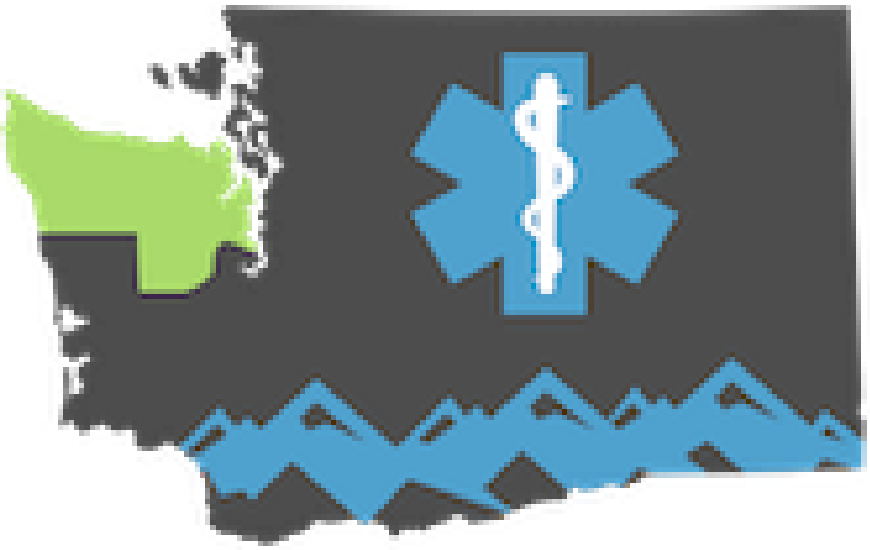
Northwest Region EMS

Protocols



Clallam, Mason, Kitsap & Jefferson Counties

MPD Approved July 31 *,2026*

Washington State DOH approved July 31 *2026*

The following protocols and procedures have been approved for use by pre-hospital care providers in Clallam, Mason, Kitsap, and Jefferson Counties, in addition to Navy Region Northwest.

These protocols will be reviewed and revised as necessary to reflect the changes in standards.

Dr. Paul Craven, MPD Clallam County

Dr. Joseph Hoffman, MPD Mason, and Kitsap County

Dr. David Carlbom, MPD, Jefferson County

We wish to express our sincere gratitude to the highly skilled EMS professionals across the Northwest Region who participated in this important endeavor. These dedicated individuals have generously volunteered their valuable time and expertise to revise and update our Regional EMS Protocols.

This collaborative effort involved representatives from five distinct EMS councils working closely with the Regional Medical Program Directors. Every person's contribution was vital to ensuring that patient care in our region continues to meet the highest standards of excellence.

This revised version represents our shared commitment to enhancing and advancing emergency medical services for our communities. Our region will benefit from improved prehospital emergency care protocols thanks to their hard work.

Dr. Joseph Hoffman, Chair, Northwest Region EMS

Randi Riesenberg, Executive Director, Northwest Region EMS

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Any reproduction of this document must be approved by the Northwest Region Emergency Medical Services and Trauma Care Council.

REGIONAL GUIDELINES

PREHOSPITAL PROVIDER SCOPE OF PRACTICE

Level of Certification Washington DOH	Medical Control & Skills Capabilities	Medication Administration	With MPD Specialized Training
Emergency Medical Responder	MPD protocols, patient assessment, CPR, AED, BVM, bandaging, splinting, trauma, triage, medical, and pediatrics.	02, IN Naloxone, Aspirin, Pre-loaded Epinephrine IM.	draw up Epinephrine for IM injection. Aspirin, Oral Glucose
Emergency Medical Technician	Above plus CPAP. End-tidal capnometry. Suction of tracheal, bronchial suctioning of an already intubated patient, and/or tracheostomy with a modified technique.	Above plus with bronchodilators, IM/ IN Naloxone, Aspirin, Epinephrine IM for allergic reaction. Oral Glucose, Analgesic OTC. Assist with patient's prescribed nitroglycerin or use EMS supply if unavailable or expired.	Above plus supraglottic airway with endorsement. ECG/12-Lead can be read only. Ondansetron SL, Diphenhydramine(PO), Activated Charcoal, Nitrous Oxide.
Emergency Medical Technician with IV Endorsement	Same as above		Obtain IV/IO access & IV therapy with endorsement
Advanced Emergency Medical Technician		Above plus IV Naloxone, Zofran IV/IM, bronchodilator	Dextrose 50/25/10, Epinephrine for cardiac arrest, parenteral non-opioid analgesia, antihistamines, Nitro Paste.
Paramedic	Above plus capnography, advanced airway control, ACLS w/ manual defibrillation, advanced patient assessment, trauma, and medical skills.	Above plus MPD protocol	Simple Thoracostomy, Pericardiocentesis, Venous Access External Jugular, Ultrasound, Central Venous Device

NORTHWEST REGION PATIENT CARE PROCEDURES

These procedures have been developed by the Northwest Regional EMS & Trauma Council in conjunction with local councils. Patient Care Procedures define how the EMS system operates within the Northwest Region of Washington State by identifying the level of medical care personnel who participate in the system, their roles, and the participation of the hospital facilities in the system. They also address inter-hospital transfers, transfer agreements for identification, and the transfer of critical care patients.

The NWREMS Trauma Triage Procedure and the Regional Patient Care Procedures outline an EMS system structure that effectively reduces morbidity and mortality. A full copy of the Northwest Regional Patient Care Procedures is available on our website at www.nwrems.org.

These protocols are to provide a fluid framework for the care of the pre-hospital patient. When sequential care is required, it will be indicated on those pages with the following icon(1234).

NWREMS TRAUMA TRIAGE

Red Criteria: High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to the head, neck, torso, and proximal extremities. • Skull deformity, suspected skull fracture • Suspected spinal injury with a 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 the wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure • Burns - Burn Center appropriate	**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 meeting any RED criteria should be transported to the closest level I or II trauma service within 30 minutes of transport time (air or ground). For transport times greater than 30 minutes, take to the closest, most appropriate trauma service.

Yellow Criteria: Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement

• 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 an unsecured child safety seat.
  • Vehicle telemetry data consistent with severe injury.
• Rider separated from transport vehicle with significant impact (e.g., Motorcycle, ATV, horse, etc.)
• Pedestrian/bicycle rider thrown, run over, or with significant impact.
• Fall from height > 10 feet (all ages)
	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
	• Children should be triaged preferentially to pediatric-capable centers.
	
	• **If concerned, take to a trauma service.**

County Destination Policies

Insert here and number as follows:

Clallam County Pg. 11-A

Jefferson County Pg. 11-B

Mason County Pg. 11-C

Kitsap County Pg. 11-D

West Olympic Peninsula Pg. 11-E

CHAPTER: 2000 NUMBER: 2130 DATE: 7-15-2010 3-10-2020

APPROVED: _____ Joe Hoffman, M.P.D

APPROVED: _____ Carl Ehresman, Chair

I. PURPOSE:

To designate destination hospitals for patients with cardiovascular emergencies, specifically stroke and myocardial infarction, and maximize the best possible outcomes.

II. POLICY:

All patients with the assessment of stroke/CVA and or myocardial infarction will be transported to a designated hospital as specified in Washington State DOH Stroke and Cardiac Categorization System

III. PROCEDURE:

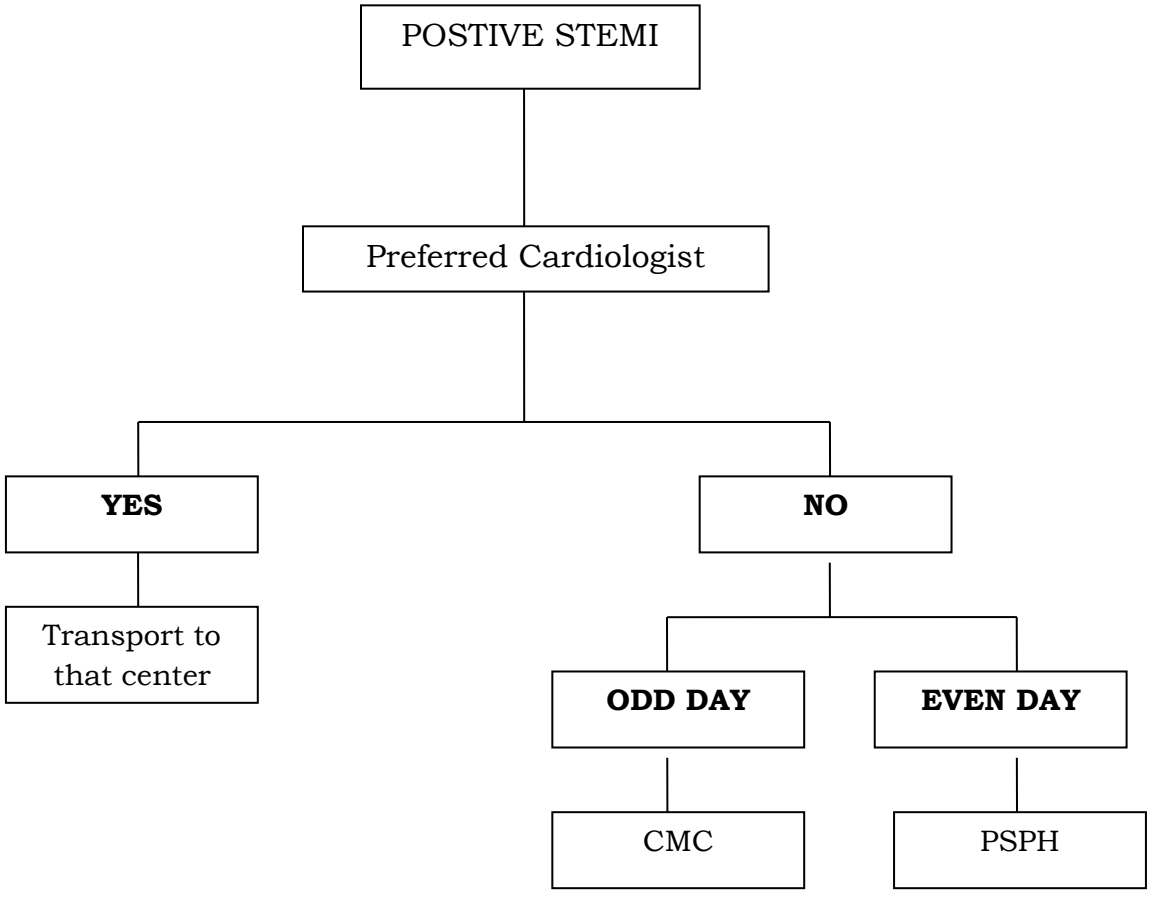
A. STROKE

1. It is required for a patient who has had the onset of stroke symptoms within the last 5 hours to be included under this policy for thrombolytic therapy.
2. It is required for a patient who has had the onset of stroke symptoms within the last 23 hours with a LAMS score 4-5 to be included under this policy for LVO therapy.
3. Calls to base station and/or the receiving hospital should declare this patient as a “Stroke Activation.”
4. Designation Hospitals (within 5 hours of onset/last known well):
   a. Patients in the North Hwy 3 Corridor (North of Allyn)- Harrison Medical Center
   b. Highway 101 Corridor or Central County – Mason General Hospital
   c. South County (South of Lynch Road) – St. Peter’s

5. Designation Hospitals (within 23 hours of onset/last known well with a LAMS score 4-5):
   d. Patients in the North Hwy 3 Corridor (North of Allyn)- Harrison Medical Center
   e. Highway 101 Corridor or Central County – Mason General Hospital
   f. South County (South of Lynch Road) – St. Peter’s

B. MYOCARDIAL INFARCTION

1. It is required for a patient with signs and symptoms of a myocardical infarction AND a POSITIVE 12 Lead ECG to be included under this policy.
2. Calls to base station and/or the receiving hospital should declare this patient as a “STEMI Activation”.
3. Designated Hospitals:
   a. Patients in the North Hwy 3 Corridor (North of Allyn)- Harrison Medical Center
   b. Highway 101 Corridor, Central & South County (South of Lynch Road and South of Allyn) –



Mason County
Prehospital Stroke Triage Destination Procedure

Assess Applicability for Triage
Report from patient or bystander of one or more **sudden**:
- ☐ Numbness or weakness of the face, arm or leg,
- ☐ especially on one side of the body
- ☐ Confusion, trouble speaking or understanding
- ☐ Trouble seeing in one or both eyes
- ☐ Trouble walking, dizziness, loss of balance or
- ☐ coordination
- ☐ Severe headache with no known cause

NO → Transport per regional patient care procedures

YES ↓

Perform *B.E.F.A.S.T* Assessment
- ☐ **B**alance (abrupt change) yes/no
- ☐ **E**yes (loss of vision/double vision) yes/no
- ☐ **F**ace (unilateral facial droop) yes/no
- ☐ **A**rms (unilateral drift/weakness) yes/no
- ☐ **S**peech (abnormal/slurred) yes/no
- ☐ **T**ime last normal (determine time patient last known normal)

Yes to any one sign = YES
No to all five signs = NO

NO → Transport per regional patient care procedures

YES ↓

Determine LAMS SCORE*
Determine patient's LAMS score

YES ↓

Determine Destination*
Estimate time patient last normal to arrival at stroke center emergency department

**If unable to manage airway, consider rendezvous with ALS or transport to nearest facility capable of definitive airway management.*

If a stroke center is not available within transport times by ground, consider air transport or contact medical control for destination decision.

If there are two or more facilities to choose from, patient preference, physician practice patterns, and local rotation agreements maybe be considered in determining destination.

- ≤ 5 hrs → **Transport** patient per county operating procedure
- ≥5 hrs to ≤ 23 hrs → **Transport** patient per county operating procedure
- >23 hrs or unknown → **Transport** patient to level 1, 2, or 3 stroke center within 30 minutes transport time per regional patient care procedures and patient/family preference

Limit scene time and alert destination hospital en route ASAP

Mason County
Prehospital Cardiac Triage Destination Procedure

Assess Applicability for Triage

- ❒ Post cardiac arrest with ROSC
  -OR-
- ❒ ≥ 21 years of age with symptoms lasting more than 10 minutes but less than 12 hours suspected to be caused by coronary artery disease:
  - **Chest discomfort** (pressure, crushing pain, tightness, heaviness, cramping, burning, aching sensation), usually in the center of the chest lasting more than a few minutes, or that goes away and comes back.
  - **Epigastric (stomach) discomfort,** such as unexplained indigestion, belching, or pain.
  - **Shortness of breath** with or without chest discomfort.
  - **Radiating pain or discomfort in 1 or both arms,** neck, jaws, shoulders, or back.
  - **Other symptoms** may include sweating, nausea, vomiting.
  - **Women, diabetics, and geriatric patients** might not have chest discomfort or pain. Instead they might have nausea/vomiting, back or jaw pain, fatigue/weakness, or generalized complaints.

NO → Transport per regional patient care procedures

YES → *If ALS has not been dispatched, upgrade if available.*

Assess Immediate Criteria 1

- ☐ Post cardiac arrest with return of spontaneous circulation
- ☐ Hypotension or pulmonary edema
- ☐ EKG positive for STEMI (if available)

NO →

Assess High Risk Criteria

In addition to symptoms in Box 1, pt has 3 or more of the following:

- ☐ Age >55
- ☐ New aspirin use in last 7 days
- ☐ Angina in last 24 hours
- ☐ Known coronary disease

OR

3 or more CAD rise factors:

- ☐ Family hx
- ☐ BP
- ☐ Cholesterol
- ☐ Diabetes
- ☐ Current Smoker

NO → Transport per regional patient care procedures

YES →

YES →

Transport per County Operating Procedure to Level 1 Cardiac Center 2

1 Unstable patients with severe respiratory distress, hypotension, or recurrent life-threatening arrhythmias should be transported to the closest Level 1 or 2 Cardiac Hospital.
2 Consider air transport for all transports greater than 60 minutes
3 Patients who do not meet Level 1 criteria, should be transported to a Level 2 Cardiac Center.

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Off-Campus Emergency Department (OCED) Transports

Inclusion

- Most patients with any chief complaint that would be transported to any ED.

Steps for Transports:

1. Take your history.
2. Do your assessment.
3. Check your vitals, against the exclusion criteria.
4. Look for exclusion criteria in area of interest/chief complaint.

Exclusion

Vital Signs:

- Heart Rate >150, or <50 sustained and with symptoms.
- Systolic BP >180, or <90.
- SpO_2 <93%, or <90% with history of COPD
- Respiratory Rate >30, or <10.
- Temperature >100 in pediatrics 3 months old or less.

Trauma:

- Meets trauma triage criteria
- Fall with head trauma on blood thinners, e.g. Xarelto, Eliquis, Coumadin.
- Fractures: open, hip, or extremity with neuro or vascular compromise.

Vascular Emergency:

- Ischemic limb.
- Active arterial bleeding.
- Decreased or absent pulses.

Acute onset neurological complaint:

- Focal weakness.
- Suspected CVA/TIA.
- Numbness/paresthesia.
- Acute Altered Mental Status or confusion.
- Seizure that is new onset/ without history or with postictal state.

Exclusion

Acute psychiatric or behavioral health complaint:

- Suicidal/Homicidal Ideations
- Psychosis
- Depression

Cardiac:

- Suspected cardiac chest pain/ACS based on Cardiac Emergencies Protocol
- Syncope/Near syncope

Suspected Sepsis/Severe infection > or equal to 9.

GI/GU Compliant:

- Abdominal pain/flank pain in patients over 60 years old.
- Blood in stool or emesis.
- Known or suspected pregnancy.
- Suspected sexual assault.
- Suspected esophageal foreign object.

Overdose or ingestion.

Alcohol or illicit drug(s) use who are clinically impaired.

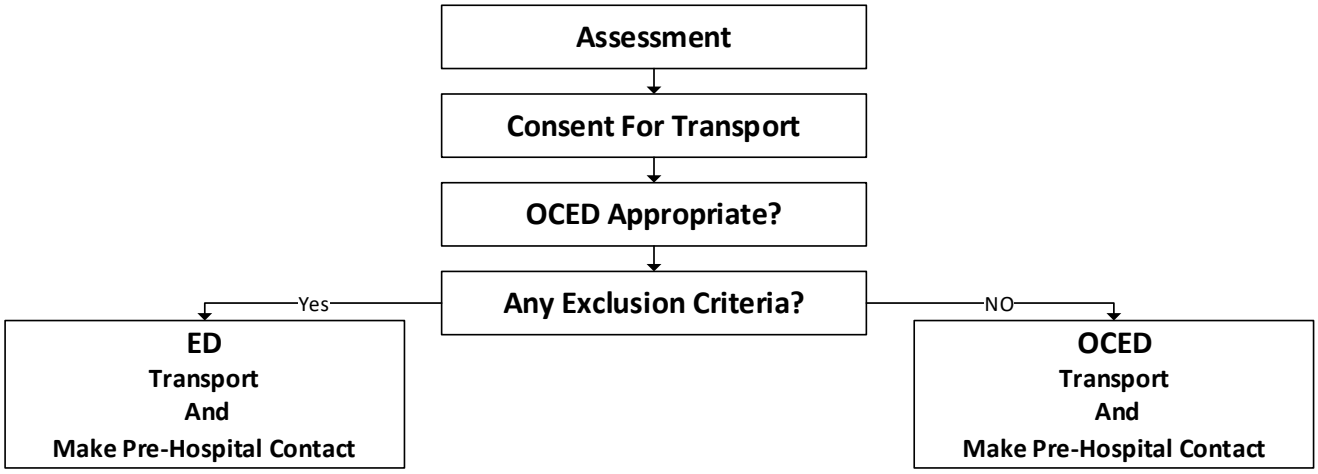
Bariatric patients >400 pounds.

Chemical contamination: mace, chemical or biological warfare.

Isolation requirements- suspected TB.

Generalized weakness and unable to ambulate.

Chronically bedridden.



Destination Hospital Matrix

Hospital	Trauma	Cardiac	Stroke	Specialty service	County
Jefferson Healthcare	IV	II	III	Level 1 Newborn	Jefferson
Swedish Cherry Hill	N/A	I	I	Level 1 Newborn	King
Swedish First Hill	N/A	II	II	Level 4 Newborn	King
UW Montlake	N/A	I	III	Dialysis, Level 4 Newborn	King
Providence Regional MC Everett	II	I	II	Dialysis, Level 3 Newborn	Snohomish
Seattle Children's	N/A	N/A	N/A	Pediatric, Level 4 Newborn	King
Harborview Medical Center	I	I	I	Burns, Dialysis, Special Pathogen Treatment Center, ECMO	King
Virginia Mason Medical Center	N/A	I	I	Dialysis, Decompression chamber	King
St. Michael's Medical Center	III	I	II	Level 2 Newborn	Kitsap
Mason General Hospital	IV	II	III	Level 1 Newborn	Mason
Mary Bridge Children's Hospital	II, <15 age	N/A	N/A	Pediatric, Level 4 Newborn	Pierce
St. Anthony Hospital	IV	II	II	Dialysis, Level 1 Newborn	Pierce
St. Joseph Medical Center	II	I	I	Level 3 Newborn	Pierce
Tacoma General Hospital	II	I	I	Level 4 Newborn	Pierce
Madigan Army Medical Center	II	I	II	Level 3 Newborn	Pierce
Providence St. Peter Hospital	III	I	II	Dialysis, Level 2 Newborn	Thurston
Capital Medical Center	N/A	I	N/A	Level 1 Newborn, Dialysis	Thurston

Key: Level 1 = highest trauma priority; Level 4 = highest newborn priority

Phone Numbers on Page 227

PREHOSPITAL PROVIDER CONDUCT

1. Northwest Region EMS Providers must maintain the highest standard of professional conduct.
2. Competent medical care must be provided with compassion and dignity for all persons regardless of race, color, religion, age, sex, including pregnancy, gender identity, physical or mental disability, familial status, or veteran status.
3. Providers must refuse to participate in unethical activities and/or activities that may impair professional judgment and the ability to act competently.
4. Any disagreements or potential conflicts at a scene should be discussed in a private setting after the call. Efforts should be made to resolve interpersonal conflicts at the lowest possible level. Face-to-face discussions are encouraged whenever possible. In the event the conflict cannot be resolved, the appropriate department/service chain of command must be utilized. MEDICAL CONTROL must be contacted immediately for patient care issues that cannot be resolved.
5. Decisions about patient care & disposition should focus on the safest (and sometimes conservative) option for the patient.
6. Patient Confidentiality will always be maintained in compliance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and all applicable federal and state laws.

INFECTION CONTROL STANDARDS

1. Infection Control Standards assume that all contact with blood, other bodily fluids, and potentially infectious materials is infectious.
2. The standards for using Universal Precautions/Body Substance Isolation, including safe work practices, proper use of engineering controls, and personal protective equipment, are mandated by WISHA and must be adhered to.
3. EMS Providers must always protect themselves from “reasonably anticipated potential for exposure.” The following is a list of mandated items: Gloves, Masks, Face Shields, Safety Glasses, High Efficiency Particulate Air (HEPA) Filters, Resuscitation Equipment, and Protective Clothing.

DOCUMENT LEGEND

Sequential Steps: When sequential care **is required,** it will be indicated on those pages with this icon.

Provider Alert: Critical reminders applicable to all EMS personnel.

Caution: Potential for adverse patient outcomes. Proceed with careful management.

Differential Considerations

ALS Evaluation or Transport

Patient Consent and Refusal of Medical Evaluation

Reminders
Law enforcement may provide consent for patients in custody, mental health or drug/alcohol hold, or children/adults in protective custody.

Do They Have The Capacity To Make Decisions?

- A/O X4
- Not Clinically Impaired
- Normal Cerebral Perfusion
- Cooperative
- Not Suicidal

NO → **Does Pt. Have POA/Guardian?**

- **Yes** → **POA/Guardian Can Give Consent** → **Yes** → **Care/Tranpsort**
- **NO** → **Consent Is Implied**

Yes → **Age of Patient 18 or Older**

- **Yes** → **Patient Can Provide Consent For Care AND/OR Refuse Care.** → **Ask the patient and document the response**

- Have you decided what you want to do?
- What are the risks of that decision?
- What could happen if we do nothing?
- Why do you think this is the best option and why do you choose that?
- Do you know you can change your mind and we'll take you to the hospital?

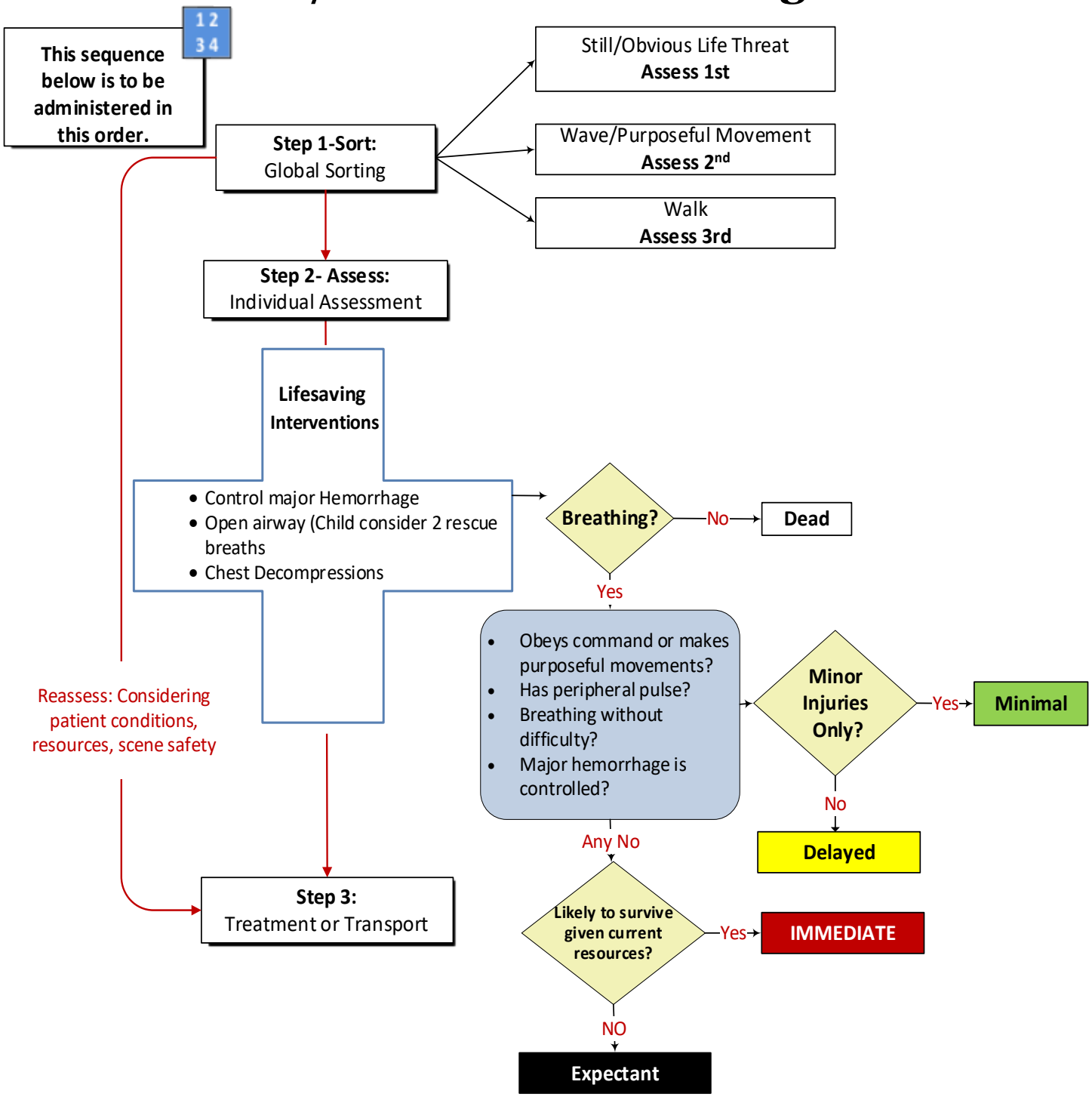
*** If unable to answer most of these 5 elements then may have to address capacity to make decisions.

- **NO** → **13 and older can consent for**:
  - Mental health
  - Substance Abuse
  - Pregnancy Issues
  - Sexually Transmitted infections W/O Adult

→ **Does The Patient Have Proof Of Emancipation?**

- **Yes** → **Able To Provide Consent For Every Thing**
- **NO** → **Treat Emergent Conditions: Need Parent/ Guardian/ Assigned Agent For Consent**

Adult/Pediatric SALT Triage



AVPU Infant / Child		
	Infant	Child
A - Alert	Curious / Recognizes parents	Alert / Aware of surroundings
V – Responds to Voice	Opens eyes/responds to voice	Opens eyes to voice
P – Responds to Pain	Cries in response to pain	Withdrawals from pain
U - Unresponsive	No Response	No Response

Burn MCI Triage

In case of a mass casualty event with multiple burned patients, use this chart to triage the burn patients.

Triage Category	Estimated % TBSA burn	Additional Comments	Fluid Resuscitation
Priority 1	> 40%	Inhalational injuries **OR** circumferential chest wall burns irrespective of % TBSA	500ml LR in the first hour.
Priority 2	20 - 40%	Circumferential limb burns **OR** special area burns	IV Fluids if available, but oral fluids are acceptable.
Priority 3	< 20%		Oral electrolyte solution.

High Threat

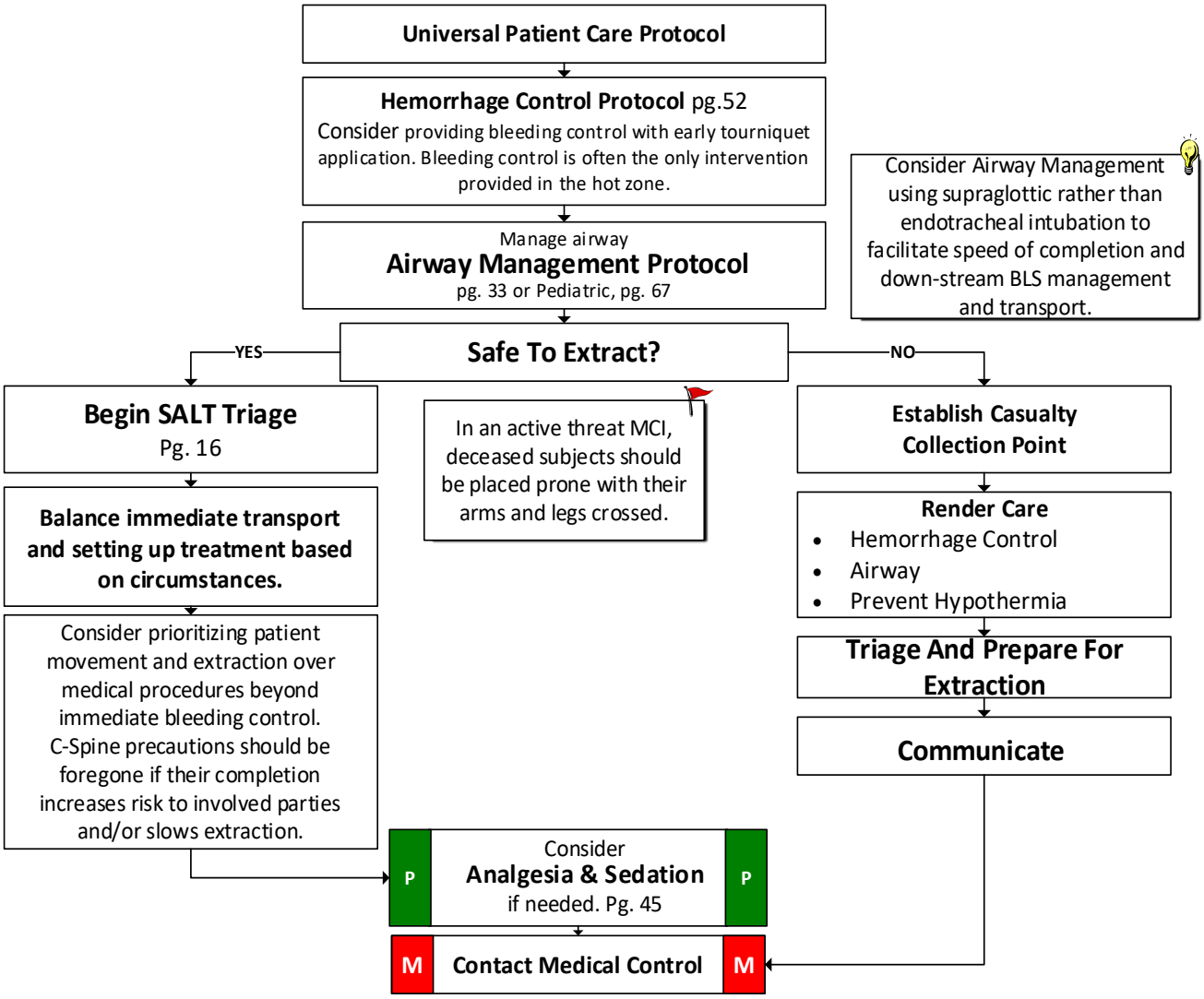
Inclusion Criteria:

- Circumstances within a dynamic and evolving scene that is considered to have a high likelihood of danger to rescuers and / or produce multiple casualties. Some examples include:
- Technical Rescue Incident
- Active Shooter, IED, Vehicle bomb, or similar intentional act to harm
- Water rescue/marine operations
- Hazardous Material Incident

Ensure Provider Safety

- EMS personnel operating in the hot or warm zone should follow the direction of competent technical personnel in regards to safe movement through the environment, i.e. law enforcement, hazardous materials, or technical rescue personnel.
- Providers should defer in depth medical interventions if engaged in ongoing direct threat, e.g. active shooter, unstable building, improvised explosive device(s), or hazardous materials.
- In an active threat event with multiple patients, SALT Triage should be deferred until a later phase of care and prioritization for extraction or extrication should be based on resources available and the situation presented.
- Encourage patients to provide self-first aid or instruct aid from uninjured bystanders.
- In an active high threat event involving law enforcement, providers trained and equipped to work in a hot zone (tactical medics) should create one or more (depending on circumstances) Casualty Collection Point(s) (CCP) to deliver immediate care, triage, and become point of contact for rescue teams performing extraction.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M



Adult/Pediatric Universal Patient Care

Consider ALS Evaluation and Transport if:

- Suspected cardiac chest pain
- Shortness of breath not relieved by initial interventions
- Abdominal pain
- Altered mental status
- Abnormal vital signs

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Unstable Criteria

- MAP < 65
- GCS <13
- HR > SBP
- RR < 10 or > 29 breaths/ min

Scene Safety / BSI

↓

Initial Assessment
Pediatric Assessment Procedure Pg. 85

→ Cardiac Arrest → **Cardiac Arrest Protocol**
Adult Pg. 23
Pediatric Pg. 60

↓

Vital Signs
BP, Pulse, Respiratory

↓

R | **Oxygen** PRN | R
O2 sat > 94- 98%

↓

E | **Temperature** PRN | E
Blood Sugar
Pulse Oximetry

↓

E | **Cardiac Monitor/12 Lead ECG, Capnometry** PRN | E

↓

P | **Capnography** | P

↓

Appropriate Protocol(s)

↓

M | Doesn't fit protocol? **Contact Medical Control** | M

Notes:

- A pediatric patient is defined by a length based tape. If the patient does not fit on the tape, they are considered adult.
- Exam: Minimal exam if not noted on the specific protocol is vital signs, mental status, and location of injury or complaint.
- Any patient contact which does not result in an EMS transport shall be documented.
- *EMT can acquire 12-lead ECG and read/report text printout but cannot interpret.

Suspected Abuse

Transport all patients

Physical findings:
- Unexplained bruises
- Numerous/multiple bruises
- Burns: Cigarette, Immersion, Rope, Infected
- Torn, stained, bloody underclothes
- Bleeding, irritation or pain of the genitals
- Poor hygiene/malnourished
- Child with repeated injuries/multiple calls to the same address
- Flat/bald spots on head (infants)
- Unexplained wet clothing/body

Behavioral:
- History of minor incident inconsistent with major injury
- MOI inconsistent with developmental age
- Inappropriate fear of parent
- Inconsistent explanation for injury
- Nervous disorders (rash, hives, stomachaches)
- Age-inappropriate behaviors (bedwetting)
- Lack of adult supervision
- Delay in seeking medical care
- Caregiver who refuses treatment or transport

Contact LE/CPS/APS should caretaker not allow transport to hospital.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Important Numbers: CPS/APS
- WA: 1-866-363-4276
- National: 800-799-7233

Sexual Assault Nurse Examiner (SANE) Programs
- Jefferson General: 360-385-7617
- St. Michael's: 360-377-9111
- Olympic Medical Center: 360-417-7381

***** 13 and under consider Mary Bridge**

Universal Patient Care Protocol

↓

Oxygen PRN
Advanced Airway Management

↓

Consider Other Treatment Protocol As Necessary

↓

Documentation
- Carefully document caretakers description of event.
- Note environment including temperature.
- Note clothing, stains, and conditions.

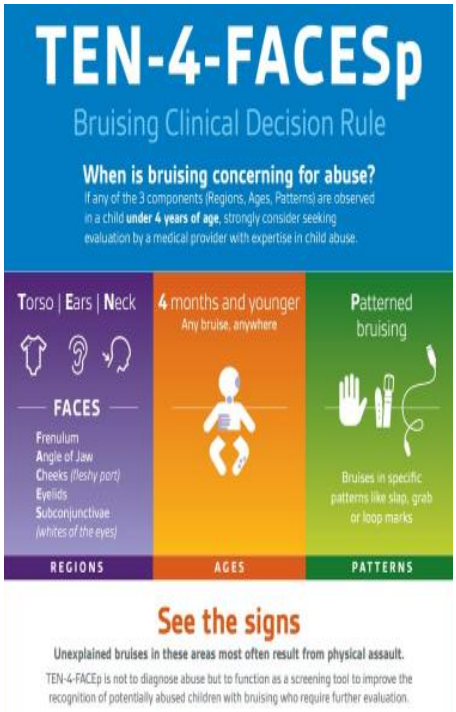
↓

M **Contact Medical Control** M

EMS are mandatory reporters for:
- **Suspected abuse or neglect of a child.**

AND
- **Suspected or neglect of venerable adult/elder.**

Sexual abuse:
- May be present without apparent signs of physical abuse.
- Discourage patient from going to the bathroom.
- Don't allow patient to change clothes or wash.
- If possible have the patient bring a change of clothing to hospital.



End of Life/Palliative Care

Inclusion Criteria:

- Patient diagnosed with a terminal illness or condition, **AND**
- Suffering from symptoms related to such terminal condition, **AND**
- Currently enrolled in hospice or palliative care, **OR**
- Having advance care directives indicating comfort measures only or similar, **OR**
- For who transport and/or condition correcting treatment has been refused by competent patient or family members.

Exclusion Criteria:

- Complaints unrelated to the underlying terminal illness or condition **AND/OR**
- Patients not meeting inclusion criteria.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Base physician shall be consulted prior to the palliative management of pediatric patients.

Universal Patient Care Protocol

R — **Oxygen** as indicated for patient comfort — R

Encourage PO fluid intake as appropriate if patient is able to swallow. **Consider ice chips or water soaked swabs,** if difficulty swallowing.

Assist Patient And Family In Finding A Position Of Comfort.

E-IV — **Obtain IV/IO access** — E-IV

E-IV — For patient comfort with signs of dehydration or hypovolemia **Isotonic IVF** — E-IV

P — Consider **Analgesia & Sedation** if needed. Pg. 45 — P

P — **Atropine Sulfate IV solution** 2-4 drops in oral cavity for secretions. — P

Respiratory Distress?

P — consider **Midazolam** 2.5-5 mg IV/IN/IM **OR** **Fentanyl** 25-100 mcg SVN, mixed in 2mL isotonic IVF **OR** **Morphine** 0.1mg/kg IV/IM max 10 mg IV or 15 mg IM — P

Nausea Relief, General Illness Pg. 41

Anxious?

P — consider **Lorazepam** 0.5-2 mg IV/IN/IM **OR** **Midazolam** 2.5-5 mg IV/IN/IM **OR** **Diazepam** 2-5 mg IV/IN/IM — P

M — **Contact Medical Control** — M

Notes:

- Social interactions with family may affect end-of-life care.
- Generally, patients receiving palliative or end-of-life care for their underlying terminal illness or condition should not be transported. Careful consideration must be given prior to transport in collaboration with the patient, hospice or palliative care provider, guardian, power of attorney, or other accepted healthcare proxy. ALS Providers are authorized to medicate these patients in accordance with this protocol and to leave them in their home or palliative care setting.

Sepsis

SUSPECTED/KNOWN Infection?

EMS Triage	3	2	1	0	1	2	3
Respiratory Rate		<8		9-20		21-29	>30
Heart Rate		<40	**41-59**	60-89		90-119	>120
Temperature (F)		<96.8		96.8-100.4		>100.4	
Age				<54	55-64	65-74	>75
Pre-existing Factors				none	2	3	>4
GCS	<6	7-11	**12-14**	15			
SBP		<90		>91			
EtCO2	<25	25-31	**32-37**	>37			
SUBTOTAL		Score > 9 = CODE SEPSIS					

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Pre-existing factors

- Cancer with recent treatment (chemo, radiation)
- Diabetes Mellitus
- Renal Failure
- Liver Failure
- Hypertension (HTN)
- Cardiac Disease (CHF and vascular disease)
- Known Infection
- Implanted Ports
- Feeding Tube
- Urinary Tube (Foley, suprapubic cath, or urostomy)
- Colostomy
- Surgical Sites
- Implanted Devices
- Pressure Ulcers
- Antibiotic therapy within 30 days
- Surgery within 30 days
- HIV

Yes

Universal Patient Care Protocol

M — **Contact Medical Control**
Declare Code Sepsis
Limit scene time
ALS transport or ALS rendezvous — M

E — **ECG / 12 Lead** — E

E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Isotonic IVF**
20-30mL/kg may repeat x 1
if no Pulmonary Edema
Treat for Shock GOAL MAP >65 — E-IV

A — **Acetaminophen**
15 mg/kg IV over 15 mins
up to 1,000 mg
Or
500- 1000 mg PO — A

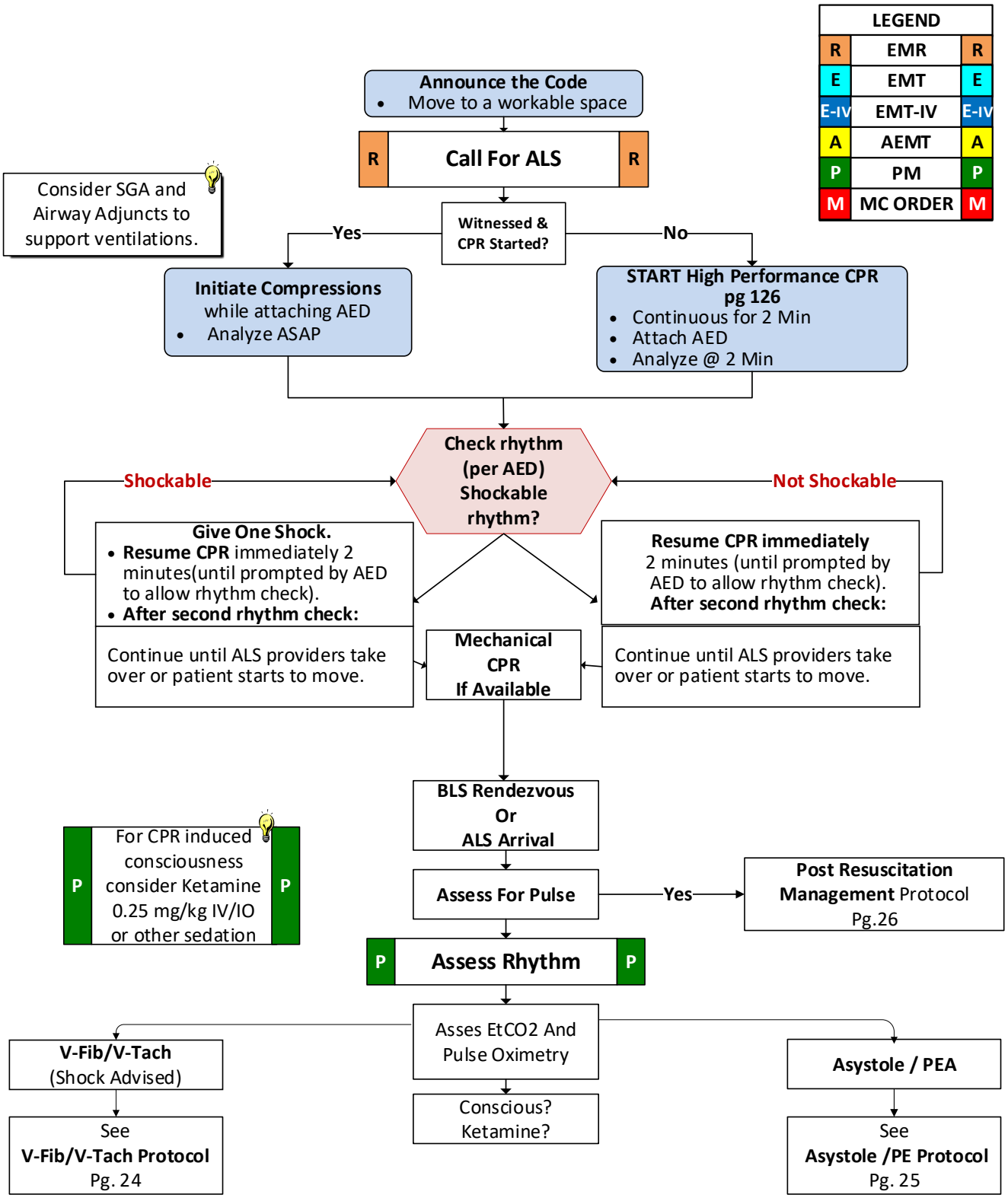
A — AND/OR
Ketorolac
15-30 mg IV — A

→ **Ketorolac Caution:** Decreased Urine Output.

P — **Norepinephrine**
Titrate drip 2-30 mcg/min IV/IO
MAP >65
Or
Epinephrine
Titrate drip 2-30 mcg/min IV/IO
MAP >65
Optional 1 mL of 1:10,000
in 10 mL NS IV push
20-40 mcg IVP PRN — P

→ P — **Ceftriaxone**
1g IV/IM — P

Adult Cardiac Arrest



Notes:

- All shocks Monophasic 360 J or the Biphasic device specific equivalent. If Biphasic equivalent unknown deliver shock at 200 J.
- Consider **discontinuing CPR** pursuant to **Procedure page 138**
- For spontaneous resuscitation refer to **Post Resuscitation Management protocol page 26**

V-Fib/Pulseless V-Tach (Shock Advised)

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Arrive here from
Cardiac Arrest Protocol
Pg. 23

Defibrillate Once

High Performance CPR Pg. 126
Airway Management and confirm effective oxygenation and ventilation

E-IV **Obtain IV/IO Access** E-IV

Assess Rhythm

V-Fib/V-Tach
(Shock Advised)

A **Epinephrine 1:10,000** A
0.5mg IV push (1.0mg for patients >100kg)
repeat every 4 – 6 min.
Once EtCO2 >or =30mmHg,
then 0.3mg IV push every 4-6 mins.

Resume attempts to **defibrillate**
High performance CPR between defibrillations

P **Lidocaine** P
Initial bolus 1 mg/kg IV/IO repeat bolus
0.5 -0.75 mg/kg q 5 min to max 3 mg/kg
OR
Amiodarone
(dilute in NS/D5W 20mL)
300 mg IVP, repeat once at 150mg IVP

Refractory or Recurrent V-Fib/V-Tach

P **Consider for renal, toxin and severe acidosis patients**
Sodium Bicarbonate P
1 mEq/kg IV/IO

P Consider
Procainamide P
300 mg every 8 min (900 mg total)

P **Consider for Cocaine/Meth OD**
Metoprolol 5-10 mg IV/IO P

Resume attempts to **defibrillate**
High performance CPR between defibrillations.

P **If Torsades des Pointes**
Magnesium Sulfate P
2gm IVP, may repeat x2

M **Contact Medical Control And Transport** M

Flush the line!

Flush the line before bicarb is given if Amiodarone was given in same line.

Asystole Or PEA
(No Shock Advised)

Go to
Asystole or PEA (No Shock Advised) Protocol
Pg. 25

Search For And Treat Possible Causes:

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen ion (acidosis)
- **H**ypokalemia
- Slow VT:? **H**yperkalemia
- **H**ypoglycemia
- **H**ypothermia
- **T**oxins
- **T**amponade, cardiac
- **T**ension pneumothorax
- **T**hrombosis (coronary or pulmonary)
- **T**rauma (hypovolemia, increased ICP)

Refractory V-Fib and V-Tach

- Change defibrillation vector
- Dual-sequential defibrillation **pg 130**
- Consult with receiving cardiac center about potentially transporting with CPR in progress to attempt rescue catheterization.

Notes:

- Guidelines for **Discontinuation of Resuscitation Pg. 138**

Asystole/PEA (No Shock Advised)

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Arrive here from
Cardiac Arrest Protocol
Pg.23

High Performance CPR, Pg. 126
Airway Management and confirm effective oxygenation and ventilation

R	**Naloxone**	R
E-IV	**Obtain IV/IO Access**	E-IV
P	**Confirm with Ultrasound**	P

Search For And Treat Possible Causes

Consider
Hyperkalemia Protocol
Pg. 31

A	**Epinephrine 1:10,000** 0.5mg IV push (1.0mg for patients >100kg) repeat every 4 – 6 min. Once EtCO2 >or =30mmHg, then 0.3mg IV push every 4-6 mins.	A

Search For And Treat Possible Causes:

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypokalemia
- Slow VT:? Hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax/hemothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

Assess Rhythm

V-Fib/V-Tach
(Shock Advised)

See
V-Fib/V-Tach Protocol
Pg. 24

Asystole or PEA
(No Shock Advised)

P	**Transcutaneous Pacing** Consider for Bradycardic rhythms Pg. 136	P
P	Consider if preexisting hyperkalemia (renal failure), TCA or ASA OD **Sodium Bicarbonate** 1 mEq/kg IV/IO	P
P	Consider pressor drip for refractory PEA with organized rhythm **Norepinephrine** Titrate drip 2-30 mcg/min IV/IO MAP >65 **Or** **Epinephrine** Titrate drip 2-30 mcg/min IV/IO MAP >65 Optional 1 mL of 1:10,000 in 10 mL NS 20-40 mcg IV push	P
M	**Contact Medical Control**	M

Notes:

- Guidelines for **Discontinuation of Resuscitation** Pg. 138

Post Resuscitation Management

ALS evaulation and/or transport if available

History:	Signs/Symptoms:	Differential:
• Respiratory arrest • Cardiac arrest	• Return of Spontaneous Circulation refer to **Cardiac Destination policies** Pg. 11	• Continue to address specific differentials associated with the original dysrhythmia

Stop the HOP Killers
- **H**= Hypotension
- **O**=Oxygenation(Hypoxia)
- **P**=pH(Metabolic Acidosis)

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Preferential triage to level 1 cardiac center

Repeat Primary Assessment

Continue ventilatory support with 100% oxygen PEEP after oxygen and titrate saturations between 94-98 %

E **Monitor /12 Lead ECG / ETCO2** E

Vital Signs / Pulse Oximetry

E-IV **Obtain IV/IO Access** E-IV

P **Consider Definitive Airway** P

Stable

Hypotension

E-IV **Isotonic IVF** E-IV

P **Norepinephrine**
Titrate drip 2-30 mcg/min
IV/IO MAP > 65
Or
Epinephrine
Titrate drip 2-30 mcg/min
IV/IO MAP > 65
optional
1 mL of 1:10,000
in 10 mL NS 20-40 mcg IV
push P

Bradycardia

Treat per
Bradycardia Protocol
Pg. 28

Need for additional vascular access?
Place pt. on ventilator? Pg. 102

If arrest reoccurs, revert to appropriate protocol and/or initial successful treatment.

