	Twice a day
BBB	Bundle Branch Block
BGL	Blood glucose level
Bk	Back
BLS	Basic life support
BP	Blood pressure
BS	Breath sounds,
BVM	Bag-valve-mask
c/o	Complaining of
Ca	Cancer/carcinoma
CAOx4	Conscious, Awake, Oriented x 4 (Person, place, time, event)
CBG	Capillary Blood Glucose
cc	Cubic centimeter
C/C	Chief Complaint
CHF	Congestive heart failure
CLI	COVID Like Illness
CO	Carbon monoxide
CO2	Carbon dioxide
COPD	Chronic obstructive pulmonary disease (emphysema, chronic bronchitis)
CP	Chest pain
CPAP	Continuous positive airway pressure
CPR	Cardiopulmonary resuscitation
CSF	Cerebrospinal fluid
CVA	Cerebrovascular accident
Cx	Chest
d/c	Discontinue
DM	Diabetes mellitus
DNR	Do not resuscitate
DOA	Dead on arrival
DOB	Date of birth
Dx	Diagnosis
ECG	Electrocardiogram

e.g.	For example
EKG	Electrocardiogram
ETA	Estimated time of arrival
ETCO2	End-tidal carbon dioxide
ETT	Endotracheal Tube
Ext	Extremity
FAST	Stroke findings: Facial, Arm, Speech, Time
FROM	Full range of motion
Fx	Fracture
GCS	Glasgow Coma Score
GI	Gastrointestinal
gm	Gram
GSW	Gunshot wound
gtt.	Drop
gtts	Drops
GU	Genitourinary
GYN	Gynecologic
hr.	Hour
H/A	Headache
HEENT	Head, ears, eyes, nose, throat
Hg	Mercury
h/o	History of
HPI	History of present illness
HTN	Hypertension
Hx	History
ICP	Intracranial pressure
ICU	Intensive Care Unit
IDDM	Insulin dependent diabetes mellitus
IM	Intramuscular
IN	Intranasal
IO	Intraosseous
IV	Intravenous
JVD	Jugular venous distension
kg	Kilogram
KVO	Keep vein open
L	Left or Liter
lac	Laceration
LAMS	Los Angeles Motor Score
lbs	Pounds
LBB	Long back board
LBBB	Left bundle branch block
LE	Law enforcement
LLQ	Left lower quadrant
LOC	Level of consciousness

LS	Lung sounds
LSC	Legacy Salmon Creek
LUQ	Left upper quadrant
LZ	Landing zone
mcg	Micrograms
MC	Medical Control
mg	milligram
MgSO4	Magnesium Sulfate
MI	Myocardial infarction
MRH	Medical Resource Hospital
MS	Morphine sulphate, multiple sclerosis
NAD	No apparent distress
NaHCO3	Sodium Bicarbonate
NC	Nasal cannula
NCT	Narrow Complex Tachycardia
NIDDM	Non Insulin Dependent Diabetes Mellitus
NKA	No known allergies
NKDA	No known drug allergies
NPO	Nothing by mouth
NRB	Non-rebreather mask
NS	Normal saline
NSAID	Non Steroidal Anti-inflammatory Drug
NSR	Normal sinus rhythm
NTG	Nitroglycerin
N/V	Nausea / vomiting
O2	Oxygen
OB	Obstetrics
OD	Overdose
OPA	Oropharyngeal airway
OR	Operating room
PCN	Penicillin
PEA	Pulseless electrical activity
PEEP	Positive end expiratory pressure
PERL	Pupils equal and reactive to light
PHSW	Peace Health Southwest
PID	Pelvic inflammatory disease
PMHx	Past medical history
PMD	Personal Medical Doctor
PND	Paroxysmal nocturnal dyspnea
PO	Per os (by mouth)
POV	Per own vehicle
PRN	As needed
PSM	Pulses, Sensation, Movement
PSVT	Paroxysmal supra ventricular tachycardia

Pt	Patient
PTA	Prior to arrival
PVC	Premature ventricular contraction
q.h.	Every hour
QID	Four times a day
R	Right
r/o	Rule out
RLQ	Right lower quadrant
ROC	Resuscitation Outcomes Consortium
ROM	Range of motion
ROSC	Return of Spontaneous Circulation
RUQ	Right upper quadrant
RVH	Right ventricular hypertrophy
RVR	Rapid ventricular response
Rx	Prescription
SaO2	Pulse Oximetry
SIDS	Sudden Infant Death Syndrome
SL	Sublingual
SNT	Soft, non-tender
SOB	Shortness of breath
STAT	immediately
SVT	Supraventricular tachycardia
Sx	Symptoms
TCC	Trauma Communications Center
TIA	Transient ischemic attack
TID	Three times a day
TKO	To keep open
Tv	Tidal volume
Tx	Treatment
Trnx	Transport
VF	Ventricular fibrillation
VT	Ventricular tachycardia
V.S.	Vital signs
WNL	Within normal limits
WPW	Wolf-Parkinsons-White
Wt.	Weight
x	Times
y/o	Year(s) old
$\bar{a}$	Before
$\overline{p}$	After
@	At
$\overline{c}$	With
$\overline{s}$	Without
Δ	Change

↑	Increasing
↓	Decreasing
>	Greater than
<	Less than
~	Approximate
+	Positive
-	Negative
♂	Male
♀	Female

REFERENCE – BLS Response Unit Call Types

11A1F Choking_Not Now/Food	26O21 Sick_Swallowed obj
12A1E Seizure_Not Now	26O22 Sick_Painful_Urination
12A5 ConvSZ_Br reg_Impndg Sz_A	26O23 Sick_Penis_Pain
12A5 Seizure_Impending	26O24 Sick_Skin Disorder
12A5E Epil_ConvSZ_Br reg_Impnd	26O25 Sick_STD
12A5E Seizure_Impending	26O26 Sick_Sore Throat
13A1 Diabetic_Alert	26O27 Sick_Toothache
14A1 Drowning_Br_No inj	26O28 Sick_Wound infect
16A3 Eye Prob_Medical	26O28 Sick_Wound infect
17B1G Fall_Poss Dang/Ground	26O3 Sick_Bumps
17B4G Fall	26O4 Sick_Cannot sleep
18A1 Head_Br Norm	26O6 Sick_Catheter prob
1A1 Abd Pain	26O7 Sick_Constipated
21A1M Hemorr_Not dang/MED	26O8 Sick_Cramp or spasm
21A1M Hemorrhage	26O9 Sick_Cut ring off
21A1T Hemorr_Not dang/TRAU	28A1 CVA_Breath Norm<35
21B4M Hemorr_Thinners/MED	28A1G CVA_Breath Norm<35
23O1A Accid_Poison_No_Pri	28A1L CVA_Breath Norm<35
24A1 OBGyn	29B1 MVA_ Injury
24A1 OBGyn_1st tri misc	29B5 MVA_Unknown Status
25A1 Psy_Alert_NonSui	30A1 Trauma_Not dang
25A2V Violent_Psy_Suicidal	30A2 Trauma_Non Dang
25B3 Psy_SuicideThreat	30A3 Trauma_Non Recent
26A1 Sick_No pri symp	31A2 Faint<35With_Ht_Hx
26A10 Sick_Unwell_Ill	31A3 Faint<35No_Ht_Hx
26A11 Sick_Vomiting	32B1 UnkProb_StandSitMoveTalk
26A2 Sick_BP_Abn	32B2 Unk Prob_Med alert
26A3 Sick_Dizzy-Vertigo	32B3 Unk Prob_Unk Status
26A6 Sick_Nausea	33A1T Transfer Acuity I
26A7 Sick_New_Immobility	33A2P Palliative Acuity II
26A8 Sick_Other_Pain	33A2T Transfer Acuity II
26A9 Sick_Transport_Only	33A3 Interfacility Acuity III
26B1 Sick_Unk symp	33A3P Palliative Acuity III
26O10 Sick_Deafness	33A3T Transfer Acuity III
26O12 Sick_Earache	33C2T InterTransfer_Br abnr
26O14 Sick_Gout	33C6 Interfacility_Emer Resp r
26O15 Sick_Hemorrhoids	33C6T InterTransfer_Emer Resp
26O17 Sick_Hiccups	33C7T Interfacility
26O18 Sick_Itching	4A2 Assault_Not Dang
26O19 Sick_Nervous	5A1 Back Pn_NonTrauma
26O2 Sick_Boils	5A2 Back Pn_Not Recent
26O20 Sick_Object stuck	