P Consider
Analgesia & Sedation
if needed. Pg. 45 P

M **Contact Medical Control** M

Notes:
- Continue antiarrhythmic infusions from previous resuscitation protocol

PRN

Non-Traumatic Shock

History:	Signs/Symptoms:	Differential:
• Cardiac ischemia (MI, CHF) • Medications	• Hypotension • Rales & pulmonary edema on exam • Altered mental status • Weakness, dizziness • Weak, rapid pulse • Pale, cool, clammy skin • Bleeding, volume loss • JVD • Absent breath Sounds	• Dysrhythmias • Cardiogenic • Hypovolemic • Anaphylaxis • Sepsis • Neurogenic • Distributive

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

Is Your Patient Septic?

Yes → Go to **Code Sepsis** pg.22

NO ↓

Consider And Treat Cause, If Known,
Allergic Reaction/ Anaphylaxis, Pg. 38
Hemorrhage Control, Pg. 52
Chest Pain/ ACS, Pg. 32

↓

E | **ECG / 12 lead/EtCO$_2$** | E

↓

E-IV | **Obtain IV/IO Access** | E-IV

↓

E-IV | **Isotonic IVF**
20-30mL/kg may repeat x 1 if no Pulmonary Edema
Goal MAP >65 | E-IV

↓

P | **Norepinephrine**
Titrate drip 2-30 mcg/min
IV/IO MAP >65
Or
Epinephrine
Titrate drip 2-30 mcg/min
IV/IO MAP >65
optional
1 mL of 1:10,000
in 10 mL NS 20-40 mcg IV push | P

↓

M | **Contact Medical Control** | M

Bradycardia

Consider ALS Evaluation & Transport if:

History:
- Past medical history
- Medications** See expanded list in reference section.
  - Beta-Blockers
  - Calcium channel blockers
  - Clonidine
  - Digitalis
- Pacemaker

Potential causes:
- Acute myocardial infarction
- Sinus bradycardia
- Athletes / non pathologic
- Stroke
- Sick sinus Syndrome
- Heart block
- Overdose

Signs/Symptoms:
- HR < 60/min and symptomatic
- Chest pain
- Respiratory distress
- Hypotension or Shock
- Altered mental status
- Syncope

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

E — **ECG /12 Lead/$EtCO_2$** — E

E-IV — **Obtain IV/IO Access** — E-IV

Perfusion
Signs of inadequate perfusion- acute altered mental status, ongoing chest pain, hypotension or low EtCO2, mottling, cool extremities, delayed capillary refill.

Adequate → Observe/monitor PRN
Consider
TCP Pads

Inadequate

E-IV — **Isotonic IVF** — E-IV
20-30mL/kg if no
Pulmonary Edema
Goal MAP >65

P — **Atropine** — P
1mg IV/IO q 3-5 min max 3mg PRN

P — Consider **Analgesia & Sedation** if needed. Pg. 45 — P

P — **Transcutaneous Pacing** Pg. 136 — P

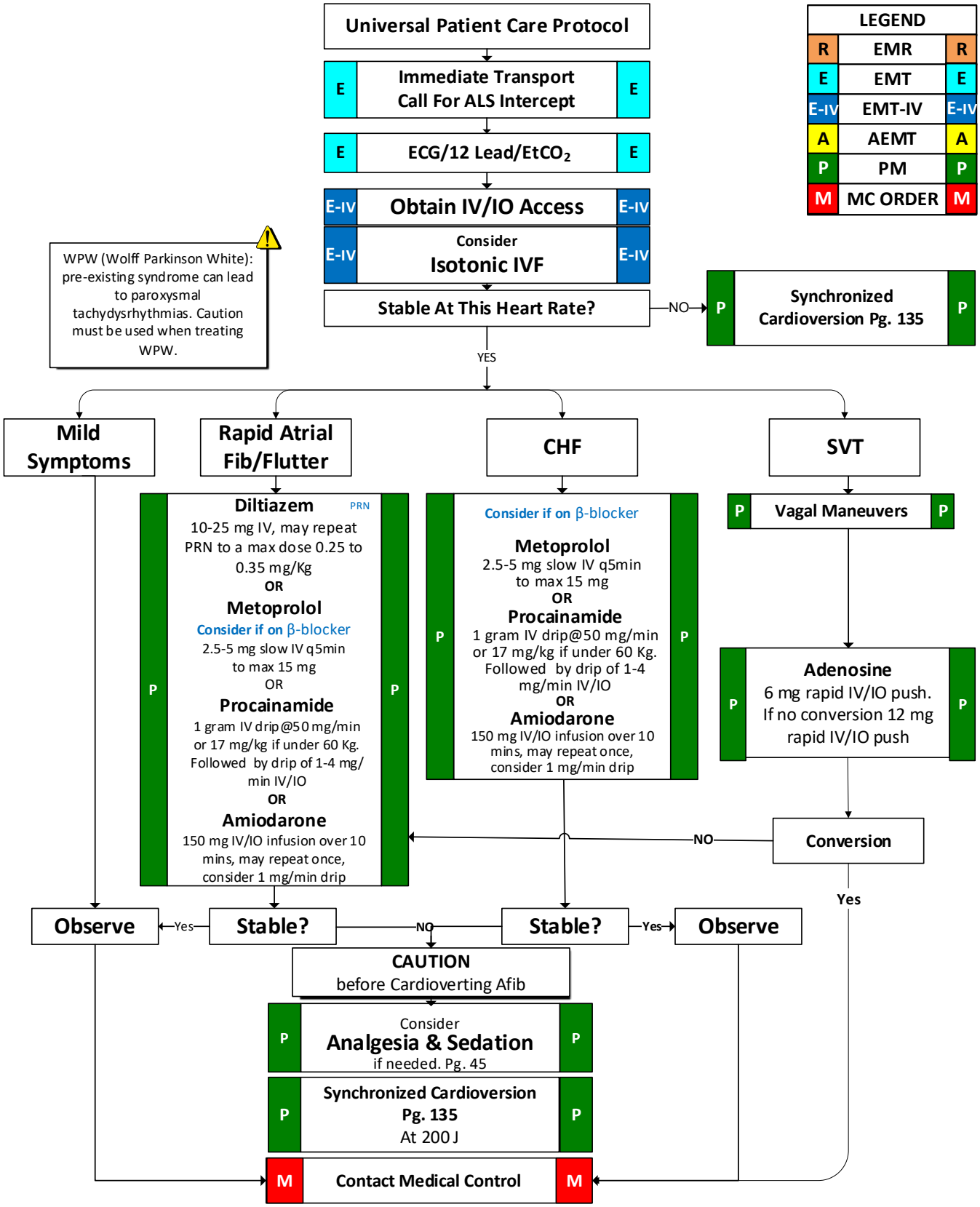
P — **Epinephrine** — P
Titrate drip 2-30 mcg/min
IV/IO MAP >65 PRN
optional
1 mL of 1:10,000
in 10 mL NS 20-40 mcg IV push

P — See **Non-Traumatic,** Pg 27 **or** **Multi-Systems Trauma,** Pg 59 — P

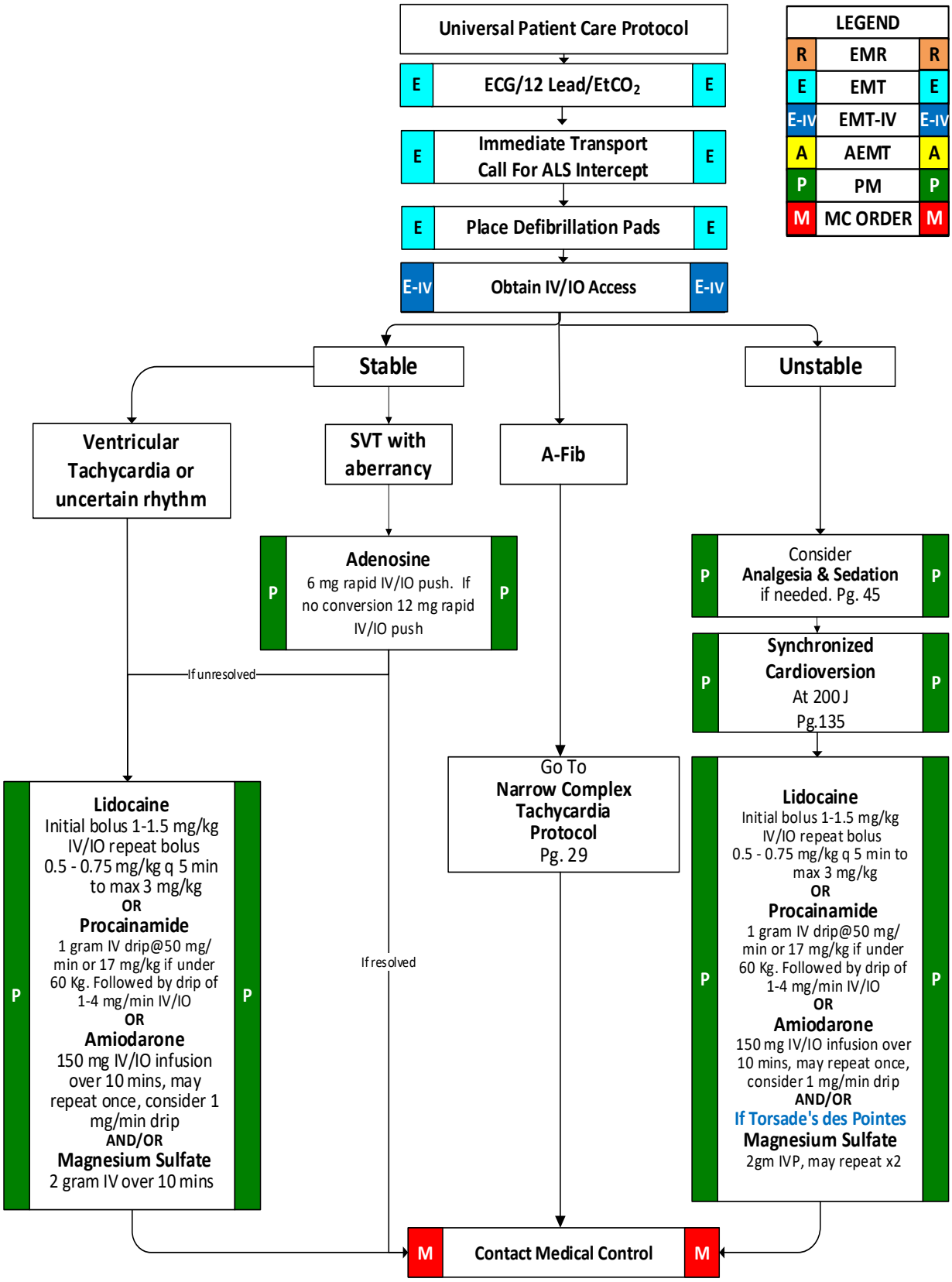
M — **Transport and Contact Medical Control** — M

Search For And Treat Possible Causes:
- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hyper/hypokalemia
- Slow VT:? Hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

Narrow Complex Tachycardia



Wide Complex Tachycardia



Hyperkalemia

Consider in patients with History of:

- Chronic dialysis patient (typically due for dialysis or late)
- Suspected Rhabdomyolysis or crush injury/prolonged immobility
- Extensive Burn Injury
- ACE or Potassium sparing diuretics (recent)
- Extensive Hemolysis
- Tumor Lysis Syndrome
- Severe Acidosis
- Extensive physical activity
- Depolarizing paralytic (Succ)
- Consider in hyperactive delirium

With EKG Changes of:

- Peaked T-Waves (without suspected MI)
- Loss of P-Waves (with peaked T-Waves)
- Wide QRS (IVCD Pattern)
- Sine wave pattern VT or VF
- Bradycardia or Bradyasystolic Rhythm Asystole

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

E — **ECG/12 Lead/EtCO$_2$** — E

E-IV — IV/IO access and start **Isotonic IVF bolus** — E-IV

Symptomatic Arrhythmia?

Yes

12 34 — This sequence below is to be administered in this order.

E — Continuous **Albuterol,** SVN — E

E-IV — **Isotonic IVF** Bolus 500-1000 cc — E-IV

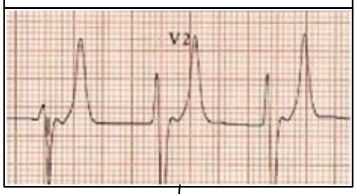
P — **Calcium Chloride** 1000 mg IV over 2-5 min or as a drip — P

Flush IV line, min 25 mL after administration of Calcium.

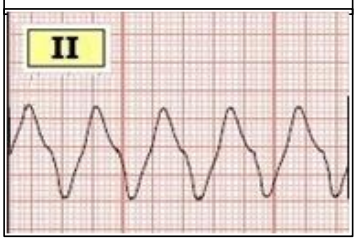
P — **Sodium Bicarbonate** 1 mEq/kg IV/IO — P

P — **Furosemide** 1mg/ KG to max 120mg IV — P

Peaked T, Loss of P Waves



IVCD Sine Wave VT



IVCD Sine Wave Bradyasystolic

No

E — Consider **Albuterol 2.5 mg** SVN — E

E-IV — Consider **Isotonic IVF** — E-IV

If tachycardiac, refer to WCT Pg 30

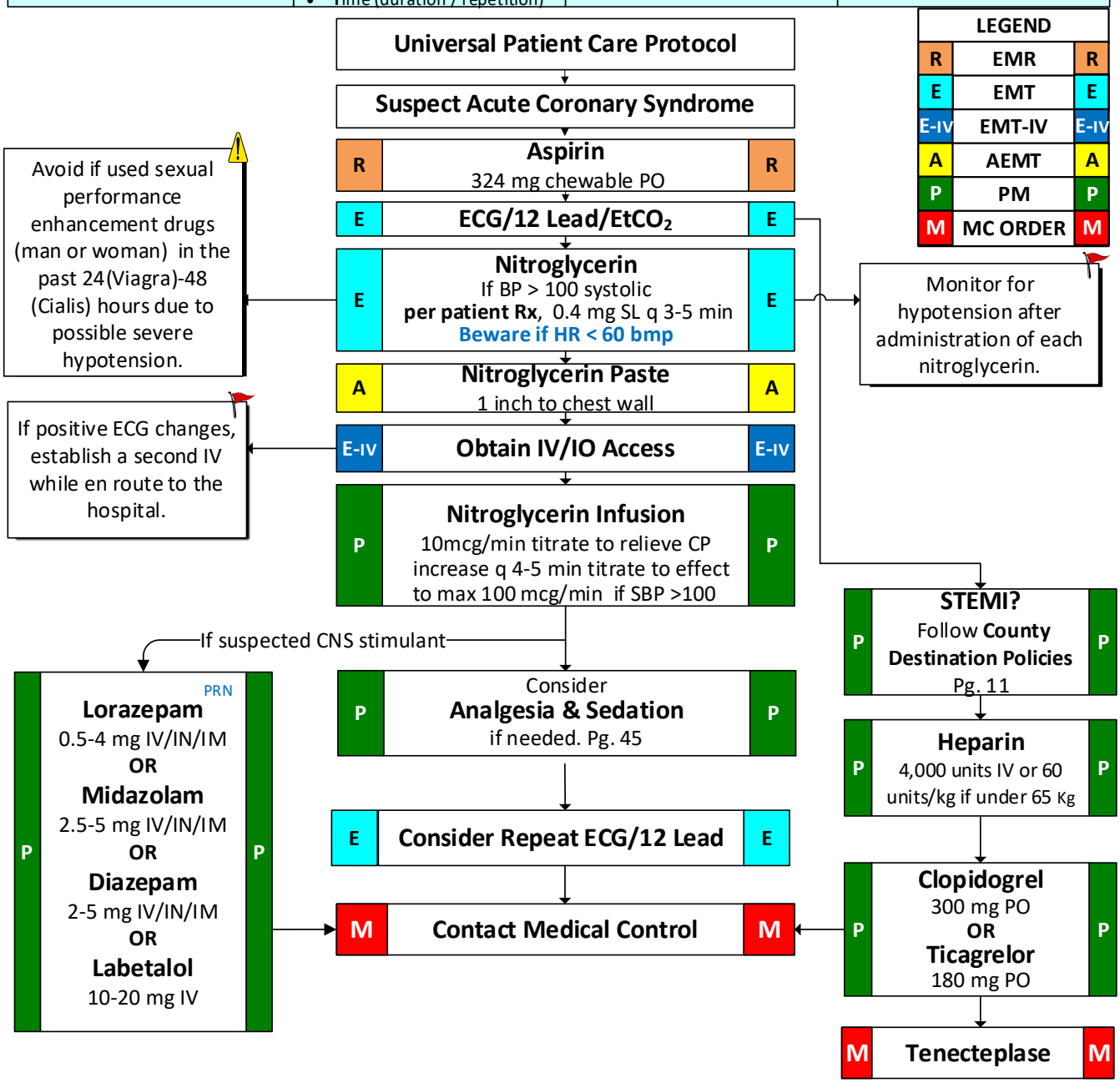
P — Consider **Furosemide** 1mg/kg to max 120mg IV — P

M — **Contact Medical Control** — M

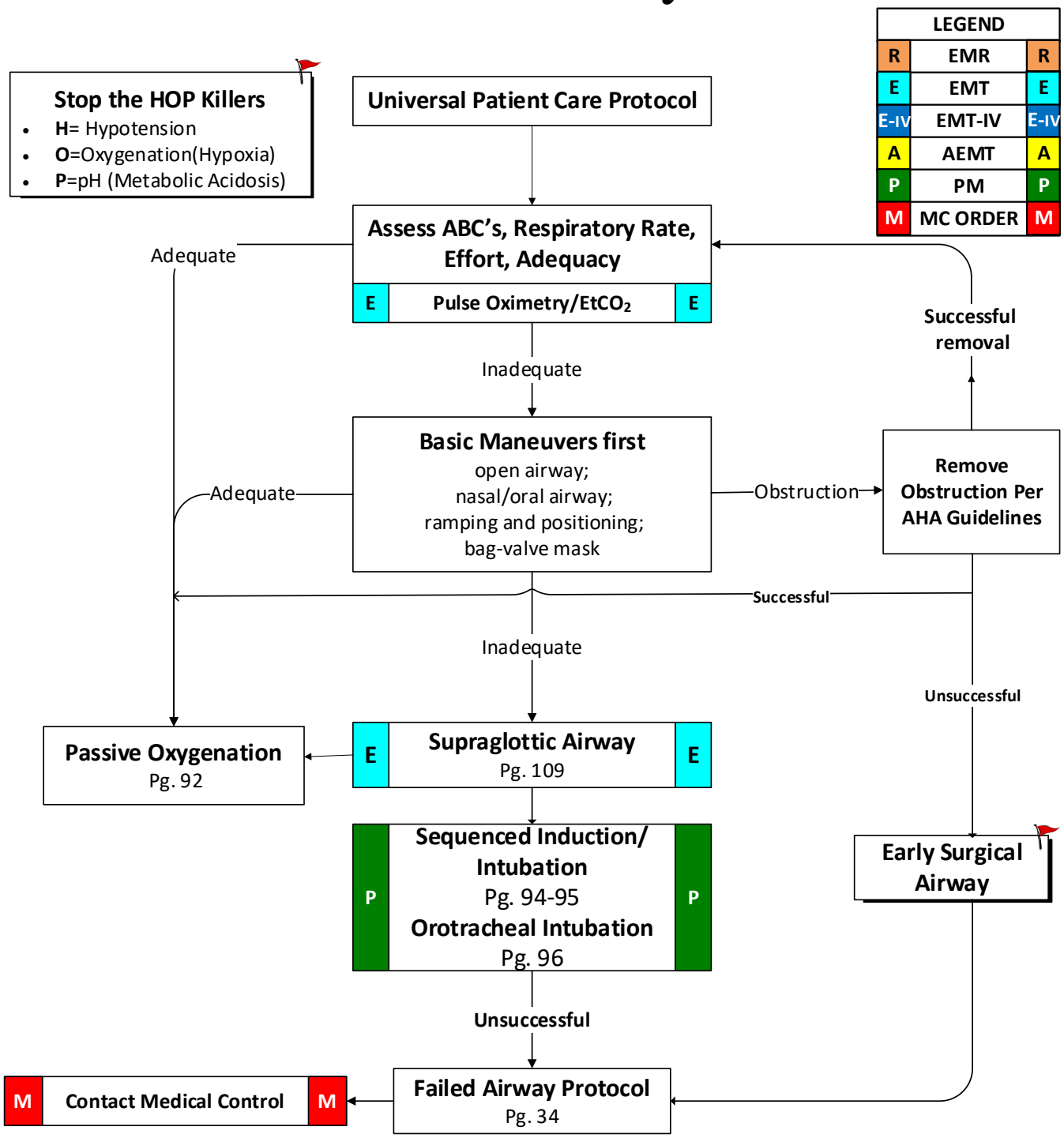
Chest Pain/Acute Coronary Syndrome

ALS evaluation and/ or transport if:

Cardiac Risk Factors:	History:	Signs/Symptoms:	Differential:
• Previous MI / Known Cardiac disease • Hypertension • Diabetes • Smoking tobacco use • Family History • High Cholesterol • Hyperlipidemia	• **Viagra, Cialis, Levitra** (Male or Female) • **O**nset • **P**alliation / **P**rovocation • **Q**uality (crampy, constant, sharp, dull, etc.) • **R**egion / **R**adiation / **R**eferred • **S**everity (1-10) • **T**ime (duration / repetition)	• CP (pain, pressure, aching, tightness) • Radiation of pain • Pale, diaphoresis • Shortness of breath • Nausea, vomiting, dizziness • Abnormal vital signs	• Aortic dissection or aneurysm • Trauma vs. Medical • Pericarditis • Pulmonary embolism • Asthma / COPD • Pneumothorax • GE reflux or Hiatal hernia • Esophageal spasm • Chest wall injury or pain • Pleural pain



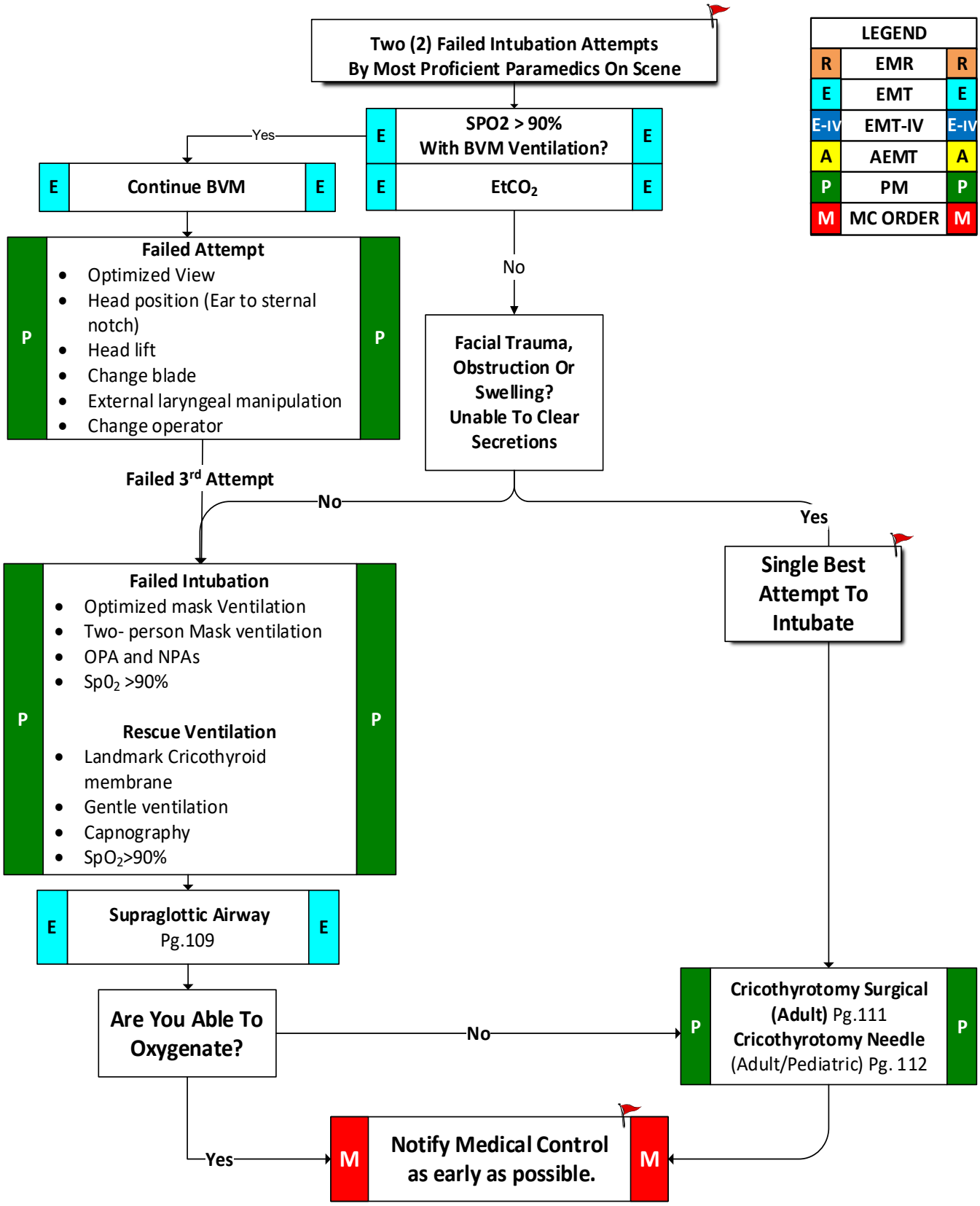
Adult Airway



Notes:

- **Capnometry or capnography and pulse oximetry is mandatory with all methods of intubation. Document results.**
- For this protocol, adult is defined any person who does not fit the length based tape.
- **EMT's must have SGA training to use Supraglottic Airway Adjuncts, with endorsement.**
- Maintain C-spine immobilization for patients with suspected spinal injury.
- Paramedics should consider Supraglottic Airway Adjuncts.
- Reconfirm ETT placement each time patient is moved.

Adult Failed Airway



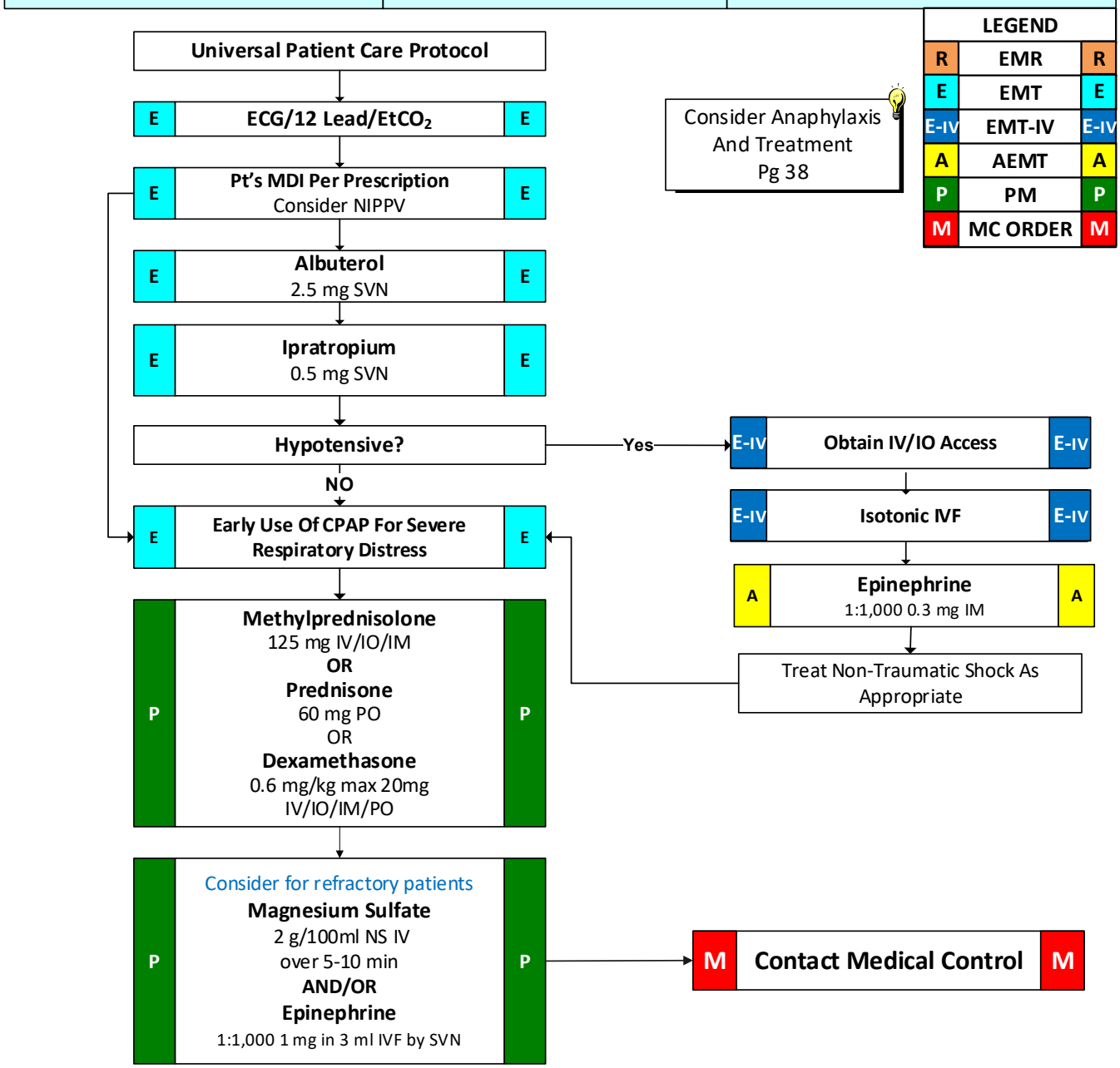
Reactive Airway Disease

ALS evaluation and/or transport if available:

History:
- Asthma
- COPD- emphysema, chronic bronchitis
- Congestive heart failure
- Home treatment (O_2, nebulizer)
- Medications (theophylline, steroids, inhalers)
- Toxic exposure
- Smoking
- **No improvement with initial treatment**

Signs and Symptoms:
- Shortness of breath
- **Pursed-lip breathing**
- **Decreased ability to speak**
- **Increased respiratory rate and effort**
- Wheezing, rhonchi, rales
- **Use of accessory muscles**
- Fever, cough
- Tachycardia
- **Suspected PE**

Differential:
- Asthma
- Anaphylaxis
- Aspiration
- COPD (Emphysema, Bronchitis)
- Pleural effusion
- Pneumonia
- Pulmonary Embolus
- Pneumothorax
- Cardiac (MI or CHF)
- Pericardial Tamponade
- Hyperventilation
- Inhaled Toxin (Carbon monoxide, etc.)



Pulmonary Edema

ALS evaluation and/or transport if available

History:
- Congestive heart failure
- Past medical history
- Medications (Digoxin, Lasix, HCTZ)
- Viagra, Levitra, Cialis
- Cardiac history- past myocardial infarction

Signs/Symptoms:
- Respiratory distress, rales
- Apprehension, orthopnea
- Jugular vein distention
- Pink, frothy sputum
- Peripheral edema, diaphoresis
- Hypotension, shock
- Chest pain

Differential:
- Myocardial infarction
- Congestive heart failure
- Asthma
- Anaphylaxis
- Aspiration
- COPD
- Pleural effusion
- Pneumonia
- Pulmonary Embolus
- Pericardial tamponade

Mild-Moderate- able to speak sentences, crackles base only, O_2 sat ≥ 92%
Severe- respiratory distress, crackles throughout, O2 sat < 92%
Near Death- Decreased LOC, cyanosis, dropping sats, ineffective respiratory drive

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

E — **Early Use Of CPAP For Severe Respiratory Distress** — E

E-IV — **Obtain IV/IO Access** — E-IV

E — **ECG/12 Lead/EtCO2** — E

P — Unable to tolerate NIPPV, consider Sedation as adjunct Pg.45 — P

Fever or Purulent Sputum?

Yes → **Consider Sepsis** Pg 22 And Support via **Adult Airway** Pg. 33

No →

Nitroglycerin
Indicated of SBP >100

E — 0.4 mg tablet/spray SL **per patient Rx**, may repeat q 5 min. — E

A — **Nitroglycerin Paste** 1 inch to chest wall — A

P — Consider **Nitroglycerin IV drip** Hold if SBP <100 **Nitroglycerin Paste** 1-2' to chest wall May repeat q 1 min. — P

P — Consider for transports longer than 30 mins. PRN **Furosemide** 1mg per KG to max 120mg IV — P

P — For CP refractory to nitroglycerin **Analgesia & Sedation** Pg. 45 — P

M — **Contact Medical Control** — M

If HR >130 & Pulmonary Edema, go to narrow or wide complex tachycardia for rate control. Pg 29-30

Avoid if used sexual performance enhancement drugs (man or woman) in the past 24(Viagra)-48 (Cialis) hours due to possible severe hypotension.

P — **SCAPE**
- Rapid onset of severe dyspnea
- Hypoxemia
- Hypertension(SBP>160 mm and or MAP >120mm)
- Diffuse Rales

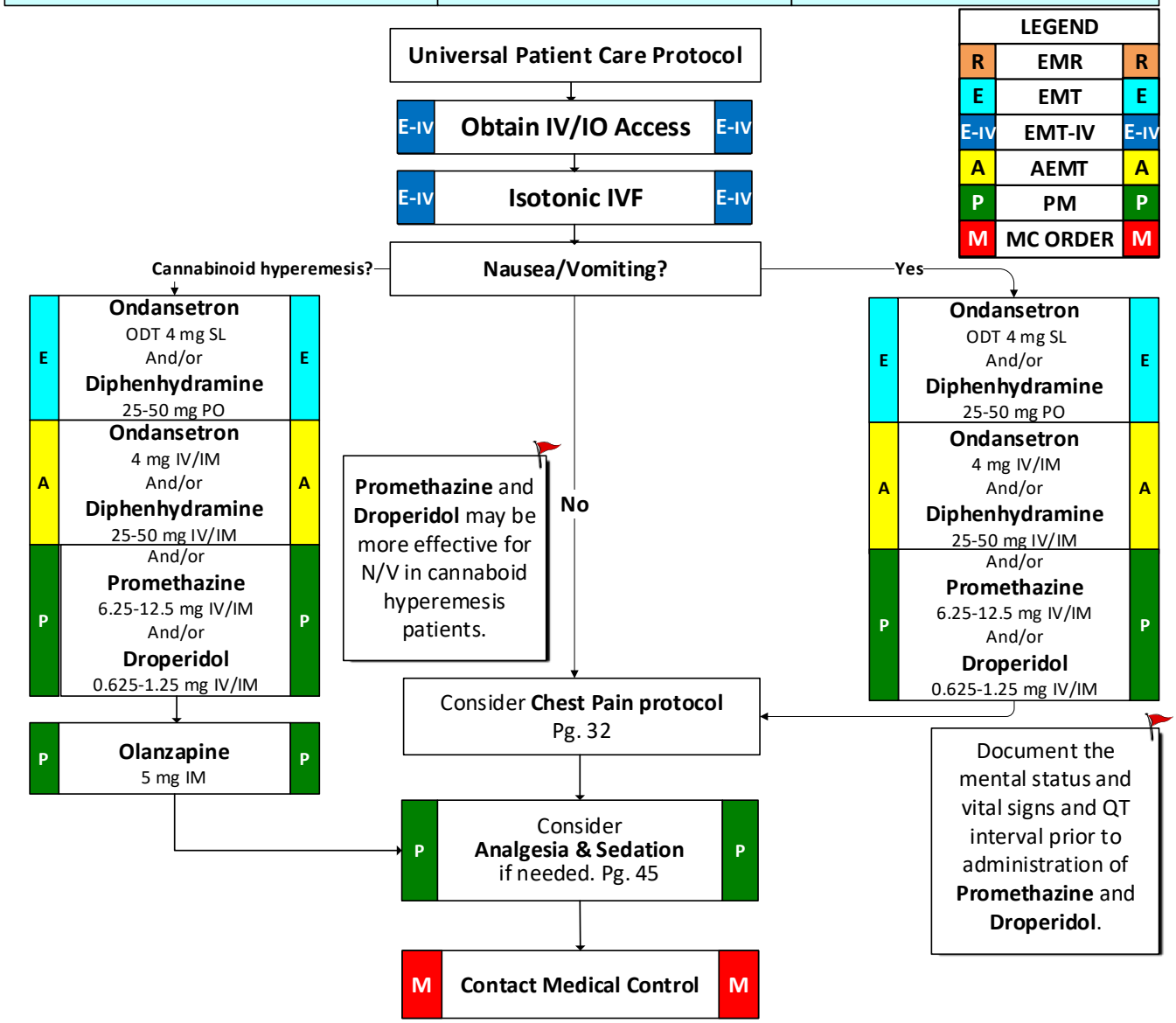
Nitroglycerin IV drip

400- 800 mcg per min x 2 -3mins, then 100mcg per min, titrating up until effective.
Once episode breaks, wean down nitroglycerin. — P

Abdominal Pain

ALS evaluation and/or transport if available:

History:	Signs/Symptoms:	Differential:
• Age • Past medical / surgical history • Medications • Onset • Palliation / Provocation • Quality (crampy, constant, sharp, dull, etc.) • Region / Radiation / Referred • Severity (1-10) • Time (duration / repetition) • Fever • Last meal eaten • Last bowel movement / emesis • Menstrual history (pregnancy)	• Pain (location / migration) • Tenderness • Nausea • Vomiting • Diarrhea • Dysuria • Constipation • Vaginal bleeding • Pregnancy • Pulsating mass • Chest pain • Shortness of breath • Abnormal vital signs • Blood in emesis or from rectum	• AAA • Ectopic pregnancy • Bowel obstruction • Cardiac • Pregnancy (ectopic?) • **GI bleed** • Appendicitis • Cholecystitis • Pancreatitis • Kidney stones • DKA • Cannabinoid Hyperemesis • Exposure/Anaphylaxis



Allergic Reaction/Anaphylaxis

ALS evaluation and/or transport if available:

History:
- Onset and Location
- New clothing, soap, detergent
- Insect bite/sting
- Ingestion
- ACE INHIBITOR

Signs/Symptoms:
- Anxiety
- Nausea / Vomiting
- Altered Mental Status
- Pale Diaphoresis
- Hypotension
- Rash
- Hives
- Angioedema
- Shortness of breath

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Remove Stinger And Decontaminate Clothing

The shorter the onset from contact to symptoms, the more severe the reaction.

Hives/ Rash only
No respiratory component

E — May assist patient with own meds – Benadryl, Allegra™, Claritin™, Dramamine™, Pepcid™, Zantac™, Tagamet™ (Diphenhydramine, cetirizine, fexofenadine, loratadine, dimenhydrinate) — E

E — **Diphenhydramine** 25-50 mg PO — E

Reassess patient

Two or more system involvement

R — **Epinephrine** 1:1000 0.1 – 0.3 mg Auto-injector IM — R

E — **Epinephrine** 1:1000 0.1 – 0.3 mg IM Repeat Epinephrine PRN — E

E — **Albuterol** 2.5 mg SVN — E

E — **Ipratropium** 0.5 mg SVN — E

E — **ECG /Consider 12 Lead** — E

E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Isotonic IVF** — E-IV

A — **Diphenhydramine** 25-50 mg PO/IM/IV/IO — A

A — **Famotidine** 20 mg IV/IO — A

P — **Methylprednisolone** 125 mg IV/IM/IO **OR** **Prednisone** 60 mg PO OR **Dexamethasone** 0.6 mg/kg max 20mg IV/IO/IM/PO — P

P — **Epinephrine** PRN 1:1,000 1 mg 3ml NS SVN — P

P — **Consider anti-emetic** — P

Be watchful for secondary allergic response, after apparent resolution of initial S/S. Continue to be monitored for 30-60 minutes.

Unresponsive / impending respiratory arrest

P — **Epinephrine** 1:10,000 1 mcg /kg IVP q 3-5 min — P

P — **RSI And Endotracheal Intubation** — P

P — Unable To Intubate And Oxygenate? Go To **Cricothyrotomy** Pg 111-112 — P

P — **Epinephrine** titrate drip 2-10 mcg/ min IV/IO to MAP >65 — P

M — **Contact Medical Control** — M

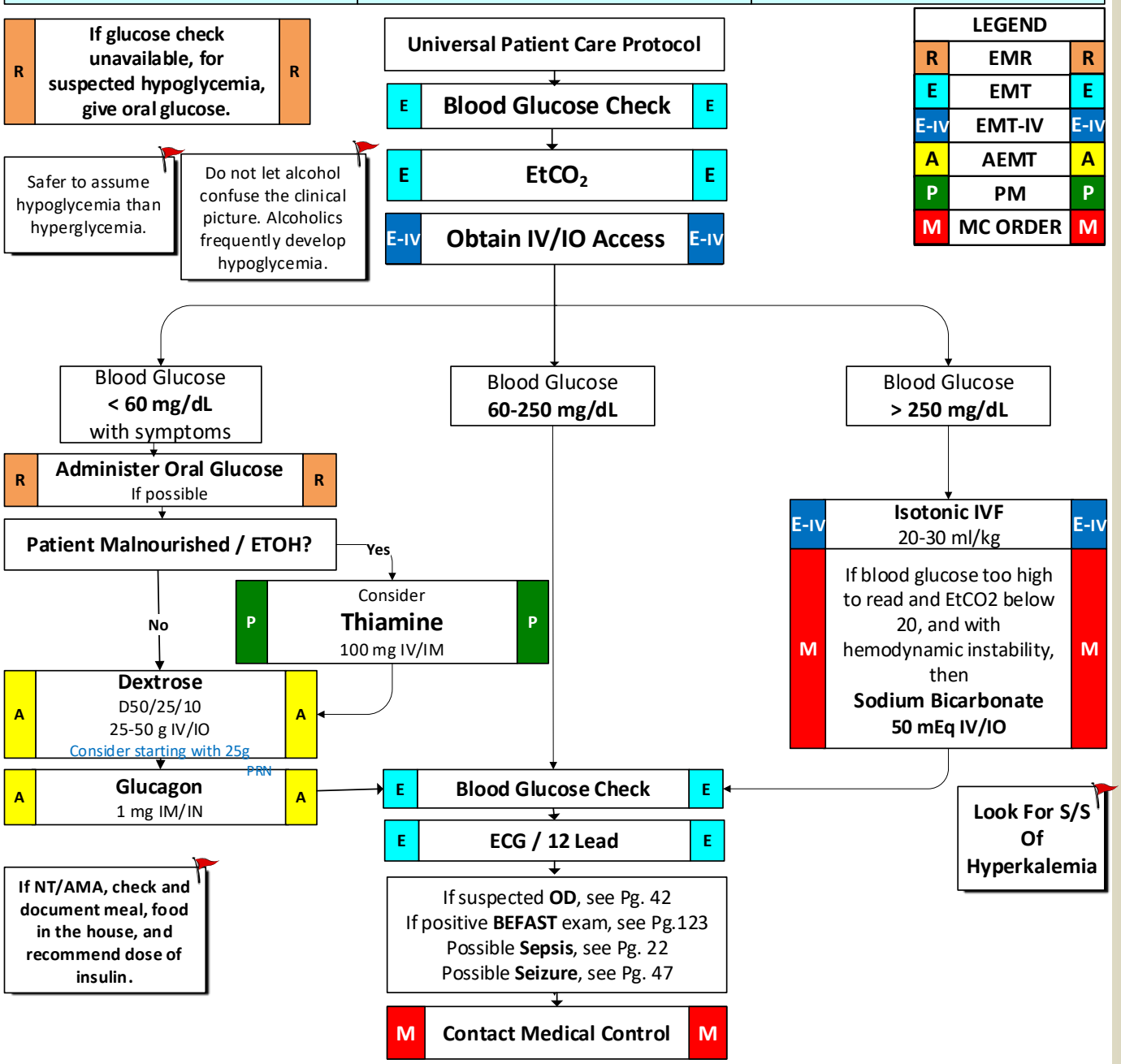
Diabetic Emergency

ALS evaluation and/or transport if available:

History:
- Known diabetic, medic alert tag
- Drugs, drug paraphernalia
- Report of illicit drug use or toxic ingestion
- Past medical history
- History of trauma
- GI History
- Syncope
- Last meal
- Medication Dosing

Signs/Symptoms:
- Decreased mental status
- Change in baseline mental status
- Bizarre behavior
- Hypoglycemia (cool, diaphoretic skin)
- Hyperglycemia (warm, dry skin; fruity breath; Kussmal resps; signs of dehydration)
- Diabetic
- Syncope
- Abnormal Vital signs persists
- Shortness of breath

Differential:
- **A:** Alcohol/ Acidosis
- **E:** Endocrine/ Epilepsy/ Electrolytes/ Encephalopathy
- **I:** Insulin
- **O:** Opiates/ Overdose/ Oxygen
- **U:** Uremia/Underdose
- **T:** Trauma
- **I:** Infection
- **P:** Poisoning/ Psychosis/ Pharmacology
- **S:** Stroke/ Seizure/ Syncope/Sepsis



Altered Mental Status

ALS evaluation/and or transport if available:

History:	Signs/Symptoms:	Differential:
• Known diabetic, medic alert tag • Drugs, drug paraphernalia • Report of illicit drug use or toxic ingestion • Past medical history • Medications • History of trauma • GI History • Syncope	• Decreased mental status • Change in baseline mental status • Bizarre behavior • Hypoglycemia (cool, diaphoretic skin) • Hyperglycemia (warm, dry skin; fruity breath; Kussmal resps; signs of dehydration) • Diabetic • Syncope • Abnormal Vital signs persist • Shortness of breath	**A:** Alcohol/ Acidosis **E:** Endocrine/ Epilepsy/ Electrolytes/ Encephalopathy **I:** Insulin **O:** Opiates/ Overdose/ Oxygen **U:** Uremia/Underdose **T:** Trauma **I:** Infection **P:** Poisoning/ Psychosis/ Pharmacology **S:** Stroke/ Seizure/ Syncope/Sepsis

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

E | **Blood Glucose Check** | E

↓

E | **ECG/12 Lead/EtCO$_2$** | E

↓

E-IV | **Obtain IV/IO Access** | E-IV

↓

TRAUMA Pg. 59

OVERDOSE Pg. 42

STROKE Pg.48

SEPSIS Pg. 22

DIABETIC EMERGENCIES Pg. 39

Alcoholics may always have other etiologies or pathologies at the same time as ETOH use.

Safer to assume hypoglycemia than hyperglycemia.

Hemodynamic Instability and/or suspected acidosis

↓

M | If blood glucose too high to read and/or EtCO$_2$ below 20, and with HD instability, then **Sodium Bicarbonate 50 mEq IV/IO** | M

↓

M | **Contact Medical Control** | M

General Illness

Fever/Nausea/Vomiting/Unknown

ALS evaluation/and or transport if available:

History:
- Age
- Duration
- Past medical history
- Last oral intake
- Medications
- Immunocompromised
- Bloody emesis/diarrhea
- Menstrual history
- Past surgical history
- Environmental exposure/travel history

Signs/Symptoms:
- Warm
- Sweaty
- Flushed
- Pain
- Radiation
- Abdominal distension
- Chills/Rigors
- Constipation
- Diarrhea
- Persistent Abnormal Vital signs
- Consistent ALOC
- Shortness of Breath/tachypnea

Differential:
- Infections / Sepsis
- Cancer / Tumors / Lymphomas
- GI or Renal disorders
- Heat Stroke
- Medication or drug reaction
- Vasculitis
- Hyperthyroid
- CNS disease/trauma
- Myocardial infarction
- Diabetic ketoacidosis
- Gynecologic disease (ovarian cyst, PID)
- Electrolyte abnormalities
- Pregnancy
- Psychologic

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

R — **Sepsis** Screening Tool Pg. 22 — R

R — **BEFAST Assessment** Pg. 123 — R

E — **Check Blood Glucose** — E

E — **ECG /12 Lead/EtCO$_2$** — E

E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Isotonic IVF** — E-IV

Nausea/Vomiting?

Consider → E — **Diphenhydramine** 25-50 mg PO **OR** **Ondansetron** 4 mg SL — E

A — **Ondansetron** 4-8 mg IV/IM/SL **And/or** **Diphenhydramine** 25-50 mg IV/IM/PO — A

P — **Promethazine** 6.25-12.5 mg IV/IM **And/or** **Droperidol** 0.625-1.25mg IV/IM/IO — P

Document the mental status and vital signs and QT interval prior to administration of **Promethazine** and **Droperidol**.

No

Fever?

Yes → E — **Acetaminophen** 500- 1000 mg PO — E

P — **Acetaminophen** 15 mg/kg IV over 15 mins up to 1,000 mg — P

No → M — **Contact Medical Control** — M

No

Individuals' normal body temperatures differ, with 98.6°F (37°C) being average. Generally a temperature over 100.4° F (38°C) is considered a fever.

Overdose/Poisoning

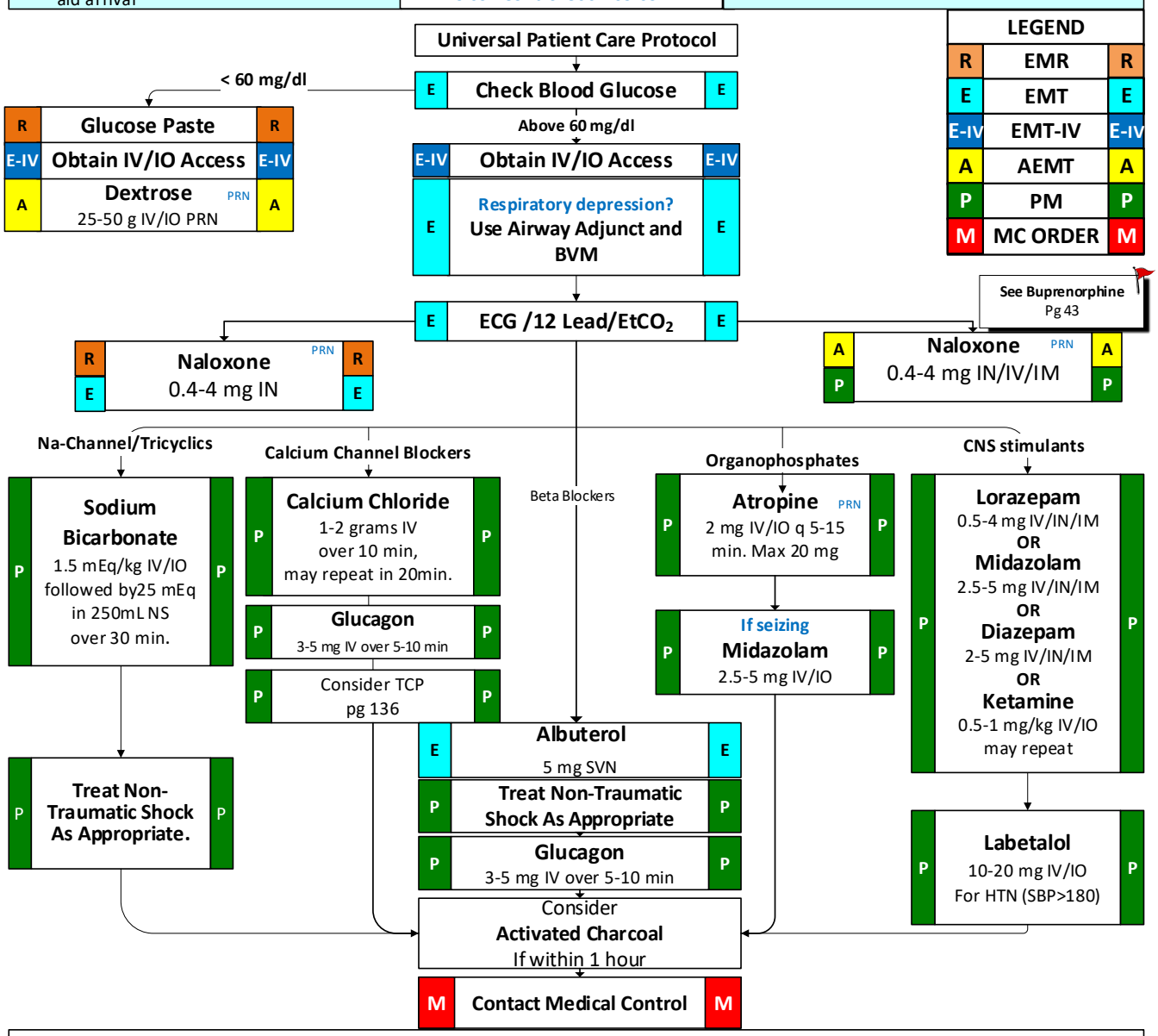
ALS evaluation/and or transport if available:

History:
- Ingestion or suspected ingestion of a potentially toxic substance
- Substance ingested, route, quantity
- Time of ingestion
- Reason (suicidal, accidental, criminal)
- Available medications in home
- Past medical history, medications
- Home remedies given to patient prior to aid arrival

Signs/Symptoms:
- Mental status changes
- Hypotension / hypertension
- Decreased respiratory rate
- Tachycardia, dysrhythmias
- Seizures

Poison Control 800-709-0911

Differential:
- Tricyclic antidepressants (TCAs)
- Acetaminophen (Tylenol)
- Depressants
- Stimulants
- Anticholinergic
- Cardiac medications
- Solvents, Alcohols, Cleaning agents
- Insecticides (organophosphates)

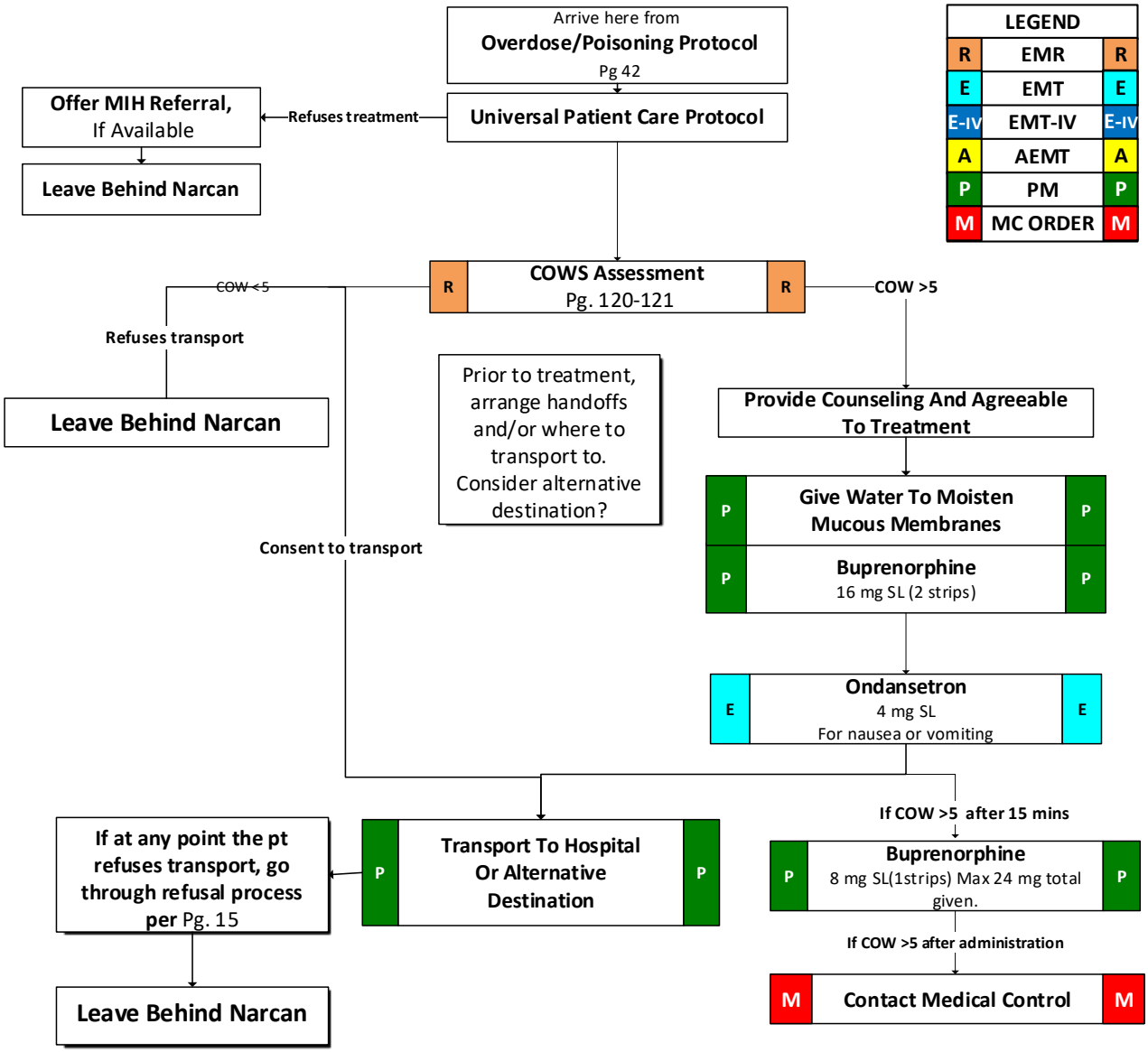


- Do not rely on patient history of ingestion, especially in suicide attempts.
- Bring bottles, contents, emesis to ED.
- Treat medication overdoses if symptomatic including ECG changes SPB <100, ALOC, HR >100
- Document case number from Poison Control on the PCR, if applicable.
- Recommendations from Poison Control Center, verify with Medical Control

Opioid Withdrawal/ Buprenorphine

ALS evaluation/and or transport if available:

History:	Signs/Symptoms:	Exclusion
• Severe withdrawal symptoms with a high rate of repeat overdose w/in 24 hrs of first overdose.	• Tachycardia • Diaphoresis • Restlessness and/or agitation • Dilated Pupils • Rhinorrhea or lacrimation • Nausea, Vomiting, diarrhea, • Piloerections • Yawning • Stomach/abdominal cramps • Body aches • Achy bones/joints • Restlessness • Hot and cold • Nasal Congestion	• Under 13 years of age • Altered mental status and unable to give consent • Severe medical illness (sepsis, respiratory distress) • No clinical opioid use disorder symptoms • Unable to comprehend potential risks and benefits for any reason • Not a candidate for buprenorphine for treatment for any reason • Use of methadone in the last 48 hours



Alcohol Withdrawal

ALS evaluation/and or transport if available:

Inclusion:

- Tremors
- Sweating
- Tachycardia
- Elevated Blood Pressure
- Hallucinations
- Seizures
- Agitation/Anxiety
- Altered Mental Status
- Tongue Disticulations (Wormy Tongue)

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

E | **Check Blood Glucose** | E

↓

E | **ECG/12 Lead/$EtCO_2$** | E

↓

E-IV | **Obtain IV/IO Access** | E-IV

↓

E-IV | **Isotonic IVF**
20-30 ml/kg | E-IV

↓

Seizures? Agitation?

↓

P | **Lorazepam**
0.5-2 mg IV/IN/IM
OR
Midazolam
2.5-5 mg IV/IN/IM
OR
Diazepam
2-5 mg IV/IN/IM | P

REASSESS

↓

P | **Thiamine**
100-200 mg IM/Slow IV | P

↓

M | **Contact Medical Control** | M

Analgesia & Sedation

ALS transport if patients are given an opiate analgesia or sedation.

Inclusion Criteria:	Signs/Symptoms:	Exclusion Criteria:
• Patients who are experiencing pain • Prior to painful procedure • Anxiety • Need for sedation	**O, P, Q, R, S, T** • **O**nset • **P**alliation/**P**osition/**P**rovocation • **Q**uality/**Q**uantity • **R**adiation/**R**eferral/**R**egion • **S**everity (0-10) • **T**iming (duration/repetition)	• Pregnancy with active labor • Patients with care plans that prohibit use of parentenal analgesics by EMS (Relative) • Patients with chronic pain who aren't part of a hospice/ palliative care plan AND who are not experiencing an acute injury or illness resulting in pain (Relative)

The goal of pain management is patient comfort while maintaining alertness and the ability to communicate effectively with the medical care team.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

R — Provide oxygen as appropriate to maintain an oxygen saturation of 94-98% or as indicated by clinical presentation — R

R — Ice/cool packs and positioning as appropriate to manage pain — R

E-IV — **Obtain IV/IO Access** — E-IV

E — **ECG/EtCO$_2$** Suctioning and Monitoring — E

Moderate to severe discomfort

E — **Nitrous Oxide** if available w/ specialized training — E
Contraindicated in pregnancy

E — **Acetaminophen** 500-1000 mg PO — E

A — **Acetaminophen** 15 mg/kg IV, max adult dose 1 gram — A
OR
Ketorolac 30 mg IM or 15 mg IV in non-pregnant patients

P — **Fentanyl** 1 mcg/kg IV/IM/IO/IN, repeat PRN q 5 min max initial dose 100 mcg, max cumulative dose 3 mcg/kg — P
OR
Morphine 0.1 mg/kg IM/IV/IO, repeat PRN q 5 min max initial dose of 15 mg IM or 10 mg IV, max cumulative dose 0.3 mg/kg
OR
Hydromorphone 0.5 mg IV/IO/IM q 5 min to max of 4 mg
OR
Ketamine 0.5 mg/kg IM or 0.1-0.3 mg/kg IV, Repeat PRN q 5 min max initial dose of 50 mg IM/25 mg IV, max cumulative dose 1.5 mg/kg OR drip 0.5 to 2 mg/kg/hr

Pts who receive acetaminophen, ketorolac or nitrous oxide by ALS can be transported by BLS.

See indications in formulary. Consider a lower dose especially in the elderly.

Anxiety / Sedation

P — **Lorazepam** 0.5 -2 mg IV/IO/IN/IM — P
OR
Midazolam 2.5-5 mg IV/IO/IN/IM
OR
Diazepam 2-5 mg IV/IO/IN/IM
OR
Ketamine 0.5 to 2 mg/kg/hr
OR
Etomidate 0.1 mg/kg IV/IO

Nausea?

E — **Ondansetron** 4 mg SL — E

A — **Ondansetron** 4-8mg IV/IM/SL Max dose of 32 mg — A

M — **Contact Medical Control** — M

Behavioral Emergencies/ Acute Behavioral Disturbance

ALS transport if patients given a sedating medication.

History:
- Situational crisis
- Psychiatric illness
- Medications
- Injury to self or threats to others
- Medic alert tag
- Substance abuse / overdose
- Diabetes

Signs/Symptoms:
- Anxiety, agitation, confusion
- Affect change, hallucinations
- Delusional thoughts, bizarre behavior
- Combative violent
- Expression of suicidal / homicidal thoughts

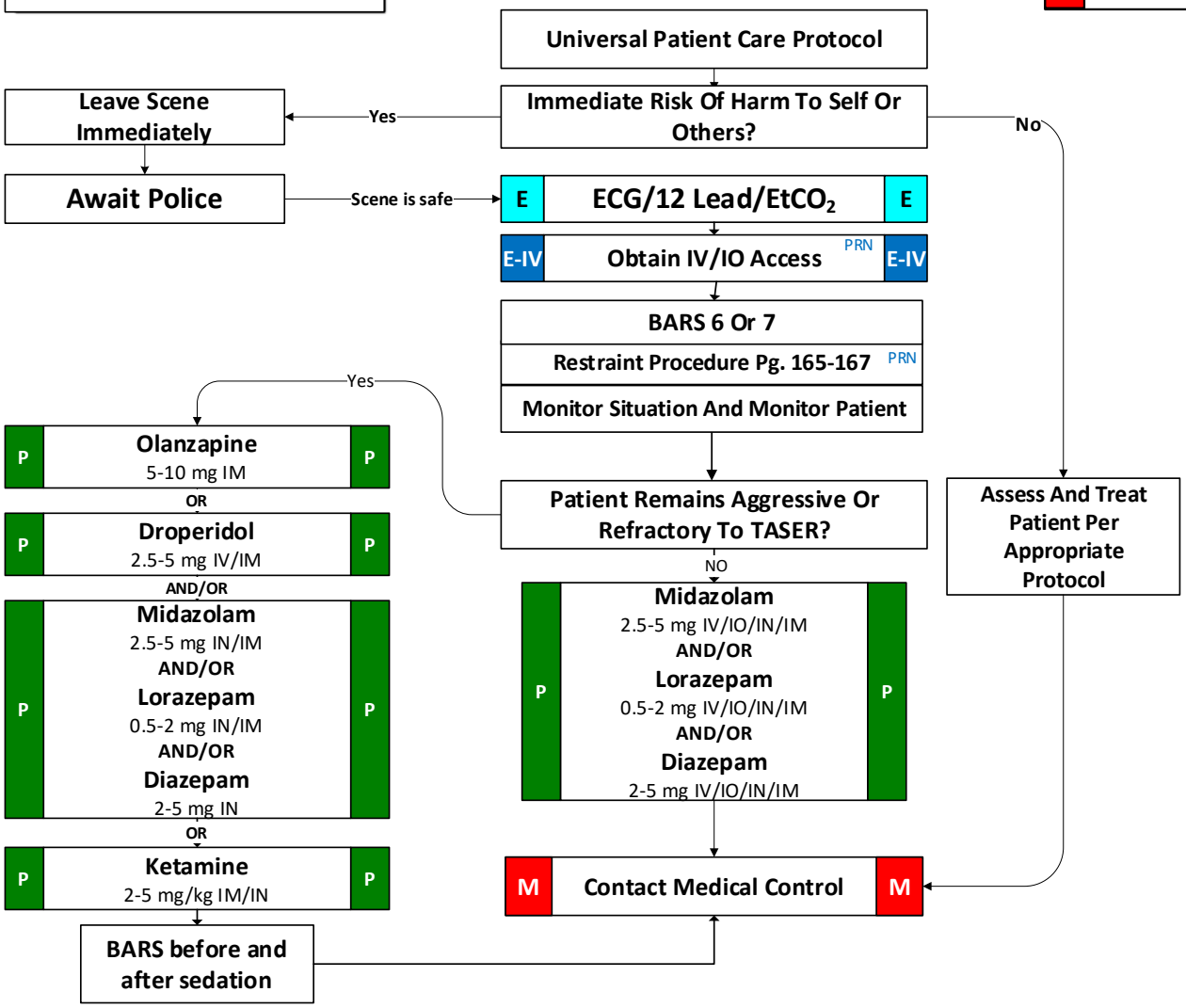
Differential:
- Alcohol Intoxication
- Toxin / Substance abuse
- Medication effect / overdose
- Withdrawal syndromes
- Sepsis / Meningitis
- See Altered Mental Status differential

- Be sure to consider all possible medical/trauma causes for behavior.
- Do not overlook the possibility of associated domestic violence or child abuse.
- Doses may be repeated for the immediate safety of the provider or the patient.

BARS Scoring

1– Difficult or unable to arouse
2– Asleep but responds normally to verbal or physical contact
3– Drowsy, appears sedated
4– Quiet and awake (normal level of activity)
5– Signs of overt verbal or physical activity, but calms with instructions
6– Extremely or continuously active, not requiring restraint
7– Violent, requires restraint

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M



Seizure

ALS transport if patients given a sedating medication and / or:

History:	Signs/Symptoms:	Differential:
• Prior history of seizures • Seizure medications • Reported seizure activity • History of recent head trauma • Congenital abnormality • Pregnancy (see Pregnancy Induced Hypertension - Eclampsia) • Medical alert tag • If given sedation medication by EMS • Overdose	• Observed seizure activity • Altered mental status • Tonic / colonic activity • Status epilepticus • Incontinence • Mouth trauma • First time Seizure	• Arrhythmia • Hypoxia • Acidosis • Hypo-/Hyperkalemia • Hypoglycemia • Hypothermia • Toxins • Cardiac Arrest • Sepsis • Delirium Tremens • Trauma

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

Position Patient On Side To Prevent Aspiration

↓

Spinal Motion Restriction Or Immobilization As Indicated

↓

Blood Glucose **<60mg/dL?**

Yes → **Diabetic Emergencies** Pg. 39

↓

E-IV **Obtain IV/IO Access** E-IV

↓

Active Seizure?

Yes, Pregnant or Post Partum Patient → **Eclampsia/ Pre-eclampsia** Pg. 49

Yes →

E *Assist with Patient's own rescue med. PR or IN E

↓

P **Midazolam** 2.5-10 mg IV/IO/IN/IM **OR** **Lorazepam** 0.5-2 mg IV/IO/IN/IM **OR** **Diazepam** 2-10 mg IV/IO/IN P

No ↓

Assess For Cause Of Seizure

Treat Per Appropriate Protocol

↓

Repeat Seizures?

Yes →

P Status Seizure? **Ketamine** 2mg/kg IV/IO can re-bolus 1 mg/kg IV/IO P

↓

M **Contact Medical Control** M

If RSI to control airway and patient is still seizing put tourniquet on **NON** IV arm. Can remove tourniquet after paralytic agent has taken effect. Can monitor for seizure in that arm now only.

Stroke

ALS evaluation and/or transport if available:

History:	Signs/Symptoms:	Differential:
• Previous CVA, TIA's • Previous cardiac / vascular surgery • Associated diseases: diabetes, hypertension, CAD • Atrial fibrillation • Medications (blood thinners) • History of trauma	• Altered mental status • Weakness / Paralysis • Blindness or other sensory loss • Aphasia / Dysarthria • Syncope • Vertigo / Dizziness • Vomiting • Headache • Seizures • Respiratory pattern change • Questionable airway • Abnormal vital signs	**A:** Alcohol / Acidosis **E:** Endocrine/ Epilepsy/ Electrolytes/ Encephalopathy **I:** Insulin **O:** Opiates/ Overdose/ Oxygen **U:** Uremia/Underdose **T:** Trauma **I:** Infection **P:** Poisoning/ Psychosis/ Pharmacology **S:** Stroke/ Seizure/ Syncope/Sepsis

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

E | **Blood Glucose** | E

→ <60 mg/dL → Treat hypoglycemia as appropriate → R

↓ > 60 mg/dL

R | **Stroke BEFAST Assessment** Pg. 123 | R

↓

E-IV | **Obtain IV/IO Access** | E-IV

↓

E | **Stroke Activation** Follow **County Destination Policies** Pg. 11 | E

Get phone number from family members for consent.

↓

P | **Labetalol** 10 mg IV/IO over 1-2 min for SBP > 180 And/or DBP > 105, **if in the thrombolytic window** May repeat once in 5 min. | P

↓

M | **Contact Medical Control** | M

Los Angeles Motor Scale (LAMS)

Category	Score	Description
Face	0	Both sides move normally
Face	1	One side is weak or flaccid
Arm	0	Both sides move normally
Arm	1	One side is weak
Arm	2	One side is flaccid/doesn't move
Grip	0	Both sides move normally
Grip	1	One side is weak
Grip	2	One side is flaccid/doesn't move
Total	0-5	

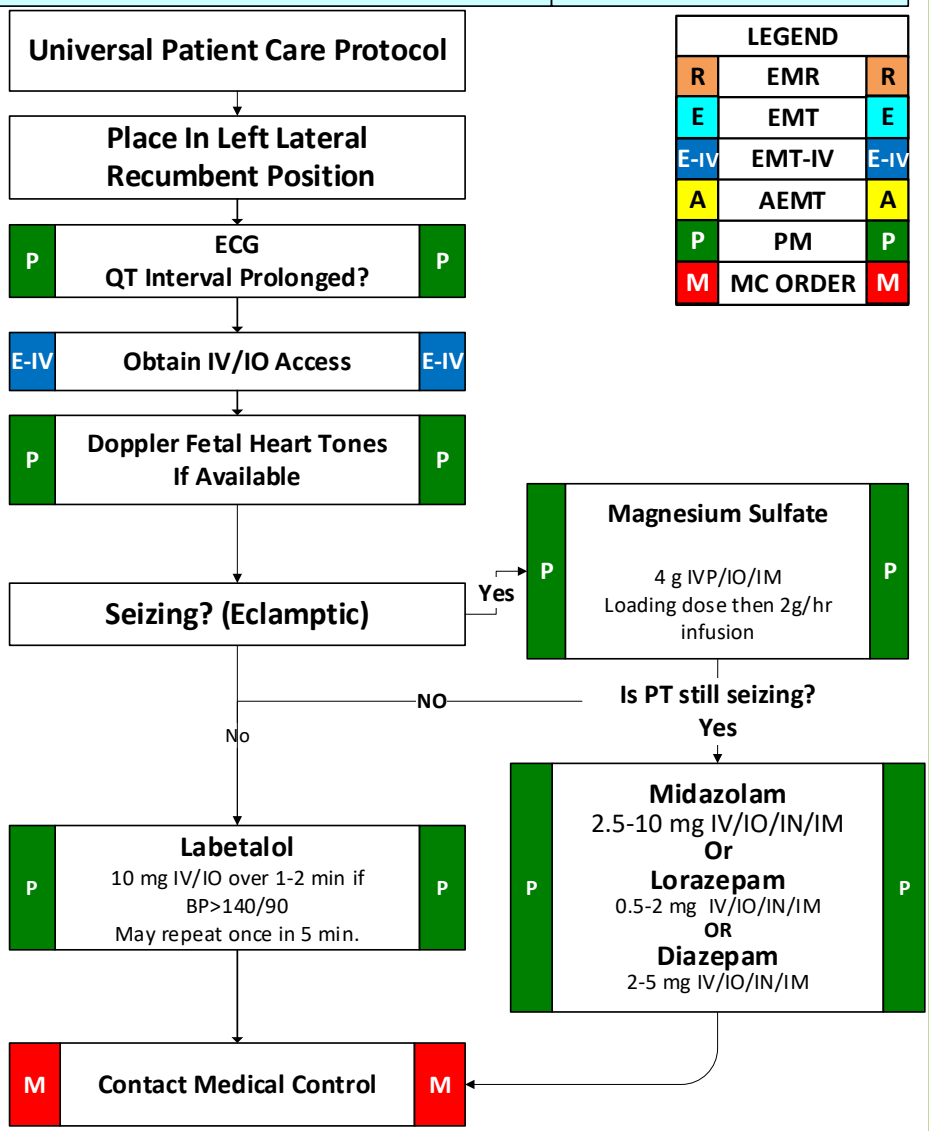
Signs Of Increased Intracranial Pressure
- Abnormal Vital Signs
- Sluggish Or Dilated Pupils
- Abnormal Breathing

Notes:
- Onset of symptoms is defined as the last witnessed time the patient was symptom free (i.e. awakening with stroke symptoms would be defined as an onset time of the previous night when patient was symptom free)
- Be alert for airway problems (swallowing difficulty, vomiting).
- Elevate head of bed to 30 degrees.

Eclampsia/Pre-eclampsia

ALS transport gently and quietly

History:	Signs/Symptoms:	Differential:
• Past medical history • Prenatal care • Medications/drugs • Familial incidence • Primigravida • Renal disease • Post Partum up to 6 wks	• Seizure • Hypertension • Tachycardia • Edema • Headache • Visual disturbance • Abdominal pain/RUQ pain • Amnesia and/or other change in mental status	• Hypertension • Multiple fetuses • Gestational diabetes • Microthrombi • Improper placental implantation



LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Notes:

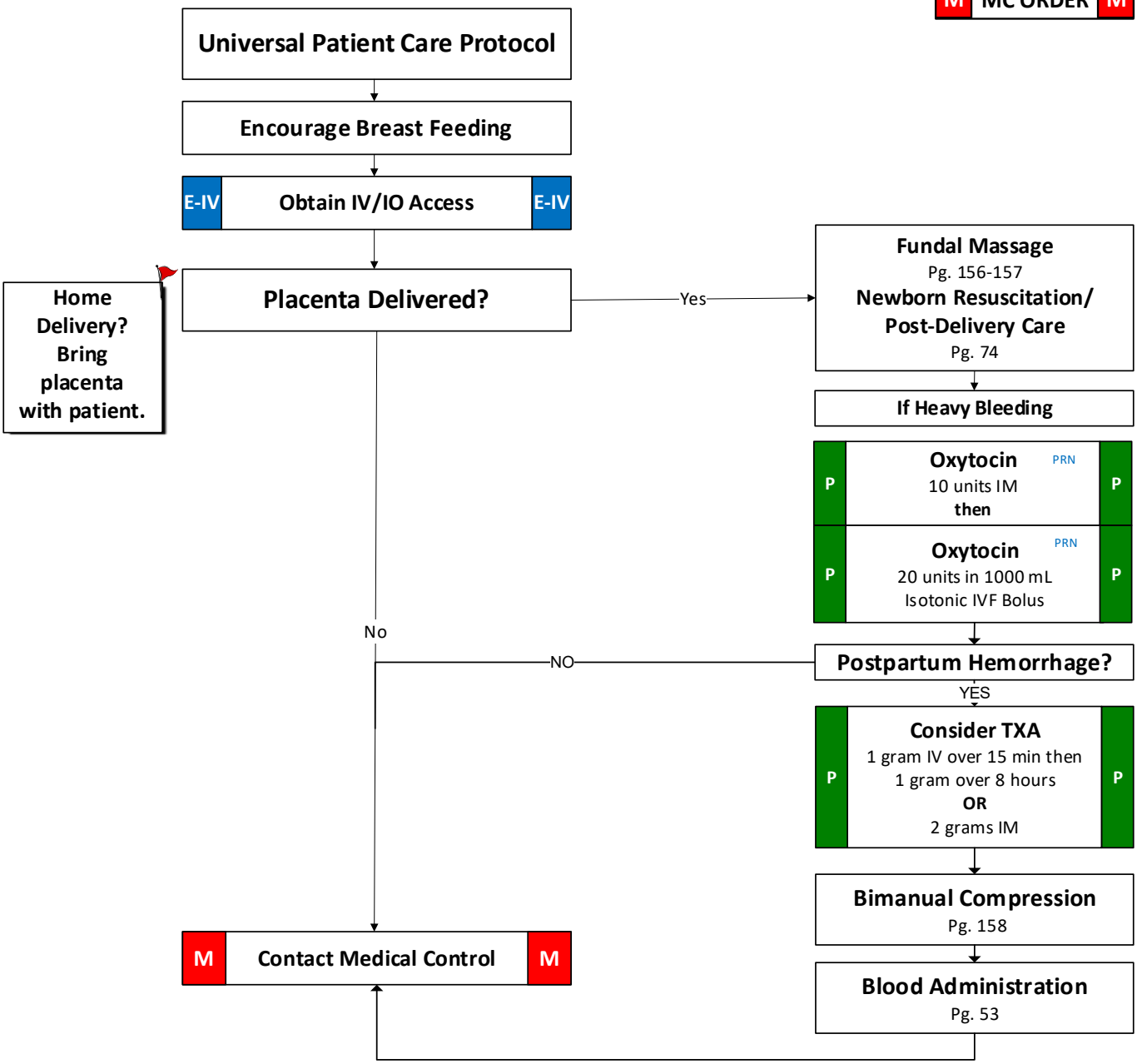
- In the setting of pregnancy, hypertension is defined as a BP greater than 140 systolic or greater than 90 diastolic, or a relative increase of 30 systolic and 20 diastolic from the patient's normal (pre-pregnancy) blood pressure.
- Maintain patient in a left lateral position to minimize risk of supine hypotensive syndrome.

Postpartum

ALS evaluation and/or transport if available:

History:	Signs/Symptoms:	Differential:
• Prenatal care? • Due date and gestational age • Multiple gestation (twins etc.) • Meconium • Delivery difficulties • Medications (maternal) • Maternal risk factors • Substance abuse	• Excess vaginal bleeding • Signs of shock	• Secretions • Infection • Hypovolemia • Hypoglycemia

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M



Hyper/Hypothermia

ALS transport if available:

History:	Signs/Symptoms:	Differential:
• Age • Exposure to increased/decreased temperatures and/or humidity • Past medical history/medications • Extreme exertion • Time and length of exposure • Poor PO intake	• Altered mental status or unconsciousness • Hot, dry or sweaty skin • Hypotension or shock • Seizure • Nausea • Fatigue and / or muscle cramping	• Fever (Infection) / Sepsis • Dehydration • Medications • Hyperthyroidism (Storm) • Delirium tremens (DT's) • Heat exhaustion • Heat stroke • Hypoglycemia • Poisoning/overdose

- With temperature less than 31° C (88° F) ventricular fibrillation is common cause of death. Handling patients gently may prevent this (rarely responds to defibrillation).
- Hypothermia may produce severe bradycardia.

Universal Patient Care Protocol

E	Blood Glucose Check	E
E	ECG/ 12 Lead/$EtCO_2$	E
E-IV	Obtain IV/IO Access	E-IV
E-IV	Isotonic IVF Bolus PRN	E-IV

Document Patient Temperature

Hyperthermic?

If capable cool on scene. Cooling: consider electrolyte solution, cold packs to armpits/groin, cold showers and baths, pools, bodies of water, wet clothes with fans.

Shivering?

Yes → P **Lorazepam** 0.5 - 2 mg IV/IO/IN/IM OR **Midazolam** 2.5-5 mg V/IO/IN/IM OR **Diazepam** 2-5 mg IV/IO/IN/IM P (PRN)

No → M **Contact Medical Control** M

Hypothermic?

If capable warm on scene Consider warm baths, showers, stripping patient of wet clothes, electric blankets, residential or vehicular heat sources.

Hypothermic Cardiac Arrest

- High Performance CPR
- Airway
- Active Rewarming
- Minimize Movement
- ½ Dose IV Meds Until Core Temp Above 96 Degrees

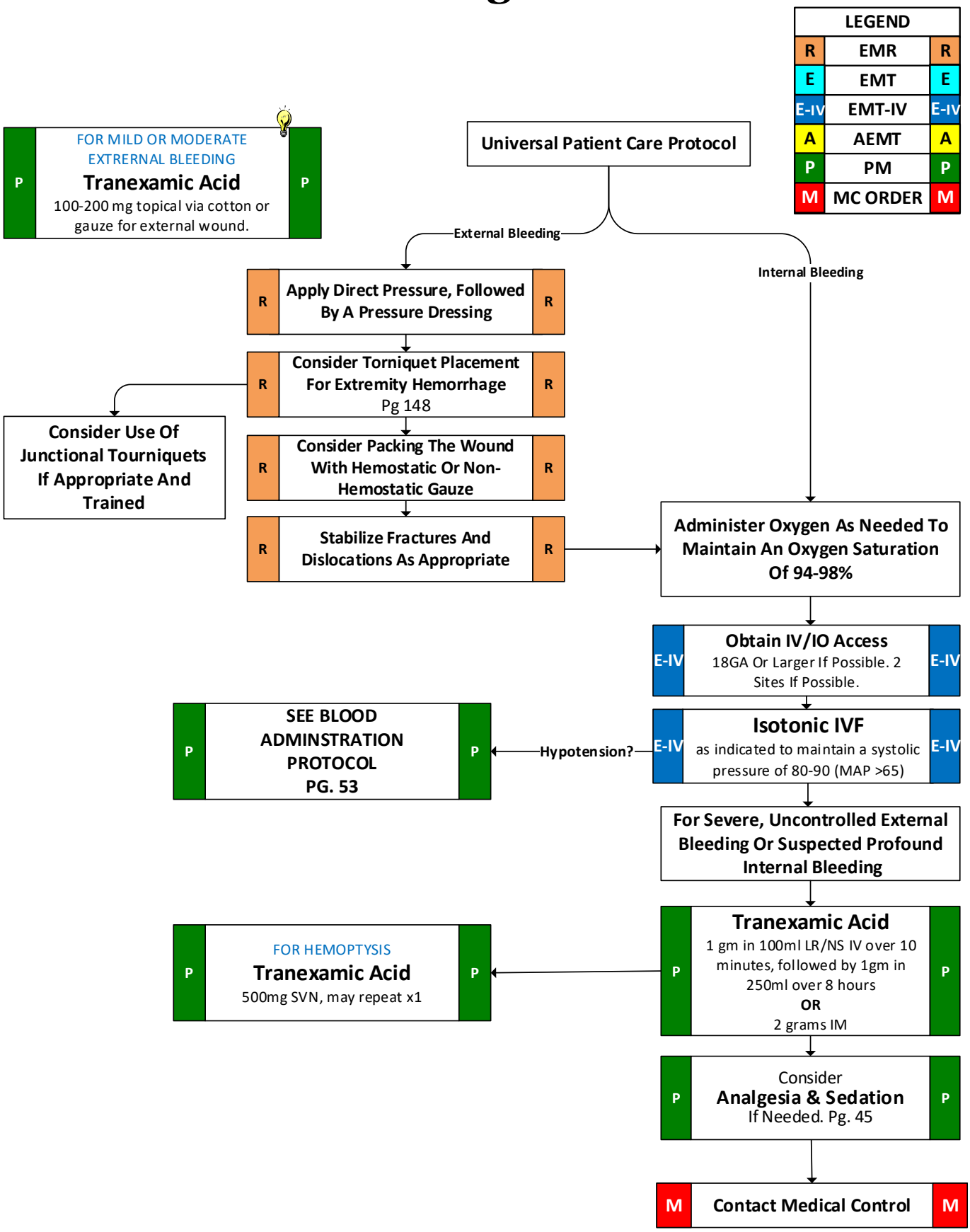
ATTEMPT REWARMING BEFORE CEASING RESUSCITATION EFFORTS.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Notes:

- Extremes of age are more prone to temperature emergencies (i.e. young and old).
- Core temperature is the most reliable measure - for pts with ALOC and pts < 2 years old this should be the method of measurement.
- Shivering stops below 32° C (90° F).
- Sweating generally disappears as body temperature rises above 104° F (40° C).

Hemorrhage Control



Blood Administration

ALS transport if available:

Indications/Criteria

Hemorrhagic Shock (Trauma or Medical)

- 0-9 Years Old
  - SBP < 70 mm Hg + (2x age in years)
- 10-64 Years Old
  - SBP <90 mm Hg **OR** - HR > SBP
- ≥ 65 year Years Old
  - SBP < 110 mm Hg **OR** - HR > SBP

Contraindications

- Religious objection - call medical Control
- Relative Contraindication
- <6 years old - contact Medical Control

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

PRBC = Packed Red Blood Cells

FFP = Fresh Frozen Plasma

Arrive here from
Hemorrhage Control
Pg. 52

Meets Inclusion Criteria

YES

P **Transfuse**
1 unit low titer O POS Whole Blood
OR
1 unit low titer type A Liquid Plasma/FFP & 1 unit low titer O POS RBC
P

See Blood Product Administration Procedure PG 155

P **Reassess** P

Still Meets Criteria? Yes

Above 11 years Old

P **Transfuse**
Second Unit of Whole Blood or Plasma + PRBC P

P **Calcium Chloride**
500 mg, repeat x1 q 15 min for ongoing hypotension P

6- 10 Years Old

M **Contact Medical Control**
Ask for order
10 ml/kg of Whole Blood or PRBC +FFP M

NO

M **Contact Medical Control** M

P **Reassess** P

< 6 Year Old

M **Contact Medical Control**
Ask for order
10 ml/kg of Whole Blood or PRBC +FFP M

Transfusion Reaction:

- Fever
- Hypotension
- Tachycardiac
- SOB
- AMS
- Rash

Stop blood product and treat per Pg 38 or Pg 70.

Peds Transfusion Rates

- <6 yr 5 ml/Kg/hr.
- <1 yr 1ml/Kg/hr.

Burns

ALS transport if available:

History:
- Type of exposure (heat, gas, chemical)
- Inhalation injury
- Other trauma
- Loss of consciousness

Signs and Symptoms:
- Burns, pain, swelling
- Dizziness
- Loss of consciousness
- Shock / Hypotension
- Airway compromise / distress
- Singed facial or nasal hair
- Hoarseness / wheezing

Differential:
- Chemical
- Thermal
- Electrical
- Radiation

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen PRN
SAT 94-98%

Stop The Burning Process
Remove Jewelry And Clothing That May Be Burned, Covered In Chemicals Or Restricting.

Thermal/Electrical

Cover Burn With A Dry Clean Sheet Or Dressing.
Keep Warm

Use Rule of 9's
>10% TBSA 2nd/3rd degree burn then

E-IV **Obtain IV/ IO Access** E-IV
LR 500ml/hr x 1 hr

P Consider **Analgesia & Sedation** P
If Needed. Pg. 45

If Burn < 10 % Body Surface Area
Cool down the wound with Normal Saline

Cover Burn With A Dry Clean Sheet Or Dressing

Outlying Areas May Use Burn Gel For Comfort In Burns < 10% BSA

M **Contact Medical Control** M

Chemical

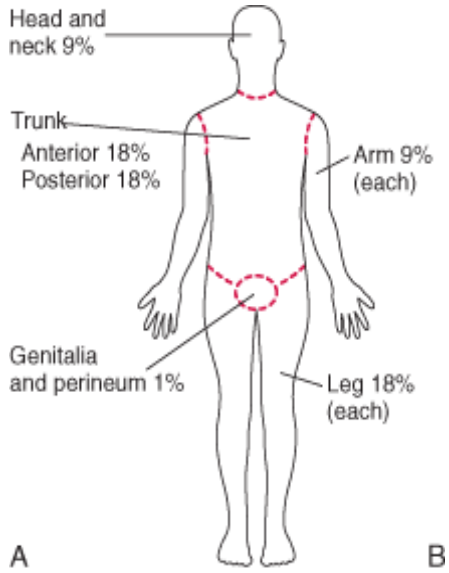
Brush Off Any Excess Chemical Or Powder

Flush Area With Water
Or Normal Saline (except Materials That React With H2O)
Keep Warm

Eye involvement?
Saline flush in the affected eye

Needs a Burn Unit

1. Partial and/or Full Thickness (2nd and/or 3rd degree burn >10% TBSA
2. 2nd and/or 3rd burns to face, hands, or genitals
3. Circumferential burns or burns at groin, axilla, or over major joints.



SCUBA

Transport ALL near drowning Patients/ALS if:

History:	Signs and Symptoms:	Differential:
• Aspiration of fluid • Possible history of trauma • Duration of immersion • Temperature of water • Depth of dive • Know history of dive (tank pressure / gas content) • Recent air travel • Salt vs. Fresh water • Repetitive dives • Free diving is same as SCUBA	• Unresponsive • Changes in mental status • Coughing • Joint pain or tooth pain • Ear pain/hearing loss • Stroke like symptoms • Itching • Rash	• Trauma • Pre-existing medical problem • Pressure injury (diving) Barotrauma Decompression sickness • Near Drowning

Scene safety! Drowning is a leading cause of death in would-be rescuers.

HYPERBARIC DESTINATION
- Bends go to VMMC or US NAVAL(DOD).
- Trauma and/or intubated go to Harborview.

Universal Patient Care Protocol

↓

100% O_2 Non Rebreather Mask

↓

Spinal Motion Restriction PRN
pg. 146
Left Lateral Recumbent

↓

Remove Wet Clothing
Cover With Dry (warm) Blankets
Warming Measures

↓

E — For suspected pulmonary edema **Non-Invasive Positive Pressure Ventilation** Pg. 110 — E → P — Consider **Analgesia & Sedation** if needed. Pg. 45 — P

↓

E-IV — **Obtain IV/IO Access** — E-IV

↓

Monitor And Reassess

↓

M — **Contact Medical Control** — M

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Notes:
- Exam: Check Head, Neck, Chest, Abdomen, Pelvis, Back, Extremities, Skin, Neuro for Trauma
- Transport dive computer with patient
- For dive deaths, gear is evidence
- What type of gas used? Any seizures in the history? Mixed gas?
- With cold water there is no time limit- resuscitate all.
- All near drowning victims should be transported- conditions may deteriorate during the next several hours
- Activate Trauma system. Consider Aeromedical Transport. Contact early
- For Air Embolism symptoms patient should be placed on high flow oxygen, and lie patient down on left side with head and feet neutral.
- **Diver's Alert Network (DAN) (877) 595-0625**

Hyperbaric Chambers capable of taking patients with the Bends or Carbon Monoxide poisoning on an emergency basis:

Harborview Medical Center	**US Naval Undersea Warfare Center (Active duty/dependants)**	**VVMC**
Phone (206) 731-3000	Phone 24 hours (360) 396-2111	Phone: (206) 583-6450
ED		

Drowning/Near Drowning

Transport ALL near drowning Patients/ALS if:

History:	Signs and Symptoms:	Differential:
• Aspiration of fluid • Submersion in water- regardless of depth • Possible history of trauma • Duration of immersion • Temperature of water • Salt vs. Fresh water	• Unresponsive • Changes in mental status • Coughing • Respiratory compromise	• Trauma • Pre-existing medical problem • Pressure injury (diving) Barotrauma Decompression sickness

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Scene safety! Drowning is a leading cause of death in would-be rescuers.

With cold water there is no time limit - resuscitate all.

Universal Patient Care Protocol

↓

Oxygen
to keep sat 94-98%

↓

Spinal Motion Restriction PRN
pg. 146

↓

Remove Wet Clothing
Cover With Dry (warm) Blankets
Warming Measures

↓

E — For Pulmonary Edema **Early Use Of CPAP For Severe Respiratory Distress** Pg. 110 — E → P — Consider **Analgesia & Sedation** if needed. Pg. 45 — P

↓

E — **ECG /12 Lead/$EtCO_2$** — E

↓

E-IV — **Obtain IV/IO access** — E-IV

↓

Monitor And Reassess

↓

M — **Contact Medical Control** — M

Notes:

- **Exam : Check Head, Neck, Chest, Abdomen, Pelvis, Back, Extremities, Skin, Neuro for Trauma**
- With cold water there is no time limit- resuscitate all.

Crush Injury/Rhabdomyolysis

History:
- Determine the duration of crush
- Examine extent of tissue involvement
- Prolonged down time
- Excessive exercise

Inclusion Criteria:
- Traumatic crush mechanism of Injury
- Prolonged down time
- Compartment syndrome

Exclusion Criteria:
- Non-crush injuries

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

If bleeding
Extremity Trauma/External Hemorrhage Control Protocol
Pg. 52

↓

Administer High Flow Oxygen

↓

E-IV **Obtain IV/IO Access** E-IV

↓

E-IV **Isotonic IVF Bolus**
10-15 ml/kg
Preferably prior to extrication E-IV

↓

P Consider **Analgesia & Sedation** if needed. Pg. 45 P

↓

For significant crush injuries or prolonged entrapment (> 30 min) of an extremity consider the below:

Yes →

E **Albuterol** 5-10 mg SVN E

P **Calcium Chloride** 1000 mg IV/IO over 5 min P

Flush with NS between Meds

P **Sodium Bicarbonate** 1 mEq/kg IV Max dose 50 mEq over 5 min. P

↓

Apply tourniquets
to entrapped extremities before extrication.

↓

Monitor carefully for dysrhythmia and signs of hyperkalemia immediately after release of pressure and during transport.

→ For indications of Hyperkalemia see Pg 31

↓

Consider The Following Post Extrication

↓

Continued
E-IV **Isotonic IVF Bolus** (500-1000 ml/hr for adults, 10 ml/kg/hr for children) E-IV

↓

M **Contact Medical Control** M

Non-traumatic Rhabdomyolysis? → P

Notes:
- Crush patients should be considered high priority for transport or transfer in accordance with the NWREMS Trauma Triage tool.

Head Injury

ALS evaluation and/or transport if available:

History:
- Onset
- Mechanism (blunt / penetrating)
- Loss of consciousness
- Bleeding
- Medical History (ETOH…)
- Medications (Coumadin…)
- Extremes of age
- See Trauma Triage Tool

Signs and Symptoms:
- Pain, swelling, bleeding, oto/rhinorrhea
- Altered Level of Consciousness GCS <13or unable to follow commands
- Respiratory distress/failure
- Vomiting
- Significant mechanism of injury

Signs of Herniation:
- GCS <8
- Fixed or asymmetric pupils
- Neurologic Posturing
- Cushing's Triad
- Intermittent apnea
- Neurologic deterioration (decrease in GCS ≥ 2)

Differential:
- Seizure
- Stroke
- Alcohol
- Epilepsy Endocrine
- Insulin
- Overdose
- Uremia
- Trauma
- Infection / Sepsis
- Psychosis

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Isolated Head Trauma?

No → **Multi-system Trauma** Protocol Pg.59

Yes

Spinal motion restriction with head of board elevated approx. 30° PRN

Oxygen keep Sat 94-98%

E — **$EtCO_2$** — E

GCS

GCS 9 or greater

E-IV — Obtain IV access PRN **Isotonic IVF** maintain SBP ≥ 110 mm Hg — E-IV

E — **Ondansetron** 4mg SL — E

A — **Ondansetron** 4mg IV/IO/IM — A

P — **Ondansetron** 4-8mg IV/IM/SL **And/or** **Promethazine** 6.25-12.5 mg IV/IM **OR** **Droperidol** 0.625mg IV/IM — P

GCS 3-8 and/or a drop of 2 points or more

E-IV — Obtain IV access PRN **Isotonic IVF** maintain SBP ≥ 110 mm Hg — E-IV

P — **Sequenced Intubation (RSI)** PRN Pg. 94-95 — P

P — **Sodium Bicarbonate** 1 mEq/kg IV For signs of Cushing reflex — P

GCS≥14 → **Treat S/S Per Appropriate Protocol**

P — Maintain **Capnography** where available Pg.100-101 (maintain $EtCO_2$ 35-45 mmHg) **Avoid excessive hyperventilation** — P

M — **Contact Medical Control** — M

Multi-System Trauma

ALS evaluation and/or transport if available:

History:
- Time and Mechanism of injury
- Damage to structure or vehicle
- Location in structure or vehicle
- Others injured or dead
- Speed and details of MVA
- Restraints / protective equipment
- Symptoms preceding incident

Signs and Symptoms:
- Altered mental status or unconscious GCS<13
- Hypotension or shock

Differential:
- Chest Tension pneumothorax
  - Flail Chest
  - Pericardial Tamponade
  - Open chest wound
  - Hemothorax
- Intra-abdominal bleeding
- Pelvis/femur fracture
- Spine fracture / Cord injury
- Extremity fracture / Dislocation
- HEENT (Airway Obstruction)
- Hypothermia

- Mechanism is often a good indicator of serious injury
- If domestic violence or abuse is suspected it must be reported to Law Enforcement, receiving facility or air ambulance.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Minimize On Scene Time

Expose Injuries

Trauma Triage Tool Pg. 10
Arrange Transport According To The County Destination Policy Pg. 11

Hemorrhage Control? Pg 52
Pelvic Stabilization? Pg. 142
Spinal Motion Restriction? Pg. 146

E-IV **Obtain IV/IO Access** E-IV

Signs of Shock?

Yes

E-IV **Isotonic IVF bolus** E-IV
repeat as needed to maintain BP of 80-90 systolic

P See **Blood Administration Protocol** Pg 53 P

Reassess Airway/Ventilation

P **Advanced Airway Procedures** as Needed Pg 92-101 P

No

Traumatic Arrest witness by EMS?

E Definitive Airway
Immobilize pelvis
Straighten long bones to position of function E

E-IV **Isotonic IVF bolus** E-IV

P Bilateral Thoracostomy
Pericardiocentesis P

ROSC?

Ongoing Assesment

M **Contact Medical Control** M

Pediatric Cardiac Arrest

ALS transport if available

Scene Considerations		
Scene Safety / PPE	Radio Traffic "FULL CODE"	Start Timer
Treat in Place	360 Degree Access to Patient	Pertinent MHx
Team Leader Identified	Ped Card Color Identified	Family Liaison
Assign Pit-Crew Positions	G P R P Y W B O G	POLST Signed and Present

2 Min Goal: Arrive, Breath (I-Gel), CPR, Defib / Drill, Epi

Position #1	Position #2	Position #3
Compressions (Left)	**Airway** (Head)	**Monitor/Time Keeper** (Right)
Continuous	**I-gel** 1 Breath / 3 sec (20/min)	AED and Pad Selection
Switch every 2 min.	Oxygen	Monitor EKG / SpO2 / ETCO2
Coordinate with Defib	ETCO2	Metronome / Timer App
Minimize Hands Off Time	Length Based Tape	**Time Stamp Interventions**
Ensure Pulse Check	Suction	Charge at 1:45

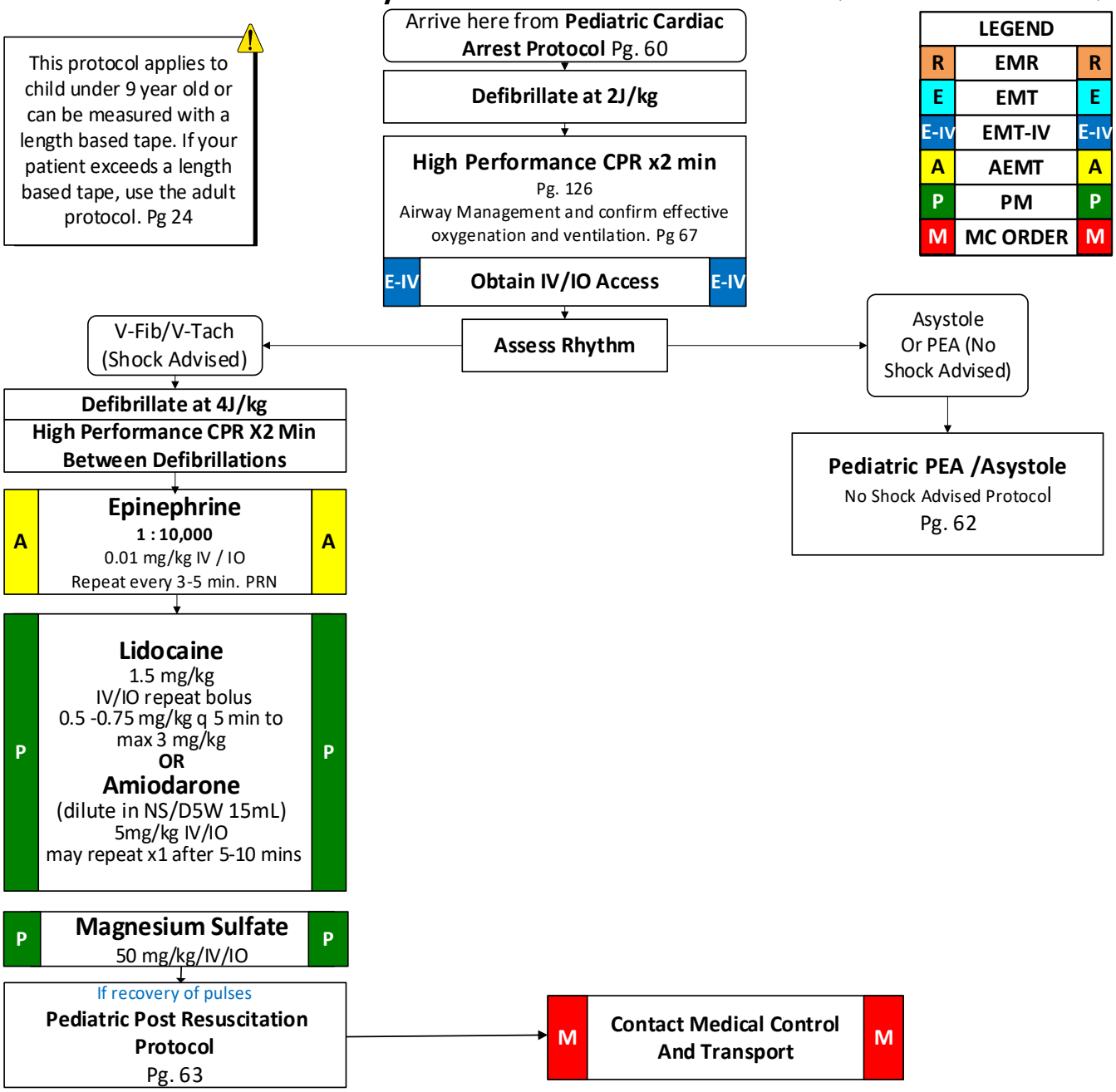
Position #4		
Prepare IO / IV set up	**DRUG BOX**	Obtains Glucose Check
Prepares Epi as Directed	Confirm Ped. Card Doses	Prepares Meds as Directed

Monitor Manual Mode	Position #5 **ALS / Team Lead**	**Minimize Hands Off Time**
IO / IV Access		ETT Needed?
Shockable? Rapid Epi		OG / NG?
ALS Meds		H's and T's

Position #6		
Document Patient Info.	**Documentation / Liaison**	Coordinates with **Team Lead**
Family Liaison	Coordinates Resource Pool	PPE and Scene Safety

Positions #7-9 **Resource Pool**		
Airway Support	Backup Compressions	Patient Movement

Pediatric V-Fib/Pulseless V-Tach(Shock Advised)



Weight	4 kg grey	6 kg pink	8 kg red	10 kg purple	13 kg yellow	16 kg white	20 kg blue	26 kg orange	32 kg green
Epinephrine 1 : 10,000 0.01 mg/kg **IV / IO**	**0.04 mg**	**0.06 mg**	**0.08 mg**	**0.1 mg**	**0.13 mg**	**0.16 mg**	**0.20 mg**	**0.26 mg**	**0.32 mg**
Lidocaine repeat bolus 0.5-0.75 mg/kg	**2-3 mg**	**3-4 mg**	**4-6 mg**	**5-7 mg**	**6-9 mg**	**8-12 mg**	**10-15 mg**	**12-18 mg**	**16-24 mg**
Amiodarone	**20 mg**	**30 mg**	**40 mg**	**50 mg**	**65 mg**	**80 mg**	**100 mg**	**130 mg**	**160 mg**
Magnesium Sulfate	**200 mg**	**300 mg**	**400 mg**	**500 mg**	**650 mg**	**800 mg**	**1000 mg**	**1300 mg**	**1600 mg**
JOULES 2J/kg & 4J/kg	**8/15 J**	**15/30 J**	**15/30 J**	**20/40 J**	**30/60 J**	**30/60J**	**40/80/J**	**50/100 J**	**60/120 J**

Pediatric Asystole/PEA

ALS transport if available:

History:
- Time of arrest
- Medical history
- Possibility of foreign body
- Hypothermia
- Non-accidental trauma
- SIDS

Differential:
- Respiratory failure
- Foreign body obstructions
- Hypovolemia (dehydration
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

This protocol applies to child under 9 year old or can be measured with a length based tape. If your patient exceeds a length based tape, use the adult protocol. Pg. 25

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Arrive here from **Pediatric Cardiac Arrest Protocol** Pg. 60

↓

Begin High Performance CPR
Pg. 126

↓

Oxygen
Keep sat 94-98%

↓

E | **Supraglottic Airway** Pg. 109 | E

↓

E | **12 lead/ ECG/ $EtCO_2$** | E

↓

P | **Advanced Airway Management** | P

↓

E-IV | **Obtain IV/IO Access** | E-IV → E-IV | **Isotonic IVF Bolus** 20 ml/kg IV/IO, May repeat up to 60 ml/kg, For signs of shock | E-IV

↓

P | **Epinephrine** **1 : 10,000** 0.01 mg/kg IV / IO, Repeat every 3-5 min. | P

-OR-

P | **Epinephrine** **1 : 1,000** 0.1 mg/kg ET/IM, Repeat every 3-5 min. | P

↓

Resume CPR
Treat other associated rhythms, consider differentials.