REFERENCE – Patients Ability Checklist

GENERAL - IMMEDIATE ACTION ITEMS:

A. Safety of EMS personnel and bystanders
B. Respect personal space, use calm tone
C. Include the patient in planning and decision making
D. Assess and treat immediate life threats
E. What physical barriers need to be removed
F. Consider the need for outside resources

PROCEED TO SPECIFIC ABILITY SECTION:

A. Mobility / Physical Impairments
    1. Assistive devices used by a patient should accompany the patient when possible.
    2. Arrange for alternative transport for the device or find a method of securing the device if it is not possible to transport the device.
    3. Consider using the same method patient was transported in past.
    4. Request other resources if special considerations in handling and transport are needed.
B. Sensory Impairments - Vision
    1. Determine the degree of vision deficit.
    2. Speak directly to the patient; do not shout or use non-specifics e.g. “Watch out”.
    3. Determine if assist devices or service animals are used.

C. Sensory Impairments – Hearing
    1. Determine the degree of hearing deficit.
    2. Determine which communication techniques are best to use, such as lip reading, signing, or the use of written language.
    3. Look for someone to help you to communicate, or use a family member or other resource immediately available who is able to assist if appropriate.

D. Mental Health / Cognitive
    1. Check blood sugar.
    2. Consider the differential diagnosis (consider medical, traumatic conditions).
    3. Avoid sensory overload or triggering actions when interacting with the patient.
    4. Use calm voice, avoid escalation.
    5. Use open posture, avoid prolonged eye contact.
    6. Consider other resources for safety.
E. Autism
    1. Avoid sensory overload and triggering actions such as sounds or bright light when interacting with the patient.
    2. Discuss requirements for successful interaction with caregiver.
    3. Use calm tone, acknowledge and validate emotions.
F. Service Animals
    1. Assure the service animal is transported with the patient.
    2. Request additional assistance should the animal not be able to accompany the patient.

REFERENCE - APGAR Scoring Table

SCORE	0	1	2
HEART RATE	Absent	<100	>100
RESP. EFFORT	Absent	Slow, irregular	Good, crying
MUSCLE TONE	Limp	Some flexion of extremities	Active motion
REFLEX IRRITABILITY	No response	Grimace	Coughs, sneezes
COLOR	Blue/pale	Extremities blue	Completely pink

REFERENCE – Glasgow Coma Scale Adult and Infant

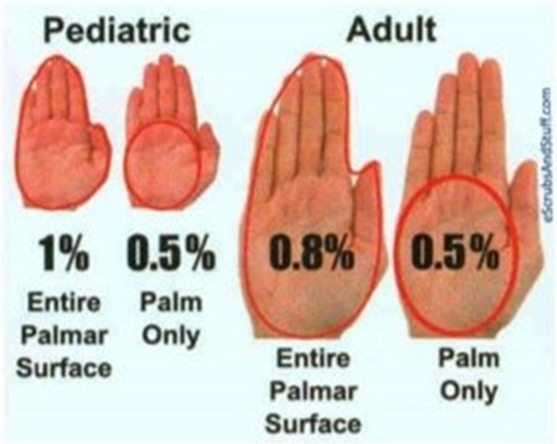
	Adult		Infant
EYES	*Spontaneous*	**4**	*Spontaneous*
	To Speech	**3**	*To Speech*
	To Pain	**2**	*To Pain*
	No Response	**1**	*No Response*
MOTOR	*Obeys verbal command*	**6**	*Normal movements*
	Localizes pain	**5**	*Localizes pain*
	Flexion- w/draws from pain	**4**	*Flexion- w/draws from pain*
	Flexion- abnormal	**3**	*Flexion- abnormal*
	Extension	**2**	*Extension*
	No response	**1**	*No response*
VERBAL	*Oriented and converses*	**5**	*Coos, babbles*
	Disoriented & converses	**4**	*Cries but consolable*
	Inappropriate words	**3**	*Persistently irritable*
	Incomprehensible sounds	**2**	*Grunts to pain, restless*
	No response	**1**	*No response*

REFERENCE – Rule of Nines/Palms

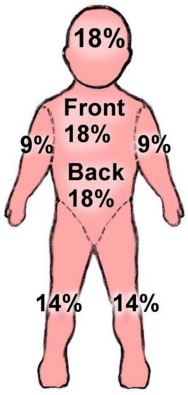
Rule of Palms

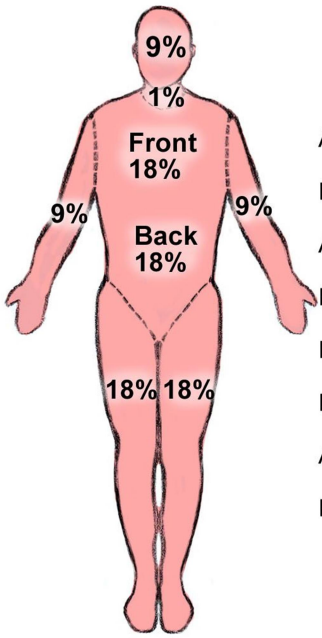
Use PATIENT's hand & ENTIRE palmar surface

Good for TBSA<15%



Child body	% of total
Part	BSA
Arm	9%
Head and neck	18%
Leg	14%
Anterior trunk	18%
Posterior trunk	18%





Adult body	% of total
Part	BSA
Arm	9%
Head	9%
Neck	1%
Leg	18%
Anterior trunk	18%
Posterior trunk	18%

REFERENCE – IM Vaccine Administration

POLICY STATEMENT
It is within the scope of practice for an Emergency Medical Technician (EMT) or Paramedic to administer a vaccination during a public health emergency.
EMS personnel may provide emergency medical care under the direction of their county EMS medical program director (MPD). The National Scope of Practice Model (2019) recognizes the use of certified AEMT and Paramedic level providers for administering vaccinations in public health initiatives.
Washington State scope of practice allows EMTs to perform an intramuscular injection with MPD-approved specialized training.

PROPER EQUIPMENT:

A. One alcohol wipe
B. One sterile 2 x 2 gauze pad
C. A new needle and syringe that are the correct size
D. Hand sanitizer and new gloves for each patient
E. Appropriate PPE

PROCEDURE:

A. Wear appropriate PPE, gloves, eye protection and n95 or higher mask.
B. Receive and confirm medication order and proper indication
C. Evaluate for contraindications and precautions. Contact MPD or Training Physician for questions
D. Prepare equipment and medication expelling air from the syringe.
E. Explain the procedure to the patient and reconfirm patient allergies.
F. Adult injection location
    1. The most common site for subcutaneous injection is the arm.
        a. Injection volume should not exceed 1 cc.
    2. The possible injection sites for intramuscular injections include the arm, buttock and thigh.
        a. Injection volume should not exceed 1 cc for the arm
        b. Injection volume should not exceed 2 cc in the thigh or buttock.
G. Pediatric injection location
    1. The thigh should be used for injections in pediatric patients and injection volume should not exceed 1 cc.
H. Expose the selected area and cleanse the injection site with alcohol.
I. Insert the needle into the skin with a smooth, steady motion
    1. SQ: 45-degree angle IM: 90-degree angle skin pinched skin flattened
J. Aspirate for blood, if none Inject the medication.
K. Withdraw the needle quickly and dispose of properly without recapping.
L. Apply pressure to the site.
M. Monitor the patient for the desired therapeutic effects as well as any possible side effects.

DOCUMENT:

A. Date that the vaccine was administered
B. Route
C. Dose
D. Site
E. Manufacturer and Lot number
F. Publication date of the vaccine Information Statements (VIS)
G. Name and title of the person administering the vaccine.
H. Identify and report any adverse reactions to vaccine administration through the Vaccine Adverse Event Reporting System (VAERS).

REFERENCE – MCI Protocol Detailed Operations

MCI Task Card - MEDICAL

MEDICAL

Reports to Incident Commander (or Operations in larger incidents)

OBJECTIVES:

1. **Coordinate all On-Scene EMS activity.**
2. **Coordinate Medical activities with Incident Commander (IC), and other ICS branches as needed.**
3. **Provide accountability for supervised personnel.**

ACTIONS:

☐ Establish Medical with Command.

☐ Obtain a separate working radio channel for use by Medical.

☐ Establish the following roles/functions and hand out vest, triage tags and task cards.