↓

Assess Rhythm
after 2 minutes of CPR → **Rhythm Change?** Go to appropriate protocol

↓

M | **Contact Medical Control** | M

Ultrasound if available to assess for cardiac mechanical function

Weight	*4 kg grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Epinephrine 1 : 10,000 0.01 mg/kg **IV / IO**	**0.04 mg**	**0.06 mg**	**0.08 mg**	**0.1 mg**	**0.13 mg**	**0.16 mg**	**0.20 mg**	**0.26 mg**	**0.32 mg**
Epinephrine 1 : 1,000 0.1 mg/kg **ET/IM**	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**

Pediatric Post-Resuscitation Management

ALS evaluation and/or transport if available:

Stop the HOP Killers
- **H** = Hypotension
- **O** = Oxygenation(Hypoxia)
- **P** = pH (Metabolic Acidosis)

Universal Patient Care Protocol

↓

Oxygen
Keep sats 94-98%

↓

E | **Supraglottic Airway** Pg. 109 | E

↓

P | **Obtain Definitive Airway** | P

↓

E-IV | **Obtain IV/IO Access** | E-IV

↓

E-IV | **Isotonic IVF**
20 ml/kg IV/IO
May repeat up to 60 ml/kg | E-IV

↓

E | **ECG / 12 Lead/EtCO$_2$** | E

↓

P | **Capnography** | P

↓

P | **Sedation Post Intubation** | P

↓

P | Consider
Pediatric Analgesia & Sedation
If needed Pg. 76 | P

↓

Treat other associated signs
and symptoms per guideline
Consider temperature control

↓

M | **Contact Medical Control** | M

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Pediatric Bradycardia

ALS transport if available:

History:
- Medical history
- Possibility of foreign body
- Respiratory distress or arrest
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)

Differential:
- Respiratory failure
- Foreign body obstructions
- Hypovolemia (dehydration)
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

This protocol applies to child under 9 year old or can be measured with a length based tape. If your patient exceeds a length based tape, use the adult protocol. Pg 28

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen
Keep sats 94-98%

E **Supraglottic Airway** E
Pg. 109

E **ECG /12 lead/EtCO$_2$** E

P **Advanced Airway Mangement** P

Perform CPR if HR<60 after oxygenation and ventilation

E-IV **Obtain IV/IO Access** E-IV → E-IV **Isotonic IVF** E-IV
20 ml/kg IV/IO
May repeat up to 60 ml/kg for signs of shock.

Persistent Symptomatic Bradycardia?

No → **Support ABC's;**
Give Oxygen If Needed
Observe

Yes → P **Epinephrine** P
1: 10,000
0.01 mg/kg **IV / IO**
OR
Epinephrine
1: 1,000
0.1 mg/kg **ET/IM**
Repeat every 3-5 min.

P **Atropine** P
0.02 mg/kg IV/IO

P **Consider Pacing** P

M **Contact Medical Control** M

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Epinephrine 1 : 10,000 0.01 mg/kg **IV / IO**	**0.04 mg**	**0.06 mg**	**0.08 mg**	**0.1 mg**	**0.13 mg**	**0.16 mg**	**0.20 mg**	**0.26 mg**	**0.32 mg**
Epinephrine 1 : 1,000 0.1 mg/kg **ET/IM**	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Atropine	**0.1 mg**	**0.12 mg**	**0.16 mg**	**0.2 mg**	**0.26 mg**	**0.32 mg**	**0.4 mg**	**0.52 mg**	**0.64 mg**
PACING	**0.1 mg**	**0.12 mg**	**0.16 mg**	**0.2 mg**	**0.26 mg**	**0.32 mg**	**0.4 mg**	**0.52 mg**	**0.64 mg**

Pediatric Narrow Complex Tachycardia

ALS evaluation and/or transport if available:

History:
- Medications or toxins
- Congenital heart disease
- Respiratory distress
- Syncope
- Volume loss (diarrhea / vomiting)

Differential:
- **Sinus Tachycardia vs. SVT**
- Heart disease (congenital)
- Electrolyte imbalance
- Hypotension
- Fever / infection / sepsis
- Medication/toxin/drug
- Pulmonary Embolism
- Tension Pneumothorax

This protocol applies to child under 9 year old or can be measured with a length based tape. If your patient exceeds a length based tape, use the adult protocol. Pg 29

Universal Patient Care Protocol

Oxygen keep sats 94-98%

P — **Advanced Airway Management** — P

E — **Supraglottic Airway** Pg. 109 — E

E — **ECG /12 lead/EtCO$_2$** — E

E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Isotonic IVF** as appropriate to max of 60 mL/kg — E-IV

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Adequately perfused

Probable Sinus Tachycardia
Infant rate < 220 bpm
Children < 180 bpm

Probable SVT
Infant rate ≥ 220 bpm
Children ≥ 180 bpm

Search and treat causes

Consider Vagal Maneuvers

P — **Adenosine** 0.1 mg/kg PRN Repeat dose 0.2 mg/kg — P

P — **Procainamide** for WPW 4 mg/kg slow IV at 25 to 50 mg/min. — P

Poorly perfused

P — Consider **Pediatric Analgesia & Sedation** If needed Pg. 76 — P

P — **Synchronized Cardioversion** Pg. 135 — P

P — for refractory tachycardia **Procainamide** 4 mg/kg slow IV at 25 to 50 mg/min. — P

M — **Contact Medical Control** — M

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Adenosine 0.1 mg/kg – 1st dose	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Adenosine 0.2 mg/kg – 2nd dose	**0.8 mg**	**1.2 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**	**4 mg**	**5.2 mg**	**6 mg**
Procainamide	**16 mg**	**24 mg**	**32 mg**	**40 mg**	**52 mg**	**64 mg**	**80 mg**	**104 mg**	**128 mg**
JOULES 0.5-2 J/kg	**2/8 J**	**3/12 J**	**4/15J**	**5/20 J**	**6/25 J**	**8/30J**	**10/40J**	**15/50 J**	**15/60 J**

Pediatric Wide Complex Tachycardia

ALS evaluation and/or transport if available:

History:
- Medications or toxins
- Congenital heart disease
- Respiratory distress
- Syncope
- Drugs (cocaine)

Differential:
- Heart disease (congenital)
- Hypovolemia (dehydration) or anemia
- Electrolyte imbalance
- Anxiety
- Hypotension
- Medication / toxin / drugs

This protocol applies to child under 9 year old or can be measured with a length based tape. If your patient exceeds a length based tape, use the adult protocol. Pg. 30

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen
SAT 94-98%

P **Advanced Airway Management** P

E **Supraglottic Airway** E
Pg. 109

E **ECG/12 Lead/EtCO$_2$** E

E-IV **Obtain IV/IO Access** E-IV

E-IV **Isotonic IVF** E-IV
as appropriate to max of 60 mL/kg

Adequate Perfusion?

No/Unstable → P **Consider Pediatric Analgesia & Sedation** P
If needed Pg. 76

P **Synchronized Cardioversion** P
Pg. 135

Yes/Stable → P **Lidocaine** P
1 mg/kg IV/IO
Or
Amiodarone
5 mg/kg IV/IO over 20-60min
(mix in NS/D5W 100mL)
Or
Procainamide
4 mg/kg IV/IO at 25-50 mg/min

P **Magnesium Sulfate** P
25-50mg/kg IV/IO

P **Unable to convert or unstable?** P

Yes → P **Pediatric Analgesia & Sedation** P

No → M **Contact Medical Control** M

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Lidocaine	4 mg	6 mg	8 mg	10 mg	13 mg	15 mg	19 mg	24 mg	30 mg
Amiodarone	20 mg	30 mg	40 mg	50 mg	65 mg	75 mg	95 mg	120 mg	150 mg
Magnesium Sulfate	100-200	150-300	200-400-	250-500	300-600	400-800	500-1000	650-1300	800-1600
Procainamide	16 mg	24 mg	32 mg	40 mg	52 mg	64 mg	80 mg	104 mg	128 mg
JOULES 0.5-2 J/kg	2/8 J	3/12 J	4/15J	5/20 J	6/25 J	8/30J	10/40J	15/50 J	15/60 J

Pediatric Airway

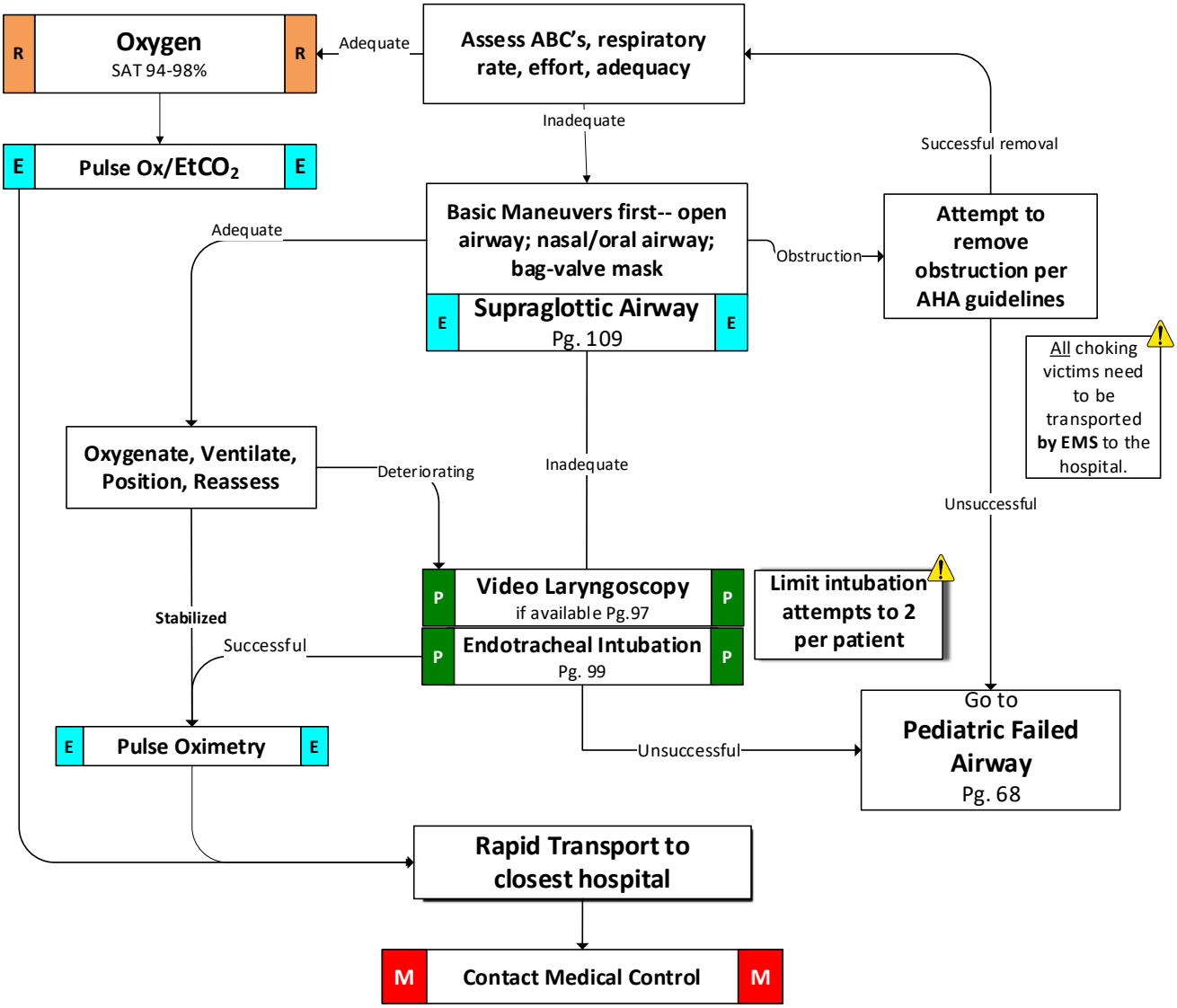
ALS evaluation and/or transport if available:

History:
- Know difficult Airway
- Neck or head trauma
- Trisomy 21
- Congenital malformations

Differential:
- Physical Examination
- Small jaw or limited jaw opening
- Limited cervical spine movement swollen tongue, oropharynx, or neck, midface hypoplasia.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

This protocol applies to child under 9 year old or can be measured with a length based tape. If your patient exceeds a length based tape, use the adult protocol. Pg 33



Notes:
- Maintain C-spine immobilization for patients with suspected spinal injury
- Reconfirm ETT placement each time patient is moved

Pediatric Failed Airway

ALS evaluation and/or transport if available:

History:
- Know difficult Airway
- Neck or head trauma
- Trisomy 21
- Congenital malformations

Differential:
- Physical Examination
- Small jaw or limited jaw opening
- Limited cervical spine movement swollen tongue, oropharynx, or neck, midface hypoplasia

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

This protocol applies to child under 9 year old or can be measured with a length based tape. If your patient exceeds a length based tape, use the adult protocol. Pg 34

Two (2) failed intubation attempts
By most proficient paramedic on scene

E | SAT > 90% **With BVM ventilation?** | E

E | **EtCO2** | E

E | **Continue BVM** | E

P | **Failed Attempt**
- Optimized View
- Head position (Ear to sternal notch)
- Head lift
- Change blade
- External laryngeal manipulation
- Change operator | P

Failed 3rd Attempt

P | **Rescue Ventilation**
- Landmark Cricothyroid membrane
- Gentle ventilation
- Capnography
- SpO_2>90% | P

E | **Supraglottic Airway** Pg. 109 | E

Are You Able To Oxygenate?

Yes

Failed 3rd Attempt

P | **Failed Intubation**
- Optimized mask Ventilation
- Two- person Mask ventilation
- OPA and NPAs
- $Sp0_2$ >90% | P

P | **Cricothyrotomy Needle (Adult/Pediatric)** Pg. 112 | P

M | **Notify Medical Control as early as possible.** | M

Pediatric Sequenced Intubation

ALS evaluation and/or transport if available:

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

E — Preoxygenate with N/C and NRB flush. Avoid BVM if possible — E

E-IV — **Obtain IV/IO Access** — E-IV

P — For salivation **Atropine** 0.02 mg/kg iV — P

Shock?

- Yes → P — **Ketamine** 0.5 mg/kg IV **Or** **Etomidate** 0.3 mg/kg IV — P
- No → **Suspected intracranial hypertension?**
  - Yes → P — **Ketamine** 1 mg/kg IV **Or** **Etomidate** 0.3 mg/kg IV — P
  - No → P — **Ketamine** 1 mg/kg IV **Or** **Etomidate** 0.3 mg/kg IV **Or** **Fentanyl 1** mcg/kg IV **And** **Midazolam** 0.1 mg/kg IV **Hydromorphone** 0.015 mg/kg IV/IM — P

P — **Apply Cricoid Pressure** — P

Any personal or family history of malignant hyperthermia, known or suspected mitochondrial or skeletal myopathy, glaucoma, penetrating eye injury? Known or suspected Hyperkalemia?

- Yes → P — **Rocuronium** 0.6 to 1.2 mg/kg IV — P
- No → P — **Succinylcholine** 2 mg/kg IV **OR** **Rocuronium** 0.6 to 1.2 mg/kg IV — P

P — **Orotracheal Intubation** Pg. 96 — P

P — **Rocuronium** 0.2 to 0.5 mg/kg iV if needed — P

P — For Bradycardia **Epinephrine** 1ml 1:10,000 in 10 mL NS 1 mcg/kg IV/IO — P

P — **Pediatric Analgesia & Sedation** If needed Pg. 76 — P → M — **Contact Medical Control** — M

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Atropine	0.1 mg	0.12 mg	0.16 mg	0.2 mg	0.26 mg	0.32 mg	0.4 mg	0.52 mg	0.64 mg
Ketamine 0.5mg/kg	2 mg	3 mg	4 mg	5 mg	6 mg	8 mg	10 mg	13 mg	16 mg
Ketamine 1mg/kg	4 mg	6 mg	8 mg	10 mg	13 mg	16 mg	20 mg	26 mg	32 mg
Etomidate	1.2 mg	1.8 mg	2.4 mg	3 mg	3.9 mg	4.8 mg	6 mg	7.8.mg	9.6 mg
Fentanyl	4 mcg	6 mcg	8 mcg	10 mcg	13 mcg	16 mcg	20 mcg	26 mcg	32 mcg
Midazolam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.3 mg	1.6 mg	2.mg	2.6 mg	3.2 mg
Succinylcholine	8 mg	12 mg	16 mg	20 mg	26 mg	32 mg	40 mg	52 mg	64 mg
Hydromorphone	0.06 mg	.09 mg	.12 mg	.15 mg	.2 mg	.24 mg	.3 mg	.39 mg	.48 mg
Rocuronium	4 mg	6 mg	8 mg	10 mg	13 mg	16 mg	20 mg	26 mg	32 mg
Epinephrine 1:10,0000	4 mcg	6 mcg	8 mcg	10 mcg	13 mcg	16 mcg	20 mcg	26 mcg	32 mcg

Pediatric Allergic Reaction/Anaphylaxis

ALS evaluation and/or transport if available:

History:
- Allergies
- Medications
- Past Medical history
- Last oral ingestion
- Event preceding

Differential:
- Acute respiratory f
- Anxiety
- Aspiration
- Asthma
- Drug reaction
- Shock

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Be watchful for secondary allergic response, after apparent resolution of initial S/S .Continue to be monitored for 30-60 minutes.

Universal Patient Care Protocol

Remove Stinger And Decontaminate Clothing

The shorter the onset from contact to symptoms, the more severe the reaction.

Hives/ Rash only
No respiratory component

E	**Diphenhydramine** 1 mg/kg PO	E
A	**Famotidine** 0.25mg/kg IV/IO	A

Two or more system involvement

R	**Epinephrine** 1:1000 0.1 – 0.3 mg Auto-injector IM	R
E	**Epinephrine** 1:1000 0.1 – 0.3 mg IM Repeat Epinephrine	E
E	**Albuterol** 2.5 mg SVN	E
E	**Ipratropium** 0.5 mg SVN	E
E	**ECG / Consider 12 lead**	E
E-IV	**Obtain IV/IO Access**	E-IV
E-IV	**Isotonic IVF**	E-IV
A	**Diphenhydramine** 1 mg/kg PO IV/IO/IM	A
A	**Famotidine** 0.25 mg/kg IV/IO	A
P	**Epinephrine** 1:1,000 1 ml SVN	P

Unresponsive impending respiratory arrest

R	**Epinephrine** 1:1,000 0.15 mg or .03 mg Auto-Injector IM	R
E	**Epinephrine** 1:1,000 0.01 mg/kg IM May repeat q 5 mins X 2 (total 3 doses)	E
P	**Epinephrine** 1:10,000 1 mcg /kg IVP q 3-5 min	P
P	**Epinephrine Drip** 0.1-1.5 mcg/kg/min IV/IO	P
P	**RSI and Endotracheal intubation**	P
P	Unable to intubate and oxygenate? go to **Surgical airway**	P

P	**Dexamethasone** 0.6 mg/kg IV/IO/IM/PO **Or** **Methylprednisolone** 2 mg/kg IV/IO/IM	P
P	**Magnesium Sulfate** SVN	P

Reassess Patient → M **Contact Medical Control** M

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Diphenhydramine	4 mg	6 mg	8 mg	10 mg	13 mg	16 mg	20 mg	26 mg	32 mg
Famotidine	1 mg	1.5 mg	2 mg	2.5 mg	3 mg	4 mg	5 mg	6.5 mg	8 mg
Methylprednisolone	8 mg	12 mg	16 mg	20 mg	26 mg	32 mg	40 mg	52 mg	64 mg
Dexamethasone	2.4 mg	3.6 mg	4.8 mg	6 mg	7.8 mg	9.6 mg	12 mg	15.6 mg	19.2 mg
Epinephrine 1: 10,000	0.04 mg	0.06 mg	0.08 mg	0.1 mg	0.13 mg	0.16 mg	0.2 mg	0.26 mg	0.32 mg

Epineprine Drip — **1 mg Epinephrine 1:1,000 in 250 ml = 4 mcg/ml** — **Use 60 gtt tubing**

Mcg/min	2	4	6	8	10
Administer	30 gtts/min	60 gtts/min	90 gtts/min	120 gtts/min	150 gtts/min
Run gtts/sec	1 every 2 seconds	1 every second	1.5 every second	2 every second	2.5 every second

Pediatric Brief Resolved Unexplained Event (BRUE)

ALS evaluation and/or transport if available:

History:
- Altered Mental Status
- Cardiac
- Respiratory Failure
- Seizures
- Syncope

Differential:
- Hypovolemia (dehydration)
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma (hypovolemia, increased ICP)

Exclusion Criteria:
Identifiable cause for the event, which may include:
- Gastric reflux (spitting up)
- Swallowing dysfunction
- Nasal congestion
- Color change that involved only redness (e.g. in the face) or isolated perioral or hand/feet cyanosis

Inclusion:
Suspected BRUE: An event in an infant less than 1 year old reported by a bystander as sudden, brief (less than 1 min) event, completely resolved upon EMS arrival that includes one or more of the following:
- Absent, decreased, or irregular breathing
- Color change (central cyanosis or pallor)
- Marked change in muscle tone (hyper- or hypotonia)
- Altered level of responsiveness
- Chocking/gagging

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen
SAT 94-98%

E | **Supraglottic Airway** PRN | E
Pg. 109

Consider Other Treatment Protocols As Necessary
Obtain full history and features of event
Explore medication ingestion/toxin risk

Complete Thorough History

Specifically assess for history of apnea (>15 seconds?), increased or decreased tone?, change of color?, pallor or cyanosis?

No? → M | **Contact Medical Control** | M

Yes to any?

Meets Criteria For An BRUE

Patient must be transported for evaluation even if well appearing
Contact Medical Control If Caregiver Refusing Transport

E | **ECG / 12 Lead** PRN | E

E-IV | **Obtain IV/IO Access** | E-IV → E-IV | **Isotonic IVF** PRN | E-IV
20 ml/kg IV/IO
May repeat up to 60 ml/kg

Pediatric Breathing Difficulty

ALS evaluation and/or transport if available:

History:
- Possibility of foreign body
- Cardiac/Respiratory history
- Respiratory infection
- Persistent Symptoms

Differential:
- Asthma
- Aspiration
- Foreign body
- Pneumonia (aspiration)
- Croup
- Epiglottitis (Rare)
- Congenital heart disease
- Medication or Toxin
- Trauma

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen
SAT 94-98%

Advanced Airway Management PRN

Severe Distress Respiratory Failure

Yes → **Pediatric Airway** Pg.67

No → **Transport In Position Of Minimal Agitation**

Lower Airway → **Wheeze?**

Yes →
- E — **Albuterol** 2.5 - 5 mg SVN — E
- E — Consider **Ipratropium** 0.5 mg SVN for greater than 12 kg — E
- P — **Magnesium Sulfate** SVN — P

Upper Airway → **Stridor and/or Retractions?**

Yes →
- P — **Epinephrine** 3 mL 1:1,000 SVN (No saline needed) — P

P — Consider **Dexamethasone** 0.6 mg/kg IV/IO/IM/PO, Max dose of 16 mg
Or
Methylprednisolone 2 mg/kg IV/IM
Or
Prednisone 1 mg/kg PO — P

P — **Magnesium Sulfate** 25 – 50 mg/kg IV/IO — P

P — **Repeat appropriate nebulizer Treatment as indicated for continued symptoms** — P

M — **Contact Medical Control** — M

Weight	4 kg	6 kg	8 kg	10 kg	13 kg	16 kg	20 kg	26 kg	32 kg
Epinephrine	3 mL SVN								
Nebulizer	Albuterol 2.5 mg				Ipratropium 0.5 mg				
Methylprednisolone	8 mg	12 mg	16 mg	20 mg	26 mg	32 mg	40 mg	52 mg	64 mg
Prednisone	4 mg	6 mg	8 mg	10 mg	13 mg	16 mg	20 mg	26 mg	32 mg
Dexamethasone	2.4 mg	3.6 mg	4.8 mg	6 mg	7.8mg	9.6 mg	12 mg	15.6 mg	16 mg
Magnesium Sulfate SVN	300 mg	300 mg	300 mg	300 mg	300 mg	300 mg	600 mg	600 mg	600 mg
Magnesium Sulfate IV/IO	200 mg	300 mg	400 mg	500 mg	600 mg	800 mg	1000 mg	1300 mg	1600 mg

Pediatric Altered Mental Status/Hypoglycemia

ALS evaluation and/or transport if available:

History:
- Polyuria
- Polydipsia
- Vomiting
- Weakness
- Confusion

Clinical Signs:
- Dehydration
- Kussmaul respirations
- Smell of ketones
- Change in mental status

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen
SAT 94-98%

E | **Supraglottic Airway** PRN | E
Pg. 109

E-IV | **Obtain IV/IO Access** | E-IV

E-IV | **Isotonic IVF** | E-IV
20 mL/kg, may repeat 10 mL/kg

Trauma → See **Pediatric Trauma** Pg. 80

Overdose → See **Pediatric Overdose** Pg. 75

Seizure → See **Pediatric Seizure** Pg. 79

Sepsis → See **Pediatric Shock Nontraumatic** Pg. 78

E | **Blood Glucose Check** | E

High → **Clinical Signs of Intracranial Hypertension?**

Signs of intracranial hypertension include:
- Severe headache
- Lethargy
- Vomiting
- Coma

Yes → P | Consider **Pediatric Sequence Intubation** for GCS <8 Pg. 69 | P
→ **Elevate head of bed to 45°**
→ P | **Ventilate patient to maintain 30-35 mm/Hg ETCO2** | P

No → **Clinical Signs of Dehydration or Hyperglycemia > 250?**
→ E-IV | **Isotonic IVF** 10 ml/kg IV/IO Reassess, may repeat | E-IV

Low → R | PO **Glucose** with intact airway | R
→ A | Blood Glucose < 60 **D25** 2 mL/kg or **D10** 5mL/kg | A
→ P | OR **Glucagon** 0.1 mg/kg IM to 1 mg max | P

M | **Contact Medical Control** | M

Newborn Resuscitation/Post Delivery Care

ALS evaluation and/or transport if available:

History:
- Prenatal care and history
- Due date/LMP
- Expected multiple births
- Meconium
- Congenital disease
- Medications
- Maternal risk factors

Differential:
- Airway obstruction
- Respiratory distress
- Infection
- Hypovolemia
- Hypoglycemia
- Congenital heart disease
- Hypothermia

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

- Consider ceasing resuscitation efforts if fetal foot length is less than 33mm.
- Fused eyelids=less than 24 weeks

Universal Patient Care Protocol *

Suction with bulb syringe PRN
Mouth then nose
Dry infant and keep warm

APGAR Pg. 87

Oxygen Blow-by PRN

Assess Breathing And Heart Rate

Heart rate > 100 → **Continue Ongoing Assessment**

Heart rate < 100 Or RR < 40 or shallow →

Assist Ventilations BVM PRN

No improvement after 30 seconds? begin chest compressions

E — Consider Blood Glucose check if < 60mg/dL then see **Pediatric Altered Mental Status** Pg. 73 — E

R — **Naloxone** 0.1 mg/kg IN — R

A — Consider **Naloxone** 0.1 mg/kg IM/IN/IV/IO — A

P — **Umbilical Access** Pg 90 — P

E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Isotonic IVF** 20 ml/kg IV/IO May repeat up to 60 ml/kg — E-IV

E — **ECG / 12 Lead** — E

P — **Epinephrine** PRN 1 : 10,000 0.01 mg/kg **IV / IO** **OR** **Epinephrine** 1 : 1,000 0.1 mg/kg **ET** Repeat every 3-5 min. — P

P — **Pediatric Airway** PRN Pg. 67 — P

M — **Contact Medical Control** — M

APGAR SCALE

	0 Points	1 Point	2 Points
A – Appearance (Skin Color)	Blue / Pale	Normal, except for extremities	Normal over entire body
P – Pulse	Absent	Below 100	Above 100
G – Grimace (Reflex irritability)	No Response	Grimace	Sneeze, cough, pulls away
A – Activity	Absent	Arms and Legs Flexed	Active Movement
R – Respiration	Absent	Slow, irregular	Good, strong cry

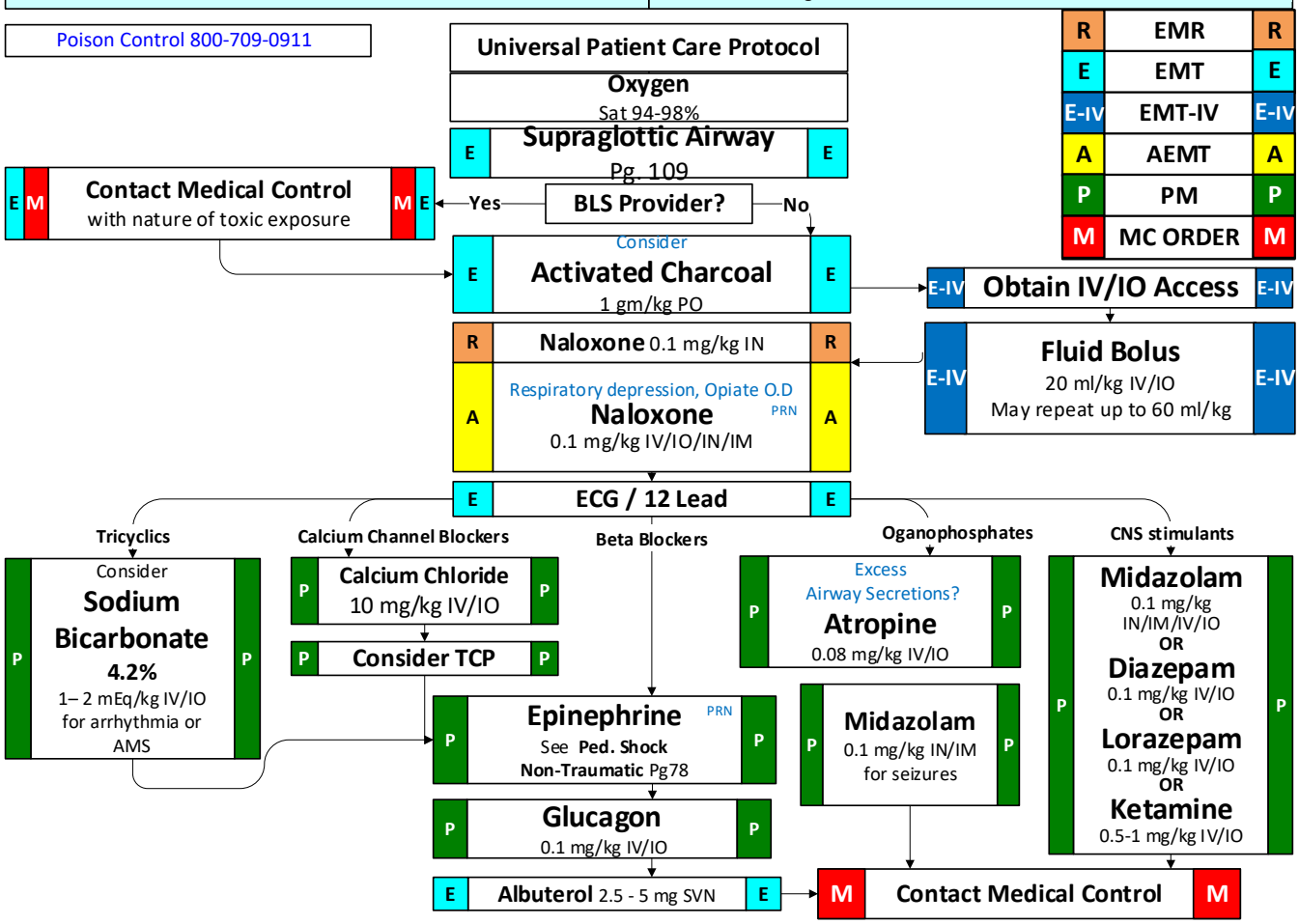
Weight	2 kg *grey*	3 kg *grey*	4 kg *grey*	5 kg *grey*
Epinephrine 1 : 10,000 0.01 mg/kg **IV / IO**	**0.02 mg**	**0.03 mg**	**0.04 mg**	**0.05 mg**
Epinephrine 1 : 1,000 0.1 mg/kg **ET**	**0.2 mg**	**0.3 mg**	**0.4 mg**	**0.5 mg**
Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*
Naloxone	**0.4 mg**	**.06 mg**	**0.8 mg**	**1 mg**

Pediatric Toxic Exposure

ALS evaluation and/or transport if available:

History:
- Ingestion or suspected ingestion of a potentially toxic substance
- Substance ingested, route, quantity
- Time of ingestion
- Reason (suicidal, accidental, criminal)
- Available medications in home

Differential:
- Tricyclic antidepressants (TCAs)
- Acetaminophen (tylenol)
- Depressants
- Stimulants
- Anticholinergic
- Cardiac medications
- Solvents, Alcohols, Cleaning agents
- Insecticides (organophosphates)



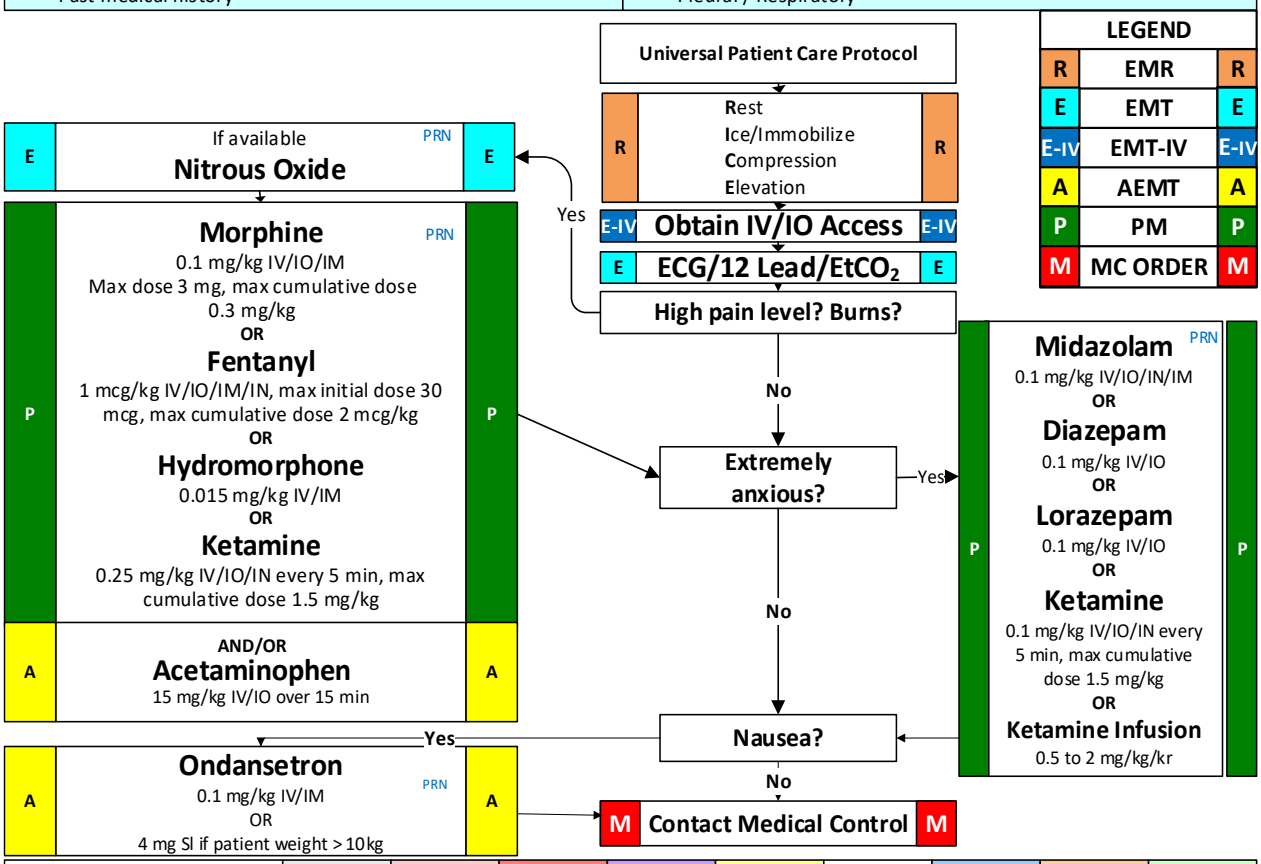
Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	25 kg *orange*	32 kg *green*
Activated Charcoal	4 gm	6 gm	8 gm	10 gm	12 gm	15 gm	19 gm	24 gm	30 gm
Naloxone	0.4 mg	0.6 mg	0.8 mg	1 mg	1.2 mg	1.5 mg	1.9 mg	2 mg	2 mg
Sodium Bicarbonate	4 mEq	6 mEq	8 mEq	10 mEq	12 mEq	15 mEq	19 mEq	24 mEq	30 mEq
Calcium Chloride	40 mg	60 mg	80 mg	100 mg	120 mg	150 mg	190 mg	240 mg	300 mg
Glucagon	0.4 mg	0.6 mg	0.8 mg	1 mg	1.2 mg	1.5 mg	1.9 mg	2.4 mg	3 mg
Atropine	0.32 mg	0.48 mg	0.64 mg	0.8 mg	0.96 mg	1.2 mg	1.52 mg	1.92 mg	2.4 mg
Midazolam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.2 mg	1.6 mg	2 mg	2.6 mg	3.2 mg
Diazepam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.2 mg	1.5 mg	1.9 mg	2 mg	2 mg
Lorazepam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.2 mg	1.5 mg	1.9 mg	2 mg	2 mg
Ketamine	4 mg	6 mg	8mg	10 mg	12 mg	15 mg	19 mg	24 mg	30 mg

Pediatric Analgesia and Sedation Management

ALS transport if patients given a sedation medication

History:
- Age
- Location
- Duration
- Severity (1 - 10)
- Past medical history
- Medications
- Drug allergies
- Aggravating factors
- Alleviating factors

Differential:
- Per the specific protocol
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural / Respiratory
- Neurogenic
- Renal (colic)



Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Morphine	.4 mg	.6 mg	.8 mg	1 mg	1.3mg	1.6. mg	2 mg	2.6 mg	3.2 mg
Fentanyl max	8 mcg	12 mcg	16 mcg	20 mcg	26 mcg	32 mcg	40 mcg	52 mcg	64 mcg
Hydromorphone	0.06mg	0.09mg	0.12mg	.15 mg	.2 mg	.24 mg	.3 mg	.39mg	.48 mg
Midazolam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.3mg	1.6 mg	2 mg	2.6 mg	3.2 mg
Diazepam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.3 mg	1.6 mg	2 mg	2.6 mg	3.2 mg
Lorazepam	0.4 mg	0.6 mg	0.8 mg	1 mg	1.3 mg	1.6 mg	2 mg	2.6 mg	3.2 mg
Ondansetron	Contact MC			1 mg	1 mg	1 mg	2 mg	2 mg	3 mg
Ondansetron PO	Contact MC			4 mg ODT					
Ketamine	1 mg	1.5 mg	2 mg	2.5 mg	3 mg	4mg	5 mg	6.5 mg	8 mg
Ketamine Infusion(max dose)	8mg	12mg	16mg	20mg	26 mg	32mg	40mg	52mg	64mg
Acetaminophen IV	60 mg	90 mg	120 mg	150 mg	195 mg	240mg	300mg	390mg	480mg

Notes: Avoid polypharmacy and switching between multiple medications.

Pediatric Fever

ALS evaluation and/or transport if available:

History:
- Fever not associated with heat injury does not require rapid temperature reduction

Differential:
- Infections / Sepsis
- Medication or drug reaction
- Altered mental status

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

E | **Sepsis Screening Tool** Pg. 22 | E

↓

Temp ≥ 101°F or ≥ 38 C ?

No → **Otherwise Well?**

Otherwise Well? Yes → **Keep Patient Comfortable**
Do Not Undress
Do Not Apply Cool Compress

Otherwise Well? No → See Appropriate Protocol

Temp ≥ 101°F or ≥ 38 C ? Yes ↓

Keep Patient Comfortable
Do Not Undress
Do Not Apply Cool Compress

↓

Associated With Needing Treatment?

Yes → See Appropriate Protocol

No ↓

If greater than 10 mins from hospital, w/ no vomiting and no acetaminophen w/in 4 hours, THEN

↓

E | Consider **Acetaminophen** 15 mg/kg PO | E

↓

E | **Ibuprofen** 10 mg/kg PO> 6 months of age | E

↓

OR

A | **Acetaminophen** 15 mg/kg IV/IO over 15 min | A

↓

M | **Contact Medical Control** | M

Remember pediatrics have febrile seizures from 6 months from 6 years of age.

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Acetaminophen PO	60 mg	90 mg	120 mg	150 mg	195 mg	240 mg	300 mg	390 mg	480 mg
Acetaminophen IV	60 mg	90 mg	120 mg	150 mg	195 mg	240 mg	300 mg	390 mg	480 mg
Ibruprofen			80 mg	100 mg	130 mg	160 mg	200 mg	260 mg	320 mg

Pediatric Non-Traumatic Shock

ALS evaluation and/or transport if available:

History:
- Medical history
- Respiratory distress or arrest
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)
- Non accidental trauma

Differential:
- Respiratory effort
- Hypovolemia (dehydration)
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-hyperkalemia
- Hypoglycemia
- Hypothermia
- Toxins
- Tamponade, cardiac
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

E — **Oxygen** PRN — E
SAT 94-98%
Early assisted ventilation
Supraglottic Airway
Pg. 109

E — **Blood Glucose** — E

E — **ECG/12 Lead/EtCO$_2$** — E

E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Fluid Bolus** — E-IV
20 ml/kg IV/IO
May repeat up to 60 ml/kg

P — **Epinephrine Bolus** — P
0.01 mg/kg IV/IO
Epinephrine Drip
0.1-1.5 mcg/kg/min IV/IO

Ongoing Assessment

Consider Other Treatment Protocol As Necessary

M — **Contact Medical Control** — M

Weight	4 kg grey	6 kg pink	8 kg red	10 kg purple	13 kg yellow	16 kg white	20 kg blue	26 kg orange	32 kg green
Epinephrine 1 : 10,000 0.01 mg/kg IV / IO	0.04 mg	0.06 mg	0.08 mg	0.1 mg	0.13 mg	0.16 mg	0.20 mg	0.26 mg	0.32 mg

Epineprine Drip	1 mg Epinephrine 1:1,000 in 250 ml = 4 mcg/ml	Use 60 gtt tubing			
Mcg/min	2	4	6	8	10
Administer	30 gtts/min	60 gtts/min	90 gtts/min	120 gtts/min	150 gtts/min
Run gtts/sec	1 every 2 seconds	1 every second	1.5 every second	2 every second	2.5 every second

Pediatric Seizure

ALS evaluation and/or transport if available:

History:
- Prior history of seizures
- Seizure medications
- History of VP Shunt
- Fever
- Head Trauma

Differential:
- Medication or Toxin
- Hypoxia or Respiratory failure
- Hypoglycemia
- First time Seizure

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Febrile?

Yes → See **Ped. Fever Protocol** Page 77

No →

Oxygen
SAT 94-98%

Overdiluted formula can cause hyponatremia and lead to seizures. Treat with isotonic fluid.

E — **Supraglottic Airway** PRN Pg. 109 — E

E-IV — **Obtain IV/IO Access** — E-IV

A — Blood Glucose < 60
See **Pediatric Altered Mental Status** Pg.73 — A

Active Seizure ≥ 5 minutes?

Yes → E — **Assist Patient With Own Seizure Med** — E

A — **Midazolam** 0.1 mg/kg /IM — A

No →

Repeat Seizures?

Yes → P — **Midazolam** 0.1 mg/kg IV/IO/IN/IM
OR
Diazepam 0.1 mg/kg IV/IO/IN
OR
Lorazepam 0.1 mg/kg IV/IO/IM
Or
Ketamine 1 mg/kg IV/IO/IN — P

M — **Contact Medical Control** — M

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Ketamine	**4 mg**	**6 mg**	**8 mg**	**10 mg**	**13 mg**	**16 mg**	**20 mg**	**26 mg**	**32 mg**
Midazolam	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Diazepam	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Lorazepam	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**

Pediatric Multi-System Trauma

ALS evaluation and/or transport if available:

History:	Signs and Symptoms:	Differential:
• Time and Mechanism of injury • Damage to structure or vehicle • Location in structure or vehicle • Others injured or dead • Speed and details of MVA • Restraints / protective equipment • Symptoms preceding incident	• Altered mental status or unconscious • Hypotension or shock	• Chest Tension pneumothorax Flail Chest Pericardial Tamponade Open chest wound Hemothorax • Intra-abdominal bleeding • Pelvis/femur fracture • Spine fracture / Cord injury • Extremity fracture / Dislocation • HEENT (Airway Obstruction) • Hypothermia

Trauma Red Criteria:

Age 0–9 years
- SBP < 70mm Hg + (2 x age in years)

Age 10–18 years
- SBP < 90 mmHg or
- HR > SBP

LEGEND

R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

MAP
<1 year =< 40
1-3 year = < 50
>3 year = < 60

Universal Patient Care Protocol

Expose Injuries

Arrange Transport According To The **CDC Pg. 10 / Or County Destination Policies**

Wound Care / Hemorrhage Control? Pg. 52
Pelvic Stabilization? Pg. 142

Patient With Mechanism Or Exam Concerning For Potential Spinal Injury
Spinal Motion Restriction Pg. 146

E — **Supraglottic Airway** PRN — E
Pg. 109

E-IV — **Obtain IV/IO Access** — E-IV

Signs of Shock?

Yes →

E-IV — **Isotonic IVF**: 20 mL/kg IV/IO may repeat up to 60 mL/kg — E-IV

Reassess Airway/Ventilation

P — Advanced Airway Procedures as needed
Pediatric Sequenced Intubation Pg. 69
Pediatric Airway Pg. 67
Pediatric Analgesia & Sedation Pg.76
Chest Decompression Pg 145 — P

P — **See Blood Administration Protocol** Pg 53 — P

No →

Ongoing Assesment

Appropriate Protocol

M — **Contact Medical Control** — M

Pediatric Drowning/Near Drowning

Transport ALL near drowning patients

History:
- Submersion in water regardless of depth
- Possible history of trauma
- Duration of submersion
- Temperature of water
- Salt vs.Fresh Water

Differential:
- Trauma
- Pre-existing medical problems
- Barotrauma
- Decompression Sickness

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

↓

Consider **Spinal Motion Restriction**
Pg. 146

↓

If Apnea, or no pulse or Symptomatic Bradycardia
Begin CPR
See Appropriate Guideline

← E: Patient breathing or restless? Start **CPAP** (E)

↓

E: **Supraglottic Airway** PRN (E)
Pg. 109

↓

E: **Pulse Ox/$EtCO_2$** (E)

↓

Remove Wet Clothing
Cover With Dry (warm) Blankets
Warming Measures

↓

E: **ECG / 12 Lead** (E)

E-IV: **Obtain IV/IO Access** PRN (E-IV)

↓

Consider Other Treatment Protocol As Necessary

↓

M: **Contact Medical Control** (M)

Pediatric Burns

ALS evaluation and/or transport if available > 15%:

History:
- Type of exposure
- Inhalation injury
- Time of injury
- Mechanism of Injury
- Non-accidental trauma
- Trauma

Differential:
- Superficial (1°) red and painful
- Partial thickness (2°) blistering
- Full thickness (3°) charred or leathery skin
- Chemical
- Thermal
- Electrical

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

Oxygen

E **Supraglottic Airway** PRN E
Pg. 109

Stop The Burning Process
Remove Jewelry And Clothing That May Be Burned, Covered In Chemicals Or Restricting.

Electrical Burns
Are sympathetic when there is an entrance and exit wound.

Thermal / Electrical

Cover Burn With A Dry Clean Sheet Or Dressing
Keep Warm

If burn < 10 % body surface area
Cool down the wound with Normal Saline

Cover Burn With A Dry Clean Sheet Or Dressing

Outlying Areas May Use Burn Gel For Comfort In Burns < 10% BSA

Use Rule of 9's

If Above 10% Then

E-IV Obtain IV/ IO access E-IV
Less than 5 yr. old
Isotonic IVF at 125 mL/hr
5-14 yr. old
Isotonic IVF at 250 mL/hr
15 yr. and older
Isotonic IVF at 500 mL/hr

A With better estimate of **TBSA, then** A
TBSA x weight in kg/8
Volume of Isotonic IVF in 1st hour, NS or LR

P **Pediatric Analgesia & Sedation** P
Pg. 76

M **Contact Medical Control** M

Chemical

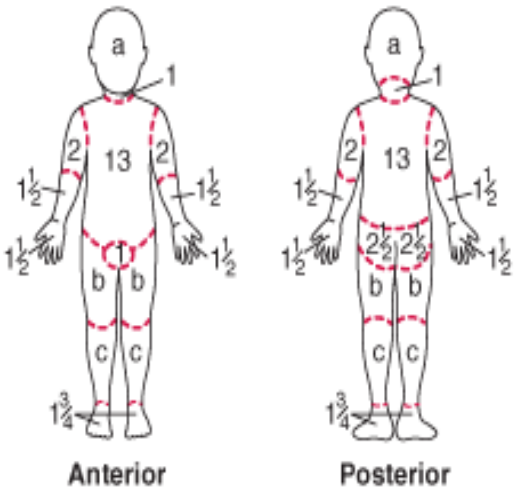
Brush Off Any Excess Chemical Or Powder

Flush Area With Water Or Normal Saline (except Materials That React With H2O) Keep Warm

Eye Involvement?
Saline Flush In The Affected Eye

Needs a Burn Unit

1. Partial and/or Full Thickness (2nd and/or 3rd degree burn >10% TBSA
2. 2nd and/or 3rd burns to face, hands, or genitals
3. Circumferential burns or burns at groin, axilla, or over major joints.



Relative percentage of body surface area (% BSA) affected by growth

Body Part	Age 0 yr	1 yr	5 yr	10 yr	15 yr
a = 1/2 of head	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2
b = 1/2 of 1 thigh	2 3/4	3 1/4	4	4 1/4	4 1/2
c = 1/2 of 1 lower leg	2 1/2	2 1/2	2 3/4	3	3 1/4

Pediatric Hyper/Hypothermia

ALS evaluation and/or transport if available:

History:
- Age
- Exposure to increase temperature and/or humidity
- Extreme exertion
- Time and length of exposure
- Fatigue and/or muscle cramping
- Altered Mental Status
- Temp > 104° F or 40 C due to heat
- Abnormal vital signs

Differential:
- Infection
- Dehydration
- Medications
- Thyroid storm

What is on scene?
- Try to take advantage of what is on scene. Gatorade? Warm bath?
- If capable, cool on scene.

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

Universal Patient Care Protocol

E-IV **Obtain IV/IO Access** PRN E-IV

E-IV **Isotonic IVF** PRN E-IV
20 mL/kg

E **ECG/12 Lead/EtCO$_2$** PRN E

Document Patient Temperature

Hyperthermic?

If capable cool on scene.
Cooling Measures
- Ice
- Wet clothing & fan

Shivering?

Yes

No

P **Midazolam** PRN P
0.1 mg/kg IN/IM/IV/IO
OR
Diazepam
.1 mg/kg IV/IO
OR
Lorazepam
0.1 mg/kg IV/IO
OR
Ketamine
0.25-0.5 mg/Kg IV/IO/IN

Blood Glucose Check

Treat Per Appropriate Protocol

M **Contact Medical Control** M

Hypothermic?

Warming Measures

Hypothermic Cardiac Arrest
- High Performance CPR
- Airway
- Active Rewarming
- Minimize movement
- Hold IV Meds until core temp above 96 degrees.

Weight	4 kg *grey*	6 kg *pink*	8 kg *red*	10 kg *purple*	13 kg *yellow*	16 kg *white*	20 kg *blue*	26 kg *orange*	32 kg *green*
Midazolam	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Diazepam	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Lorazepam	**0.4 mg**	**0.6 mg**	**0.8 mg**	**1 mg**	**1.3 mg**	**1.6 mg**	**2 mg**	**2.6 mg**	**3.2 mg**
Ketamine	**4 mg**	**6 mg**	**8 mg**	**10 mg**	**13 mg**	**16 mg**	**20 mg**	**26 mg**	**32 mg**

Notes:
- Succinycholine not recommended for Hyperthermic patients
- Document patient's rectal temperature
- Rapid cooling to 39° C (103° F) to avoid overshooting and shivering.
- Apply room temperature water to skin and increase airflow around patient if possible. Ice packs to axillae and groin

Pediatric Concussion/Traumatic Brain Injury

ALS evaluation and/or transport if available:

Signs observed by Others:
- Appears dazed or stunned
- Confusion, Forgetfulness
- Unsure
- Moves Clumsily
- Answers Questions slowly
- Loses consciousness
- Behavior or personality Changes
- Can't recall events prior to hit / fall
- Apparent weakness
- Neurological deterioration over time
- Abnormal Vital signs
- Posturing/Seizure

Symptoms Report by Athlete:
- Headache
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light
- Sensitivity to noise
- Numbness or weakness in extremities
- Feeling sluggish, hazy, foggy, or groggy
- Concentration or memory problems
- Confusion / Altered Mental Status
- DOES NOT "FEEL RIGHT"

LEGEND		
R	EMR	R
E	EMT	E
E-IV	EMT-IV	E-IV
A	AEMT	A
P	PM	P
M	MC ORDER	M

EMS provider will not clear athlete with signs/ symptoms of concussion.

Universal Patient Care Protocol

Mechanism or Signs / Symptoms of Head Injury

Consider **Spinal Motion Restriction** Pg. 146

E — **End Tidal CO2** — E

Advanced Airway Management or Focal neurologic abnormalities, or GCS < 8

Yes → P — Consider **Sequence Intubation** for GCS < 8 ; Pg. 69 — P

Hypotension? — Yes → E-IV — **Obtain IV/IO Access** — E-IV

E-IV — **Isotonic IVF** 20 ml/kg IV/IO May repeat up to 60 ml/kg — E-IV

No → **MAP Goal**
< 1 year =/> 40
1-3 year =/> 50
> 3 year =/> 60

E — **Supraglottic Airway** PRN Pg. 109 — E

Signs of Intracranial Hypertension? → P — Consider **Sequence Intubation** for GCS <8 Pg. 69 — P

Signs of intracranial hypertension
- Severe headache
- Lethargy
- Vomiting
- Coma

Elevate head of bed to 30-45°

P — **Ventilate As Clinically Indicated To Maintain 35-45 Mm/Hg ETCO2** — P

Clinical signs of seizure? — Yes → See **Pediatric Seizure Protocol** Pg. 79

No → M — **Contact Medical Control** — M

No → **Support ABC's Monitor Treat other associated sypmtoms Consider Differentials**

Consider Neurogenic shock
- Hypotension
- Worsening GCS

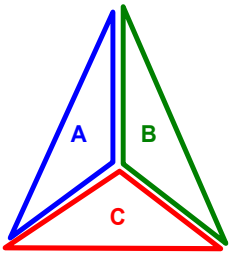
Start Isotonic IVF or Pressor

Pediatric Assessment

R | E | E-IV | A | P

Airway & Appearance
(Open/Clear – Muscle Tone/Body Position)

Abnormal: **Abnormal** or absent cry or speech. Decreased response to parents or environmental stimuli. Floppy or rigid muscle tone or not moving.
Normal: Normal cry or speech. Responds to parents or to environmental stimuli such as lights, keys, or toys. Good muscle tome. Move extremities well.



Work of Breathing
(Visible movement/Respiratory Effort)

Abnormal: Increased/excessive (nasal flaring, retractions or abdominal muscle use) or decreased/absent respiratory effort or noisy breathing.
Normal: Breathing appears regular without excessive respiratory muscle effort or audible respiratory sounds.

Circulation to skin
(Color / Obvious Bleeding)

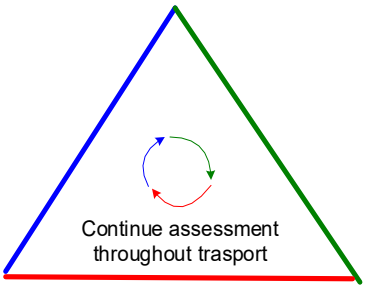
Abnormal: Cyanosis, mottling, paleness/pallor or obvious significant bleeding.
Normal: Color appears normal for racial group of child. No significant bleeding.

Decision/Action Points:
Any abnormal findings or life-threatening chief complaint such as major trauma/burns, seizures, diabetes, asthma attack, airway obstruction, etc (urgent) – proceed to Initial Assessment. Contact ALS if not already on scene/enroute.
All findings normal (non-urgent) – proceed to Initial Assessment.

Initial Assessment (Primary Survey)

Airway & Appearance
(Open/Clear – Mental Status)

Abnormal: Obstruction to airflow. Gurgling, stridor or noisy breathing. **V**erbal, **P**ain or **U**nresponsive on AVPU scale.
Normal: Clear and maintainable. **A**lert on AVPU scale.



Breathing
(Effort / Sounds / Rate / Central Color)

Abnormal: Presence of retractions, nasal flaring, stridor, wheezes, grunting, gasping or gurgling. Respiratory rate outside normal range. Central cyanosis.
Normal: Easy, quiet respirations. Respiratory rate within normal range. No central cyanosis.

Circulation to skin
(Color / Obvious Bleeding)

Abnormal: Cyanosis, mottling, or pallor. Absent or weak peripheral or central pulses; Pulse or systolic BP outside normal range; Capillary refill > 2 sec with other **abnormal** findings.
Normal: Color normal. Capillary refill at palms, soles, forehead or central body ≤2 sec. Strong peripheral and central pulses with regular rhythm.

Decision/Action Points:
Any abnormal findings (C, U, or P pg. 74) – Immediate transport with ALS.
Open airway & provide oxygen. Assist ventilations, start CPR, suction, or control bleeding as appropriate. Check for causes such as diabetes, poisoning, trauma, seizure, etc. Assist patient with prescribed bronchodilators or epinephrine auto-injector, if appropriate.
All findings on assessment of child normal (S) – Continue assessment, detailed history & treatment at scene or enroute.

Pediatric References

R E E-IV A P

Weight	3-5 kg grey	6-7 kg pink	8-9 kg red	10-11 kg purple	12-14 kg yellow	15-18 kg white	19-23 kg blue	24-29 kg orange	30-36 kg green
Age	Newborn – 3 mos	6 mos	9 mos	1 yr	2 yrs	3 yrs	5 yrs	7 yrs	10 yrs
Pulse	100-160	100-160	100-160	90-150	90-150	80-140	70-120	70-120	70-120
Respiratory Rate	30-60	30-60	30-60	24-40	24-40	22-34	18-30	18-30	18-30
Blood Pressure	40 mmHg	60 mmHg	60 mmHg	70 mmHg	70 mmHg	80 mmHg	80 mmHg	80 mmHg	90 mmHg
IGEL Size	1	1 1/2	1 1/2	1 1/2	2	2	2.00	2 1/2	2 1/2-3
Endotracheal uncuffed	3	3.5	3.5	4	4.5	5	5.5	6	6.5
Endotracheal cuffed	2.5	3	3	3.5	4	4.5	5	5.5	6
Nasogastric Tube	5 Fr	5 Fr	8 Fr	8-10 Fr	10 Fr	10 Fr	12 Fr	14 Fr	14 Fr
Defibrillation	8J	12J	16J	20J	24J	30J	38J	48J	60J
Cardioversion	2-4J	3-6J	4-8J	5-10J	6-12J	8-15J	10-20J	12-24J	15-30J
Fluid Challenge	80 ml	120 ml	160 ml	200 ml	240 ml	300 ml	380 ml	480 ml	600 ml
Suction Catheter	6 Fr	8 Fr	8 Fr	10 Fr	10 Fr	10 Fr	10 Fr	10 Fr	12 Fr

APGAR Scale

	0 Points	1 Point	2 Points
A – Appearance (Skin Color)	Blue / Pale	Normal, except for extremities	Normal over the entire body
P – Pulse	Absent	Below 100	Above 100
G – Grimace (Reflex Irritability)	No Response	Grimace	Sneeze, cough, pulls away
A – Activity	Absent	Arms and Legs Flexed	Active Movement
R – Respiration	Absent	Slow, irregular	Good, strong cry

AVPU Infant / Child

Response	Infant	Child
A – Alert	Curious / Recognizes parents	Alert / Aware of surroundings
V – Responds to Voice	Irritable / Cries	Opens eyes
P – Responds to Pain	Cries in response to pain	Withdraws from pain
U – Unresponsive	No response	No response

CUPS Pediatric

C – Critical	**Absent airway, breathing or circulation** (cardiac or respiratory arrest or severe traumatic injury)
U – Unstable	**Compromised airway, breathing or circulation** (unresponsive, respiratory distress, active bleeding, shock, active seizure, significant injury, shock, near-drowning, etc.)
P – Potentially Unstable	**Normal airway, breathing & circulation but significant mechanism of injury or illness** (Post-seizure, minor fractures, infant <3 months with fever, etc.)
S – Stable	Normal airway, breathing & circulation.No significant mechanism of injury or illness.(small lacerations or abrasions, infant ≥3 months with fever)

TICLS

T – Tone	Refers to child's muscle tone
I – Interactivity	Refers to degree of interaction the child has with his/her environment or those attempting to interact with the child
C – Consolability	Refers to the child's response to parents or caregivers
L – Look/gaze	Identifies whether the child tracks things appropriately with his/her eyes or has a nonfocused gaze.
S – Speech or cry	Refers to how the child vocalizes.

R E E-IV A P

Pediatric

Neonatal Resuscitation

Dry, Warm, Position, Tactile stimulation.

Suction mouth then nose

Administer O2 as needed.

Apnea/Gasping, HR <100 or central Cyanosis

Ventilate with BVM

HR < 60 after 30 sec BVM

Chest Compressions

ALS- HR <60

Intubate

Meds

Pediatric
Pain Assessment and Documentation

Clinical Indications:

- Any pediatric patient with pain

Definitions:

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

Procedure:

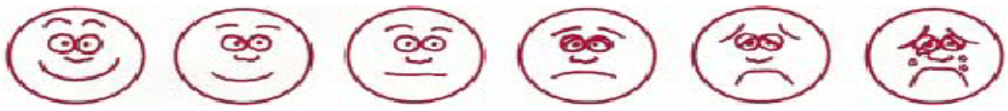
1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self-report.
2. Pain should be assessed and documented during the initial assessment, before starting pain control treatment, and with each set of vitals.
3. Pain should be assessed using the appropriate approved scale.
4. 0 – 10 Scale: the most familiar scale used by EMS for rating pain based on the patient's ability to express their perception of the pain as related to numbers. Avoid coaching the patient; instead, simply ask them to rate their pain on a scale from 0 to 10, where 0 means no pain at all and 10 means the worst pain ever.

Visual Analog Scale

0 1 2 3 4 5 6 7 8 9 10

No Pain — Worst pain

5. The Wong–Baker "faces" scale may be used with any patient with a language barrier. The faces correspond to numeric values from 0 to 10.



0 No Hurt | 2 Hurts Little Bit | 4 Hurts Little More | 6 Hurts Even More | 8 Hurts Whole Lot | 10 Hurts Worse

BEHAVIORAL TOOL

Face	0 No particular expression or smile	1 Occasional grimace or Frown, withdrawn, disinterested	2 Frequent to constant frown Clenched jaw, quivering chin
Legs	0 Normal or relaxed position	1 Uneasy, restless, tense	2 Kicking, or legs drawn up
Activity	0 Lying quietly, normal position, moves easily	1 Squirming, tense, shifting Back and forth	2 Arched, rigid or jerking
Cry	0 No cry (awake or asleep)	1 Moans or whimpers; occasional complaint	2 Cries steadily, screams, sobs, frequent complaints
Consol ability	0 Content, relaxed	1 Reassured by "talking to, hugging; distractible	2 Difficult to console or comfort

Pediatric

Umbilical Vein Cannulation

P

Clinical Indications:

- Emergency resuscitation and stabilization of neonates up to 10 days postpartum as initial access or when unable to gain venous and/or IO access.

Equipment:

- Umbilical clamps/Tape
- Scalpel
- 5 or 3.5 Fr feeding tube with Luer lock.
- 10 cc syringe
- IV bag
- IV tubing
- 3-way stopcock
- OR Commercially prepared umbilical line kit

Procedure:

1. Clamp and cut the cord at least 3-4 inches from the neonate's abdomen.
2. Tie the umbilical tape around the base of the cord, gently snug it to control bleeding, and clean it with betadine.
3. Using a scalpel, **cut the cord** about 2 cm above the abdomen (take care not to cut the skin).
4. Wipe the cut end of the cord with alcohol.
5. Measure for insertion depth by measuring the cord's length plus 2cm from that measurement, to prevent the tip of the catheter from being inserted so far that it injures the liver.
6. Identify the umbilical vein:
   a. There are two small arteries with small, thick walls.
   b. One larger, more "floppy" vein is typically at the 12 o'clock position.
7. Flush the catheter with NS.
8. Only put in as far as you need to get blood return, usually 4 to 5 cm max total depth, (5 Fr in normal gestation, 3.5 Fr in premature neonate).
9. Gently apply negative pressure on the end of the feeding tube with a syringe, watching for blood return.
10. Tape the distal portion of the catheter to the abdomen.
11. Disconnect the syringe and connect the 3-way stopcock and flush tubing.
12. Administer fluid and medications in a bolus fashion. **DO NOT** freely run IV fluids, use the three-way stopcock and a syringe to administer measured boluses over time.

Tips:

- It may be helpful to stabilize the cord by holding it at the base and applying gentle traction.
- Angle stump toward feet so the catheter is directed toward the head.
- If the catheter will not pass the umbilical tape, loosen it and try again.
- A newborn will need to be dried thoroughly for the securing tape to stick to their abdomen.

Pediatric
Venous Access Intraosseous

Clinical Indications:

- Life-threatening illness or injury in a child <8 years of age after effective ventilation is established. (For children > 8 and adults, see Venous Access Intraosseous Adult Pg. 152)
- Inability to obtain vascular access in a pediatric patient under 8 years old that requires emergent access.

Procedure:

1. Expose the leg.
2. Identify the insertion site:
   a. Proximal tibia: 1-2cm below and medial to the tibial tubercule (the bony prominence below the kneecap on the proximal tibia).
   b. Distal femur: slightly flex and place a roll behind the knee, 1cm above the top edge of the patella, midline.
3. Prep the site as per peripheral IV site.
4. **If using a commercial, powered IO device, follow the manufacturer's instructions for insertion, IV attachment, and stabilization**.
5. If using a manual IO device (Jamshidi, Illinois Bone Needle), insert it perpendicularly through the skin until it strikes bone, then apply controlled downward force while twisting back and forth in a rotating grinding motion until a "pop" or "give" is felt as the needle enters the marrow space inside the bone.
6. Remove the trocar and attach the IV.
7. **Stabilize and secure the device following manufacturers' recommendations. Pad in place as with an "impaled object" if necessary to prevent dislodging when moving the patient.**
8. Document the procedure, time, and result (success) on/with the patient care report (PCR).
9. If IO becomes dislodged or fails, remove it and mark the site "EMS-IO" rather than risking further attempts to use that access. If IO access is still required, use other sites before attempting to re-access a failed site."

Airway

Passive Pre-oxygenation Procedure

Clinical indications:

- Cardiac arrest
- To support and maintain oxygen saturation throughout airway procedures
- All rapid sequence intubations
- All conscious sedations

Clinical contraindications:

- None

Procedure:

- Place $ETCO_2$ nasal cannula on all patients while preparing for RSI see pages 94-95.
- Standard nasal cannula can be inserted into the mouth for higher flow rates.

1. **Low risk patient (96-100%):**
   a. **Pre-oxygenation:** nonrebreather mask (NRB) w/ normal flow.
   b. **Induction**: NRB and nasal cannula (NC) set to 15L/min
   c. **During intubation:** NC kept at 15L/min

2. **High risk (91-95%):**
   a. **Pre-oxygenation**: NRB or CPAP/BIPAP or bag valve mask (BVM) with PEEP valve.
   b. **Induction:** as above plus NC at 15L/min
   c. **During intubation:** NC at 15L/min

3. **Hypoxemic, Cardiac arrest (<90%):**
   a. **Pre-oxygenation**: CPAP/BIPAP or BVM w/ PEEP.
   b. **Induction:** as above, plus NC at 15L/min
   c. **During intubation:** NC at 15L/min
   d. **Cardiac arrest:** NC at maximum output

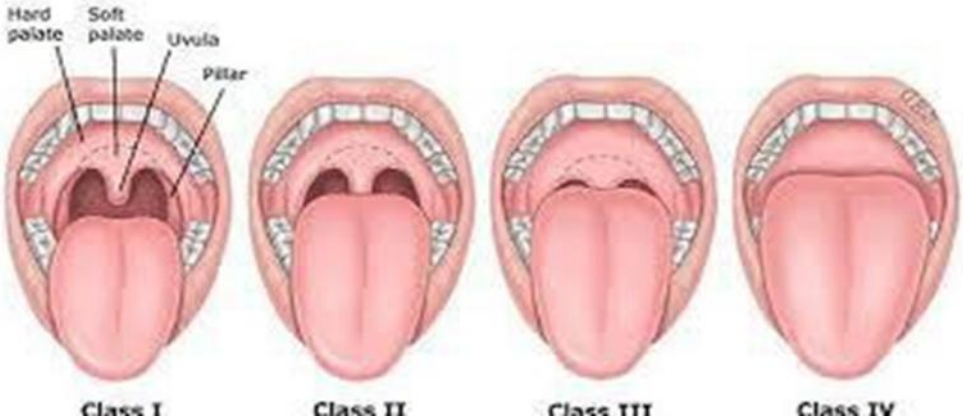
4. Once an advanced airway has been placed, the nasal cannula can be removed.

5. Document the procedure and results on/with the Patient Care Report (PCR).

Airway

Difficult Airway Assessment

HEAVEN Criteria		
Physical signs	**Less difficult airway**	**More difficult airway** ****Consider video laryngoscopy as first pass method.**
Hypoexmia	• SpO2 ≥ **93%** at time of initial laryngoscopy	• SpO2 ≤ **93%** at time of initial laryngoscopy
Extremes of size	• Adult patients • Normal body habitus	• Age ≤ **8** years of age • Clinically obese • Other size-related complications requiring special resources, equipment, or positioning
Anatomic challenge	• No facial, head, or neck trauma • No swelling or foreign body, • No other structural abnormality is limiting laryngoscopic view	• Facial, head, neck trauma • Airway swelling or foreign body • Other structural abnormality limiting the laryngoscopic view
Vomit/blood/fluid	• Pharynx and hypopharynx are clear of blood, emesis, or other fluid	• Blood, vomit, or other fluid present in the pharynx or hypopharynx, limiting laryngoscopic view
Exanguination	• No suspected anemia or blood loss	• Suspected or known anemia or blood loss, which could accelerate desaturation during apneic periods
Neck	• No suspected neck injury, medical condition, or device limiting cervical range of motion	• Known or suspected neck injury, medical condition, or device limiting cervical mobility



Rapid Sequenced Induction and Intubation (RSI)

Inclusion Criteria:

- Patients with an intact gag reflex who require proactive airway control and management due to a clinical condition.

Procedure:

1. Use the Rapid Sequence Induction and Intubation Checklist to assemble equipment and ensure proper function.
   a. Ensure the availability of atropine for all patients.
   b. Ensure the availability of vasopressors for all patients.
2. Preoxygenate with high-flow oxygen **(see page 92)**.
3. Assess the patient for a difficult airway. **(see page 93)**
4. Explain the procedure to the patient as appropriate.
5. If the patient displays clinical indications of shock, resuscitate as appropriate before attempting intubation, if possible.
   a. Hypovolemia: 250 - 500 mL of isotonic crystalloid
   b. Other causes of shock: vasopressors as appropriate.
   c. A higher-than-normal target pressure (systolic greater than 130mmHg/MAP greater than 85mmHg) may be desirable in the shock patient prior to intubation attempt(s).
6. Sedate/dissociate as appropriate:

Non-Shock/Normotensive Patient	Shock/Hypotensive Patient
Ketamine 1 mg/kg IV/IO **Or** **Midazolam 0.1 mg/kg** IV/IO **(Max dose of 10mg)** **Or** **Etomidate 0.3 mg/Kg** IV/IO	**Ketamine 0.5 mg/kg** IV/IO **Or** **Etomidate 0.1-0.2mg/kg** IV/IO

7. Consider continuing preoxygenation for up to 3 minutes if the patient's condition tolerates.

8. Position the patient as appropriate.
9. Paralyze as appropriate:

Rapid Sequenced Induction and Intubation (RSI)*(continued)*

Non-Shock/Normotensive Patient	Shock/Hypotensive Patient
Succinylcholine 1.5 mg/kg IV/IO **(Adult)** **Succinylcholine 2mg/kg** IV/IO **(Pediatric)** Or **Rocuronium 0.6 to 1.2 mg/kg** IV/IO	**Succinylcholine 2 mg/kg** IV/IO Or **Rocuronium 0.6 to 1.2 mg/kg** IV/IO

10. Intubate the patient per procedure.
    a. Consider using video laryngoscopy and/or bougie on the first attempt.
11. Consider ongoing sedation as needed:

Non-Shock/Normotensive Patient	Shock/Hypotensive Patient
Ketamine 1 mg/kg IV/IO Or **Midazolam 0.1 mg/kg** IV/IO **(Max dose of 10mg)** Or **Diazepam 2-5 mg** with **Fentanyl 1 mcg/kg** IV/IO OR **Ketamine drip 0.5-1 mg/kg/hr** IV/IO	**Ketamine 0.5 mg/kg** IV/IO Or **Midazolam 0.1 mg/kg** IV/IO Or **Diazepam 2-5 mg** with **Fentanyl 1 mcg/kg** IV/IO Or **Ketamine drip 0.5-1 mg/kg/hr** IV/IO

12. Consider ongoing paralysis as needed and clinically indicated:

Non-Shock/Normotensive Patient	Shock/Hypotensive Patient
Rocuronium 0.1- 0.2 mg/kg IV (Adult) **Rocuronium 0.075-0.125 mg/kg IV (3 mos.-14 yrs)**	

Airway
Orotracheal Intubation

Video laryngoscopy (VL) represents the preferred method for intubation when available, though direct laryngoscopy (DL) remains valuable based on provider preference, experience, and specific clinical situations. **See pg. 97**

Clinical Indications:

- An unconscious patient without a gag reflex who is apneic or demonstrating inadequate respiratory effort.
- Any patient medicated for rapid sequence intubation.

Procedure:

1. Prepare all equipment and have the suction ready.
2. Pre-oxygenate the patient, **Page 92**.
3. Medicate according to the appropriate **RSI procedure. Page 94-95.**
4. Open the patient's airway and, holding the laryngoscope in the left hand, insert the blade into the right side of the mouth and sweep the tongue to the left.
5. Use the blade to lift the tongue and epiglottis (either directly with the straight blade or indirectly with the curved blade).
6. Once the glottic opening is visualized, slip the tube through the cords and continue to visualize until the cuff is past the cords.
7. The number of intubation attempts shall not further compromise oxygenation. Oxygenate between each attempt and record SPO2. If unable to intubate after two (2) attempts, proceed to the Failed Airway protocol, Pg. 34. Or Pediatric Failed Airway protocol Pg. 68.
8. Remove the stylet and inflate the cuff (5- 10cc until no cuff leak).
9. Auscultate for the absence of sounds over the epigastrium and bilaterally for equal breath sounds.
10. This should be repeated frequently and after movement or manipulation.
11. Confirm the placement using a minimum of two (2) methods. CO2 detection device mandatory. **See ETT Placement Verification and Monitoring Pg. 99.**
12. Secure the tube.
13. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient's teeth or lips on/with the patient care report (PCR).
14. Document all devices used to confirm initial tube placement. Also, positive or negative breath sounds should be documented before and after each patient's movement.

Airway
Video Assisted Laryngoscopy

Video laryngoscopy (VL) represents the preferred method for intubation when available, though direct laryngoscopy (DL) remains valuable based on provider preference, experience, and specific clinical situations.

Clinical Application:

Video laryngoscopy is applicable for any orotracheal intubation.

Provider Considerations:

Selection between VL and DL should be based on:

- Provider training and experience
- Clinical comfort with each technique
- Equipment availability
- Specific patient factors

Providers should maintain competency in both techniques, recognizing DL as an essential backup method.

Procedure:

1. Prepare all equipment, activate the VL device, and have suction ready.
2. Pre-oxygenate the patient.
3. Medicate according to the appropriate **Sequenced Intubation procedure. Pg. 94-95**.
4. Record and save intubation whenever possible.
5. Insert VL into the oropharynx as the manufacturer has suggested and as instructed during training.
6. Advance bougie or manufacturer-recommended stylet through vocal cords.
7. Pass the ET tube through the vocal cords while maintaining a view via the VL device.
8. Remove the stylet and inflate the cuff (5-10 mL until no cuff leaks).
9. Auscultate for the absence of sounds over the epigastrium and bilaterally equal breath sounds. This should be repeated frequently and after movement or manipulation.
10. Confirm placement using a minimum of two methods. At least one form of CO2 detection (colorimetric, capnometry, capnography) is required. Maintain continuous capnography.
11. Secure the tube.

Intubation with Eschmann Catheter, Tracheal Tube Introducer, or Gum Elastic Bougie

Technique

1. Perform direct or video laryngoscopy after thorough pre-oxygenation. **Passive Preoxygen Pg. 92**
2. Insert a bougie under direct or video visualization using epiglottis as a guide. Maintain midline bent end facing anteriorly.
3. With the tip directed anteriorly, guide the bougie toward the epiglottis.
4. Advance the bougie posterior to the epiglottis and into the glottic opening.
5. Cricoid pressure may facilitate correct placement (when the tip of the introducer passes the cricoid cartilage and enters the trachea, it may also be palpable at the anatomic location).
6. The operator may be able to feel the bougie “click” or “bump” over the anterior tracheal rings (“washboarding or railroading”).
7. Use the laryngoscope to elevate the pharyngeal soft tissue.
8. Subtle maneuvering may be required to traverse the vocal cords.
9. Advance to the carina (resistance to passage) to verify placement (approximately 45 cm). Once advanced to the carina, further insertion causes the bougie to rotate on entry into a bronchus, providing an additional criterion to confirm correct placement. Failure to meet resistance after inserting the bougie nearly to its full length indicates esophageal placement. Withdraw and align the black “lip-line marker” with the lips (cm band located 40 cm (4 stripes) from the proximal end).
10. Pass the endotracheal tube (larger than 6.0 mm) over the bougie.
11. If the endotracheal tube catches on the arytenoid or aryepiglottic folds, withdraw the tube slightly, rotate it 90° counterclockwise, and advance it forward (allows the beveled end to pass).
12. For optimal passage of the tube over the bougie into the trachea, the laryngoscope should be left in place as the endotracheal tube is advanced with the bevel facing posteriorly.
13. Secure the tube (remove bougie) and verify tube placement.

ETT Placement Verification and Monitoring

Clinical Indications:

- Verification and monitoring of endotracheal tube (ET) placement in all intubated patients. The use of waveform capnography in initial confirmation and ongoing placement monitoring is mandatory for all intubated patients.

Procedure:

After successfully intubating the patient:

1. Assess for breath sounds high in the axilla, anterior chest, and over the abdomen.

2. Confirm for negative gastric sounds.

3. Use inline ETCO2 monitoring to confirm and continuously monitor tube placement. This must be documented in the narrative, and capnography readings should be included in the vitals.

4. A Litmus paper CO2 detector may be used, if continuous monitoring is not available, at the initial stage of ET intubation, but inline continuous monitoring should occur thereafter.

5. In the perfusing patient, obtain and monitor SPO2. These should be adequate or improving—record data in PCR.

6. ETT placement should be re-verified after all patient posture changes, moves, and transfers.

7. A simple way to determine proper ETT cuff pressure in order to prevent tracheal &/or anterior esophageal necrosis from overinflated cuffs:
   a. Attach a 10mL syringe to the cuff pilot tube port.
   b. Depress the syringe plunger to inflate the cuff with 10mL of air.
   c. WAIT for the syringe plunger to retract back into the syringe body. This indicates the equalization of pressures between the air within the cuff, atmospheric pressure & the pressure of the tracheal soft tissues on the cuff.
   d. 10mL - Amount of equalized back into the syringe = Amount of air remaining in the cuff. Document.

Capnography, End Tidal CO2

Clinical Indications:

- Should be used for suspected sepsis screening
- Capnography shall be used in all patients with endotracheal or supraglottic airways.
- If appropriate cannula-type sensors are available, capnography may be used in non-intubated patients.

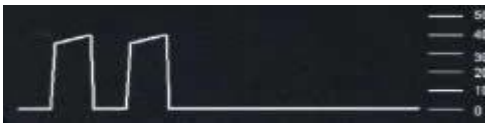
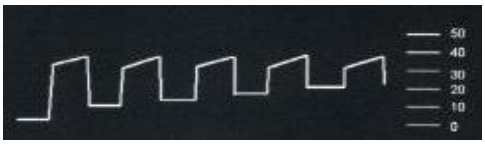
⚠Use of cannula-type end-tidal capnography as a source of oxygen delivery is limited by the small holes through which oxygen can flow. If a patient requires more than 2-4 LPM, use a standard cannula for oxygen delivery.

***Important: Severe metabolic acidosis (DKA, sepsis, salicylate poisoning, acute renal failure, methanol ingestion, tricyclic overdose) will cause tachypnea, but ETCO2 will be HIGH. THIS IS NOT NORMAL.**

Procedure:

1. For non-intubated patients with severe respiratory distress/respiratory insufficiency, suspected sepsis, place a cannula-type sensor in the patient's nares.
2. Attach the capnography sensor to the supraglottic airway or endotracheal tube.
3. Note CO2 level and waveform changes. These will be documented for each respiratory failure or cardiac arrest patient.
4. The sensor shall remain in place with any endotracheal or supraglottic airway and be monitored throughout the prehospital care and transport.
5. Any loss of CO2 detection or waveform indicative of an airway problem should be immediately addressed and documented.
6. The capnogram should be monitored during procedures to verify or correct the airway problem.
7. Document the procedure and results on/with the Patient Care Report (PCR).

Capnography, End Tidal CO2 *(continued)*

NORMAL: "Square box" waveform; baseline CO2 = 0; ETCO2 = 35-45 mm Hg **Management**: Monitor	
DISLODGED ETT / ESOPHAGEAL INTUBATION: Loss of waveform, Loss of ETCO2 reading **Management:** DOPES (**see page 102**)	
"SHARKFIN" with/without prolonged expiration = Bronchospasm (asthma, COPD, allergic reaction): **Management:** Bronchodilators (Albuterol, Atrovent, or epinephrine)	
RISING BASELINE = Patient is rebreathing CO2: **Management:** Check equipment for adequate oxygen inflow Allow the intubated patient more time to exhale	
HYPERVENTILATION: Rapid RR; shortened waveform; baseline ETCO2 = 0; ETCO2 < 35 mm Hg **Management:** Biofeedback if conscious, decrease assisted ventilation rate if unconscious/intubated.	
PATIENT BREATHING AROUND ET TUBE: angled, sloping downstroke on the waveform. A broken cuff or tube is too small. **Management:** Assess patient, oxygenation, ventilation; may need to reintubate.	

Airway
Ventilator Operation

Clinical Indications:

- Transport of an intubated patient in both the prehospital and interfacility settings.

Procedure:

A. Initial ventilator therapy
   1. Confirm the placement of the tube as per airway protocol.
   2. Ensure adequate oxygen delivery to the ventilator device.
   3. Preoxygenate the patient as much as possible with a bag-valve mask.
   4. In the field, set initial values per the device instructions. For example, set an I:E ratio of 1:4, with a rate of 12-20 and a tidal volume of 4-6 mL/kg. If transferring a patient who is already stable on a ventilator in the hospital or at home, set initial values to mimic those of the ventilator the patient is already on.
   5. Remove the BVM and attach the tube to the ventilator device.
   6. Assess breath sounds. Allow for adequate expiratory time. Adjust the ventilator setting as clinically indicated.
   7. For post-intubation HYPOXIA, consider **DOPES**

      DOPES

      Displacement of endotracheal tube (ETT)
      Obstructions of the ETT
      Patient – **P**neumothorax, **P**ulmonary edema, **P**ulmonary embolism, collapse or bronchospasm
      Equipment – ventilator malfunction
      Stacked breaths – lack of expiratory time
      For ETT suctioning: French size suction catheter = ETT size x 1.5

8. If the patient's condition continues to decline or there is any question regarding the function of the ventilator, discontinue ventilator use and resume BVM ventilations.
   a. Document time, SPO2 / ETCO2 trends, complications, and patient response on the patient care report (PCR)

9. Continued ventilation therapy <u>Principles of Therapy</u>:
   a. The following guidelines are to decrease the work of breathing, improve patient-ventilator synchrony, enhance patient comfort, maintain adequate blood gases, and prevent alveolar distension. Contact medical control for complex situations.
   b. The patient and ventilator function as a dynamic system. No one set of ventilator parameters is ideal for all patient situations. Each patient has unique neural respiratory drives.

Airway
Ventilator Operation (*continued*)

c. **"The brain's desire to regulate respirations does not stop."** Dysynchrony occurs when the ventilator settings do not match the patient's needs well. Depending on the clinical situation, one goal of therapy may take precedence over others.
   i. Dynamic hyperventilation
   ii. Compliance
   iii. Resistance

Terms:

Assist Control – The ventilator delivers to a set tidal volume, or pressure, and rate regardless of whether or not the patient is spontaneously breathing. Best used with apneic patients (i.e. cardiac or respiratory arrest).

SIMV – Synchronized Intermittent Mechanical Ventilation. Ventilators with this capability can sense the negative pressure caused by a spontaneously breathing patient's inspiration, which then triggers ventilation delivery to either a set volume or pressure. The patient's exhalation is also sensed, triggering the ventilator to stop inspiration. In addition, a minimum rate can also be set.

AC - Assist control is a common method of mechanical ventilation that delivers a set tidal volume (VT) with each breath, regardless of the patient's inspiratory effort.

I:E - Ratio of inspiration time to expiration time. Often 1:2 or 1:3, but depending on the patient's needs, it may be more (1:5, 1:6, etc…).

FiO2 – Fraction of Inspired Oxygen. Percent of oxygen in the ventilation. May be expressed as a decimal or percentage. For instance. = % . = % etc… Room air is 0.21 or 21%.

PEEP – Positive End Expiratory Pressure. The amount of pressure that a patient needs to exhale against. This helps prevent atelectasis by providing a pressure in the airways to 'stent' them open against the increased thoracic pressure during exhalation.

PIP – Peak Inspiratory Pressure. The maximum allowable pressure is used during the inspiratory phase. It can be adjusted to the patient's condition. However, some ventilators may have a hard limit (around 35 cmH_2O) that cannot be exceeded.

Ve – Minute ventilation.

Vt – Tidal volume.

Ventilator Operation *(continued)*

Mechanical Ventilation

INDICATIONS:

1. Ventilation of the patient with an indwelling tracheal or supraglottic airway
2. Special Considerations
   a. All patients with an artificial airway in place must be accompanied with an appropriate sized Bag Valve and mask and a 10cc syringe during transport.
   b. **Continuous monitoring of waveform capnography is required.**
      i. The morphology of the waveform should be documented in the PCR.
   c. Lung protective ventilator strategies (4ml/kg) should be used on all patients. Use the minimum necessary tidal volume &/or pressure to obtain the desired result.
   d. Obstructive ventilator strategies (permissive hypercapnea and prolonged expiratory time) should be used on all patients with concern for, or presence of, auto PEEP. These patients may also have a substantially elevated serum bicarbonate level.
   e. SIMV in the transport of acutely ill patients is rarely indicated.
      i. If used, ensure adequate pressure support to reduce the increased work of breathing for patient-triggered breaths.

CONTRAINDICATIONS:

1. None

PROCEDURE:

1. Mode
   a. Volume Control Ventilation is generally the standard breath type unless:
      i. Ventilation is suboptimal due to high PIP alarms.
      ii. Poor oxygenation exists, despite appropriate alveolar recruitment with PEEP to 20.
      iii. Flow requirements cannot be met with current compliance and inspiratory times.
      iv. The patient is found to be ventilating well in PRVC or PCV, and this modality can be safely continued during transport.
   b. Pressure Regulated Volume Control
      i. Breaths are delivered in a decelerating inspiratory flow pattern to a target pressure, calculated from the previous breath, maximizing mean airway pressures when used in concert with PEEP.
      ii. The target pressure is adjusted based on the desired volume as the patient's pulmonary compliance changes.
      iii. The maximum allowed target pressure should be at least 5 cmH20 less than the set High Airway Pressure Alarm setting.

Ventilator Operation *(continued)*

iv. Caution should be used in spontaneously breathing patients as variability in tidal volumes can be extreme.
v. Caution should be used in obstructive lung disease patients as rapidly changing compliance can preclude adequate ventilation.

2. Lung Protection Ventilation for known ARDS
   a. **NOTE: Lung size is a function of the height, not weight.**
   b. Vt (Tidal Volume) should be 6mL/kg Ideal Body Weight (IBW).
      i. Ideal Body Weight calculation is based on height measured in inches)
         1. FEMALE: 45.5 + 2.3 x (Height – 60) = mL of Vt
         2. MALE: 50 + 2.3 x (Height – 60) = mL of Vt
      ii. Reduce Vt until Pplat (plateau pressure) < 30cmH2O
      iii. Tidal volumes as low as 4mL/kg can be used if necessary
   c. **CAUTION**
      i. Consider increasing rate to maintain Ve (minute ventilation).
      ii. Closely monitor I:E (Inspiratory Expiratory Ratio) and avoid inverse ratio ventilation.
3. Oxygenation
   a. Generally, 100% FiO2 (Fraction of inspired Oxygen) should be utilized until SpO2 is identified or obtained and is greater than 90%. Once at 90%, begin titrating FiO2 to keep SpO2 93% to 99%. For inter-facility patients, FiO2 should be the same as or as close to the transferring facility's ventilator.
   b. PEEP should be <u>at least</u> 5 cmH20 on all patients. Some patients may require more. For pre-hospital patients, contact with the Base Station Physician is recommended. For inter-facility patients, PEEP should be the same as the facility's ventilator.
   c. PEEP should be increased to 20 cmH20, in patients with hypoxia to promote alveolar recruitment, before reflexively moving to pressure control ventilation.
   d. PEEP may also be increased to reduce FiO2 requirements in the long-term setting.

Ventilator Operation *(continued)*

4. Ventilation
   a. Ventilatory RATE
      i. Used to control minute ventilation to accommodate patient needs as they relate to pCO2 and respiratory acidosis
      ii. $\frac{Current\ Respiratory\ rate\ x\ pCO2}{Desired\ pCO2} = New\ Respiratory\ Rate$

      pCO2 is typically 2-5 mm Hg higher than EtCO2 Flow and I:E ratio

   b. Inspiratory time (i-Time)
   c. Reducing the i-Time increases flow
   d. Reducing the i-Time will increase the Peak Inspiratory Pressure
   e. Be cognizant of I: E ratio and inadvertent inverse ratio ventilation (i.e. 2:1).
   f. For ETT suctioning: French size suction catheter = ETT size x 1.5

      A simple way to determine proper ETT cuff pressure in order to prevent tracheal &/or anterior esophageal necrosis from overinflated cuffs:

      1. Attach 10mL syringe to cuff pilot tube port.
      2. Depress syringe plunger to inflate cuff w/ 10mL air.
      3. WAIT for the syringe plunger to retract back into the syringe body. This indicates the equalization of pressures between the air within the cuff, atmospheric pressure & the pressure of the tracheal soft tissues on the cuff.
      4. 10mL - Amount of equalized back into the syringe = Amount of air remaining in the cuff. Document.

Ventilator Operation *(continued)*

FEMALE: Tidal Volume (mL) per Ideal Body Weight						
Height (inches)	IBW (kg)	4mL/kg	5mL/kg	6mL/kg	7mL/kg	8mL/kg
4’0” (48”)	17.9	72	90	107	125	143
4’1” (49”)	20.2	81	101	121	141	162
4’2” (50”)	22.5	90	113	135	158	180
4’3” (51”)	24.8	99	124	149	174	198
4’4” (52”)	27.1	108	136	163	190	217
4’5” (53”)	29.4	118	147	176	203	235
4’6” (54”)	31.7	127	159	190	222	254
4’ 7” (55")	34	136	170	204	238	272
4’ 8” (56”)	36.3	145	182	218	254	290
4” 9” (57”)	38.6	154	193	232	270	309
4’10” (58”)	40.9	164	205	245	286	327
4’11” (59”)	43.2	173	216	259	302	346
5 ’0” (60”)	45.5	182	228	273	319	364
5 ’1” (61”)	47.8	191	239	287	335	382
5 ’2” (62”)	50.1	200	251	301	351	401
5 ’3” (63”)	52.4	210	262	314	367	419
5 ’ 4” (64”)	54.7	219	274	328	383	438
5 ’5” (65”)	57	228	285	342	399	456
5 ’ 6” (66”)	59.3	237	297	356	415	474
5 ’ 7” (67”)	61.6	246	308	370	431	493
5 ’ 8” (68”)	63.9	256	320	383	447	511
5’ 9” (69”)	66.2	265	331	397	463	530
5 ’10” (70”)	68.5	274	343	411	480	548
5 ’11” (71”)	70.8	283	354	425	496	566
6’0” (72”)	73.1	292	366	439	512	585
6’ 1” (73”)	75.4	302	377	452	528	603
6’ 2” (74”)	77.7	311	289	466	511	622
6’ 3” (75”)	80	320	400	480	560	640
6’ 4” (76”)	82.3	329	412	494	576	658
6’ 5” (77”)	84.6	338	423	508	592	677
6’ 6” (78”)	86.9	348	435	521	608	695
6’ 7” (79”)	89.2	357	469	535	624	714
6’ 8” (80”)	91.5	366	458	549	641	732
6’ 9” (81”)	93.8	375	469	563	657	750
6’10” (82”)	96.1	384	481	577	673	769
6’11” (83”)	98.4	394	492	590	689	787
7’0” (84”)	100.7	403	504	604	705	806

Ventilator Operation *(continued)*

MALE: Tidal Volume (mL) per Ideal Body Weight						
Height (inches)	IBW (kg)	4mL/kg	5mL/kg	6mL/kg	7mL/kg	8mL/kg
4’0” (48”)	22.4	90	112	134	157	179
4’1” (49”)	24.7	99	124	148	173	198
4’2” (50”)	27	108	135	162	189	216
4’3” (51”)	29.3	117	147	176	205	234
4’4” (52”)	31.6	126	158	190	221	253
4’5” (53”)	33.9	136	170	203	237	271
4’6” (54”)	36.2	145	181	217	253	290
4’ 7” (55")	38.5	154	193	231	270	308
4’ 8” (56”)	40.8	163	204	245	286	326
4” 9” (57”)	43.1	172	216	259	302	345
4’10” (58”)	45.4	182	227	272	318	363
4’11” (59”)	47.7	191	239	286	334	382
5 ’0” (60”)	50	200	250	300	350	400
5 ’1” (61”)	52.3	209	262	314	366	418
5 ’2” (62”)	54.6	218	273	328	382	437
5 ’3” (63”)	56.9	228	285	341	398	455
5 ’ 4” (64”)	59.2	237	296	355	414	474
5 ’5” (65”)	61.5	246	308	369	431	492
5 ’ 6” (66”)	53.8	255	319	383	447	510
5 ’ 7” (67”)	66.1	264	331	397	463	529
5 ’ 8” (68”)	68.4	274	342	410	479	547
5’ 9” (69”)	70.7	283	354	424	495	566
5 ’10” (70”)	73	292	365	438	511	584
5 ’11” (71”)	75.3	301	377	452	527	602
6’0” (72”)	77.6	310	388	466	543	621
6’ 1” (73”)	79.9	320	400	479	559	639
6’ 2” (74”)	82.2	329	411	493	575	658
6’ 3” (75”)	84.5	338	423	507	592	676
6’ 4” (76”)	86.8	347	431	521	608	694
6’ 5” (77”)	89.1	356	446	535	624	713
6’ 6” (78”)	91.4	366	457	548	640	731
6’ 7” (79”)	93.7	375	469	562	656	750
6’ 8” (80”)	96	384	480	576	672	768
6’ 9” (81”)	98.3	393	492	590	688	786
6’10” (82”)	100.6	402	503	604	704	805
6’11” (83”)	102.9	412	515	617	720	823
7’0” (84”)	105.2	421	523	631	736	842

Airway
I-gel Supraglottic Airway

***EMT with Supraglottic endorsement**

Clinical Indications:

- Apneic children and adults without an intact gag reflex.
- Orotracheal intubation is impossible due to patient access or difficult airway anatomy.
- Airway, Adult; Airway Rapid Sequence Intubation; Failed Airway, Adult; & Cardiac Arrest
- Newborn Resuscitation
- Pediatric Airway; Pediatric Difficult Airway & Pediatric Rapid Sequence Intubation

⚠ **Caution:** This airway does not prevent or protect against aspiration.

Clinical Contraindications:

- Pulmonary Fibrosis
- Tracheostomies, chronically ventilated patients

Procedure:

1. Select the appropriate size i-gel

		Compatible Endotracheal Tube
Size 1.0	2 – 5 kg	3.0 mm I.D.
Size 1.5	5 – 12 kg	4.0 mm I.D.
Size 2	10 - 25 kg	5.0 mm I.D.
Size 2.5	25 - 35 kg	5.0 mm I.D.
Size 3	30 – 60 kg	6.0 mm I.D.
Size 4	50 – 90 kg	7.0 mm I.D.
Size 5	> 90 kg	8.0 mm I.D.

2. Ventilate the patient as needed with BVM while preparing iGel.
3. Lubricate the non-inflatable cuff (insertion end) with a water-soluble jelly on the middle of the smooth surface and return to the cradle.
4. Grasp the lubricated i-gel along the integral bite block. Position the device so that the I-gel cuff outlet faces the patient's chin (mental mandible region).
5. The patient should always be in the 'sniffing position' with the head extended and neck flexed before insertion unless head/neck movement is inadvisable or contraindicated.
6. Introduce the leading soft tip into the mouth of the patient in the direction of the hard palate.
7. Glide the I-gel downward and backward along the hard palate with a continuous but gentle push until a definitive resistance is felt.
8. Connect the I-gel to a bag-valve-mask and assess for breath sounds, adequate air exchange, and end-tidal CO2 (EtCO2).
9. Monitor oxygen saturation with pulse oximetry, EtCO2, and heart monitor.
10. Secure the I-gel.
11. Re-verify I-gel placement after every move and upon arrival in the Emergency Department.
12. Document the procedure, time, and result (success) on/with the patient care report (M.I.R./P.C.R.).

⚠ When using the device after encountering a difficult intubation, a bougie advanced into the trachea should get "hold-up" when it reaches the carina, roughly mid-sternum. You may also be able to palpate the coude tip rubbing past the tracheal cartilage rings as it passes. A bougie that can be advanced well past the expected hold-up is likely in the esophagus.

	E	E-IV	A	P

Non-invasive Positive Pressure Ventilation (NIPPV)

Clinical Indications:

- Near drowning, Asthma/RAD, pre-oxygenation for intubation.
- Presumed pulmonary edema or **Pg. 36 SCAPE.**
- Consider in respiratory distress in the conscious patient suffering from:
  - Severe reactive airway disease
  - Conditions reactive under medical management (e.g., hypoxemic respiratory failure)
  - Consider use in patients DNR/DNI with signs of respiratory compromise.
- **Continue medical management of cardiogenic pulmonary edema while preparing and during the use of NIPPV.**

Contraindications:

- Respiratory arrest
- Facial trauma/surgery/structural deformity that would affect the ability to make a seal
- Known or suspected pneumothorax
- Upper airway obstruction
- Pulmonary fibrosis
- **Relative contraindications** include the inability to protect the airway and impaired consciousness.

Procedure: E A

1. Assemble equipment and ensure proper function.
2. Ensure adequate oxygen supply to the ventilation device.
3. Assess and document initial SpO2, work of breathing, and EtCO2 if possible.
4. Explain the procedure to the patient.
5. Calmly and continuously reassure the patient.
   a. Consider 1-2 mg of morphine IV for anxiety and air hunger. P
   b. Consider placement of a nasopharyngeal airway.
6. Place the delivery mask over the mouth and nose.
7. Secure the mask with the provided straps or other provided devices
8. If using BIPAP, select EPAP similar to CPAP pressure, and IPAP should be at least 5 cm of H2O above the EPAP. You can titrate your IPAP up to get the desired effect. P
9. Begin at 5 cm H2O with low pressure and increase as the patient tolerates and/or the clinical situation dictates by 2.5cm H2O to a **maximum of 20 cm H2O.**
10. Frequently reassess the patient's respiratory status and vital signs.
    a. If rapid improvement is NOT noted, discontinue NIPPV and manage the respiratory condition via other means.
11. Notify the receiving facility of NIPPV use.
12. SVN can be utilized in line with the NIPPV circuit.

Airway

Surgical Cricothyrotomy

Clinical Indications:

- Failed Airway Protocol, Pg. 34
- Management of an airway when standard airway procedures cannot be performed or have failed in a patient > 12 years old or exceeds the length-based tape.

Clinical Contraindications:

- History of prior surgical airway.
- Significant trauma to the trachea or larynx suspicious of a tear or fracture.
- Massive neck edema obstructing landmark identification.
- Children less than 12 years of age.
- Ability to effectively ventilate/oxygenate and suction if necessary.