- ☐ **Triage Treatment**
- ☐ **Transportation**
- ☐ **Destination** (reports to Transportation)
- ☐ **Staging Area** (confirm area, and proper talk group)
- ☐ **An assistant to help you with radio and face-to-face communications.**
- ☐ **Landing Zone (LZ)**

☐ Order additional resources and ambulances through Incident Command.

☐ Establish accountability system for personnel working within Medical.

☐ Refer to Medical checklists (over).

☐ Monitor performance of subordinates. Provide support and changes as needed.

SCENE CHECKLIST

Functional Assignments:		**Ops:**	**Order Resources:**		**Ops:**	**HazMat:**		**Active Threat**
	Triage			Ambulances (specify #)			Mass Decon	Casualty Collection Point
	Treatment			Police (Secure Area)			Safety	Tactical Triage
	Transportation			Buses			Rescue	L.E. Liason
	Destination			Vans				
	Staging Area			Medical Examiner				
	Landing Zone			Red Cross				
				Specialty Teams				

OTHER ASSIGNMENTS

Incident Commander	**Triage**	**Treatment**	**Transportation**	**Destination**
				Staging Area

MCI Task Card - TREATMENT

TREATMENT

Reports to Medical (Use assigned radio channel)

Coordinates with Triage and Transportation

OBJECTIVES:

1. **To rapidly treat and transport all patients.**
2. **Identify and establish large treatment area(s) to stabilize and care for patients until transported.**
3. **Coordinate all activities within the treatment area.**
4. **Coordinate movement of patients from treatment area(s) with Transportation.**
5. **Provide accountability for personnel working in Treatment.**

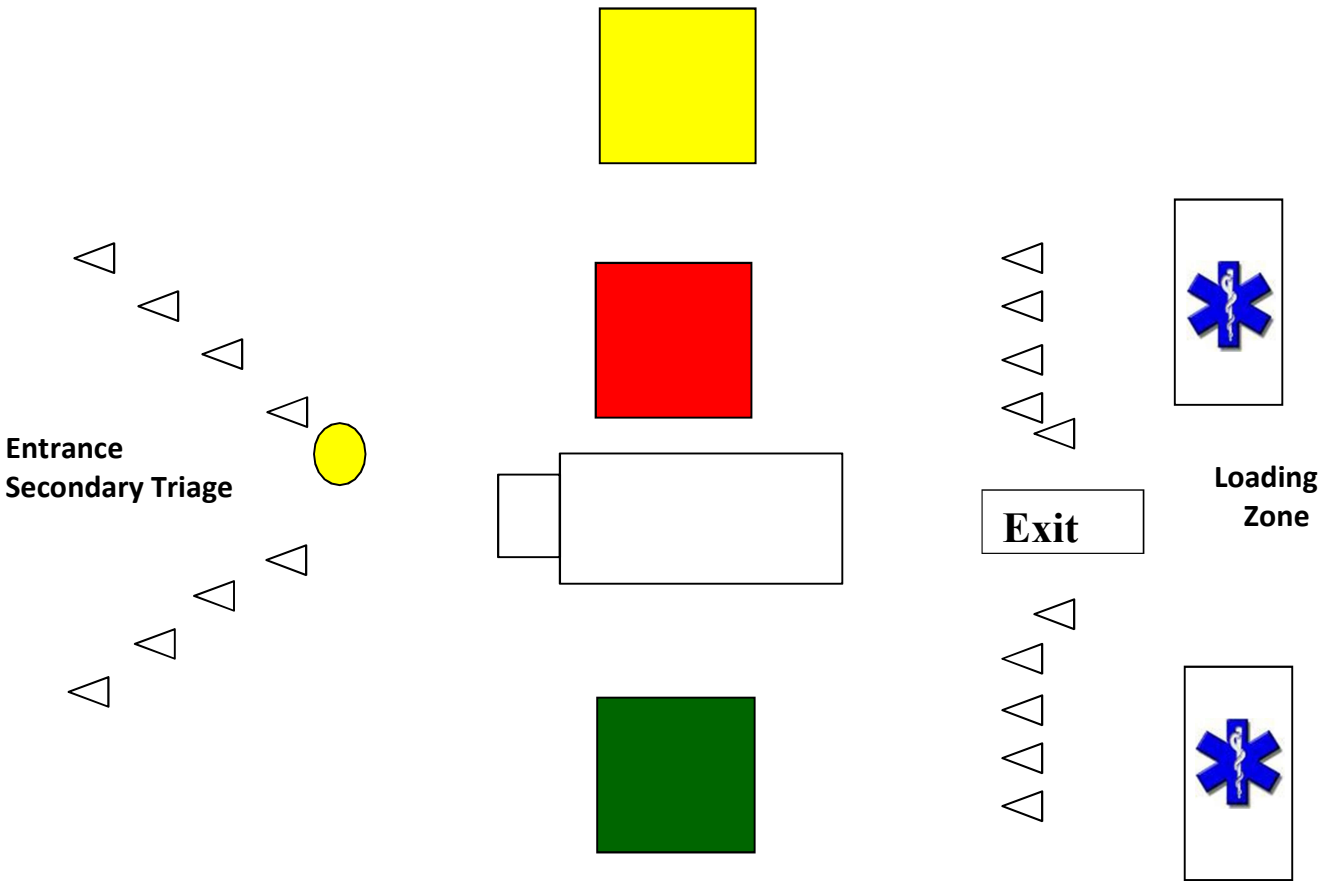
ACTIONS:

- ☐ Establish treatment area(s) large enough to receive estimated number of patients. Set up area with room to expand if necessary. Provide for environmental protection of victims and allow easy ambulance access and egress. If multiple treatment areas are needed, identify each geographically. (e.g. - North/South, street name, division name, etc.). See Diagram.
- ☐ Order additional resources through Medical.
- ☐ Clearly identify treatment area entry point. Assign a person at the entrance to conduct primary or secondary triage, attach triage tags and direct patients to correct treatment area.
- ☐ Consider appointing “Red,” “Yellow,” and “Green” Treatment Team Leaders and assign support personnel.
- ☐ Establish a medical supply drop area for incoming ambulances and fire units.
- ☐ Provide BLS care in the treatment area until resources allow a higher level.
- ☐ Ensure all patients in treatment area have been tagged with a triage tag.
- ☐ Identify the order in which patients are to be transported. Coordinate patient movement to the loading zone with Transportation.
- ☐ Provide accountability for personnel working within treatment area.

MCI Task Card - TREATMENT

Treatment Area Guidelines

- ☐ Set up treatment area WELL AWAY from Hazardous. Consider ambulance access/egress, wind direction and slope.
- ☐ Make it BIG. Set up in an area that will allow you to expand.
- ☐ Clearly identify entry point and exit point for patient transportation.
- ☐ Utilize colored tarps and flags to identify each treatment area.
- ☐ Separate the green area from yellow/red area. Consider separating with CBRNE unit or other natural barrier.
- ☐ Assign treatment team leaders to each area and identify them with the appropriate colored vests.



SCENE CHECKLIST

OPS Channels	Medical:	Treatment:	Transport:

Assign Treatment Team Leaders		Current Patients in Treatment Area	
RED Team Leader:		Red	
YELLOW Team Leader:		Yellow	
GREEN Team Leader:		Green	
Supply:		Black	

Additional Company Assignments

Company	Assignment

Notes:

Other Assignments:

Command	Operations	Triage	Staging	Destination
OPS:_____	OPS:_____	OPS:_____	OPS:_____	OPS:_____