Procedure:

1. Have suction and supplies available and ready.
2. Place the patient supine with the neck in a neutral position.
3. Locate the cricothyroid membrane utilizing anatomical landmarks.
4. Prep the area with an antiseptic swab.
5. Stabilize the thyroid cartilage with the thumb and middle finger of the non-dominant hand.
6. Identify the cricothyroid membrane.
7. Make a vertical incision over the cricothyroid membrane.
8. Visualize the cricothyroid membrane and puncture with the cric introducer or scalpel.
9. Dilate the cricothyroid membrane using any of the following techniques: kit dilator, curved hemostats, or gloved finger. You may insert a skin hook and advance a Bougie through the incision with a curved tip directed toward the feet.
10. Insert a 5.5-6.5 ID ETT just until the cuff passes into the trachea. Be sure the cuff has cleared the cricothyroid space. If you've inserted a Bougie, pass the endotracheal tube over the top of the Bougie stylet.
11. Inflate the cuff with 5 -10cc of air and ventilate the patient while manually stabilizing the tube.
12. All of the standard assessment techniques for ensuring tube placement should be performed (auscultation, chest rise & fall, end-tidal CO2 detector, etc.).
13. Secure the tube.
14. Document the time, procedure, and patient response on/with the Patient Care Report (PCR).

Needle Cricothyrotomy (Adult & Pediatric)

Clinical Indications:

- Failed Airway Protocol, Pg. 34.
- Management of an airway when standard airway procedures cannot be accomplished or have failed in a patient.

🚩**This is a temporizing procedure that can deliver oxygen but does NOT allow effective long-term exhalation of CO2.**

Procedure:

1. Have suction supplies available and ready.
2. Collect supplies, including the endotracheal adapter for a 3.0 mm-ID ET tube.
3. Extend the patient's neck if there is no concern for spinal motion restriction to optimize identification of anatomical landmarks and ease of procedure.
4. Locate the cricothyroid membrane utilizing anatomical landmarks.
5. Use the non-dominant hand to stabilize the trachea with the thumb and middle finger.
6. Prep the area with an antiseptic swab.
7. Using the syringe and the finder needle supplied in the commercial needle cricothyrotomy kit (or a 5-cc syringe attached to a 10 to 14-gauge catheter-over-needle device if needed), insert the needle through the cricothyroid membrane at a 45 to 60-degree caudal angle.
8. Aspirate for air with the syringe containing 1-2 ml of saline throughout the procedure. This will help you properly locate the air bubbles.
9. Once air returns easily, stop advancing the device. Place the dominant hand under the syringe to hold the needle in a pencil grip with the hand resting against the chin or neck to immobilize the needle while you gently thread the catheter off the needle at a 60-degree caudal angle.
10. Attach the previously sized ET adapter to the end of the catheter and begin ventilation with a Bag Valve Mask connected to a high-flow oxygen source.
11. Assess breath sounds. Make certain ample time is used not only for inspiration but also for expiration. A 1:6 ratio is not unreasonable.
12. Secure the needle using the best method available, recognizing that this may involve direct hands-on control of the device throughout the entire transport.
13. If unable to obtain an adequate airway, resume basic airway management and transport the patient as soon as possible.
14. Regardless of the success or failure of needle cricothyrotomy, notify the receiving hospital at the earliest possible time of a surgical airway emergency.
15. Document time/procedure/confirmation/change in patient condition/time on the patient care record (PCR).

Airway
Basic Suctioning

Clinical Indications:

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient who cannot maintain or keep the airway clear without assistance.

Procedure:

Oropharyngeal

1. Ensure the suction device is in proper working order with the rigid suction tip in place.
2. Preoxygenate the patient as much as possible.
3. Explain the procedure to the patient if they are coherent.
4. Examine the oropharynx and remove any potential foreign bodies or material that may occlude the airway if dislodged by the suction device.
5. If applicable, remove airway adjuncts from the airway.
6. Use the suction device to remove any secretions, blood, or other substances.
7. Be aware that a patient with altered mentation may bite on the suction device, resulting in a foreign body obstruction.
8. The alert patient may assist with this procedure and/or be allowed to suction themselves if appropriate.
9. Reattach the ventilation device (e.g., bag-valve mask) and resume ventilating/assisting the patient if appropriate.
10. Record the time and result of the suctioning in the patient care report (PCR).

Nasopharyngeal

1. Ensure the suction device is in proper working order, with the flexible suction tip in place.
2. Lubricate the end of the suction catheter with water soluble lubricant.
3. Preoxygenate the patient as much as possible.
4. Explain the procedure to the patient if they are coherent.
5. Examine the oropharynx and remove any potential foreign bodies or material that may occlude the airway if dislodged by the suction device.
6. If applicable, remove ventilation devices from the airway.
7. Insert the flexible catheter through the largest nare following the floor of the nasal passage, angling toward the posterior pharynx.
8. Use the suction device to remove any secretions, blood, or other substances.
9. Reattach the ventilation device (e.g., bag-valve mask) and ventilate or assist the patient.
10. Record the time and result of the suctioning in the patient care report (PCR).

Airway
Advanced Suctioning

Clinical Indications:

- Obstruction of the airway (secondary to secretions, blood, or any other substance) in a patient currently being assisted by an airway adjunct such as:
  - Nasotracheal tube
  - Endotracheal tube
  - Supraglottic airway
  - Tracheostomy tube
  - Cricothyrotomy tube

🚩 The above can be done by the EMT with specialized training and are core to the paramedic.

Procedure:

1. Ensure the suction device is in proper working order.
2. Collect supplies, including a flexible suction catheter, sterile saline in a container, and clean gloves.
3. Pre-oxygenate the patient as much as possible. Do not over-inflate the lungs.
4. Attach the suction catheter to the suction device, keeping the end of the catheter aseptic.
5. Measure the length of the catheter for proper depth of insertion based on the type of device in place.
6. If applicable, remove ventilation devices from the airway.
7. With the thumb port of the catheter uncovered, insert the catheter through the airway device.
8. Once the desired depth (measured in #5 above) has been reached, occlude the thumb port and remove the suction catheter slowly.
9. Interrupt ventilations for no more than 30 seconds.
10. Reattach the ventilation device (e.g., bag-valve mask) and ventilate the patient.
11. Clear the suction catheter of thick secretions by aspirating sterile saline.
12. If thick secretions prevent effective suctioning, instill 3-5 cc of sterile saline into the airway adjunct and ventilate the patient for 3-4 breaths. Then, repeat suctioning as described.
13. Document time and result, including SpO_2 readings before and after the procedure, in the patient care report (PCR).

Airway
Tracheostomy Tube Change

Clinical Indications:

- Presence of a tracheostomy site.
- Urgent or emergent indications to change the tube such as:
  - obstruction that will not clear with suction,
  - dislodgement,
  - inability to oxygenate/ventilate the patient without other apparent explanations.

⚠ **More difficulty with tube changing can be anticipated for immature tracheostomy sites – i.e., less than two weeks old. Great caution should be exercised in attempts to change immature tracheotomy sites.**

Procedure:

1. Enlist the assistance of the primary caregiver if available.
2. Have all airway equipment prepared for standard airway management, including equipment for orotracheal intubation and failed airway.
3. Have an airway device (endotracheal tube or tracheostomy tube) of the same size as the tracheostomy tube currently in place as well as 0.5 size smaller available (e.g., if the patient has a #6.0 Shilley, then have a 6.0 and a 5.5 tube).
4. Lubricate the replacement tube(s) and check the cuff.
5. Remove the tracheostomy tube from mechanical ventilation devices and use a bag-valve apparatus to pre-oxygenate the patient as much as possible.
6. Once all equipment is in place, remove devices securing the tracheostomy tube, including sutures and/or supporting bandages.
7. If applicable, deflate the cuff on the tube.
8. In the immature tracheostomy, insert the bougie/stylet through the trach tube prior to its removal.
9. Remove the tracheostomy tube.
10. Insert the replacement tube. Confirm placement using EtCO2 along with another method. Esophageal Detection Devices are not to be used.
11. If there is any difficulty placing the tube, re-attempt the procedure with the smaller tube.
12. If difficulty is still encountered, use standard airway procedures such as oral bag-valve mask or endotracheal intubation (as per protocol). If forced to fall back to using an oral BVM, externally occlude the tracheostomy opening to direct air into the lungs, and verify lung sounds/chest rise with ventilation.
13. Document procedure, confirmation, patient response, and any complications in the PCR.
14. If transporting the patient, bring a spare tube from home to the hospital.

Assessment
Glasgow Coma Score

Glasgow Coma Score		
Infants		Children/Adults
Eye Opening		
Spontaneous	4	Spontaneous
To speech/sound	3	To speech
To pain	2	To pain
No response	1	No response
Verbal Response		
Coos or babbles	5	Oriented
Irritable crying	4	Confused
Cries to pain	3	Inappropriate words
Moans to pain	2	Incomprehensible
None	1	None
Motor Response		
Spontaneous	6	Obeys commands
Withdraws touch	5	Localizes/attempts to prevent pain
Withdraws pain	4	Withdraws from pain
Abnormal flexion	3	Abnormal flexion
Abnormal extension	2	Abnormal extension
No response	1	No response

Assessment
Glucometry

Clinical Indications:

- Patients with suspected hypoglycemia (diabetic emergencies, change in mental status, bizarre behavior, etc.)
- Patients with Altered Mental Status
- Any patient, where appropriate.
- Continuous glucose monitoring (CGM) devices can be accessed using the patient's smartphone but can be inaccurate and may require verification.
- The reference range normal is 60 to 120 mg/dL correlated to the patient's condition. Correlate any low, high, or error reading clinically. In patients with poor perfusion, therefore, shock may give erroneous capillary blood glucose values.

Procedure:

1. Gather and prepare equipment.
2. Blood samples for glucose analysis should be obtained according to the device manufacturer's recommendations.
3. Place the correct amount of blood on the reagent strip or site on the glucometer per the manufacturer's instructions.
4. Time the analysis as instructed by the manufacturer.
5. Document the glucometer reading and treat the patient as indicated by the presenting symptoms, analysis, and protocol.
6. Repeat glucose analysis as indicated for reassessment after treatment and document patient response on the PCR.
7. Follow the manufacturer's recommendations for device calibration.

Assessment

Orthostatic Blood Pressure Measurement

Clinical Indications:

- Patient situations with suspected blood /fluid loss /dehydration who have the mobility to complete the procedure.
- Patients larger than the Length-Based tape

Procedure:

1. Assess the need for orthostatic vital sign measurement.
2. Obtain the patient's pulse and blood pressure while supine.
3. Have the patient stand for two minutes.
4. Obtain the patient's pulse and blood pressure while standing.
5. If the pulse has increased by 30 BPM **or** systolic blood pressure decreased by 30 mmHg, the orthostatics are considered positive. If dizzy or symptomatic during the procedure, consider the test positive.
6. If the patient is unable to stand, orthostatics may be taken while the patient is sitting with feet dangling.
7. If positive orthostatic changes occur while sitting, **DO NOT** continue to the standing position.
8. Patients on prolonged beta-blocker therapy will not demonstrate orthostatic vital sign changes. The provider must complete the assessment and utilize clinical judgment.
9. Document the time and vital signs for supine and standing positions on/with the patient care report (PCR).
10. Determine appropriate treatment based on protocol.

Assessment

Adult Pain Assessment and Documentation

Clinical Indications:

- Any patient with pain

Definitions:

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

Procedure:

1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self-report.
2. Pain should be assessed and documented during the initial assessment, before starting pain control treatment, and with each set of vitals.
3. Pain should be assessed using the appropriate approved scale.
4. Two pain scales are available: the 0 - 10 and the Wong - Baker "faces" scale.
5. 0 – 10 Scale: the most familiar scale used by EMS for rating pain with patients. It is primarily for adults and is based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.

Visual Analog Scale

0	1	2	3	4	5	6	7	8	9	10
No Pain										Worst pain

6. Wong – Baker "faces" scale may be used with geriatrics or any patient with a language barrier. The faces correspond to numeric values from 0-10. This scale can be documented with the numeric value or the textual pain description.

From Wong D.L., Hockenberry-Eaton M., Wilson D., Winkelstein M.L., Schwartz P.: Wong's Essentials of Pediatric Nursing, ed. 6, St. Louis, 2001, p. 1301. Copyrighted by Mosby, Inc. Reprinted by permission.

Clinical Opiate Withdrawal Scale (COWS)

Clinical Indication: R E E-IV A P

For each item, write in the number that best describes the patient's signs or symptoms. Rate on just the apparent relationship to opiate withdrawal. For example, if the heart rate is increased because the patient was jogging just prior to assessment, the increase pulse rate would not add to the score.

Note, this checklist is required to determine COWS score when assessing patient eligibility and post-treatment.

Patient's Name: _____
Date:_____

Enter scores at time zero, 10min after first dose, as needed, etc.

	Time Zero	10 Mins	As Needed	Etc
Resting Pulse Rate: (record beats per minute) Measured after patient is sitting or lying for **one minute** • 0 pulse rate 80 or below • 1 pulse rate 81-100 • 2 pulse rate 101-120 • 4 pulse rate greater than 120				
Sweating: over past ½ hour not accounted for by room temperature or patient activity. • 0 no report of chills or flushing • 1 subjective report of chills or flushing • 2 flushed or observable moistness on face • 3 beads of sweat on brow or face • 4 sweat streaming off				
Restlessness Observation during assessment • 0 able to sit still • 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of • legs/arms • 5 Unable to sit still for more than a few seconds				
Pupil size • 0 pupils pinned or normal size for room light • 1 pupils possibly larger than normal for room light • 2 pupils moderately dilated • 5 pupils so dilated that only the rim of the iris is visible				
Bone or Joint aches If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored • 0 not present • 1 mild diffuse discomfort				

• 2 patient reports severe diffuse aching of joints/ • muscles • 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort				
Runny nose or tearing Not accounted for by cold symptoms or allergies • 0 not present • 1 nasal stuffiness or unusually moist eyes • 2 nose running or tearing • 4 nose constantly running or tears streaming down cheeks				
GI Upset: over the last ½ hour • 0 no GI symptoms • 1 stomach cramps • 2 nausea or loose stool • 3 vomiting or diarrhea • 5 Multiple episodes of diarrhea or vomiting				
Tremor observation of outstretched hands • 0 No tremor • 1 tremor can be felt, but not observed • 2 slight tremors are observable • 4 gross tremor or muscle twitching				
Yawning Observation during assessment • 0 no yawning • 1 yawning once or twice during assessment • 2 yawning three or more times during • Assessment • 4 yawning several times/minute				
Anxiety or Irritability • 0 none • 1 patient reports increasing irritability or anxiousness • 2 patient obviously irritable, anxious • 4 patient so irritable or anxious that participation in the assessment is difficult				
Gooseflesh skin • 0 skin is smooth • 3 piloerection of skin can be felt or hairs standing up on arms • 5 prominent piloerection				
TOTAL SCORE WITH observer's initials				
Score: **5-12 = mild;** **13-24 = moderate;** **25-36 = moderately severe;** **more than 36 = severe withdrawal**				

Assessment
Pulse Oximetry

Clinical Indications:

- Patients with suspected hypoxemia.

Procedure:

1. Turn the machine on and allow for self-tests.
2. Apply the probe to the patient as recommended by the device manufacturer.
3. Allow the machine to register the saturation level. The number displayed during the first few seconds of reading may be low on some devices.
4. If possible, record time and initial saturation percent on room air on/with the patient care report (PCR).
5. Verify the pulse rate on the machine with palpated pulse of the patient.
6. Monitor critical patients continuously until arrival at the hospital. If recording a one-time reading, monitor patients for a few minutes, as oxygen saturation can vary.
7. Document the percent of oxygen saturation every time vital signs are recorded and in response to therapy to correct hypoxemia.
8. In general, normal saturation is SpO2 94-98%. Below 94%, suspect a respiratory compromise.
9. For patients with low oximetry at baseline, treat the patient and not oximetry.
10. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress or when it is the standard of care to apply oxygen.
11. Factors that may reduce the reliability of the pulse oximetry reading include:
    - (a) Poor peripheral circulation (blood volume, hypotension, hypothermia)
    - (b) Excessive pulse oximeter sensor motion
    - (c) Fingernail polish (may be removed with an acetone pad)
    - (d) Carbon monoxide bound to hemoglobin
    - (e) Irregular heart rhythms (atrial fibrillation, SVT, etc.)
    - (f) Jaundice
    - (g) Excessive light entering the side of the probe causes a "washout" of the signal.

Assessment
Stroke BEFAST Assessment

Clinical Indications:

- Suspected Stroke Patient

Procedure:

1. If possible, prehospital care providers should establish the time of onset of stroke signs and symptoms.
2. Last known well

Stroke test

1. **Balance** – Sudden change in the patient's balance or equilibrium.
2. **Eyes** – Sudden loss of vision in one or both eyes.
3. **Facial droop** – Have the patient show their teeth or smile.
   a. Normal – Both sides of the face move equally.
   b. Abnormal – One side of the face does not move as well as the other.
4. **Arm drift** – Have the patient close their eyes and hold both arms straight out with palms upward.
   a. **Norm*al*** – Both arms move in the same direction or do not move at all (pronator grip may be helpful).
   b. ***Abnormal*** – One arm does not move, or one arm drifts down compared to the other.
5. **Speech** – Have the patient say, "You can't teach an old dog new tricks".
   a. **Normal** – The patient uses the correct words with no slurring.
   b. **abnormal** – The patient slurs their words, uses inappropriate words, or is unable to speak.
6. **Time:** Any positive findings in steps 1-5 may indicate stroke, and you should consider activating your Code Stroke per County Operating Procedure. Determine the time of onset or when the patient was last known well.
7. Report specific findings, for example: left-sided facial drooping, slurred speech.
8. Perform LAMS score. A score of 4 or 5 indicates a large-vessel occlusion (LVO). Activate your Code stroke per County Operating Procedure.

Los Angeles Motor Scale (LAMS)[22]		
Face	0	Both sides move normally
	1	One side is weak or flaccid
Arm	0	Both sides move normally
	1	One side is weak
	2	One side is flaccid/doesn't move
Grip	0	Both sides move normally
	1	One side is weak
	2	One side is flaccid/doesn't move
Total	0–5	

Assessment
Temperature Measurement

Clinical Indications:

- Monitoring body temperature in a patient with suspected infection, hypothermia, or hyperthermia, or to assist in evaluating resuscitation efforts.
- Continuous monitoring for hypothermia and hypothermic arrest.

Procedure:

1. If clinically appropriate, allow the patient to reach equilibrium with the surrounding environment. For example, the temperature of a child or infant who has been heavily bundled is often inaccurate, so “unbundle” the child for 3 to 5 minutes before obtaining the temperature.
2. An oral temperature is preferred for adult patients who are conscious, cooperative, and in no respiratory distress (steps 4 to 6 below). A rectal temperature is preferred for infants or adults who do not meet the criteria above (steps 7 to 9 below).
3. A tympanic or skin contact thermometer can be used, following the manufacturer’s recommendations.
4. To obtain an oral temperature, ensure the patient has no significant oral trauma and place the thermometer under the patient’s tongue with appropriate sterile covering.
5. Have the patient seal their mouth closed around the thermometer.
6. If using an electric thermometer, leave the device in place until there is indication an accurate temperature has been recorded (per the “beep” or other indicator specific to the device). If using a traditional thermometer, leave it in place until there is no change in the reading for at least 30 seconds (usually 2 to 3 minutes). Proceed to step 9.
7. Prior to obtaining a rectal temperature, assess whether the patient has suffered any rectal trauma by history and/or brief examination as appropriate for the patient’s complaint.
8. To obtain a rectal temperature, cover the thermometer with an appropriate cover, apply lubricant, and insert it into the rectum no more than 1 to 2 cm beyond the external anal sphincter.
9. Follow the guidelines in step 5 above to obtain the temperature.
10. Record time, temperature, method, and scale (C° or F°) in Patient Care Report (PCR).

Assessment

Thrombolytic Screen

Clinical Indications:

- Rapid evaluation of a patient with suspected acute stroke, acute myocardial infarction, or acute pulmonary embolus who may benefit from thrombolysis. (e.g. BEFAST and LAMS)
- **OR USE YOUR COUNTY OPERATING PROCEDURE IF AVAILABLE**

Procedure:

1. Follow the appropriate protocol for the patient's complaint to assess the need for thrombolysis (e.g., FAST assessment for suspected stroke, 12-lead EKG for suspected myocardial infarction, etc.). If the screen is positive, proceed to step 2 below.
2. By history from the patient and/or family members, obtain and record the following information:
   a. History of active internal bleeding?
   b. History of CNS neoplasm, arteriovenous (AV) malformation, or CNS aneurysm?
   c. History of CNS surgery in the past 2 months?
   d. History of severe, uncontrolled hypertension (>200/130)?
   e. History of bleeding disorder?
   f. History of aortic dissection?
   g. History of allergy to thrombolytic?
   h. Currently anticoagulated?
3. Record all findings in the Patient Care Report (PCR).

Cardiac

High-Performance CPR

MANEUVER	Adult HCP: Adolescent and older	Child HCP:1 year to adolescent	Infant Under 1 year old
RECOGNITION	Unresponsive (for all ages)		
	No breathing or no normal breathing (ie, only gasping)	No breathing or only gasping	
	No pulse palpated within 10 seconds for all ages.		
ACTIVATE:	• Activate when the victim is found unresponsive and no lividity/ pooling of blood. • Announce Cardiac Arrest on the Radio.		
CPR Sequence	C-A-B		
Compression Rate	At least 100-120/min		
Compression Depth (Use FEEDBACK DEVICES)	At least 2 inches (5cm	At least 1/3 AP diameter about 2 inches (5cm)	At least 1/3 AP diameter about 1 ½ inches (5cm)
Chest Wall Recoil (Use FEEDBACK DEVICES)	Allow complete recoil between compressions. Providers rotate compressors every 2 minutes.		
Compression Interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds.		
Initiate Mechanical CPR Device	Apply Mechanical CPR device, **See Pg. 127**		
Airway	Head tilt-chin lift (Suspected trauma: jaw thrust), Passive Oxygenation **See Pg. 92**		
Compression-to-ventilation ratio (until advanced airway placed)	30:2 1 or 2 rescuers	30:2 Single rescuer 15:2 2 Rescuers	
Ventilations with advanced airway (HCP)	1 breath every 6-8 seconds (8-10 breaths/min) Asynchronous with chest compressions About 1 second per breath, Visible chest rise		
Foreign-body airway obstruction	**Responsive**: Abdominal thrusts **Unresponsive**: CPR with airway check	**Responsive**: Back slaps and chest thrusts **Unresponsive**: CPR with airway check	
Defibrillation	Attach and use an AED or monitor/defibrillator as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.		

Cardiac
Mechanical CPR Device

Clinical Indications:

- Cardiopulmonary arrest with limited personnel or need for prolonged High-Performance CPR or need for uninterrupted performance CPR.
- Adult or child, the patient must fit in the device and come within 15 mm of the device.
- If providers believe there's a high likelihood of the patient going into arrest during care or transport, they may be placed in/on a deactivated mechanical CPR device pre-emptively to eliminate deployment time.

Material:

1. Automated CPR device
2. AED or monitor/defibrillator (ALS)

Procedure:

1. Confirm cardiopulmonary arrest.
2. Contact dispatch to declare “CARDIAC ARREST.”
3. Begin High-Performance CPR
4. Apply the automated CPR device and activate the device per the manufacturer’s specifications.
5. Select the “Continuous” setting for the device.
6. Apply AED/defibrillator pads.
7. Elevate the head of the gurney to 30 degrees after ROSC.
8. Assess the adequacy of CPR by palpating peripheral pulses.

🚩 **Continuously assess the location and application of the device on the patient.**

Readjust as necessary.

Cardiac

Cardiac Defibrillation - AED

Clinical Indications:

- Non-traumatic cardiac arrest in patients older than 1 year of age.
- The physical interventions outlined for witnessed traumatic arrest patients under Multi-System Trauma (page 58) are more likely to result in resuscitation of a trauma patient and should be prioritized over attempting defibrillation.

Procedure:

1. Confirm that the patient is pulseless.
2. Instruct the partners or First Responders to initiate CPR while the defibrillator is set up.
3. If defibrillation is underway by First Responders, continue resuscitation as outlined.
4. Turn the defibrillator on and begin documentation.
5. Apply hands-free pads to the patient's torso. Pads may be placed in either of the following positions – anterior-posterior (preferred) or anterior-lateral. Make sure they have good skin contact. Use a razor to remove chest hair if necessary.
6. **Stop CPR and clear the patient** prior to rhythm analysis.
7. Analyze the patient's rhythm by pushing the "analyze" button. After analysis and shock is advised, perform 30 compressions (1 cycle) of CPR before SHOCK while AED is charging.
8. **Once charged, assertively state assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient prior to defibrillation.** Defibrillate by depressing the "shock" button.
9. Immediately resume CPR for two minutes and then repeat steps 4 - 7 as indicated.
10. Minimize time off chest while analyzing rhythm or shocking patient.
11. If "no shock advised" appears perform CPR for two minutes and then reanalyze.
12. If Return of Spontaneous Circulation (ROSC) is achieved, turn off AED unit. Reassess the patient frequently after ROSC to ensure they still have a pulse.
13. Transport and continue treatment as indicated.

Cardiac Defibrillation - Manual

Clinical Indications:

- Non-traumatic cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia.
- The physical interventions outlined for witnessed traumatic arrest patients under Multi-System Trauma (page 58) are more likely to result in a resuscitation of a trauma patient and should be prioritized over attempting defibrillation.

🚩 **Minimize time OFF the chest while performing CPR and completing this procedure.**

Procedure:

1. Check if patient has no pulse and shows V-fib/V-tach on monitor. If arrest was witnessed and pads are on, go straight to defibrillation. Otherwise, start CPR while preparing defibrillator.
2. Apply hands-free pads to the patient's torso. Pads may be placed in either of the following positions - anterior-posterior (preferred) or anterior-lateral. Make sure they have good skin contact. Use a razor to remove chest hair if necessary.
3. Set the appropriate energy level according to AHA guidelines and device type (mono vs biphasic).
4. Charge the defibrillator to the selected energy level. CPR should be performed while the defibrillator is charging.
   a. For pediatrics, start with 0.5-1J/kg; if unsuccessful, increase to 2J/kg.
5. Assure proper placement of the paddles or pads.
6. Make sure fast patch pads have good skin contact.
7. **Assertively state, "CLEAR" and visualize that no one, including yourself, is in contact with the patient.**
8. Deliver the shock by depressing the **shock button.**
9. Immediately resume High Performance CPR for 2 minutes.
10. Repeat the procedure as indicated by patient response and ECG rhythm.
11. Document the dysrhythmia and the response to defibrillation with ECG strips on/with the PCR.

Dual Sequenced Defibrillation & Vector Change

Clinical Indications

- Refractory V-Fib/V-Tach after 3 standard defibrillations and ACLS interventions
- Optimal chest compressions were performed
- Reversible causes addressed

Contraindications

- Responding well to standard defibrillation
- ROSC achieved
- Valid DNR/POLST order
- Pediatric patients (consult medical control)

  🚩 Remember: Dual sequence defibrillation is considered a last resort option for refractory VF/pVT.

Procedure

1. While preparing for dual sequence defibrillation, continue high-quality CPR, ensuring proper pad placement for the initial vector and maintaining minimal interruption to chest compressions.
2. For the first pad placement using the standard anterior-lateral position, place the right (sternum) pad on the upper right chest below the clavicle and the left (apex) pad on the left lateral chest wall, ensuring good adhesion and contact with the skin.
3. For the second pad placement using the anterior-posterior position, place the anterior pad to the left of the sternum and the posterior pad between the scapulae, verifying there is no contact between the two sets of pads.
4. For the monitor/defibrillator setup, set both devices to maximum energy setting (typically 200J biphasic), assign clear roles to team members, and designate a team leader to coordinate the discharge.
5. Defibrillation Sequence:
   a. Hold compressions
   b. Clear patient
   c. Discharge both defibrillators simultaneously on team leader's command
   d. Immediately resume chest compressions
   e. **Check rhythm after 2 minutes of CPR**
6. If the dual sequence is repeatedly unsuccessful, consider a vector change by removing and replacing the pads in an alternative position (the opposite of the initial placement), repeat the single vector defibrillation attempt, and document the new pad placement.
7. Record timing, energy settings, pad placement, rhythms, and patient response. Attach relevant rhythm strips to PCR.

Cardiac

Impedance Threshold Device

Clinical Indications:

- Cardiopulmonary arrest in patients 12 years and older

Contraindications:

- Patients under 12 years old
- Traumatic cardiopulmonary arrest

Procedure:

1. Confirm the absence of a pulse and begin CPR immediately.
2. After an advanced airway has been established, attach the EtCO2 detector and the impedance threshold device per the manufacturer's specifications.
3. Continue CPR with minimal interruptions and ventilate asynchronously.
4. If the return of spontaneous circulation occurs, **remove the impedance threshold device** and assist ventilations as indicated.

Automatic Implantable Cardiac Defibrillator (AICD) Deactivation

Clinical Implications:

- For verified frequent and recurrent inappropriate AICD discharges
- End-of-life Care
- During resuscitation
- With External Transcutaneous Pacing
- During Central Line Placement

Procedure:

1. Monitor to verify triggering rhythm and inappropriate defibrillator discharge. Inappropriate discharge would be for a rhythm that is not a WCT/V-Tach or Vfib.
2. Record EKG rhythm before and after magnet application
3. Identify the location of AICD
4. Place magnet directly over AICD and secure in place
5. Treat underlying rhythm

Considerations:

- The identification of the AICD type and date of implantation should be found on the patient's wallet card.

Note:

MAGNET INHIBITION:

In most devices, placing a magnet over a permanent pacemaker temporarily "reprograms" the pacer into asynchronous mode. It does not turn off the pacemaker. Each pacemaker type has a unique asynchronous rate for beginning-of-life (BOL), elective replacement indicator (EFI), and end-of-life (EOL). Therefore, if the device company parameters are known, the application of a magnet can determine if the pacer's battery needs to be replaced. Further interrogation or manipulation of the device should be performed by an individual skilled in the technique.
⚠**If the patient's condition deteriorates with the magnet in place, then remove the magnet and reassess the patient.**

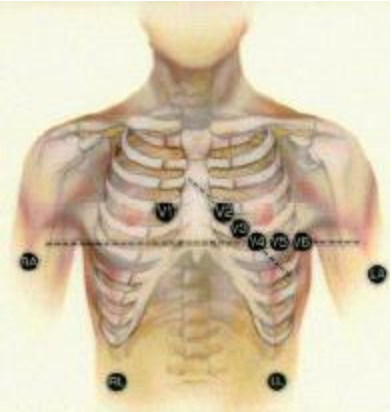
Although many different branded pacemaker/ICD magnets are available, in general any pacemaker/ICD magnet can be used to inhibit the device. When a magnet is applied to an ICD, it can temporarily turn off defibrillation therapy without affecting its pacemaker ability. Some devices can be programmed not to respond to a magnet.

	E	E-IV	A	P

Cardiac
12-15 Lead ECG

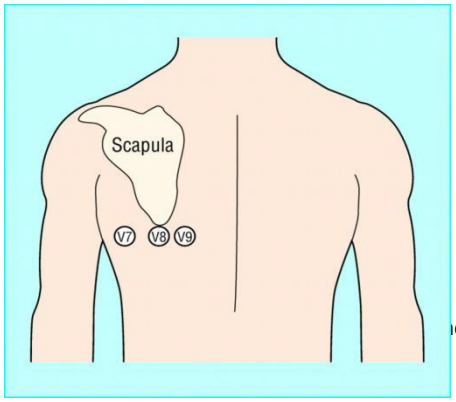
Clinical Indications:

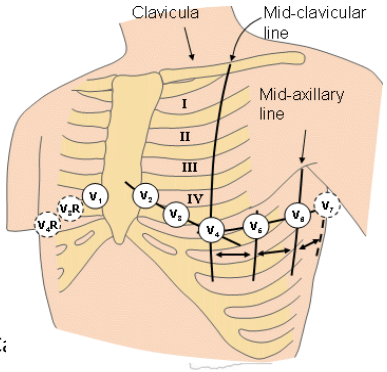
- Chest pain/upper abdominal pain, age > 35
- Suspect cardiac etiology



Procedure:

1. Assess the patient and monitor cardiac status.
2. Administer oxygen as the patient's condition warrants.
3. If the patient presents with pain or complaint, and suspect of a cardiac-related emergency, then perform a ECG. (EMT can perform ECG - read only)
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter the required patient information (patient's name, age, sex) into the ECG device.
6. Expose chest and prep as necessary. The patient's modesty should be respected.
7. Apply chest leads and extremity leads using the following landmarks:
   - RA -Right arm
   - LA -Left arm
   - RL -Right leg
   - LL -Left leg
   - V1 -4th intercostal space at right sternal border
   - V2 -4th intercostal space at left sternal border
   - V3 -Directly between V2 and V4
   - V4 -5th intercostal space at midclavicular line
   - V5 -Level with V4 at left anterior axillary line
   - V6 -Level with V5 at left midaxillary line
   - V7 -same level as V6 at left posterior axillary line, use V4
   - V8 -level with V7 at inferior tip of scapula, use V5 lead
   - V9 -level with V7 and V8 at medial edge of scapula, use V6 lead
   - VR3 -right 5th intercostal space between right sternal border and midclavicular line
   - VR4 -right 5th intercostal space at midclavicular line





Cardiac
12-15 Lead ECG *(continued)*

- If V1 and V2 ST depression, transition to 15 lead ECG
- If tall R wave in V1 or V2, or inferior ST elevation, perform right-sided ECG
- If lateral ST elevations, perform V7 and V8

8. Immediately document what leads are swapped with their counterpart (for V3-4R and V7-9), taking a picture and/or documenting in PCR.
9. Instruct the patient to remain still.
10. Press the appropriate button to acquire the ECG.
11. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the ECG acquisition will be interrupted until the noise is removed.
12. Once acquired, transmit the ECG data to the appropriate hospital.
13. Contact the receiving hospital to notify them that an ECG has been sent.
14. Monitor the patient while continuing with the treatment protocol.
15. Download data per guidelines and attach a copy of the ECG to the Patient Care Report.
16. **Document the procedure, time, and results on/with the patient care report (PCR)**

I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral
RV3 Right Ventricle	RV4 Right Ventricle	V7 Apical/Posterior	V8 Apical/Posterior
V9 Posterior			

Cardiac
Synchronized Cardioversion

Clinical Indications:

- **Unstable** patient with a tachydysrhythmia (rapid atrial fibrillation known to be less than 48 hours onset, supraventricular tachycardia, ventricular tachycardia)
- Patient is not pulseless (the pulseless patient requires unsynchronized cardioversion, i.e., defibrillation)

Procedure:

1. Ensure the patient is attached properly to a monitor/defibrillator capable of synchronized cardioversion.
2. Have all equipment prepared for unsynchronized cardioversion/defibrillation if the patient fails synchronized cardioversion and the condition worsens.
3. See **Analgesia and Sedation Protocol Pg.45.**
4. Set energy selection to an appropriate level.
   a. Suggested energies for adult 50-200 J in SVT, 100-200 J in atrial fibrillation, Wide complex tachycardia begin at 100-200 J.
   b. Pediatrics start with 0.5-1J/kg, if unsuccessful increase to 2J/kg
5. Set monitor/defibrillator to synchronized cardioversion mode. Confirm the presence of synchronization markers. ⚠**Unsynchronized cardioversion can be lethal to a patient.**
6. Make certain all personnel are clear of patient.
7. Press and hold the button to cardiovert. Stay clear of the patient until you are certain the energy has been delivered. **NOTE:** It may take the monitor/defibrillator several seconds to "synchronize" so there may be a delay between activating the cardioversion and the actual delivery of energy.
8. **Note:** patient response and perform immediate unsynchronized cardioversion/defibrillation if the patient's rhythm has deteriorated into pulseless ventricular tachycardia/ventricular fibrillation. Initiate CPR and follow the procedure for **Defibrillation- Manual on page 129.**
9. If the patient's condition is unchanged, repeat steps 2 to 8 above, using appropriate energy level per AHA guidelines. Re-select and verify monitor/defibrillator is in **SYNCHRONIZED** mode before each attempt, as most revert to unsynchronized after delivering energy.
10. If the patient has not improved after two attempts of synchronized cardioversion, contact medical control.
11. Note procedure, response, and time in the patient care report (PCR).
12. Attach the rhythm strips to the PCR and document the energy used during the procedure.

Cardiac Transcutaneous Pacing

Clinical Indications:

- Patients with symptomatic bradycardia.
- Transcutaneous pacing may be attempted in asystole; it is unlikely to be effective if not used early.

Procedure:

1. Oxygen, ECG monitor, IV (if possible) should be in place prior to pacing. 12 or 15 lead ECG if clinically appropriate.
2. Confirm the presence of dysrhythmia (print an ECG strip) and evaluate the patient's hemodynamic status.
3. Ensure 4-lead ECG leads are placed to minimize noise and maximize QRS clarity.
4. Apply pacing pads to the patient's chest in either anterior - posterior (preferred) or anterior-lateral positions.
   a. Pad placement for transcutaneous pacing on a pediatric patient should be done according to the manufacturer's guidelines.
5. Attach the pacing pads to the cable from the machine.
6. See **Analgesia and Sedation Protocol, Pg. 45.**
7. Put the monitor in Pacing mode.
8. Observe the ECG screen for a "sense" marker on each QRS complex. If a "sense" marker is not present, adjust 4-lead placement or select another lead to sense in.
9. Set the desired pacing rate (60-80 BPM).
10. Start at the lowest setting and increase the current slowly while observing the ECG screen for evidence of electrical pacing capture. Confirm mechanical capture by palpating or auscultating pt's pulse.
11. Assess the patient's response to the pacing therapy. Continue to monitor for ongoing efficacy and mechanical capture.
12. Document the dysrhythmia and the response to external pacing with ECG strips.

Cardiac
Vagal Maneuvers

Clinical Indications:

- Stable patient with supraventricular tachycardia (SVT)
- Patient is conscious, alert, and able to follow instructions
- Blood pressure is within acceptable limits
- No suspected acute coronary syndrome or myocardial ischemia
- No history of carotid artery stenosis (for carotid sinus massage)

Contraindications:

- Unstable patient with signs of shock or altered mental status
- History of stroke or TIA within the past 3 months
- Known carotid artery stenosis or carotid bruit (for carotid sinus massage)
- Recent myocardial infarction
- Third-trimester pregnancy (Valsalva only)

Procedure:

1. Ensure continuous cardiac monitoring and have emergency equipment readily available.
   a. Defibrillator with pacing capability
   b. Airway equipment
   c. IV access and emergency medications
2. Modified Valsalva Maneuver (preferred first-line technique):
   a. Position patient semi-recumbent (45 degrees) on stretcher
   b. Have the patient perform forced expiration against resistance for 15 seconds
      i. Use a 10mL syringe to blow against
      ii. Or have the patient blow against closed glottis
   c. Immediately lay the patient flat and raise legs to 45 degrees
   d. Maintain this position for 15 seconds
   e. Return patient to semi-recumbent position
   f. Assess rhythm and vital signs
3. Documentation Requirements:
   a. Time and type of maneuver performed
   b. Patient's rhythm before and after the attempt
   c. Vital signs before and after the attempt
   d. Patient's response and any complications
   e. Number of attempts
   f. Attach rhythm strips to PCR
4. If vagal maneuvers are unsuccessful after 2-3 attempts:
   a. Consider medication therapy per protocol
   b. Consider synchronized cardioversion if the patient becomes unstable
   c. Contact medical control for further orders

Cardiac

Discontinuation of CPR, Do not attempt Resuscitation, Determination of Field Death

DO NOT ATTEMPT RESUSCITATION: Obvious death.

- Decomposition of body tissue
- Total decapitation
- Total incineration
- Total separation or destruction of the heart or brain
- Fetus with a foot length of 33mm or less, less than 24 weeks of gestation
- Traumatic Arrest (Non-breathing and pulseless) more than 10 minutes prior to EMS arrival.
- Rigor Mortis
- Lividity
- End-stage/terminal condition, at verbal request of family

POLST form or DNR papers are dated and signed by the patient with appropriate witnessed signatures and there is no question they belong to the patient. The patient may be of any age.

DISCONTINUATION WITHOUT MEDICAL CONTROL: (must meet all 3 requirements)

- Non-breathing
- Pulselessness
- Asystole in two leads **OR** No Shock Advised on AED (EMT's can transmit Rhythm strip to hospital for convenience)
- After two rounds of CPR.

Note: Exception – suspected hypothermia requires full resuscitation efforts

DISCONTINUATION OF EFFORTS: (any of these apply)

1. Advanced airway and drug therapy appropriate to the presenting rhythm, according to AHA guidelines, have been initiated and the patient remains apneic, pulseless, and in asystole or PEA. EtCO2 less than 20 and not rising, at least 30 minutes of resuscitation efforts, document in PCR
2. Compelling reasons to withhold CPR/Resuscitation efforts. Such as but not limited to
   - End stage of terminal condition
   - Living will
   - Verbal request by family

Note: Prehospital care providers desiring support in the field may contact the Medical Control at any time for Determination of Death

3. DNR or POLST form has been presented after CPR was initiated.

Once death has been determined and resuscitation efforts discontinued, all EMS therapeutic modalities initiated during the resuscitation must be left in place until it has been determined that the patient will not be a Coroners' case. This includes such equipment as endotracheal tubes, IV catheters, monitor electrodes and personal items including clothes, jewelry etc. If the coroner releases the body while the prehospital care provider is still on scene, remove all medical equipment used during the resuscitation. Time of death recorded on PCR.

Medication Administration

	E	E-IV	A	P

Injections-Subcutaneous, Intramuscular

Clinical Indications:

- When medication administration is necessary and the medication must be given via the SQ or IM route or as an alternative route in selected medications.

Procedure:

1. Receive and confirm medication orders or perform according to standing orders.
2. Prepare equipment and medication, expelling air from the syringe.
3. Needle-size Subcutaneous Injection
    a. 25g 5/8 inch needle for average adult
    b. 25-27g ½ inch needle for infant, child, elderly, or thin patient
    c. The most common site for subcutaneous injection is the arm. Injection volume should not exceed 1ml.
4. Needle size Intramuscular injection:
    a. 20-25g 1-2 inch depending on patient size.
    b. The possible injection sites for intramuscular injection include the arm, buttock, and thigh.
5. Injection volume should not exceed 1 ml for the arm and not more than 2.5 ml in the thigh or buttock.
6. The thigh should be used for injections in pediatric patients, and injection volume should not exceed 1 ml.
7. Explain the procedure to the patient and reconfirm the patient's allergies.
8. Expose the selected area and cleanse the injection site with a topical antiseptic swab.
9. Insert the needle into the skin with a smooth, steady motion
10. **SQ: 45 degree angle IM: 90 degree angle**
11. Aspirate for blood. If blood is aspirated, do not inject medication. Discard and begin again.
12. Inject the medication.
13. Withdraw the needle and dispose of it properly without recapping.
14. Apply pressure to the site.
15. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
16. Document the medication, dose, route, patient response, and time on/with the patient care report (PCR).

Medication Administration
Intranasal Medication Delivery

R E E-IV A P

Clinical Indications:

- When medication administration is necessary, and an alternative route is not available or impractical.

Materials:

1. An appropriate-sized syringe and needle/needleless device are used to draw up medication.
2. Atomizer
3. Medication of appropriate concentration for nasal medication delivery

Procedure:

1. Aspirate the proper volume of medication required to treat the patient. An extra 0.1 mL of medication should be drawn up to account for the dead space within the atomizer at the end of the procedure.
2. Remove the syringe from the needle/needleless device
3. Attach the atomizer tip via the Luer lock mechanism (twist into place).
4. Using your free hand to hold the crown of the head, snug the atomizer tip into the nostril, aiming slightly upward and outward (toward the ear on the same side).
5. Briskly compress the syringe plunger to deliver half of the medication into the nostril, then move to the opposite nostril and administer the remaining medication. If an NPA is in place, deliver the entire dose of medication into the nostril without the NPA.

Notes:

Medications that are appropriate for intranasal use include:

- Diazepam (5 mg/mL) 2-5 mg
- Fentanyl (50 mcg/mL) 25-50 mcg
- Glucagon (solubilize two 1mg vials in 1mL sterile water) 2 mg
- Ketamine (100 mg/mL) 50-100 mg
- Lorazepam (2 mg/mL) 0.5-4 mg
- Midazolam (5 mg/mL) 1-10 mg
- Naloxone (1 mg/mL) 0.4-4 mg
- Tranexamic acid (100mg/mL) 100-200mg for epistaxis only

Medication Administration
Nebulizer Inhalation Therapy

	E	E-IV	A	P

Clinical Indications:

- Patients experiencing bronchospasm.
- Patients requiring the delivery of medications via inhalation.

Procedure:

1. Gather the necessary equipment.
2. Assemble the nebulizer kit.
3. Instill medication into the reservoir well of the nebulizer.
4. Connect the nebulizer device to oxygen at 6 liters per minute or adequate flow to produce a steady, visible mist.
5. Instruct the patient to inhale normally through the mouthpiece of the nebulizer. The patient needs to have a good lip seal around the mouthpiece.
6. If the patient cannot maintain a good lip seal around the mouthpiece, the nebulizer may be connected to a face mask. For a child, may hold nebulizer as “blow by” in front of the patient’s face.
7. In the intubated patient, patient on NIPPV, or BVM, nebulizer should be placed in-line for effective medication delivery. A t-connector or adapter may be needed to keep the reservoir well upright to allow it to function.
8. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in utilizing all of the solution.
9. Monitor the patient for medication effects. This should include the patient’s assessment of his/her response to the treatment and reassessment of vital signs, ECG, and breath sounds.
10. Document the treatment, dose, and route in the patient care report (PCR).

Trauma

Pelvic Fracture Stabilization

Clinical Indications:

- Physical exam indicates, and the mechanism of injury suggests a pelvic fracture.

Procedure:

1. Physical exam shows instability of the pelvis with compression.
2. Assess the abdomen and neurovascular status of the lower extremities.
3. Assess for blood at the perineum.
4. Fold a sheet lengthwise into a swathe approximately 12 to 18 inches wide.
5. Pass the swathe under the patient's buttocks just below the iliac crests.The swathe should cover the iliac crest to the greater trochanter. Spin sheet tails together & knot using overhand tie, secure with tape/zip ties ⚠ **DO NOT OVERTIGHTEN.**
6. Bind the feet together.

OR

1. Physical exam shows instability of the pelvis with compression.
2. Assess the abdomen and neurovascular status of the lower extremities.
3. Assess for blood at the perineum.
4. Utilize a commercial pelvic stabilization device following the manufacturer's specifications. The devic should cover the iliac crest to the greater trochanter.
5. Bind the feet together.

Trauma
Pericardiocentesis

Clinical Indications:

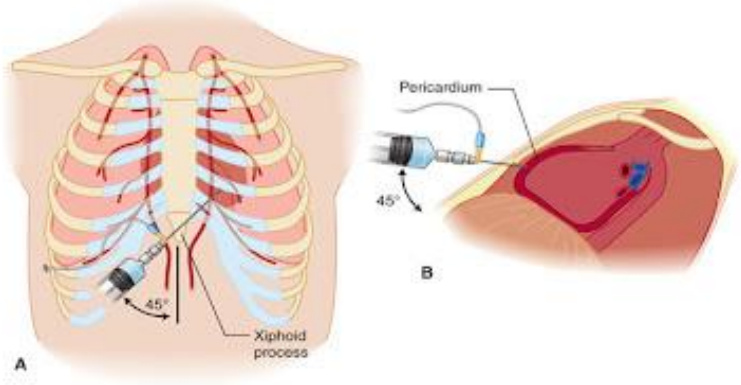
- Witnessed penetrating or blunt trauma arrest.

Equipment:

- Large-bore needle or catheter over needle
- Large barrel syringe
- Skin prep (alcohol swab or chlorhexidine)
- 3-way stopcock
- Ultrasound, if available, and trained

Procedure:

- The patient is supine and relatively straight.
- Landmarks are the xiphoid process, the left inferior edge of the 7th rib (costal margin), and the angle/space where these two structures join.
- Prep the skin
- Attach the syringe to the needle or catheter/needle.
- Needle into the space between the xiphoid and the 7th rib, 45 degrees up from the surface of the chest.
- Direct the needle laterally toward the mid-clavicular line, aspirating as you advance (about 45 degrees to the left).
- Stop advancement when fluid/blood appears in the syringe.
- Continue to aspirate until resistance is met or pulses return.
- If multiple syringes of blood are removed, check the position, as they may have penetrated the right ventricle.
- If using a needle ONLY, withdraw at the same angle as you entered and apply a dressing.
- If using a catheter, withdraw the needle and leave the catheter in place, place the thumb over the open end of the catheter, and apply a 3-way stopcock.
- Reassess your patient.



Trauma

Simple Thoracostomy

P

Clinical Indications:

- Patients in traumatic cardiac arrest or peri-arrest state with ongoing positive pressure ventilation and clinical indications of tension pneumothorax/hemothorax not responding to needle decompression.
- Patients presenting with a tension pneumothorax/hemothorax with hypoxia, hypotension, and unilaterally absent breath sounds.
- In the setting of traumatic cardiac arrest, bilateral thoracotomies should be performed empirically.
- Patients for whom needle decompression has been inadequate or have already had two needles on the same side cease to function.

Equipment:

- Sterile gloves
- Eye protection/face shield
- Some form of antiseptic. Chlorhexidine is preferred
- #10 Scalpel
- Hemostats or kelly forceps.
- Skin marking pen

Procedure:

1. Utilize universal precautions, **especially face and eye protection**.
2. With the arm abducted, find and mark the area over the fifth rib at the midaxillary line (within the triangle of safety).
3. Clean the area as best as possible with an antiseptic.
4. Make a 1-2 “(5 cm) transverse incision through the skin over the 5th rib at the marked location just anterior to the mid-axillary line.
5. With large forceps, rapidly dissect over the rib and through the intercostal muscles.
6. Push through the pleura and open the forceps.
7. With the forceps open, retract from the chest and set aside.
8. Insert a finger through the track into the pleural cavity and perform a sweep.
9. Allow and assess for release of air or blood.
10. Each wound should be circled with a permanent marker and labeled “EMS” to identify incisions made by EMS in the event of autopsy or criminal investigation.

Trauma
Thoracic/Needle Decompression

Clinical Indications:

- The need for temporizing management of a tension pneumothorax in a conscious patient.

Procedure:

1. "Identify high likelihood of a tension pneumothorax based on clinical evidence. If patient is unconscious, rapidly deteriorating, or actively being resuscitated, perform Simple Thoracostomy (Pg. 144) instead."
2. Locate the insertion site at the second intercostal space at the midclavicular line on the affected side of the chest. The fifth intercostal space in the midaxillary line may be considered in adults.
3. Prep the insertion site.
4. Select an ARS needle or an appropriately long (3+ inch) large-bore angiocath. A 1 1/4", 18ga angiocath may be used in patients under 8 years old. Insert the needle by directing it just over the top of the third rib (2nd intercostal space) midclavicular, or over the top of the 6th rib (5th intercostal space) midaxillary. Resistance will be felt until the needle enters the pleural space, a "pop" or "give" may also be felt. DO NOT advance the needle any further."
5. Advance the catheter until the hub is flush with the skin, and then withdraw the needle. Listen for a release of air from the hub, although this may be missed due to ambient noise."
6. Dispose of the needle properly and **never reinsert into the catheter**.
7. Secure the catheter and rapidly transport the patient, providing appropriate airway assistance. Reassess frequently as decompression catheters frequently occlude.

Trauma
Spinal Motion Restriction

Indications For Full Spinal Motion Restriction:

1. If a blunt trauma mechanism exists for spinal injury, perform spinal assessment. Immobilize patients with a cervical collar and position flat (supine) on a stretcher or Mega Mover if any of the following exist:
   - Altered level of consciousness
   - Midline cervical, thoracic, or lumbar spinal pain, tenderness, or deformity
   - Neurologic complaint (e.g. numbness or motor weakness)
   - High energy mechanism of injury **AND:**
     - Alcohol intoxication or substance-induced impairment, and/or
     - Inability to communicate, and/or,
     - Distracting injury, and/or
     - Age > 65 years old
2. Indications for SMR remain the same as above for all pediatric patients.
3. Head beds, head blocks, tape, or other forms for securing the patients head to a backboard or other extrication device are not required and **should not be used.**
4. A LSB may be used for extrication or moving the patient, as needed. Other rigid extrication tools, such as the Kendricks Extrication Device (KED), or a scoop stretcher, may also be used for extrication or moving the patient as needed. A Mega Mover is also a reasonable alternative for patient movement.
5. For patients who also require full SMR, they should remain flat. The elevated position of the head and SMR can be achieved by placing the patient in reverse trendelberg.

Consider elevating the head of the bed to 30 degrees for patients who you suspect has a traumatic brain injury.

Indications for Cervical Spinal Motion Restriction:

1. Patients complaining of isolated cervical neck pain or midline tenderness following blunt trauma who have a GCS of 15 can be managed by application of a cervical collar, without any further SMR. They can be secured firmly to the stretcher with seatbelts in a position of comfort.
2. This circumstance may include patients who are found ambulatory at the scene following an accident.

Indications That No SMR Is Needed:

1. Spinal motion restriction using a cervical collar and stretcher is not necessary when all of the following conditions are met:
   - Normal level of conscious (GCS 15)
   - No midline cervical, thoracic or lumbar spine tenderness or anatomic abnormality
   - No neurologic findings or complaints
   - No intoxication or drug induced impairment
2. Patients with penetrating trauma to the head, neck or torso should not be immobilized on a LSB or have a cervical collar applied as such use is associated with increased mortality).

Consider modified restriction in any patient with arthritis, cancer, dialysis, kyphosis or other underlying spinal or bone disease or who may have increased risk of spinal compromise.

Trauma
Splinting

Clinical Indications:

- Immobilization of an extremity, either due to suspected fracture, sprain, or injury.
- Immobilization of an extremity to secure medically necessary devices such as intravenous catheters.

Procedure:

1. For any reduction, consider **Analgesia and Sedation Management Pg. 45**
2. Remove all clothing, jewelry, or restricting items from the extremity.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed.
4. Do not secure the splint directly over the injury or device.
5. Place the splint and secure it with Velcro, straps, or bandage material (e.g., Kling, Keflex, cloth bandage, etc.) depending on the splint manufacturer and design.
6. Document pulses, sensation, and motor function after placement of the splint. If there has been a deterioration in any of these 3 parameters, remove the splint and reassess.
7. If a femur fracture is suspected and there is no evidence of pelvic and/or knee fracture or instability, place a traction splint per the manufacturer's specifications.
   a. Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, release traction and reassess.
8. Document the time, type of splint, and the pre and post-assessment of pulse, sensation, and motor function in the patient care report (PCR).

Trauma

Wound Care and Hemorrhage Control

Clinical Indications:

- Bleeding control of open wounds, including tourniquet use.
- Protection and care for open wounds.

Procedure:

1. Utilize universal precautions as per **Infection Control Standards Pg. 14.**
2. Control Bleeding
   a. Apply direct pressure to wound with clean gauze pad. If extremity wound, elevate above the level of the heart.
   b. If gauze soaks through, apply additional gauze on top of original- do not remove initial dressing.
   c. Use pressure points if unable to control bleeding using direct pressure, elevation, and additional gauze.
   d. If prolonged extrication or transport and unable to control bleeding to extremity wound, consider use of commercially-prepared gauze impregnated with a hemostatic non-thermogenic agent (ie Quick Clot gauze). Follow manufacturers' recommendations for packing, dressing and bandaging site.
   e. Tourniquets. For partial or complete extremity amputation or uncontrolled bleeding, consider use of commercial tourniquet device. Use blood pressure cuff only if commercial device not available and continuous pressure monitoring can be assured.
      i. Follow device manufacturers' recommendations for application and monitoring.
      ii. Apply tourniquet pressure only to point bleeding is controlled to preserve as much distal tissue as possible.
      iii. Record application time
      iv. Providers may immediately apply commercial tourniquets in the setting of severe, life-threatening bleeding to an extremity.
   f. Once bleeding is controlled, bandage dressing in place – do not rely on bandage to control bleeding.
3. Once bleeding is controlled, irrigate contaminated wounds with saline as appropriate (this may have to be avoided if bleeding was difficult to control). Consider analgesia per protocol prior to irrigation.
4. Cover wounds with sterile gauze/dressings. Check distal pulses, sensation, and motor function to ensure the bandage is not too tight.
5. Monitor wounds and/or dressings throughout transport for bleeding.
6. Document the wound and assessment and care in the patient care report (PCR

Vascular
Venous Access Blood Draw

Clinical Indications:

- Collection of a patient's blood for laboratory analysis.

Procedure:

1. Utilize universal precautions as per **Infection control standards Pg. 14.**
2. Select the vein and prep with topical antiseptic as usual. If legal blood draw, prepare skin w/ approved antiseptic.
3. Select appropriate blood-drawing devices: Vacutainer blood tubes and blood tube holders with male or female adaptors shall be available to obtain and transfer all blood samples.
4. Draw appropriate tubes of blood for lab testing per destination hospital protocol.
5. Assure that the blood samples are labeled with the correct information (a minimum of the patient's name, along with the date and time the sample was collected).
6. If legal blood draw, hand provided blood tubes back to officer for admixing per manufactures instructions & labeling.
7. Deliver the blood tubes to the appropriate individual at the hospital.
8. Nitrous oxide (where available) can be used to facilitate venous access in the pediatric patient.
9. A small intradermal wheal of 2% Lidocaine may be injected prior to blood draw.

Vascular
Venous Access External Jugular

Clinical Indications:

- External jugular vein cannulation is indicated in a critically ill patient > 8 years of age who requires intravenous access for fluid or medication administration and in whom an extremity vein is not obtainable.
- External jugular cannulation can be attempted initially in life-threatening events where no obvious peripheral site is noted.

Procedure:

1. Utilize universal precautions as per **Infection Control Standards Page 14.**
2. Place the patient in a supine head-down position. This helps distend the vein and prevents air embolism.
3. Turn the patient's head toward the opposite side if no risk of cervical injury exists.
4. Prep the site as per peripheral IV site.
5. A small intradermal wheal of 2% Lidocaine may be injected prior to IV insertion.
6. "Tourniqueting" the vein lightly with one finger above the clavicle, puncturing the vein midway between the angle of the jaw and the clavicle, and cannulating the vein in the usual method.
7. Attach the IV and secure the catheter, avoiding circumferential dressing or taping.
8. Document the procedure, time, and result (success) on/with the patient care report (PCR).

		E-IV	A	P

Vascular
Venous Access Extremity

Clinical Indications:

- Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition).

Procedure:

1. Utilize universal precautions as per **Infection Control Standards, Pg. 14.**
2. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
3. Connect IV tubing to the solution in a sterile manner. Fill the drip chamber half full, then flush the tubing to bleed all air bubbles from the line.
4. Place a tourniquet around the patient's extremity to restrict venous flow only.
5. Select a vein and an appropriate gauge catheter for the vein and the patient's condition.
6. Prep the skin with an antiseptic solution.
7. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the blood flash is visualized in the catheter.
8. Advance the catheter into the vein. **Never** reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
9. Draw blood samples when appropriate.
10. Remove the tourniquet and connect the IV tubing or saline lock.
11. Open the IV to ensure free flow of the fluid, then adjust the flow rate as per protocol or as clinically indicated.
12. Cover the site with a sterile dressing and secure the IV and tubing.
13. Document the procedure, time, and result (success) on/with the patient care report (PCR).

Vascular

Venous Access Intraosseous Adult

Clinical Indications:

- Inability to obtain vascular access in a patient who requires emergent access.

Procedure:

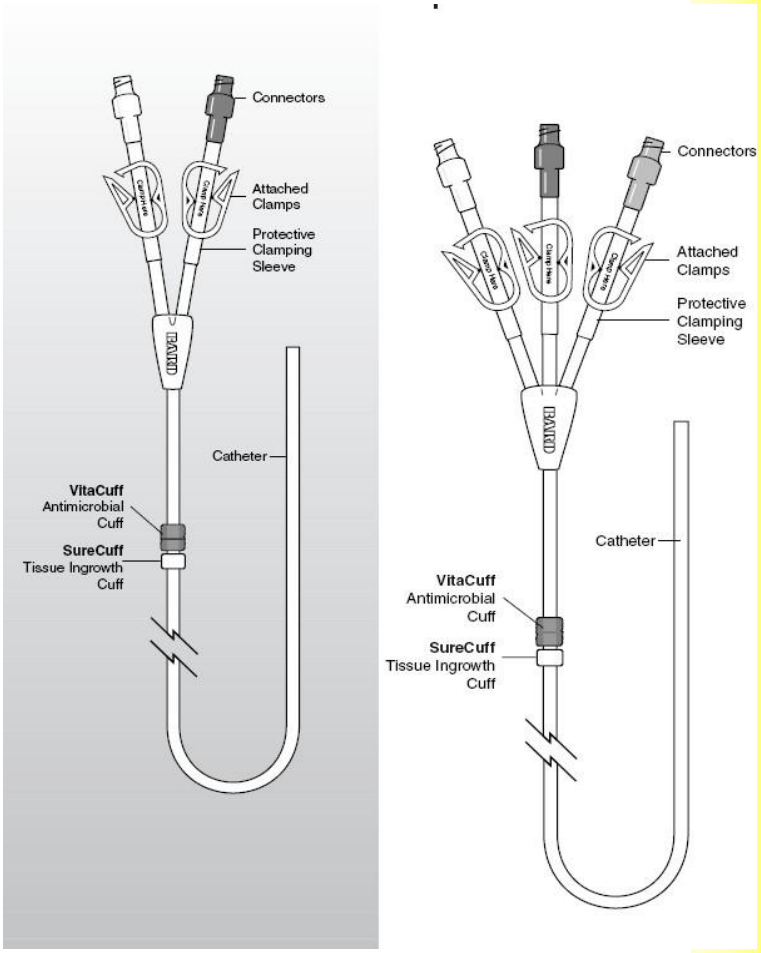
1. Utilize universal precautions as per **Infection Control Standards Pg. 14.**
2. Assemble standard intravenous access equipment as well as IO needle. **If a commercial kit is being used (O™, Bone Injection Gun™), or hand held Intraosseous needle, follow the procedure recommended by the manufacturer.**
3. Follow the manufacturer's specifications for placement—suggested sites: proximal humerus, proximal tibia, distal tibia, and distal femur.
4. Holding the I/O needle perpendicular to the site, insert it with a twisting motion until you feel decreased resistance or feel a "pop". Stop advancing the needle.
5. Remove the trochar.
6. Flush 1-5mL of 2% **Lidocaine** in conscious patients PRN.
7. Begin infusion of IV fluids. The fluids should flow easily. Once the ease of flow has been established, the line may be used just as any other IV line.
8. Stabilize the IO needle.
9. Record the procedure, any complications, and clinical response in the patient care report (PCR).

Vascular
Central Venous Device

Clinical Indications:

- Need for vascular access using a patient's current externally accessible central venous device.
- For multi-lumen lines PICC lines Hickman's and Groshong catheters.
- Subcutaneous ports
  ⚠Accessing a central venous device carries a risk of life-threatening infection and should be done with aseptic technique.

Procedures:



1. Apply gloves.
2. Gather all equipment required: antiseptic; 10 mL syringe of Normal Saline; IV solution and tubing; extra syringes
3. If thumb or slide clamps are present, ensure they are in the locked position before beginning. Clamps need to be closed before removing any syringe of adapter from the hub. Always clean the hub with an antiseptic while changing of syringes or adapters.
4. Scrub the hub with an alcohol swab for 10 seconds and attach a syringe of saline.
5. Flush with 5 ml of Normal Saline, aspirate for blood return, and flush with the remaining 5 ml of Normal Saline.
6. Regardless of the type of PICC line access, if resistance is met, assume the lumen is obstructed and repeat the procedure on the second lumen if available. Also, repeat the procedure on the second lumen if aspirating for blood is unsuccessful.
7. If drawing labs and a clamp is present, close it, remove the syringe, clean the hub, attach a new syringe, open the clamp, and aspirate 5ml of blood to discard. Attach a new syringe if needed, open the clamp, and draw blood for labs.
8. Establish IV fluids at the minimum TKO rate or desired infusion rate and secure the line.
9. Discontinue if a complication occurs.

Vascular
Central Venous Device*(continued)*

Accessing a Subcutaneous Implanted Port

1. Don a mask and sterile gloves.
2. Palpate port to locate septum.
3. Stabilize the device with your thumb and index finger.
4. Cleanse the area around the port with three separate antiseptic swabs/pads.
5. While stabilizing the port, insert a Huber needle perpendicularly through the skin into the septum. Apply pressure until the needle comes into contact with the metal backing of the device.
6. Aspirate for blood to confirm placement. If no blood returns, attempt to irrigate with saline and aspirate blood again.
7. Add a new syringe of saline and flush with saline.
8. Assess for swelling around the device. If swelling occurs, **STOP INJECTION**. ⚠
9. Tape down Huber needle “wings.”
10. Apply transparent dressing.

Blood Product Administration

POLICY: Only paramedics who have successfully completed MPD-approved training can initiate or monitor the administration of blood products.

Clinical Indications:

- To replace blood loss while maintaining adequate circulating volume and oxygen during transport.
- To replace clotting factors or other life-saving blood products.

Complications:

- Transfusion reactions may manifest as anaphylaxis with shortness of breath, hypotension with BP<90, tachycardia, angioedema, altered mental status, rash, or fever. Severe reactions usually manifest during the initial 50cc or less of infusion.
- An infusion that is too rapid produces a volume-overloaded state.

Equipment Use:

- Infusion pumps may be helpful but not required unless delivered through a central venous catheter or pediatrics.
- Blood infusion sets are required.

Prehospital Procedure:

1. Verify the blood product, blood type, infusion rate, and use of micro-aggregate or leukocyte removal filter.
2. ***Check for the history of previous reaction to a blood product and for pre-transfusion symptoms that could be mistaken for a transfusion reaction. (i.e, fever, hypotension, tachycardia, shortness of breath, altered mental status or rash) See #4 below.***
3. Assess baseline temperature, pulse, RR, and BP prior to starting transfusion, at least every 15 minutes while blood is infusing, and again when transfusion is completed (except albumin and plasma protein fraction). Vital signs must be documented.
4. Assess TPR and BP every 15 minutes x 4 during intravenous gamma globulin administration.
5. Replace blood tubing after every two units or after 4 hours of use. Discard tubing immediately following completion of transfusion.
6. Monitor the peripheral site and infusion system at least every 15 minutes during blood product administration.
7. For any suspected reaction:
   a. Stop transfusion; do not clear tubing
   b. Recheck labels
   c. Notify the base station physician
   d. See **Allergic Reaction/ Anaphylaxis Protocol, Pg. 37**.
   d. Remove bag and tubing; start isotonic saline
   e. Monitor and treat symptoms of anaphylaxis
   f. Collect a urine specimen for receiving the hospital. Keep containers available.
   g. Save the blood bag and deliver it to the receiving hospital along with the urine specimen for further testing.

Childbirth /Fundal Massage

Clinical Indications for Childbirth:

- Imminent delivery with crowning

⚠ **Delivering a child in a moving ambulance is dangerous for all parties involved.**

Procedure for Childbirth:

1. Delivery should be controlled to allow a slow, controlled delivery of the infant. This will prevent injury to the mother and infant.
2. Support the infant's head as needed.
3. Check for the umbilical cord surrounding the neck. If it is present, slip it over the head. If unable to free the cord from the neck, double-clamp it and cut between the clamps.
4. Suction the airway with a bulb syringe. Mouth then nose.
5. Grasping the head with hands over the ears, gently aim the baby down to allow delivery of the anterior shoulder.
6. Gently aim the baby up to allow delivery of the posterior shoulder.
7. Slowly deliver the remainder of the infant.
8. Clamp the cord 2 and 3 inches from the abdomen with 2 clamps and cut the cord between the clamps.
9. Record **APGAR** scores at 1 and 5 minutes. **Pg. 87**.
10. Child should be placed skin to skin with mother as soon as possible.
11. Follow the **Newborn Resuscitation/Post Delivery Care Protocol** for further treatment. **Pg. 88.**
12. The placenta will deliver spontaneously, usually within 5 minutes of the infant. Do not force the placenta to deliver.
13. Continue transport to the hospital.

Childbirth /Fundal Massage *(continued)*

Clinical Indications for Fundal Massage:

- Postpartum hemorrhage **AFTER** placental delivery

Procedure for Fundal Massage:

1. Assure complete delivery of placenta.
2. Place an absorbent material beneath the patient's pelvis to facilitate estimation of blood loss.
3. Place the ulnar aspect of your non-dominant hand perpendicular to the abdomen, parallel and just superior to the symphysis pubis.
4. Exert moderate pressure up and in toward the spine.
5. With your dominant hand, find the uterine fundus and begin a “kneading” motion using moderate pressure.
6. This procedure will be uncomfortable to the patient but should not be painful.
7. Uterine massage should result in uterine contracture and the feeling of a firm “grapefruit” sized mass.
8. Continue the procedure until bleeding subsides.
9. If **hemorrhage continues,** perform **bimanual compression** **go to page 158.**
10. Document patient condition, procedure, and response on PCR.

Childbirth/BiManual Compression

Clinical Indications for Bimanual Compression:

- Postpartum hemorrhage unresponsive to fundal massage, Pg. 156-157.
- Continued significant bleeding after placental delivery

⚠ This is an emergent procedure requiring rapid transport. Notify the receiving facility early.

Procedure for Bimanual Compression:

1. Don appropriate PPE, including sterile gloves, if possible.
2. Place patient supine with knees flexed.
3. Insert the gloved dominant hand into the vagina, form a fist, and place it in the anterior fornix.
4. Place the other hand on the abdomen, posterior to the uterus, and above the fundus.
5. Apply firm pressure between both hands to compress the uterus.
6. Maintain steady pressure until the bleeding subsides or the patient arrives at the hospital.
7. Monitor vital signs frequently, particularly for signs of shock:
    a. Blood pressure
    b. Heart rate
    c. Skin color and temperature
    d. Level of consciousness
8. Establish IV access if not already in place.
9. Document the estimated blood loss using absorbent materials placed under the patient.
10. Continue fundal massage with compression if the uterus feels boggy.
11. Provide supplemental oxygen via a non-rebreather mask at 15L/min.
12. Transport immediately to the appropriate obstetric facility.
13. Document the patient's condition, procedure, and response on PCR.

Field Ultrasound

Clinical Indications:

- High-impact torso/abdominal trauma (obvious or suspected)
- Cardiac arrest requiring wall motion assessment
- IV placement

Contraindications:

- Would delay patient care/transport
- Provider lacks required training/endorsement
- Severe abdominal pain with radiation to back/flank/groin

Procedure: *Provider must complete MPD specialized training*

Internal bleeding may not show symptoms in the first hour after major trauma. Prehospital ultrasound (Focused Assessment with Sonography for Trauma) (FAST exam) helps detect hidden injuries. It guides treatment decisions, including for potential aortic aneurysms and confirming cardiac standstill in PEA arrests, increasing survival and decreasing morbidity and mortality from internal hemorrhage.

1. When ultrasound is available, a FAST (Focused Assessment with Sonography for Trauma) exam will be completed in the following order, with at least a six-second recording of each exam.
   a. Patients who have the possibility of an abdominal aortic aneurysm can benefit from a prehospital ultrasound exam.
   b. Whenever the Cessation of Resuscitation Efforts protocol is used for PEA, and a prehospital ultrasound is available, it will be used to confirm the absence of cardiac activity.
   c. For patients presenting with torso or abdominal pain or who present with high-impact, high-mechanism trauma, a prehospital FAST exam should be considered.
      i. Morison's perihepatic view (RUQ)
      ii. Pelvic view
      iii. Perisplenic view (LUQ)
      iv. Cardiac view
   d. For patients with suspected pneumothorax or pulmonary edema.
   e. For patients who have a high clinical suspicion of abdominal aortic aneurysm, an abdominal ultrasound should be considered.
2. The trained provider will complete the appropriate prehospital ultrasound exam recording for at least six seconds.
3. **AT NO TIME SHOULD A PREHOSPITAL U/S EXAM DELAY PATIENT TREATMENT OR TRANSPORT**
4. The exam will be interpreted and transmitted to the consulting hospital for preparation of the incoming patient when multi-system trauma is present, when possible.
5. Continue patient care as appropriate for either medical and/or traumatic emergencies.
6. Assure the exam is transmitted to the receiving facility, if possible. Findings should be noted in the patient care report.

Firefighter Rehabilitation Procedure

(2)Reference: NFPA 1584

Purpose:

To provide guidance on implementing and using a rehabilitation process as a requirement of the incident management system (IMS) at the scene of a fire, other emergency, or training exercise. It will ensure that personnel suffering from metabolic heat buildup, dehydration, physical exertion, and/or extreme weather receive evaluation and rehabilitation during emergency operations.

SCOPE. All personnel attending or operating at the scene of a fire/emergency or training exercise.

Roles:

1. Rehabilitation shall commence when fire/emergency operations and/or training exercises pose a health and safety risk. **Be on the look out for the following symptoms**:
    a. Any complaints of CP, SOB, N/V, Dizziness, HA, Weakness?
    b. General complaints such as cramps, aches or pains?
    c. Symptoms of heat or cold related stress?
    d. Changes in gait, speech, behavior?
    e. Confused or disoriented?
2. Rehabilitation shall be established for large-scale incidents, long-duration and/or physically demanding incidents, and extreme temperatures.
3. The incident commander shall establish rehabilitation according to the circumstances of the incident. The rehabilitation process shall include the following:
    a. Rest
    b. Balanced hydration to replace lost body fluids
    c. Cooling (passive and/or active)
    d. Warming
    e. Medical monitoring
    f. Emergency medical care if required
    g. Relief from extreme climatic conditions (heat, cold, wind, rain)
    h. Calorie and electrolyte replacement
    i. Accountability
    j. Release

Firefighter rehabilitation procedure *(continued)*

Responsibilities:

The incident commander shall be responsible for the following:

1. Identify and provide adequate resources for rest and rehabilitation of all members of the incident team.
2. Ensure that mental health facilities are available to all members of the department.

The rehabilitation manager shall be responsible for the following:

1. Designate a responder rehabilitation location(s).
2. Request necessary medical personnel to evaluate medical condition of personnel.
3. Request necessary feeding and other resources for rehabilitation of personnel.
4. Release individuals needing additional medical care to EMS.
5. Maintain accountability of all personnel in the rehabilitation location.
6. Maintain appropriate records and documentation.

Company officers shall be responsible for the following:

1. Maintain an awareness of the physical and mental conditions of each member.
2. Ensure members remain hydrated and that potable fluids are available.
3. Continuously assess crew at least every 45 minutes and more frequently when working in extreme conditions.

Crew members shall be responsible for the following:

1. Participate in rehabilitation activities when assigned.
2. Maintain balanced hydration.
3. Advise company officers when level of fatigue or exposure to heat or cold is approaching a level that could negatively affect them, their crew, or the operation.
4. Remain aware of the health and safety of other members of their crew.

EMS personnel shall be responsible for the following:

1. Report to the incident commander and obtain the rehabilitation requirements
2. Coordinate with the rehabilitation manager
3. Identify the EMS personnel requirements
4. Check vital signs, monitor for heat stress and signs of medical issues
5. Document medical monitoring
6. Provide emergency medical care and transportation to medical facilities as required
7. Inform the incident commander and the rehabilitation manager when personnel require transportation to and treatment at a medical facility
8. Document emergency medical care provided

Firefighter rehabilitation procedure (continued)

Procedures:

1. All personnel shall maintain hydration on an ongoing basis (pre-incident, incident, post incident).
2. Members shall be sent to rehabilitation as required.
3. All members shall be sent to rehabilitation following the use of two 30-minute or 45-minute SCBA cylinders or one 60-minute SCBA cylinder. Shorter times might be considered during extreme environmental conditions.
4. Passive cooling shall be employed to reduce fire fighter heat stress. This could include moving to a shaded or air-conditioned area, removal of PPE, ingestion of cool fluids, and rest.
5. Active cooling shall be employed to reduce fire fighter heat stress when passive cooling is ineffective or when a member is experiencing heat-related illness. This could include forearm immersion, misting fans, and cold towels.
6. In hot, humid conditions, a minimum of 10 minutes (20 minutes is preferable) of active cooling shall be applied following the use of the second and each subsequent SCBA cylinder.
7. Personnel in rehabilitation shall rest for at least 10 minutes to 20 minutes prior to being reassigned or released.
8. EMS personnel shall provide medical monitoring and emergency medical care as per medical protocol.
9. If a member is demonstrating abnormal vital signs, he or she shall be monitored frequently during rehabilitation.
10. Personnel who are weak or fatigued with pale, clammy skin, low blood pressure, nausea, headache, or dizziness shall be assessed by EMS personnel.
11. Personnel experiencing chest pain, shortness of breath, dizziness, or nausea shall be transported to a medical facility for treatment.
12. Personnel transported to a medical facility for treatment shall be accompanied and attended to by a department representative.
13. Members should drink water during rehabilitation. After the first hour, a sports drink containing electrolytes should be provided. Soda and caffeinated and carbonated beverages should be avoided.
14. Nutritional snacks or meals shall be provided as required during longer duration incidents.
15. No tobacco use shall be permitted in or near the rehabilitation area.

Fire Protection District

USFA & NFPA 1584

FIREFIGHTER REHABILITATION FORM

LEGAL DOCUMENT – DO NOT DISCARD

Incident Name: _____

Date: _____/ _____/ _____

FIREFIGHTER INFORMATION

Name:

Log-In Time: _____: _____ Log-Out Time: _____:

Unit: Agency:

PPE Level: ❒ Duty Uniform ❒ Structure ❒ Wildland ❒ | Radio #:

Comments, Medical Concerns, Allergies

Age: _____

❒ Male ❒ Female

Heat Symptoms

❒ Nausea ❒ Weakness ❒ Headache ❒ Sunburned
❒ Cramping ❒ Seizure ❒ Flushed Skin ❒ Exhaustion
❒ Dehydration ❒ Mental Confusion ❒ Absence of Sweating
❒ Shortness of Breath ❒ Rapid Heart Rate

Cold Symptoms

❒ Headache ❒ Low BP ❒ Numbness ❒ Blisters
❒ Dehydration ❒ Muscle Rigidity ❒ Mental Confusion
❒ Slow Pupil Response ❒ Waxy Pale Skin

Vital Signs

Time	B/P	Pulse	Respiration	Temperature

NFPA 1582 - 9.4.20.1 Uncontrolled Hypertension Defined as

❒ Systolic Pressure >180 mm Hg
❒ Diastolic Pressure >100 mm Hg
❒ Hypertension with the presence of target organ damage

Compromises the member's ability to safely perform essential job

Oral Intake

❒ Electrolyte _____oz ❒ Water _____oz ❒ Food

Weather

Temp	Wind Chill	Humidity	Heat Index

Carbon Monoxide Exposure Assessment

Was Firefighter Exposed to Smoke? ❒Yes ❒No

Initial Carbon Monoxide Assessment Parameters

0 – 5% Normal
5 – 10% Normal in a Smoker
>10% Abnormal – Consider High Flow Oxygen
>15% Significantly Abnormal – Treatment Mandatory

Initial Carbon Monoxide Reading SpCO% = _____

Carbon Monoxide Reassessment Parameters

0 – 5% Acceptable
5 – 10% Consider High Flow Oxygen Until <5%
>10% Abnormal - Assess Symptoms – High Flow Oxygen
>15% Significantly Abnormal – Treatment Mandatory

Carbon Monoxide Reassessment Reading SpCO% = _____

CO / Oximetry Readings

Time				
Spo2				
SpCO				

Rehabilitation Procedure

NFPA 1584 – Chapter 6

6.1.1 Rehabilitation operations shall commence whenever emergency operations or training exercises pose a safety or health risk to members

6.1.4 Members shall undergo rehabilitation following:

❒ The use of a 2nd 30-minute SCBA
❒ A single 45-minute SCBA
❒ A single 60-minute SCBA
❒ 40 Minutes of intense work without an SCBA

6.2.2.1 Members entering rehabilitation for the first time shall rest for a minimum of 10 minutes and longer where practical

6.2.2.2 Members shall rest for a minimum of 20 minutes following:

❒ The use of a 2nd 30-minute SCBA
❒ A single 45-minute SCBA
❒ A single 60-minute SCBA
❒ 40 Minutes of intense work without an SCBA

6.2.2.2.2 The member shall not return to operations if he/she does not feel adequately rested

1. Rest: ❒ Yes ❒ No Minutes: _____
2. Hydration: ❒ Yes ❒ No
3. Cooling: ❒ Yes ❒ No ❒ Active ❒ Passive
4. Warming: ❒ Yes ❒ No
5. Medical Monitoring: ❒ Yes ❒ No
6. Relief from Climate: ❒ Yes ❒ No
7. Calorie & Electrolyte Replacement: ❒ Yes ❒ No
8. Emergency Medical Care Provided ❒ Yes ❒ No
9. Accountability Documentation Completed: ❒ Yes ❒ No

Released By: _____
Print Name

Signature: _____Time: _____: _____

Nasogastric Tube Insertion

Clinical Indications:

- Gastric decompression in intubated patients.
- Administration of activated charcoal in patients with altered mental status with an advanced airway.

In the setting of an unconscious, intubated patient or a patient with facial trauma, oral insertion of the tube may be considered or preferred.

Procedure:

1. Assemble all supplies. Assure functioning suction unit.
2. Estimate insertion length by superimposing the tube over the body from the nose to the ear, to the stomach. Mark the proper insertion distance with tape.
3. Administer two puffs of oxymetazoline (unless contraindicated) into the intended nostril.
4. Flex the neck **if not contraindicated** to facilitate esophageal passage.
5. Liberally lubricate the distal end of the tube and pass it through the patient's nostril along the floor of the nasal passage. Do not orient the tip upward into the turbinates. This increases the difficulty of the insertion and may cause bleeding.
6. Continue to advance the tube gently until the appropriate distance is reached.
7. Confirm placement by injecting 20cc of air and auscultate for the swish or bubbling of the air over the stomach. Additionally, aspirate gastric contents to confirm proper placement.
8. Secure the tube.
9. Decompress the stomach of air and food either by connecting the tube to suction or manually aspirating with the large catheter tip syringe.
10. Mechanical suction should only be used on the LOW setting to reduce the risk of injury to the patient.
11. Document the procedure, time, patient response, and result (success) on/with the patient care report (PCR).

Restraints

Clinical Indications:

- Patients with actual or potential threat to self or others.
- Transporting a patient on an involuntary hold.

Procedure:

1. **Planning**:
   a. Request assistance from Law Enforcement.
   b. EMS personnel are not to knowingly place themselves at risk while restraining a patient.
   c. Obtain necessary resources to manage scene and patient.
   d. Assess the patient for any condition that may contribute to violent behavior. Treatment for identified conditions is to be initiated immediately after controlling the situation and patient behavior, according to protocol.
   e. Consult Medical Control if you have questions or concerns.
   f. Verbal de-escalation techniques are to be implemented and documented. If verbal de-escalation fails, providers may need to implement physical and/or chemical restraint measures.
2. Application of restraints:
   a. Obtain and prepare appropriate restraints
      1. Padded vinyl restraints
      2. Soft restraints (i.e. posey, Velcro, or seatbelt type)
      3. Any method utilized must allow for quick-release
   b. Assess the safety of the situation
      1. Complete a visual check for potential weapons
      2. If there is suspicion of weapon involvement, request the involvement of Law Enforcement before engaging in patient interaction.
      3. Providers should remove any potential weapons from their person. (i.e., pens, flashlights, trauma shears etc.)
   c. Assign a contact for the out-of-control person
      1. Minimize the number of people speaking to the out-of-control person.
      2. Continue the use of verbal de-escalation.
   d. Designate who will direct and cue team members in the application of restraints.
      1. Assign each limb and the head to specific team members
      2. Give the signal to go hands-on (this may be a non-verbal signal)
      3. Supervise the application of restraints
      4. Give the verbal signal for hands-off (RELEASE)
      5. No team member is to release their designated limb until directed
   e. Conduct a preliminary debriefing
      1. Assess team members and patients for any injuries
      2. Re-assess restraints for the appropriate application.

Restraints (*continued*)

3. **Reassessment / Chemical Adjuncts:**
   a. EMS personnel must assess the patient to determine the need for the administration of an anxiolytic or sedative to prevent continued forceful struggle against the restraint. Continued forceful struggling against the restraint can lead to hyperkalemia, rhabdomyolysis, or cardiac arrest. See Behavioral Emergencies/Acute Behavior Disturbance. pg 46
   b. Chemical adjuncts to physical restraints must be administered following patient care protocols and/or online medical direction.
   c. Post-restraint medical or physical assessment must include hemodynamic, respiratory, and neurologic systems. Restrained extremities should be evaluated for pulse quality, capillary refill, color, nerve, and motor function distal to restraints, a minimum of every fifteen minutes. Any patient given sedating medications must be monitored on end-tidal capnography.
4. Documentation:
   a. In addition to standard information, the Medical Incident Report must document the following:
      1. Complete assessment of the patient.
      2. Objective description of patient behavior (competence) (Use BAR score)
      3. Use and effectiveness of verbal de-escalation techniques
      4. Reason for physical restraint
      5. Explanation offered to the patient
      6. Type of restraint used and time applied
      7. Post-restraint serial extremity evaluation
      8. Post-evaluation of the patient's respiratory status
      9. The patient's condition was en route and on transfer to the Emergency Department Staff.
5. Approved restraint devices/patient positioning:
   a. The following forms of restraint are NOT to be utilized by EMS personnel:
      1. "Sandwiching" patients between backboards, scoop-stretchers, or mattresses as a restraint
      2. Restraining a patient's hands and feet behind the patient (i.e. hog-tying)
      3. Methods or other material applied in a manner that could cause respiratory, vascular, or neurological compromise, including the use of "choke holds."
      4. Locking handcuffs
      5. Hard plastic ties or any restraint device requiring a key to remove

Restraints (*continued*)

b. Patients should not be transported in the prone position. EMS personnel must ensure that the patient's position does not compromise the patient's respiratory, circulatory, or neurological systems and does not preclude any necessary medical intervention to protect the patient's airway should vomiting occur. The prohibition on proning in the behavioral/restraint patient is not to be interpreted as forbidding the provider from transporting a non-behavioral patient prone for medical reasons, IE, management of ARDS or due to injury patterns.

c. Occasionally, it is necessary for Law Enforcement to apply restraint devices that are not approved for EMS use (e.g. handcuffs) in order to protect the safety of the patient and the public. EMS personnel will exchange these devices for those approved for EMS use as soon as the situation is controlled. In the event that restraint exchange cannot safely occur, Law Enforcement must accompany EMS in the patient compartment of the ambulance during transport.

Taser Dart Removal

Clinical Indication:

- The darts should only be removed in the field if they do not involve the eye, genitalia, or potential for vascular involvement. Patients with retained darts in these areas should be transported to a hospital for removal by a physician.

Procedure:

1. Before removal, the patient must be compliant or adequately restrained.
2. Body substance isolation procedures must be taken.
3. Ensure the Taser cartridge has been removed from the gun or that the wires have been cut.
4. On the body part where the barbed dart (straight #8 fishhook) is embedded, apply pressure to either side of the dart and pull it straight out.
   ⚠**Consider leaving it in place for high-risk areas such as the globe of the eye and eyelid.**
5. Apply alcohol or iodine to the puncture area and dress the wound.
6. Treat the dart as a “contaminated sharp.” The dart should be placed in a biohazard sharps container and turned over to law enforcement.
7. Patients must be thoroughly assessed to determine if other medical problems or injuries are present.
8. If the individual does not have any other presenting injuries/illness, they may be left in the custody/care of law enforcement.
9. If transported to the hospital, follow the Patient Care Procedure regarding restraints for aggressive or violent patients if appropriate.
10. Detailed documentation is critical as it is likely to become evidence

Formulary

Acetaminophen (Tylenol)

E | A | P

Indications:	• Adult Fever • Adult Pain • Sepsis	• Pediatric Pain • Pediatric Fever
ADULT Dose:	**Sepsis**: 15 mg/kg IV/PO up to 1,000 mg	**Pain:** 15 mg/kg IV/PO **Fever:**500-1000mg IV/PO
Contraindications:	Documented hypersensitivity	
Pediatric Dose:	**Fever**: 15mg/kg PO **Pain**: 15mg/kg IV/IO over 15 min • Liquid solutions vary in concentration. Verify the correct dose. • **Do not exceed 5 doses in 24 hours.**	
Precautions:	• Use cautiously in patients with long-term alcohol use. • Many OTC products contain Acetaminophen-consider toxicity. • ⚠**The toxic dose is 150 mg/kg.**	
Adverse Effects:	• Hypoglycemia	• Allergic reaction
Onset/Duration:	**Onset:** 20-30 minutes	**Duration:** 4-6 hours
Classification:	Antipyretic, Analgesic	
Action:	Reduces pain and fever by acting on brain temperature centers. Doesn't affect platelets, stomach lining, or inflammation.	
Notes:	⚠Caution with long-term alcohol ingestion.	

Acetaminophen, IV (Ofirmev)

A | P

Indications:	• Sepsis • General Illness (IV/PO) • Analgesia & Sedation	• Pediatric Pain & Sedation • Pediatric Fever
ADULT Dose:	**Sepsis:** 15 mg/kg up to 1,000 mg IV over 15 min (patient >/= 50 kg) or PO **General Illness:** 500-1000mg IV/PO **Analgesia& Sedation:** 15 mg/kg IV/PO, max adult dose 1 gram	
Contraindications:	Allergy to acetaminophen	
Pediatric Dose:	Pediatric Pain & Sedation: 15 mg/kg IV over 15 mins	Pediatric Fever: 15 mg/kg IV
Precautions:	Check for liver disease and chronic alcohol use before giving. Total daily acetaminophen from all sources (including OTC) **must not** exceed 4g/24 hours due to liver toxicity risk.	
Adverse Effects:	Hypoglycemia, allergic reaction, headache, nausea/vomiting	
Onset/Duration:	**Onset:** 15 mins analgesia, 30 mins antipyresis.	**Duration**: 4 to 6 hours
Classification:	Analgesic and antipyretic	

Action:	Reduces pain and fever by acting on brain temperature centers. Reduces pain and fever by acting on brain temperature centers.

Acetylsalicylic acid/Aspirin (Bayer/Ecotrin)

R E A P

Indications:	Chest Pain with Suspected MI	
ADULT Dose:	81mg X 4 tabs Chewable up to 325 mg PO	
Contraindications:	Known Hypersensitivity	
Pediatric Dose:	Contraindicated	
Precautions:	⚠**The toxic dose is 200-300 mg/kg**	
Adverse Effects:	• Angioedema • Occult Blood loss • Nausea- GI upset • Hepatotoxicity	
Onset/Duration:	**Onset:** 30-60 minutes	**Duration:** 4-6 hours
Classification:	Antiplatelet, Analgesic, Antipyretic, Anti-inflammatory	
Action:	Inhibition of platelet aggregation and platelet synthesis. Reduction of risk of death in patients with a history of myocardial infarction or unstable angina.	
Notes:	Salicylate Toxicity: tinnitus, nausea, vomiting	

Activated Charcoal (Actidose-Aqua/Insta-Charcoal)

E A P

Indications:	Suspected overdose or accidental ingestion of drugs or chemicals within 30 minutes.	
ADULT Dose:	50 grams PO/NG	
Contraindications:	• ALOC (may be given via NGT with a secured airway) • Diminished or absent gag reflex • Caustic, corrosive, or petroleum distillate ingestion	
Pediatric Dose:	1 gm/kg PO/NG Do not use preparations containing sorbitol	
Precautions:	• 🚩 Unpleasant taste: Be prepared for spitting or vomiting. • The use of straws may facilitate administration in adult patients.	
Adverse Effects:	• Vomiting • Aspiration	
Onset/Duration	**Onset: Immediate**	**Duration: 24 hours**
Classification:	Chemical adsorbent	
Action:	It inhibits the gastrointestinal absorption of drugs or chemicals.	
Notes:	Most effective if administered within 30 minutes of ingestion	

Adenosine (Adenocard)

P

Indications:	• Supra-ventricular tachyarrhythmias (stable) • SVT with aberrancy	• Pediatric Narrow Complex Tachycardia
ADULT Dose:	6 mg Rapid IVP followed with 10 -20 cc isotonic IVF flush Repeat dose of 12 mg as indicated	
Contraindications:	• 2nd or 3rd degree heart block • Relative contraindication in WPW	• Sick sinus syndrome • Hypersensitivity to adenosine
Pediatric Dose:	0.1 mg/kg initial Repeat 0.2 mg/kg as indicated	
Precautions:	Some Asthma patients may experience bronchoconstriction.	
Adverse Effects:	• Headache • Dizziness • Dyspnea	• Chest pressure • Nausea/Vomiting • Transient asystole
Onset/Duration:	**Onset**: Immediate	**Duration:** 10 seconds
Classification:	Cardiac rhythm control agent (AV node blocker). A natural compound that briefly interrupts electrical conduction between the heart's upper and lower chambers.	
Action:	Slows conduction through the A-V node. Can interrupt the reentry pathways through the A-V node.	
Notes:	• Caffeine/nicotine users may need higher doses. • Warn the patient of brief but intense side effects **before** administration.	
Drug interactions:	Theophylline, nicotine, caffeine - may require higher doses.	

Albuterol (Proventil / Ventolin)

E A P

Indications:	• Treatment of Bronchospasm in patients with reversible obstructive airway disease. • Pediatric Toxic Exposure beta blocker
ADULT Dose:	**E**: 1-2 puffs of patient's **OWN** Metered Dose Inhaler (MDI), 2.5 mg SVN (with specialized training). 5 mg SVN for hyperkalemia and beta-blocker overdose. **A:** 2.5 mg in 3cc NS via nebulizer May initiate continuous nebulizer for persistent distress. **Do not exceed 15mg/ hr**
Contraindications:	Known hypersensitivity to Tachycardia (relative)
Pediatric Dose:	2.5-10 mg as per Broselow tape
Precautions:	• Cardiovascular disease Diabetes mellitus • Hyperthyroidism

Albuterol (Proventil / Ventolin) *Continued*

E A P

Adverse Effects:	• Tachycardia • Palpitations • Dysrhythmias Nausea • Hypertension Dizziness • Restlessness	
Onset/Duration:	**Onset:** 5 minutes	**Duration:** 3-4 hours
Classification:	Bronchodilator	
Action:	Relaxes bronchial smooth muscle by stimulating beta2 receptors, resulting in bronchodilation.	
Drug interactions:	Beta Blockers: Pt may not respond as effectively to medication. Sympathomimetics: additive effects	

Amiodarone (Nexterone/Cordarone)

P

Indications:	• VF/Pulseless V-Tachycardia • Narrow Complex Tachycardia • Wide-Complex Tachycardia	• Pediatric V-FIB/Pulseless V-Tach • Pediatric Wide-Complex Tachycardia
ADULT Dose:	**VF/pulseless VT:** • 300mg IV/IO (dilute in NS/D5W 20mL). • May repeat 150mg IVP x 1 after 5-10min. **Max 450 mg.** **Narrow complex tachycardia:** • 150 mg IV/IO infusion over 10 mins(mix in NS/D5W 100cc) , may repeat once • Consider a 1 mg/min drip **VT, wide-complex tachycardia, narrow complex tachycardia:** • 150mg IV infusion over 10min (mix in NS/D5W 100cc). may repeat once. Consider a 1 mg/min drip	
Contraindications:	• Known hypersensitivity. • Cardiogenic shock. • Bradycardia with ventricular escape beats; marked sinus bradycardia; 2nd or 3rd-degree AV blocks. • Antiarrhythmics are not indicated for prophylactic treatment of ectopy or as a prophylactic post-arrest. • Do not use with medications that prolong QT interval (procainamide).	
Pediatric Dose:	**VF/pulseless VT:** • 5mg/kg IV/IO (dilute in NS/D5W 15mL). • May repeat q 5-10min to **max 15mg/kg.** **VT,wide-complex tachycardia**: • 5mg/kg IV/IO infusion over 20-60min (mix in NS/D5W 100ml)	

Amiodarone (Cordarone) *Continued*

P

Precautions:	Use caution when administering amiodarone alongside lidocaine, as drug interactions may occur. Monitor for hypotension and bradycardia, especially with rapid administration, and be aware that amiodarone may potentiate the effects of oral anticoagulants, digoxin, other antiarrhythmics, and cyclosporine.	
Adverse Effects:	• **Common**: Flushing, nausea, headache, vision changes, dizziness, confusion • **Cardiac:** Hypotension, bradycardia (resistant to atropine), QT prolongation, heart blocks • **Serious:** Respiratory depression, seizures, phlebitis at IV site, blue-gray skin discoloration ⚠ **Important:** Discontinue administration if significant adverse effects occur.	
Onset/Duration:	**Onset IV:** 15 min	**Duration**: half-life 40 days.
Classification:	Antiarrhythmic Class III; has effects in all four classes. • Class I – sodium channel blockade. • Class II – noncompetitive alpha and beta-adrenergic inhibition. • Class III – prolonged repolarization and refractoriness by increased action potential duration; and • Class IV – slight calcium channel blockade.	
Action:	This treatment suppresses ventricular abnormal beats and raises the ventricular fibrillation threshold. This action extends the cardiac refractory period without affecting the resting membrane potential. It relaxes blood vessels, decreases peripheral resistance, and slightly improves cardiac output.	
Notes:	• Amiodarone forms precipitates when combined with aminophylline, heparin sodium, sodium bicarbonate, cefamandole nafate, cefazolin sodium, and mezlocillin sodium. • If sodium bicarbonate is needed after amiodarone, flush the IV line with 10-20cc NS.	

Atropine (Atreza)

P

Indications:	• Pediatric Bradycardia • Pediatric Sequence Intubation • Pediatric Organophosphate poisoning (OPP) • Symptomatic bradycardia • Organophosphate poisoning (OPP) • Oral secretions for palliative care
ADULT Dose:	**Bradycardia:** 1 mg IV / IO q 3-5 min to **MAX** of 3 mg **Organophosphate Poisoning:** 2 mg IV / IO q 5-15 minutes until oral secretions improve. **Or MAX of 20 mg.** **Oral secretions**: add 2-4 drops in oral cavity.
Contraindications:	Non-symptomatic bradycardia (Relative: Asthma, Myasthenia Gravis, narrow-angle glaucoma)
Pediatric Dose:	• **Organophosphate poisoning:** 0.08 mg/kg IV/IO • Contraindicated in neonates • **Sequenced intubation adjunct:** 0.02 mg/kg • **Bradycardia:** 0.02 mg/kg IV/IO
Precautions:	• Use with caution in patients with suspected acute myocardial infarction (AMI) ⚠ • Will not be effective for Type II AV Block and new Third-Degree Block with wide QRS complexes. In these patients may cause paradoxical slowing. **Be prepared to pace**.
Adverse Effects:	• Tachycardia • Increased myocardial 02 demand • Palpitations • Dilated pupils • Increased intraocular pressure • Nausea/vomiting
Onset/Duration:	**Onset:** 2-5 minutes **Duration**: 20 minutes
Classification:	Parasympathetic blocker (Anticholinergic) Antidysrhythmic agent
Action:	• **Primary mechanism:** Blocks acetylcholine receptors, which decreases vagal tone, leading to increased heart rate and AV conduction. • **Respiratory effects:** Dilates bronchioles and reduces respiratory tract secretions. • **GI effects:** Decreases both gastrointestinal secretions and motility.

Buprenorphine w/or without Naloxone Suboxone

P

Indications:	• Moderate to severe opioid withdrawal	
ADULT Dose:	16mg SL film, q 30 minutes to max 24mg Withdrawal symptoms should be assessed prior to additional doses	
Contraindications:	• **Under 13 years of age** • Methadone use within last 48 hours • Altered mental status; unable to give consent • Severe medical illness (sepsis, respiratory distress, etc.) • Unable to comprehend potential risks and benefits for any reason	
Precautions:	• Breathing problems, sleep apnea • Liver disease • Head injury, brain tumor • Hallucinations, mental illness, etc. • Stomach, gallbladder, adrenal gland, thyroid, urinary problems	
Adverse Effects:	• Precipitated withdrawal symptoms • Bradycardia • Lightheadedness	• Chest pain, shortness of breath • Nausea, vomiting, stomach pain, itching
Onset/Duration:	**Onset:** SL 20-40 minutes **Half-life:** 24-42 hours	**Duration**: up to 72 hours
Classification:	Narcotic analgesic	
Action:	• Buprenorphine is a semi-synthetic opioid partial agonist. Naloxone is a potent narcotic antagonist and produces opioid withdrawal signs and symptoms in individuals physically dependent on full opioid agonists when administered parenterally.	
Notes:	For individuals with a Clinical Opioid Withdrawal Scale (COWS) score ≥ 5, received Naloxone during opiate overdose response, and in stable condition.	

Calcium Chloride (CaCl2)

P

Indications:	• Hyperkalemia • Crush Injury/Rhabdomyolysis	• Overdose of calcium channel blockers
ADULT Dose:	**Hyperkalemia & Crush/Rhabdo**:10 to 20 mg/kg up to 1000 mg slow IV /IO **Ca-Channel Blocker Overdose**: 1-2 grams IV/IO over 10 min, may repeat in 20 min.	
Contraindications:	VF (unless due to hyperkalemia) Hypercalcemia	
Pediatric Dose:	10 mg/kg IV/IO	
Precautions:	• It causes tissue necrosis if injected into the interstitial space. • Precipitates with sodium bicarbonate. • May increase digoxin toxicity. **Clear IV with 20cc NS before and after administration**	
Adverse Effects:	Bradycardia, hypotension, syncope	
Onset/Duration:	**Onset:** 5-to-15-minutes onset	**Duration**: Is dose-dependent; effects may persist for up to 4 hrs
Classification:	Electrolyte	
Action:	• Couples electrical and mechanical events of the myocardium • Increases myocardial contractility • Increases ventricular irritability	
Notes:	200 mg IV prophylactic to diltiazem admin in elderly if hypotensive due to dehydration or drug-induced.	

Ceftriaxone

P

Indications:	• Bacterial infection, or high-risk exposure, such as an open fracture
ADULT Dose:	IV: 1 to 2 g once IM: Concentration of 250 mg/mL or 350 mg/mL is recommended for all vial sizes except the 250 mg size (250 mg/mL is suggested) IV: Infuse as an intermittent infusion over 30 minutes. IV push administration over 1 to 4 minutes has been reported (concentration: 100 mg/mL)
Contraindications:	Allergy to cephalosporin and hx of anaphylaxis to penicillin. Neonates
Pediatric Dose:	Infants, Children, and Adolescents:50-75mg/kg/day IV/IM
Precautions:	⚠Do not run through same line as calcium. pause LR infusion in same access when giving ceftriaxone

Ceftriaxone *Continued*

P

Adverse Effects:	**Mechanism:** Incompatibility with calcium, resulting in ceftriaxone-calcium precipitates, worse in peds Immune hemolytic anemia - can occur within minutes, worse in peds and sickle cell patients. Kernicterus in neonates with hyperbilirubinemia (increased serum bilirubin)	
Onset/Duration:	**Onset:** Time to peak, serum: IM: 2 to 3 hours	**Duration:** 4-6 hour
Classification:	Cephalosporin (Third Generation)	
Action:	Cephalosporin	
Notes:	Administration of ceftriaxone should not take precedent over ANY resuscitative measures, such as fluids, definitive airways, pressors, etc.	

Clopidogrel Bisulfate (Plavix)

P

Indications:	STEMI confirmed with Medical Control authorization required Chest Pain/Acute Coronary Syndrome	
ADULT Dose:	300mg PO	
Contraindications:	• Active pathological bleeding, bleeding conditions/disorders (hemophilia), peptic ulcer • Intracranial hemorrhage • Recent surgery, recent serious injury (physical trauma)	
Precautions:	Avoid concomitant use CYP2C19 inhibitors (e.g., omeprazole) medications	
Adverse Effects:	Bruising, bleeding	
Onset/Duration:	**Onset:** 2 hrs. onset	**Duration**: 7–10 day duration
Classification:	Anti-platelet, thienopyridine class inhibitor	
Action:	It prevents platelets from sticking together by blocking a specific receptor on their surface. Creates longer-lasting anti-clotting effects than aspirin. It is used to prevent clot formation after cardiac events or stent placement.	