MCI Task Card - Triage

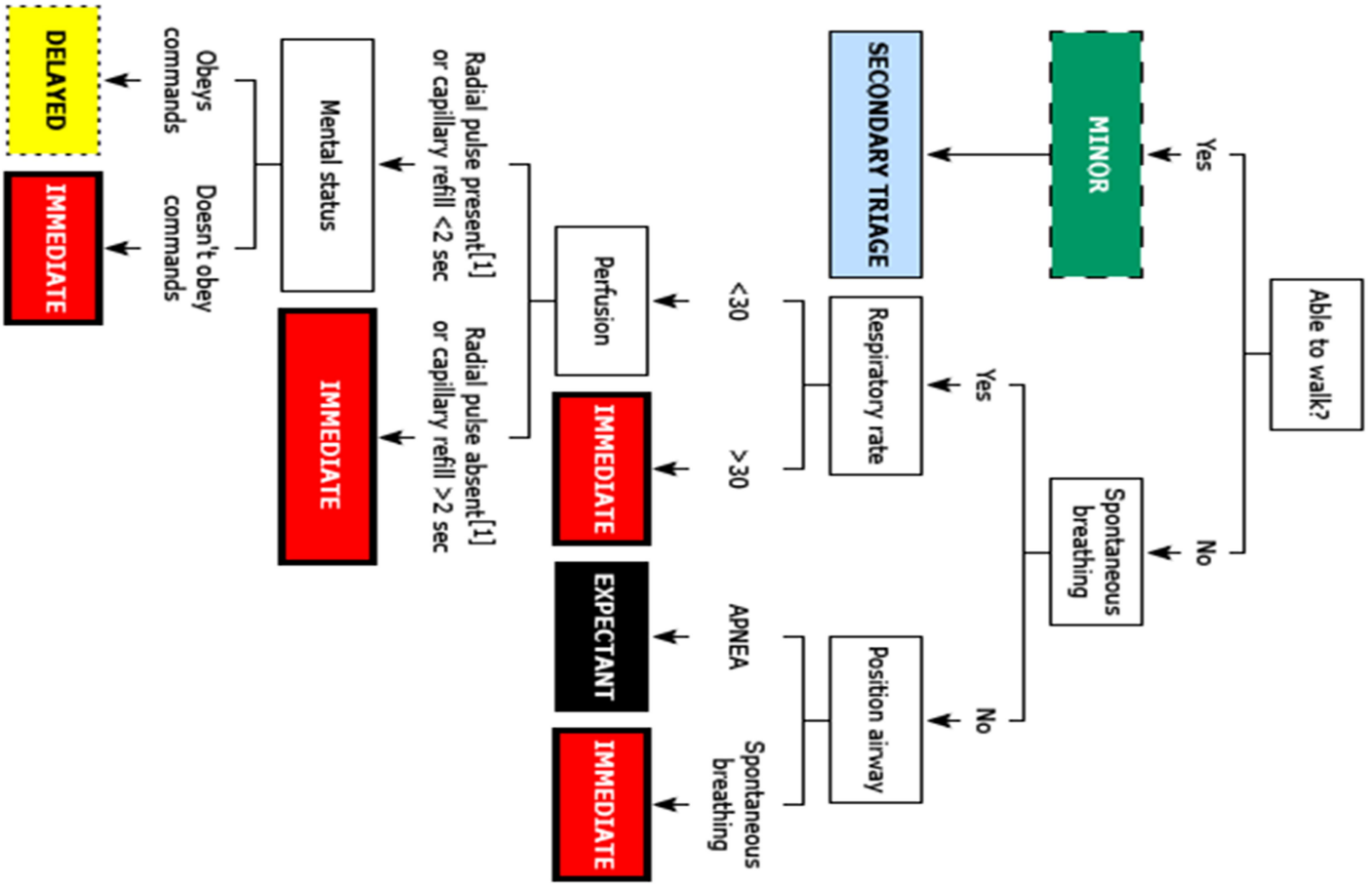
- ☐ Manage the triage function at the incident (should not perform task level triage)
- ☐ Coordinate personnel/crews performing primary and secondary triage
- ☐ Maintain accountability of all triage personnel/crews
- ☐ Ensure rapid primary triage is performed – no more than 30 seconds per patient
- ☐ Ensure secondary triage point is established when necessary or that secondary triage is accomplished in place
- ☐ Coordinates movement of triaged patients to treatment/collection/transport area. (order personnel and equipment as appropriate to accomplish this)
- ☐ Ensures appropriate patient triage log is initiated and maintained. (multiple logs may need to be managed and information integrated depending on the scope of the incident)
- ☐ Relay triage information up the chain-of-command and updates status as needed
- ☐ After triage is completed, assists treatment and transport supervisors/teams to locate their patients.

- *In a hazardous incident, patients may not be able to be triaged until they are removed from the hazard zone.*
- *Consider having crews utilize triage tags during secondary triage so that primary triage may be performed at appropriate speed.*

Triage & identify patients by category utilizing "START" method:

Red* Immediate life threat. (Must have rapid transport to survive.) **Yellow*** Delayed (Injuries can wait 1-3 hours before transport.) **Green*** Ambulatory (Injuries can wait 3+ hours before transport) **Black*** Dead (No transport) Move only if needed to reach other live patients.

START Triage
(Simple Treatment and Rapid Transport)



Triage categories

EXPECTANT Black triage tag node

- Victim unlikely to survive given severity of injuries, level of available care, or both
- Palliative care and pain relief should be provided

IMMEDIATE Thick border red triage tag node

- Victim can be helped by immediate intervention and transport
- Requires medical attention within minutes for survival (up to 60)
- Includes compromises to patient's airway, breathing, circulation

DELAYED Dotted border yellow triage tag node

- Victim's transport can be delayed
- Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours

MINOR Dashed border green triage tag node

- Victim with relatively minor injuries
- Status unlikely to deteriorate over days
- May be able to assist in own care: "Walking wounded"

MCI Task Card - TRANSPORTATION

Reports to Medical (Use assigned radio channel)

OBJECTIVES:

1. **Coordinate movement of patients from treatment area with Treatment.**
2. **Coordinate all activities within the loading zone.**
3. **Coordinate flow of transport vehicles with staging.**
4. **Provide accountability for personnel working in Transportation.**

ACTIONS:

- ☐ Establish patient loading zone.
- ☐ Establish one-way vehicle access/egress with Staging.
- ☐ Request additional resources as needed from Medical.
- ☐ Assign Medical Communications.
- ☐ Supervise patient movement to loading zone with Treatment.
- ☐ Monitor medical radio channel to estimate number of incoming patients.

MCI Task Card - TRANSPORTATION

Loading Zone Location:

_____

_____

Access/Egress Location:

_____

_____

Resources Requested:

Time	Resource	Unit/Agency

Medical Communications:

Name: _____

Unit/Agency: _____

MCI Task Card - COMMUNICATIONS

Reports to Transportation

OBJECTIVES:

1. **Coordinate hospital destination for patients leaving the loading zone.**
2. **Maintain the patient transport log using web based or protocol approved alternative.**

ACTIONS:

☐ Establish communications with "Regional Hospital." (Via MCI channel, phone number or approved alternative. (800 radio MCI channel or phone (503) 494-7333.)

☐ Confirm MCI has been declared with Regional Hospital and Dispatch.

☐ Provide total number of estimated patients.

☐ Establish communication with loading zone to receive information on patients ready for transport (e.g., face-to-face, runner, radio etc.).

☐ When a unit is ready to transport, contact Regional Hospital. Provide & record the following information.

1. Triage Tag #'sif available
2. Triage color/category
3. Age/gender
4. Unit number of transporting vehicle

☐ Confirm hospital destination with Regional and record.

☐ Inform the transporting unit of its destination.

Triage Tag # (last 4 digits)	Triage Level *R/Y/G*	Age	*Sex*	Injury Type/Location	*Destination*	Unit #	Transport *Time*
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				
	R Y G		M F				

REFERENCE – Medical Examiner Information Sheet

PROCEDURE:
Notify the Clark County Medical Examiner as per guidelines in the Death in the Field protocol. The Medical Examiner (ME) will need the following information when reporting a death in the field:

DEMOGRAPHIC INFORMATION:

A. Name
B. Age/DOB
C. Gender
D. Address of the incident
E. Date and time of death (If time of death unknown provide time decedent found)
F. Time decedent last seen alive
G. Name of the Paramedic and Agency (and MC Physician if applicable) who confirmed death
H. Medical treatment (if any) by responders
    1. Note any invasive procedures that were done, i.e. IV/IO, intubation. In general, leave devices in place

DECEDENT MEDICAL HISTORY:

A. Personal Physician
B. Current medication list
C. Known medical history

CASE DETAILS:

A. Be prepared to answer the following as applicable:
    1. How was the decedent feeling in the days before they died?
    2. What was the decedent doing before they died?
    3. Was the death event witnessed? By whom?
    4. How/where were they found?
    5. What was their body position and clothing?
    6. What death signs are present?
    7. Were they moved from their original position?
    8. Funeral home if known

NOTES:

A. Follow guidelines for Child/Infant death scene if applicable.
B. If a Crime Scene is confirmed or suspected, follow guidelines contained herein.