Dexamethasone (Decadron)

P

Indications:	• Bronchospasm/ Reactive Airway • Croup • Allergic Reaction/Anaphylaxis	• Pediatric Allergic Reaction/Anaphylaxis • Pediatric Breathing Difficulty
ADULT Dose:	**Allergic Reaction/Reactive Airway:** 0.6 mg/kg max 20mg IV/IO/IM/PO	
Contraindications:	Hypersensitivity to the product	
Pediatric Dose:	**Allergic Reaction:** 0.6 mg/kg IV/IO/IM/PO max dose 20 mg **Breathing Difficulty/Croup:** 0.6 mg/kg IV/IO/IM/PO max dose 20mg	
Precautions:	Use cautiously with renal or hepatic disease; hypothyroidism, ulcerative colitis with impending perforation; diverticulitis; active or latent peptic ulcer; inflammatory bowel disease; CHF, hypertension, thromboembolic disorders; osteoporosis; seizure disorders; diabetes mellitus; lactation.	
Adverse Effects:	Stomach upset, headache, dizziness	
Onset/Duration:	**Onset:** 4-8 hours onset	**Duration**: 24 -72 hours duration
Classification:	Glucocorticoid.	
Action:	Binds to cellular receptors to produce anti-inflammatory and immunosuppressive effects.	

Dextrose / D50W / D25W/D10W/D5W (DGlucose)

A P

Indications:	• Hypoglycemia • Hyperkalemia	• Overdose • Pediatric Altered Mental Status
ADULT Dose:	25-50 to 50g IV/IO repeat dose	
Contraindications:	Hyperglycemia	
Pediatric Dose:	**DOSE**: **D25** 2 mL/kg or **D10** 5mL/kg **D25**: DILUTE D50% 1:1 to D25% with NS **How to Make D10**: 250mL bag of Normal Saline (NS), waste 50 mL of the NS, add 50mL of D50 to NS.	
Precautions:	• Causes tissue necrosis if injected into the interstitial space • May increase cerebral ischemia in CVA ⚠Caution with intracranial hemorrhage	
Adverse Effects:	• Thrombophlebitis • Pulmonary Edema • **May worsen Wernicke's encephalopathy**	• Osmotic Diuresis
Onset/Duration:	**Onset:** 30 to 60 seconds onset	**Duration**: Depends on the severity of hypoglycemia
Classification:	Hyperglycemic agent Hypotonic solution	

Dextrose / D50W / D25W/D10W/D5W (DGlucose)

A | P

Action:	Provide an immediate source of glucose for rapid utilization for cellular metabolism.
Notes:	Follow with complex carbohydrates if leaving the patient at home.

Diazepam (Valium)

P

Indications:	• Seizures • Combative Patients/Behavioral Emergencies • Chest Pain • Overdose/poisoning with CNS Stimulants • Hyperthermic • RSI • Anxiety	• Premedication for painful procedures • Analgesia & Sedation • Eclampsia Seizures • Pediatric Toxic Exposure with CNS stimulants • Pediatric Anxiety • Pediatric Seizures • Pediatric Hyperthermic
ADULT Dose:	**Chest Pain** 2-5 mg IV/IO/IN/IM **Overdose/Poisoning with CNS Stimulants** 2-5 mg IV/IO/IN/IM **Behavioral Emergencies** 2-5 mg IV/IO/IN/IM **Hyperthermic** 2-5 mg IV/IO/IN/IM **RSI** 2-5 mg with Fentanyl 1 mcg/kg	**Anxiety** 2-5 mg IV/IO/IN/IM **Sedation and pain** management 2-5 mg IV/IO/IN/IM **Seizures** 2-10 mg IV/IO/IN, 10 mg PR, (patient's rescue kit) **Eclamptic Seizure** 2-5 mg IV/IO/IN/IM
Contraindications:	Hypotension	
Pediatric Dose:	**Overdose with CNS Stimulants** 0.1mg/kg IV/IO **Sedation and pain management** 0.1mg/kg IV/IO	**Seizures** 0.1mg/kg IV/IO **Hyperthermic** 0.1mg/kg IV/IO
	MAX DOSES: 5 mg in children and 10 mg in adolescents	
Precautions:	Inject slowly; **do not** use small veins. ⚠**Use caution in elderly patients.**	
Adverse Effects:	• Hypotension	• Respiratory depression
Onset/Duration:	**IV Onset:** 1-5 minutes onset **IV Duration**15-60 minute	**IM Onset:** 15-30 minutes **IM Duration**: 15-60 minutes

Diazepam (Valium) *Continued*

P

Classification:	Benzodiazepine
Action:	It suppresses the spread of seizure activity through the motor cortex, acts as a skeletal muscle relaxant, reduces anxiety, and causes sedation.
Notes:	Intramuscular administration leads to widely variable absorption and should be avoided if possible. **Diastat – EMTs and AEMTs may administer the patient's own prescription ONLY with specialized training. E A**

Diltiazem (Cardizem)

P

Indications:	• A flutter • PSVT • A fib	
ADULT Dose:	10-25 mg IV/IO may repeat dose PRN, max dose 0.25 (first dose) to 0.35 mg/Kg (second dose)	
Contraindications:	• Concurrent use of IV beta-blockers • Sick Sinus Syndrome • Wide complex tachycardia of unknown etiology • WPW • High Degree AV Blocks	
Precautions:	• May precipitate with the use of furosemide • Use cautiously in elderly patients • Congestive Heart Failure • **Not recommended in pediatric patients** • Administer calcium chloride 200 mg IV prophylactic in elderly dehydrated or drug-induced hypotension	
Adverse Effects:	• Arrhythmias • Heart Failure • Bradycardia • AV block • Hypotension • Pulmonary edema	
Onset/Duration:	**Onset:** 2 to 10 minutes	**Duration**: 1-3 hours
Classification:	Calcium channel blocker	
Action:	• Inhibit calcium ion passage across cell membrane • Slows SA and AV node conduction velocity • Decreases myocardial contractility • Decreases peripheral vascular resistance	
Drug Interactions	Potentiates with Beta-Blocker, Lithium, Tegretol, cyclosporins	

Diphenhydramine (Benadryl)

		E	A	P

Indications:	• Pediatric Allergic Reaction/Anaphylaxis • Allergic reactions	• Nausea • Cannoboid hyperemesis • Dystonia
ADULT Dose:	25 to 50 mg PO/IV/IO/IM A 25 to 50 mg PO (with specialized training) **E**	
Contraindications:	• Known hypersensitivity • Newborns • Relative: narrow-angle glaucoma • Acute asthma • COPD exacerbation	
Pediatric Dose:	**DOSE:** 1 mg/kg IV/IO/IM A 1 mg/kg PO (with specialized training) **E**	
Precautions:	Reduce dose for elderly	
Adverse Effects:	• Seizures • Sedation •Thickening of Bronchial Secretions	
Onset/Duration:	**Onset:** IV administration has an immediate onset **Duration**: 6 to 8 hours	
Classification:	Antihistamine	
Action:	• Prevents but does not reverse histamine-mediated responses. • Suppresses cough reflex	
Drug Interactions:	Potentiates CNS depressants	

Droperidol (Inapsine)

					P

Indications:	• Nausea/Vomiting • N/V in Cannabinoid Hyperemesis	• Acute Behavioral Disturbance
ADULT Dose:	**Nausea/Vomiting:** 0.625 – 1.25 mg IV/IM/IO **Behavioral Disturbance:** 2.5 – 5mg IV/IM	
Contraindications:	• Known QT prolongation or QT abnormalities • Allergy to droperidol or butyrophenones • Severe CNS/respiratory depression or coma • Age under 2 years • Pregnancy/breastfeeding • Severe liver/kidney dysfunction • History of malignant hyperthermia • Parkinson's disease	
Precautions:	• Monitor cardiac rhythm - obtain a 12-lead ECG before and continuous monitoring during administration. • Frequent BP checks, especially in elderly/volume-depleted patients • Have diphenhydramine ready for potential extrapyramidal symptoms • Reduce doses for elderly, debilitated, or liver/kidney impaired patients • Check medication history for QT-prolonging drug interactions • Keep resuscitation equipment immediately available • Document baseline mental status • Rule out medical causes in agitated patients (hypoxia, hypoglycemia, head injury)	

Droperidol (Inapsine) *Continued*

P

Adverse Effects:	• **Major cardiovascular effects:** Hypotension, tachycardia, QT prolongation with risk of Torsades de Pointes/life-threatening arrhythmias. • **Neurological reactions**: Extrapyramidal symptoms (acute dystonia, akathisia), excessive sedation, anxiety, restlessness, and possible paradoxical agitation. • **Common side effects:** Dizziness, headache, nausea/vomiting, and feelings of unease. • **Respiratory concerns:** Potential for respiratory depression, especially when combined with other CNS depressants. • **Less common but serious:** Neuroleptic Malignant Syndrome (hyperthermia, muscle rigidity, altered mental status), laryngospasm, bronchospasm. • Pain or burning at the injection site, phlebitis	
Onset/Duration:	**Onset:** 3-10 minutes IV 20-30 minutes IM	**Duration:** 2-3 hours for antiemetic effects; sedative effects may last 4-6 hours
Classification:	Primary: Antipsychotic Secondary uses: Antiemetic and sedative	
Action:	• Blocks dopamine (D2) receptors in the brain, reducing psychotic symptoms and nausea/vomiting • Provides mild alpha-blocking effects, which can contribute to hypotension • Acts on the chemoreceptor trigger zone (CTZ) for antiemetic effect.	
Notes:	• IV dosing should be given slowly over 2-3 minutes to minimize hypotension risk. • For agitated patients, IM may be safer/more practical than IV administration. • Do not mix with other medications in the same IV line • Assess and document the patient's behavior/mental status before and after administration	

Epinephrine (Adrenaline)

R | E | | A | P

Indications:	• Ventricular Fibrillation • Pulseless Ventricular Tachycardia • Pulseless Electrical Activity • Allergic Reaction • Asystole • Sepsis • Profound Refractory Hypotension • Non-Traumatic Shock • Bradycardia • Reactive Airway Disease for Refractory Patients • Pediatric V-Fib/VTach • Pediatric Asystole/PEA
ADULT Dose:	**Cardiopulmonary arrest: A P** • 0.5mg IV push (1.0mg for patients >100kg) repeat every 4 – 6 mins. Once EtCO2 >or =30mmHg, then 0.3mg IV push every 4-6 mins. **Anaphylaxis:** **E** 0.1-0.3 mg of 1:1,000 IM q 10-20 mins. X 2, **R (Auto-Injector)** **P** 1 mg 1:1,000 in SVN, may add saline to 3 mL total volume. **E Refractory Reactive Airway Patients:** 0.3 mg of 1:1,000 IM q 20 minutes X 2 **Profound Refractory Hypotension:** 2-30 mcg/min IV infusion Mix one milligram of 1:1,000 epinephrine in 250 cc normal saline for a concentration of 4mcg/mL **Push Dose** 1 mL of 1:10,000 in 10 mL NS IV push. 20-40 mcg IVP
Pediatric Dose:	0.01 mg/kg to max 0.3mg (1:1,000 IM/IV/IO) Nebulized for respiratory emergencies, see pediatric protocols
Precautions:	Use caution when given IV in anaphylactic shock, as myocardial ischemia and/or cardiac arrest may occur.
Adverse Effects:	Hypertension, Tachycardia, Increased myocardial oxygen demand
Onset/Duration:	**IV Onset: Immediate** **IV Duration** 3-5 minutes **IM Onset:** 5-10 minutes SQ/IM **IM Duration**: 20 minutes SQ/IM
Classification:	Sympathomimetic agent (catecholamine)
Action:	Beta effect is more profound than Alpha effect
Notes:	Epinephrine is the pressor of choice in the case of pediatric shock states. Dopamine may be ineffective.

1 mg epinephrine 1:1,000 in 250 mL = 4 mcg/ mL use 60gtt tubing

Mcg/ min	2	4	6	8	10
administer	30 gtt/min	60 gtt/min	90 gtt/min	120 gtt/min	150 gtt/min

Etomidate (Amidate)

P

Indications:	• Pediatric Sequenced Intubation • Anxiety Sedation • RSI
ADULT Dose:	**Anxiety Sedation**: 0.1-mg/kg IV/IO **RSI Normotensive Patient:** 0.3 mg/kg IV/IO **RSI Hypotensive Patient:** 0.1-0.2 mg/kg IV/IO
Contraindications:	Hypersensitivity Pregnancy
Pediatric Dose:	0.1 - 0.3 mg/kg IV
Precautions:	**Do not re-dose with etomidate.** Long-term use can cause decreased corticosteroid production.
Adverse Effects:	• Myoclonic Skeletal Muscle Movement • Laryngospasm • Eye Movement • Seizures • Apnea • Dysrhythmias • Hiccups • Hyperventilation • Nausea/Vomiting • Snoring
Onset/Duration:	**Onset:** 15-20 seconds onset **Duration**: 5-10 minutes duration* Half-life 75 mins.
Classification:	Hypnotic, non-sedative, non-narcotic, non-analgesic
Action:	• Ultra short-acting, non-barbiturate hypnotic. • Produces rapid induction of anesthesia with minimal cardiorespiratory effects. • Rapidly distributed following IV injection/ rapidly metabolized, and excreted. (note extremely short duration)
Notes:	**MUST** use sedative (Lorazepam/Midazolam) for intubation maintenance.

Wt in lbs	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
WT in kg	45	50	54	59	64	68	73	77	82	86	91
Dose in mg	13 mg	15 mg	16 mg	18 mg	19 mg	20 mg	22 mg	23 mg	25 mg	26 mg	27 mg

Wt in lbs	**210**	**220**	**230**	**240**	**250**	**260**	**270**	**280**	**290**	**300**
WT in kg	95	100	104	109	113	118	122	127	132	136
Dose in mg	28 mg	30 mg	31 mg	33 mg	34 mg	35 mg	37 mg	38 mg	40 mg	41 mg

Famotidine

A | P

Indications:	• Pediatric Allergic Reaction/Anaphylaxis • Adult Allergic Reaction/Anaphylaxis	
ADULT Dose:	20 mg IV A	
Contraindications:	Known allergy to Famotidine or antihistamines	
Pediatric Dose:	0.25 mg/kg IV/IO	
Precautions:	May interact with antivirals, oral antifungals	
Adverse Effects:	• Headache • Dizziness	
Onset/Duration:	**Onset:** 20 min	**Duration**: (half-life) 4 hours
Classification:	Histamine-2 blocker, antihistamine	
Action:	Blocks Histamine-2 receptors and prevents histamine-mediated responses.	

Fentanyl (Sublimaze)

P

Indications:	• Analgesia & Sedation • Palliative Care • RSI • Pediatric Sequenced Intubation • Pediatric Pain and Sedation	
ADULT Dose:	**Analgesia & Sedation:** 1 mcg/kg IV/IM/IO/IN, repeat PRN q 5 min max initial dose 100 mcg, max cumulative dose 3 mcg/kg **Palliative Care:** 25-100 mcg SVN, mixed in 2mL isotonic IVF **RSI:**1 mcg/kg IV/IM/IO/IN	
Contraindications:	Known hypersensitivity	
Pediatric Dose:	**Sequenced Intubation:** 1 mcg/kg IV/IO **Analgesia:** 1 mcg/kg IV/IO/IN/IM, **max initial dose 30 mcg, max accumulative dose 2 mcg/kg**	
Precautions:	• Head injuries • ALOC • COPD • Hypotension	
Adverse Effects:	• CNS Depression • Hallucinations • N/V • Constipation • Resp. Depression • Chest Wall Rigidity • Hypotension • Hypertension • Arrhythmias	

Fentanyl (Sublimaze) *Continued*

P

Onset/Duration:	**IV Onset:** 1-2 mins **IV Duration:** ½ - 1 Hr	**IM Onset:** 7-15 mins **IM Duration:** 1-2 Hr
Classification:	Opioid agonist/ narcotic analgesic	
Action:	Binds to opiate receptors as an agonist to alter the patient's perception of painful stimuli.	
Notes:	CNS and resp. Depressant effects are similar to those of Morphine. The drug has little hypnotic activity and rarely causes histamine release.	

Furosemide (Lasix)

P

Indications:	• Pulmonary edema	• Hyperkalemia
ADULT Dose:	**Hyperkalemia& Pulmonary Edema** 1mg per KG to max 120mg IV	
Contraindications:	Dehydration/ hypovolemia, hypokalemia, hepatic coma	
Pediatric Dose:	2 mg/kg	
Precautions:	• Pt's using potassium-depleting steroids Hx of lupus • Hx of hepatic cirrhosis • Increased risk of hypokalemia in patients taking digoxin, dehydration, or pneumonia.	
Adverse Effects:	Hypotension, electrolyte imbalance, transient hearing loss	
Onset/Duration:	**Onset:** 5 min for preload reduction, 30 min for diuresis.	**Duration**: 2 hours.
Classification:	Non-potassium-sparing loop diuretic	
Action:	• **Primary mechanism:** Inhibits sodium and chloride reabsorption in the proximal loop of Henle, promoting excretion of sodium, water, chloride, and potassium. • **Cardiovascular effect:** Reduces cardiac preload by increasing venous capacitance.	

Glucagon

					P

Indications:	• Pediatric Hypoglycemia • Diabetic Emergency	• OD/Poisoning • Esophageal Foreign Body
ADULT Dose:	Hypoglycemia- 1 mg IM/IN Ca++ and beta-blocker OD- 3-5mg IV over 5-10 Mins	
Contraindications:	None in the emergency setting	
Pediatric Dose:	0.1mg/kg up to 1mg IM max	
Precautions:	⚠**Do not dilute with saline solutions; it will form a precipitate**.	
Adverse Effects:	Nausea & Vomiting, hyperglycemia, hypersensitivity reactions	
Onset/Duration:	**Onset:** 5-20 minutes ***peak effect at 30 minutes.	**Duration**:1-1.5 hours
Classification:	Polypeptide hormone	
Action:	Raises blood sugar by releasing stored glucose from the liver. It also strengthens heart contractions and relaxes smooth muscle in the digestive tract.	
Notes:	**Reconstitute the powdered solution with the supplied diluent only.** If given IV, flush line with D5W instead of NS solution.	

Glucose Oral (Glucose Paste)

R	E		A	P

Indications:	Hypoglycemia in the conscious patient who can swallow.
ADULT Dose:	One tube PO- between the cheek and gum.
Contraindications:	Unconsciousness, inability to swallow, hyperglycemia
Pediatric Dose:	One tube PO
Precautions:	Not tasty. Watch for spitting
Adverse Effects:	Choking, if not properly administered
Classification:	Carbohydrate
Action:	Rapidly metabolized source of calories in patients with inadequate oral intake.
Notes:	Perform a glucose check before and after administration of Glucose. Follow with complex carbohydrates if leaving the patient at home.

Heparin Sodium

P

Indications:	Confirmed STEMI in accordance with STEMI triage procedures.	
ADULT Dose:	**STEMI:** 4,000 Units IV or 60 Units/kg if under 65kg **For longer transports:** 12U/kg/hr IV drip to max 1,000 Units/hr	
Contraindications:	Allergy to heparin, thrombocytopenia, hemophilia	
Precautions:	• Increased risk of bleeding with/ bleeding/clotting disorders (hemophilia), GI ulceration, bacterial endocarditis. • Recent surgery. • Derived from porcine intestinal mucosa, avoid if allergic to pork.	
Adverse Effects:	Bleeding, Heparin-induced thrombocytopenia, Hyperkalemia (5-10%)	
Onset/Duration	**Onset:** Immediate	**Duration**: 1.5 hours
Classification:	Injectable anticoagulant	
Action:	Binds to and activates antithrombin III, which binds to and inactivates thrombin. This inhibits further clot formation.	
Notes:	Invert infusion solution periodically to prevent pooling ⚠ **Do not mix in the same line with droperidol.**	

Hydromorphone (Dilaudid)

P

Indications:	Moderate to severe pain.	
ADULT Dose:	0.5mg IV q 3-5 min total of 4mg (caution in elderly) 1- 2 mg IM	
Contraindications:	• Hypotension SBP <110 • Current nausea or vomiting (prior to anti-emetics)	• CNS depression • Respiratory depression RR<12 • Head Injury
Pediatric Dose:	0.015 mg/kg IV/IM	
Precautions:	Caution should be used in patients who have taken other central nervous depressants, narcotic analgesics, sedative/hypnotics, or tricyclic antidepressants.	
Adverse Effects:	• Respiratory depression • Headache • Decreased LOC • Nausea/vomiting	• Increased sedation • Abdominal pain • Impaired mental status

Hydromorphone (Dilaudid) *Continued*

				P

Onset/Duration:	**IV Onset:** Immediate **IV Duration:** 4-5 hours	**IM Onset:** 7-15 minutes **IM Duration**:
Classification:	Narcotic analgesic, Opiate	
Action:	Decreases sensitivity to pain, stimulates a variety of opioid receptors	
Notes:	**This is a strong narcotic**. Start with low doses given slowly and add additional low doses as needed. ⚠ One mg of hydromorphone is equal to 7mg of morphine.	

Ibuprofen

		E		A	P

Indications:	Ibuprofen is a nonsteroidal anti-inflammatory drug (NSAID) used to relieve pain, reduce fever, and decrease inflammation. It is indicated for pediatric fever.
Contraindications:	• Allergy to Ibuprofen • Kidney and liver disease • GI Bleed
Adverse Effects:	• Nausea • GI bleeding
Pediatric Dose:	10 mg/kg PO

Insulin

				P

Indications:	Insulin is a natural hormone that helps cells absorb sugar from the blood, lowering blood sugar levels. It's used to treat Type 1 diabetes, advanced Type 2 diabetes, severe diabetic ketoacidosis (DKA), and high potassium levels in dialysis patients.
Contraindications:	Glucose level below 70
Adverse Effects:	Metabolic: Hypoglycemia, Hypokalemia
Notes:	**For Critical Care Inter-facility Transport Only** Regular Insulin must be infused via an infusion pump. Be sure to get a separate vial in order to bolus from the hospital prior to leaving the hospital.

Ipratropium (Atrovent / Ipramide)

	E	E-IV	A	P

Indications:	• Bronchospasm due to reactive airway diseases • Allergic reaction with two more systems/breathing • Pediatric allergic Reactions • Pediatric Difficulty Breathing	
ADULT Dose:	0.5 mg via nebulizer q 6-8 hours	
Contraindications:	Known Hypersensitivity	
Pediatric Dose:	0.25 mg SVN for less than 12 kg and 0.5 mg SVN for greater than 12 kg	
Precautions:	Should be used with caution in patients with narrow-angle glaucoma.	
Adverse Effects:	• Anxiety • Palpitations	• Nausea/ vomiting
Onset/Duration:	**Onset:** 15-30 minutes	**Duration**: 5–7 hours
Classification:	Anticholinergic bronchodilator	
Action:	• Blocks acetylcholine receptors • Dries respiratory tract secretions • Reduces bronchospasm	

Ketamine

					P

Indications:	• Induction agent for rapid sequence intubation (RSI) • **Treatment for Acute Behavioral Disturbance** • **Inter-facility transport**	• **Pain control** • Reactive Airway • Sedation • CNS Stimulant Overdose • Seizure
ADULT Dose:	**RSI:** 1-2 mg/kg IV push; 4-5 mg IM **Acute Behavioral Disturbance:** 2-5 mg/Kg IM **Pain Control** 0.5 mg/kg IM or 0.1-0.3 mg/kg IV, Repeat PRN q 5 min max initial dose of 50 mg IM/25 mg IV, max cumulative dose 1.5 mg/kg	OR drip 0.5 to 2 mg/kg/hr **Sedation:** Infusion 0.5 to 2 mg/kg/hr; Infusion 1000 mg in 250 mL NS (4mg/mL) **CNS Stimulant Overdose:** 0.5-1 mg/kg IV/IO **Seizure:** 2mg/kg IV/IO can re-bolus 1 mg/kg IV/IO
Contraindications:	**RSI:** Severe Hypertension, Severe Hyperthermia…be prepared to cool immediately	
Pediatric Dose:	**RSI:** 0.5 to 1 mg/kg IV over one minute; 4-5 mg/kg IM **Sedation**: Infusion 0.5 to 2 mg/kg/hr; Infusion 1000 mg in 250 mL NS (4mg/mL) **Pain:** 0.1 mg/kg IV/IO max cumulative dose 1.5 mg/kg	

Ketamine *Continued*

P

Precautions:	**RSI:** Increased blood pressure due to catecholamine release. Reemergence phenomenon. As with any intubated patient, continued sedation must be provided before the induction agent has worn off. **Important precautions:** • When an elevated ICP is suspected, use a lower dose with midazolam • Avoid in severely elevated blood pressure • May increase respiratory secretions - consider atropine (min 0.1mg) to reduce secretions.
Adverse Effects:	**Excited Delirium:** Laryngospasm, hyper salivation, nausea/vomiting, arrhythmias, emergence delirium, hallucinations, elevated BP, hypotension, documentation or observation of worsening hyperthermia
Onset/Duration:	**Excited Delirium:** Adults: IV 30 sec; duration 5-10 min for 2 mg/kg; IM 3-4min, duration 12-25 min; **Pediatrics:** IV 30-120 sec; duration 20-60 min; IM 5-10 min, duration 30-90 min
Classification:	General dissociative anesthetic
Action:	• Produces dissociative anesthesia by blocking brain pathways. Maintains airway reflexes and breathing while providing pain relief and sedation. Increases heart rate and blood pressure. Relaxes bronchial muscles in asthma/COPD.

Ketorolac (Toradol)

A P

Indications:	• Sepsis • Analgesia & Sedation
ADULT Dose:	30 mg IM or 15- 30 mg IV in non-pregnant patients⚠, ⚠½ dose for >65 years old
Contraindications:	• Documented hypersensitivity to ASA or other NSAID's • Renal Impairment, • Nursing mothers, Labor & Delivery. • Bleeding Disorders • Active Peptic Ulcer • Suspected Or Possible Dissecting AAA. • On Any Anti-Coagulant.
Pediatric Dose:	Must contact base station: Pain 1 mg/kg IM or 0.5 mg/kg IV to a maximum dose of 30 mg IM or 15 mg IV
Precautions:	Patients that are > 65 y/o or < 50 kg should receive ½ dose. ⚠**Use extreme caution in elderly and hepatic dysfunction pts.**

Ketorolac (Toradol) *Continued*

A | P

Adverse Effects:	• Possible Anticoagulation Effects • Sweating/Diaphoresis • Nausea	• Anaphylaxis • Drowsiness • Pain At the injection site
Onset/Duration:	**Onset:** IM 45-60 minutes	**Duration**: 4-6 hours
Classification:	NSAID, analgesic, antipyretic	
Action:	Inhibits synthesis of prostaglandins	

Labetalol (Trandate, Normodyne)

P

Indications:	Hypertension (SBP > 180 or DBP > 105 with atraumatic neurologic deficits or chest pain from stimulant use. **If treating hypertension in another clinical setting must call for Medical Control for approval prior to admin.** • **Chest pain from stimulant use** • **Overdose with CNS stimulants** • **Stroke**	
ADULT Dose:	10 mg slow IV/IO, may repeat 10-20 mg q 10mins IV/IO slow bolus over 2 mins until desired supine blood pressure obtained. **Max total dose 300mg.**	
Contraindications:	• COPD or Asthma, • CHF • 2nd & 3rd heart block	• Bradycardia, • Cardiogenic shock
Precautions:	Pt placed in supine position. BP, HR & EKG monitored. Atropine and TCP available.	
Adverse Effects:	Bronchospasm, CHF, heart block, bradycardia, postural hypotension, nausea	
Onset/Duration:	**Onset:** 5 mins onset	**Duration**: dose-dependent
Classification:	Non-selective beta blocker with alpha blockade and intrinsic anti-sympathomimetic activity	
Action:	**Primary action:** Blocks adrenergic receptors, decreasing peripheral vascular resistance without significant heart rate/cardiac output changes.	
Drug Interactions:	Beta-receptor agonists, verapamil, cimetidine, precipitate forms with furosemide.	

Labetalol (Trandate, Normodyne) *Continued*

P

Notes:	• **BP reduction goals:** Decrease by ≤20% in the first hour, then aim for 160/100mmHg over the next 2-6 hours. Use caution in chronic HTN patients who may not tolerate "normal" BP. • **Risks**: Rapid BP reduction can cause coronary, cerebral, or renal ischemia. Maintain the patient in the supine position for at least 3 hours. • **Pregnancy considerations:** Category C- use only if benefits outweigh potential risks to fetus/nursing infant.

Lidocaine (Xylocaine)

P

Indications:	• First-line antiarrhythmic in pregnancy VT/VF • VT with pulse Symptomatic PVCs	
ADULT Dose:	**VF/VT**- 1 mg/kg IV / IO q 5-10 min. Max 3 mg/kg. **VT w/ pulse**- 1 mg/kg IV/ IO, then 0.5-0.75mg/kg q 5-10 min. up to 3 mg/kg **Run of 6 or more Symptomatic PVC's**- 0.5-1 mg/kg IV/IO then 0.5-0.75mg/kg q 5-10min up to 3 mg/kg.	
Contraindications:	• High-degree heart blocks • Stokes-Adams syndrome • hypotension	• WPW • SVT • Bradycardias
Pediatric Dose:	**VF/VT**- 1mg/kg IV / IO q 10 min. Max 3 mg/kg **VT w/ pulse**- 1mg/kg IV/ IO, q 10 min. up to 3 mg/kg Drip 2-4mg/min following conversion	
Precautions:	Caution in use with pts >70 y/o or with liver or renal disease, CHF, resp depression, shock. Reduce maintenance infusion by 50%	
Adverse Effects:	Seizures, slurred speech, altered mental status	
Onset/Duration:	**Onset:** 45-90 seconds	**Duration**: 10-20 minutes
Classification:	Amide derivative, antiarrhythmic	
Action:	This antiarrhythmic medication stabilizes abnormal heart electrical activity by blocking sodium channels in cardiac cells. It specifically targets damaged or ischemic heart tissue, preventing dangerous irregular heart rhythms by interrupting abnormal electrical re-entry circuits. The drug effectively suppresses spontaneous heart muscle contractions and helps restore normal cardiac electrical conduction.	

Drip – mix 1G/250ml D5W using 60gtt set

4mg/ml:	1mg	2mg	3mg	4mg
gtts/min:	15gtt	30gtt	45gtt	60gtt

Lorazepam (Ativan)

P

Indications:	• Seizures • Analgesia & Sedation • Acute Behavioral Disturbance • Overdose/Poisoning/CNS • Chest pain with Suspected CNS Stimulant use	• Seizing with Eclampsia • Hyperthermia • End of life • Pediatric Toxic Exposure • Pediatric Pain & Sedation • Pediatric Hyper/Hypothermia • Intranasal Medication Delivery
ADULT Dose:	0.5 - 2 mg IV/IO/IN/IM. May repeat PRN. May go up to 4 mg for stimulant use.	
Contraindications:	Narrow-angle glaucoma, pregnancy (except for eclamptic seizures)	
Pediatric Dose:	0.1 mg/kg IV/IO	
Precautions:	⚠ Caution in use with patients with renal or hepatic impairment. • Increased CNS depression in patients intoxicated or on other depressant-type drugs.	
Adverse Effects:	Orthostatic hypotension, drowsiness, respiratory depression, Tachycardia, and confusion	
Onset/Duration:	**Onset IV:** 1-5 minutes IV, **Duration IV**: Duration 12-24 hours	**Onset IM:** 15-30 minutes IM **Duration IM**: Duration 12-24 hrs
Classification:	Benzodiazepine hypnotic	
Action:	• **Primary mechanism:** CNS depressant that facilitates GABA activity at benzodiazepine receptor sites in the ascending reticular activating system. • **Effects:** Produces muscle relaxation, anticonvulsant activity, and anxiolytic effects.	
Notes:	**E A**, may assist the caregiver with rectal administration of the patient's own prescription. **Lorazepam – EMTs and AEMTs may administer the patient's own prescription ONLY with specialized training.**	

Magnesium Sulfate (MgSO4)

P

Indications:	• Eclamptic seizures • Torsades de Pointes(TdP) with VF/VT • Peds VF/VT • Pediatric Allergic Reaction • Peds Difficulty breathing	• Torsades de Pointes(TdP) with wide complex • Refractory bronchospasm • Pediatric Asystole/PEA • Pediatric Wide Complex
ADULT Dose:	**TdP/VF/VT:** 2gm IVP may repeat x2 **Eclamptic SZ**: 4g IVP then 2 gram per hr infusion **Breathing diff/RAD:** 2g/100 mL NS/D5W IV	
Contraindications:	Renal disease, heart block, hypermagnesemia	
Pediatric Dose:	**Peds Wide Complex**: 25-mg/kg IV/IO **VF/VT** / **Pediatric Asystole/PEA:** 50 mg/kg IV/IO **Allergic reaction with two systems involved/difficulty breathing**: SVN 300 mg under 20 Kg and 600 mg over 20 Kg.	
Precautions:	⚠Caution should be used in patients receiving digitalis, as it may cause severe hypotension or cardiac arrest. Calcium chloride should be readily available as an antidote if respiratory depression results from treatment.	
Adverse Effects:	• Hypotension, • Respiratory Depression • Bradycardia	• Dysrhythmias • Cardiac Arrest • CNS Depression • Flushing • Sweating
Onset/Duration:	**Onset:** 1-5 min onset	**Duration**: approximately 30 min
Classification:	Electrolyte, anticonvulsant, antidysrhythmic	
Action:	Blocks nerve impulses at muscle junctions to prevent seizures. Slows the heart's electrical conduction. Draws water into the intestines when used for constipation.	
Drug interaction	Increases strength and duration of neuromuscular blocking agents (Rocuronium/Zemuron)	

Methylprednisolone (Solu-Medrol/Amethapred)					P

Indications:	• Allergic reaction/Anaphylaxis • Upper airway burns • History of adrenal insufficiency associated with either serious trauma/illness or shock unresponsive to conventional therapy.	• Reactive airway disease • COPD exacerbations • Peds Allergic Reaction • Peds Difficulty Breathing
ADULT Dose:	125 mg IV/IO/IM	
Contraindications:	Preterm infants, Newborns, systemic fungal infections	
Pediatric Dose:	2 mg/kg IV/IO/IM	
Precautions:	Use with caution in patients with G.I. bleeding, diabetes mellitus & severe infection.	
Adverse Effects:	Alkalosis, CHF, headache, hypertension, hypokalemia, seizures, nausea, and vomiting	
Onset/Duration:	**Onset:** 20 minutes - 2 hours	**Duration**: 18-36 hours
Classification:	Corticosteroid, glucocorticoid steroid, anti-inflammatory	
Action:	• **Primary action:** Reduces inflammation by blocking white blood cell movement and inflammatory mediators. • **Secondary effect:** Enhances the relaxation of blood vessel muscles when used with beta medications, improving blood flow.	
Notes:	• **Drug interactions:** May blunt hypoglycemic responses to insulin and oral hypoglycemic agents. • **Electrolyte concerns:** Potassium-depleting agents can worsen corticosteroid-induced hypokalemia.	

Metoprolol (Lopressor)

P

Indications:	• Hyperdynamic • VF/VT- with Cocaine/Meth OD • ACS/STEMI • Narrow Complex • Tachycardia
ADULT Dose:	**Narrow Complex (Consider if on Beta blocker)**: 2.5 - 5mg slow IV q 5min; to a maximum dose of 15 mg **VF/VT- with Cocaine/Meth OD**: 5-10 IV/IO
Contraindications:	• Documented hypersensitivity • Uncompensated congestive heart Failure • Cardiogenic shock • AV conduction abnormalities • Asthma Bradycardia Pediatric
Precautions:	• During IV administration, carefully monitor blood pressure, heart rate, and ECG. • **The goal** of treatment is to reduce the heart rate to 60-90 beats/min.
Adverse Effects:	• Hypotension • CHF • Dizziness • Chest Pain • Headache • Bronchospasm • Bradycardia
Onset/Duration:	**Onset:** Immediate, peaks in 20 minutes IV **Duration**: 5-8 hours
Classification:	Beta-blocker
Action:	Selectively blocks beta-1 receptors in the heart, reducing heart rate, contractility, and blood pressure. Decreases cardiac oxygen demand without significantly affecting airways.
Notes:	• Increased side effects with calcium channel blockers and phenothiazines • May increase the toxicity of digoxin, flecainide, clonidine, epinephrine, nifedipine, prazosin, verapamil, and lidocaine.

Midazolam (Versed)

P

Indications:	• Respiratory Distress with Palliative Care • Sedation • Seizure	• Organophosphate & CNS Stimulate Overdose/Poisoning • Chest Pain with Suspected CNS Stimulant
ADULT Dose:	**Palliative Care/ Chest pain with suspected CNS stimulant/overdose:** 2.5-5 mg IV/IN/IM **Sedation/:** 2.5-5 mg IV/IO/IN/IM **RSI:** 2.5-10mg IV/IO over 2 minutes **Chemical restraint:** 2.5-5 mg IM/IV/IN over 2 min, repeat PRN **Seizure:** 2.5-10 mg IV/IO/IN/IM	
Contraindications:	Hypersensitivity, OD of alcohol or other CNS depressants, depressed vital signs/hypoperfusion, acute narrow-angle glaucoma, Pregnancy (except for eclamptic seizures)	
Pediatric Dose:	**6 months to 5 years of age**: Initial dose 0.05 to 0.1 mg/kg IV/IO/IN/IM. A total dose up to 0.6 mg/kg **6 to 12 years of age:** Initial dose 0.025 to 0.05 mg/kg IV/IO/IN/IM; total dose up to 0.4 mg/kg may be needed to reach the desired endpoint, but usually does not exceed 10 mg total.	
Precautions:	• Use caution in patients with renal impairment • History of COPD • May wish to double the IV dose when administering IM	
Adverse Effects:	Respiratory depression or arrest, Hypotension, bradycardia, HA, N/V, pain at the injection site, hiccups	
Onset/Duration:	**Onset IV:** Onset IV/ IO: 1-3 mins **Duration:** dose-dependent	**Onset IM:** approx 10-20 mins **Duration**: dose-dependent
Classification:	Benzodiazepine, CNS depressant, anticonvulsant, amnestic, muscle relaxant	
Action:	Benzos boost GABA (the brain's natural calming chemical) by connecting to specific receptor sites in the brain's emotional and alertness centers.	
Notes:	Sedative effect potentiated by barbiturates, alcohol, and narcotics **EMTs and AEMTs may administer the patient's own prescription ONLY with specialized training.** **E** **A**	

Morphine

P

Indications:	• Respiratory Distress with Palliative Care • Non-invasive Positive Pressure Ventilation • Analgesia & Sedation • Pediatric Pain and Sedation
ADULT Dose:	**Analgesia/Sedation**: 0.1 mg/Kg IV/IM/IO; repeat PRN q 5min max initial dose of 15 mg IM or 10 mg IV, max cumulative dose 0.3 mg/kg Respiratory Distress with Palliative Care: 0.1 mg/Kg IV/IM max 10ml IV or 15 ml IM Non-invasive Positive Pressure Ventilation: 1-2 mg IV for anxiety and air hunger
Contraindications:	• Head Injury • Exacerbated COPD • Depressed Respiratory Drive • Hypotension • ALOC
Pediatric Dose:	0.1 mg/kg IV/IM/IO, **MAX initial dose** 3 mg, max cumulative dose 0.3 mg/kg **MAX cumulative dose** 0.3 mg/kg
Precautions:	Patients with acute bronchial asthma, chronic pulmonary diseases, severe respiratory depression, and pulmonary edema induced by chemical irritants.
Adverse Effects:	Respiratory depression, hypotension, ALOC, nausea & vomiting
Onset/Duration:	**Onset IV:** immediate onset, peak effect 20 min. **Duration:** 2-7 hours **Onset IM:** IM/SQ 15-30 min. , peak effect 30-60 min. **Duration**: 2-7 hours
Classification:	Narcotic analgesic
Action:	Morphine acts on three receptor types: mu (provides pain relief but slows breathing and alertness), kappa (causes sedation and pinpoint pupils), and delta (affects mood and can stimulate breathing and blood vessels).
Notes:	Naloxone and respiratory equipment should be immediately accessible.

Naloxone (Narcan)

R E A P

Indications:	• Suspected or Known opiate overdose • Newborn Resuscitation with HR <100	• Altered level of consciousness • Pediatric Toxic Exposures
ADULT Dose:	0.4 - 4mg IV/ /IN/IM **A** **P** 0.4 - 4mg IN/IM **R** **E**, prn	
Contraindications:	None in the emergent setting	
Pediatric Dose:	0.1 mg/kg IN **R** 0.1 mg/kg IN/IM/IV/IO **A** ⚠Use caution in newborns. Titrate based upon cardiopulmonary response and avoid withdrawal.	
Precautions:	• Rapid reversal of narcotic effects may lead to combative behavior and vomiting. • May not reverse hypotension • For patients with chronic pain issues, administer 0.4 mg increments until respirations improve.	
Adverse Effects:	• Hypertension • Nausea • Vomiting	• Tremors • Dysrhythmias
Onset/Duration:	**Onset IV/IO:** immediate **Duration:** 20-30 minutes	**Onset IM:** 5-10 minutes **Duration**: 2-3 minutes
Classification:	Narcotic Antagonist	
Action:	Competitively binds with opiate receptor sites in the CNS.	
Notes:	Synthetic opioid overdoses often require multiple, higher doses of naloxone for reversal. While naloxone reverses respiratory depression, it cannot replace proper airway management and ventilation - always maintain the airway regardless of medication administration.	

Nitroglycerin (NitroStat /NitroQuick)

E | A | P

Indications:	• ACS • Acute angina • CHF with pulmonary edema
ADULT Dose:	0.4 mg SL q 3-5 minutes, SBP >100, and the patient is symptomatic E: Per patient Rx for chest pain **Drip:** Start at 10mcg/min, increase q 4-5 min, titrate to effect to max 100 mcg/min if SBP >100 **SCAPE:** 400- 800 mcg per min x 2 -3mins, then 100 mcg per min up titrate. Once the episode breaks, wean down nitroglycerin. **Paste;** 1-2 inches PRN A
Contraindications:	SBP <100, Intracranial bleeding/head trauma Within 24 hours of erectile dysfunction or pulmonary hypertension medication Sildenafil (Viagra/Revation) or Vardenafil (Levitra) Within 48 hours of erectile dysfunction medication Tadalafil (Cialis)
Precautions:	⚠ It will cause severe loss of blood pressure if administered to a patient experiencing an inferior MI
Adverse Effects:	• Hypotension • HA • Syncope • Reflex Tachycardia • Skin Flushing
Onset/Duration:	**Onset:** immediate, 0-3 minutes **Duration:** up to 30 minutes
Classification:	Nitrate
Action:	Causes relaxation of the vascular smooth muscle via stimulation of intracellular cyclic guanosine monophosphate production. This results in decreased preload, afterload, blood pressure, left ventricular workload, and myocardial oxygen demand. Relaxes esophageal smooth muscle.
Notes:	Aspirin may increase nitrate serum concentrations; marked symptomatic hypotension may occur with coadministration of calcium channel blockers or beta-blockers (dose adjustment of either agent may be necessary)

Nitroglycerin Drip Chart
50 mg in 250 mL D5W

mcg/min	gtt/min (mL/hr)	mcg/min	gtt/min (mL/hr)	mcg/min	gtt/min (mL/hr)
5	1.5 gtt/min	64	19.5 gtt/min	125	37.5 gtt/min
10	3.0 gtt/min	70	21.0 gtt/min	130	39.0 gtt/min
15	4.5 gtt/min	75	22.5 gtt/min	135	40.5 gtt/min
20	6.0 gtt/min	80	24.0 gtt/min	140	42.0 gtt/min
25	7.5 gtt/min	85	25.5 gtt/min	145	43.5 gtt/min
30	9.0 gtt/min	90	27.0 gtt/min	150	45.0 gtt/min
35	10.5 gtt/min	95	28.5 gtt/min	155	46.5 gtt/min
40	12.0 gtt/min	100	30.0 gtt/min	160	48.0 gtt/min
45	13.5 gtt/min	105	31.5 gtt/min	170	51.0 gtt/min
50	15.0 gtt/min	110	33.0 gtt/min	180	54.0 gtt/min
55	16.5 gtt/min	115	34.5 gtt/min	190	57.0 gtt/min
60	18.0 gtt/min	120	36.0 gtt/min	200	60.0 gtt/min

Nitrous Oxide (Nitronox)

	E		A	P

Indications:	Consider nitrous oxide for pain control in trauma patients with suspected fractures or soft tissue injuries, kidney stones, burns, abdominal pain, or any moderate to severe pain where anxiety is also present. It's particularly useful when treating patients who are anxious or apprehensive about their condition. Analgesia & Sedation Pediatric Pain and Sedation Venous Access Blood Draw	
ADULT Dose:	Instruct the patient to inhale deeply through the demand valve and mask or mouthpiece. E	
Contraindications:	• Head injury • Chest injury • EtOH and drug intoxication (relative)	• COPD • Potential bowel obstruction • Pregnancy
Pediatric Dose:	Instruct the patient to inhale deeply through the demand valve and mask or mouthpiece.	
Precautions:	Nitrous oxide requires proper ventilation during use and oxygen flush after discontinuation. Avoid in pregnant patients due to miscarriage risk. While non-flammable and safe to use around oxygen, be aware that 20% of patients won't respond to treatment. Use caution in patients who have recently used cannabis - it can increase anxiety and paranoid reactions.	
Adverse Effects:	Drowsiness, Dizziness, Nausea/Vomiting	
Onset/Duration:	**Onset:** 2 - 5 minutes	**Duration**: 2 – 5 minutes
Classification:	Inhaled gaseous analgesic and general anesthetic	

Norepinephrine Bitartrate (Levophed)

				P

Indications:	• Sepsis • Asystole/PEA	• Non-Traumatic Shock • Post-Resuscitation Management with Hypotension
ADULT Dose:	• 4 mg in 250cc of D5W, then titrate 2-30 mcg/min IV/IO. • Adjust rate of flow to establish and maintain low normal BP (MAP >65 mm Hg) sufficient to maintain vital organ circulation. • In a known HTN patient, it is recommended that the rise in BP is no higher than 40mmHg below the preexisting systolic BP. • Turn the drip off if blood pressure remains at normal levels. • Monitor BP every 2 minutes until reaching the desired BP, then every 5 minutes with continued infusion. • Rate of flow watched constantly; pt never left unattended. **Sepsis:** Titrate drip 2-30 mcg/min IV/IO MAP >65 **Asystole/PEA:** Titrate drip 2-30 mcg/min IV/IO MAP >65	

Norepinephrine Bitartrate (Levophed)*Continued*

P

Contraindications:	Sulfite allergy. Hypotensive states due to hypovolemia from blood volume deficits, except for emergency measures to maintain coronary and cerebral artery perfusion until blood volume replacement therapy is completed. Mesenteric or peripheral vascular thrombosis.
Pediatric Dose:	0.01-0.5mcg/kg/minute IV drip only (rarely used).
Adverse Effects:	• Anxiety, palpitations, hypertension, and reflex bradycardia. • VT/VF in pts with profound hypoxia or hypercarbia. • Conventional dose with hypersensitive pt (hyperthyroid) or overdose may cause severe HTN, • Violent HA, photophobia, stabbing retrosternal pain, pallor, intense sweating, vomiting.
Precautions:	⚠ Can be deactivated by alkaline solutions. • Use large upper arm veins (preferably AC) for infusion. Monitor site frequently - extravasation causes tissue death. Watch for blanching along vein which can indicate leakage even without obvious infiltration, due to vessel constriction and increased vein wall permeability. ⚠ Caution with occlusive vascular disease, elderly. ⚠ Extreme caution with MAOI or antidepressant triptyline or imipramine types per severe, prolonged hypertension • If continuous admin to maintain BP in absence of blood volume replacement, following may occur: severe peripheral, visceral vasoconstriction; decreased renal perfusion, urine output; poor systemic blood flow despite “normal” BP; tissue hypoxia; lactate acidosis. • Avoid abrupt withdrawal.
Onset/Duration:	**Onset: Immediate with peak at 5 minutes** **Duration**: Rapid/1-2min following discontinuation of infusion.
Classification:	Sympathomimetic
Action:	Peripheral vasoconstrictor (alpha-adrenergic). Inotropic stimulator of heart and coronary artery dilator (beta-adrenergic).
Notes:	Elderly pt dose starts at the lower end, reflecting a greater frequency of decreased hepatic, renal, and cardiac function. ⚠ Admin in saline solution alone not recommended.

Mix 4mg into 250mLD5W Final Concentration 16mcg/mL **Usual dose range 2-30mcg/min** Maximum dose 30mcg/min

Desired Dose (mcg/min)	2 mcg/min	4 mcg/min	8 mcg/min	12 mcg/min	16 mcg/min	20 mcg/min	24 mcg/min	28 mcg/min	30 mcg/min
Drip Rate (drops/min)	8 gtts/min	15 gtts/min	30 gtts/min	45 gtts/min	60 gtts/min	75 gtts/min	90 gtts/min	105 gtts/min	113 gtts/min

Olanzapine (Zyprexa)

P

Indications:	• Acute Behavior Disturbances • Abdominal Pain	
ADULT Dose:	5-10 mg IM	
Contraindications:	• Documented hypersensitivity • Uncompensated congestive heart Failure • Cardiogenic shock	• AV conduction abnormalities • Asthma Bradycardia Pediatric
Precautions:	• May have QT prolongation. For more agitated patients, obtain a 12-lead EKG	
Adverse Effects:	• Hypotension • CHF • Dizziness • Chest Pain • Headache • Bronchospasm • Bradycardia	
Onset/Duration:	**Onset:** 15-45 minutes (IM), peaks at 5 hours	**Duration**: 24+ hours, with single-dose effects potentially lasting 2-3 days.
Classification:	Atypical antipsychotic	
Action:	Blocks multiple brain receptors (dopamine, serotonin, histamine) to reduce agitation, hallucinations, and thought disorders.	
Notes:	Effective for acute agitation. It can cause significant drowsiness. Monitor breathing when combined with other sedating medications. Use caution in the elderly due to fall risk. Don't combine with benzodiazepines due to respiratory depression risk.	

Ondansetron (Zofran)

E A P

Indications:	• Abdominal Pain with Nausea/Vomiting • Cannabinoid Hyperemesis with Nausea/Vomiting • General Illness with Nausea/Vomiting	• Nausea with Anxiety Sedation • Pediatric Nausea with Pain and Sedation
ADULT Dose:	4-8mg IV/IM/ SL A 4 mg SL (with specialized training). E **Max Dose of 32 mg w/in 24 hours.** Abdominal Pain: ODT 4 mg SL E 4 mg IV/IM A General Illness: 4 mg SL E 4 -8 mg IV/IM/ SL A Nausea with Anxiety Sedation: 4 mg SL E 4-8 mg IV/IM/ SL max dose 32mg A	
Contraindications:	Hypersensitivity, liver disease (reduce dose)	

Ondansetron (Zofran) continued

E A P

Pediatric Dose:	Peds Pain and Sedation: 0.1 mg/kg IV/IM/ SL A Recommended for use in children greater than 2 years of age	
Precautions:	• Maintain a lower dose with amiodarone • Maintain a lower dose with liver disease • Antiemetic of last choice in pregnancy	
Adverse Effects:	• Rare Hypersensitivity • Fatigue • Pyrexia • Dizziness	• Headache • Constipation • Urinary Retention
Onset/Duration:	**Onset:** Rapid onset	**Duration**: 5 hours
Classification:	Antiemetic	
Action:	Selective serotonin-blocking agent	
Notes:	May precipitate with Sodium bicarbonate.	

Oxygen

R E A P

Indications:	Dyspnea, hypoxia, preoxygenation
Dose:	Keep between SpO2 of 94-98%.
Contraindications:	None in the emergent setting
Precautions:	Oxidizer if exposed to flame

Oxymetazoline (Afrin)

E A P

Indications:	Pre-medication for nasal intubation, Epistaxis
ADULT Dose:	2-3 puffs each nostril (on inhalation)
Contraindications:	Known hypersensitivity
Pediatric Dose:	Children under 12 require a diluted concentration
Precautions:	Hyperthyroidism, Cardiac Disease, Hypertension, Diabetes mellitus. Simultaneous use of MAOI and ephedrine may result in a hypertensive crisis.
Adverse Effects:	• Cardiovascular collapse • Hypertension • Palpitations

Oxymetazoline (Afrin) *Continued*

		E	A	P

Onset/Duration:	**Onset:** Immediate	**Duration**: 30 min-4 hour duration
Classification:	Vasoconstrictor	
Action:	Shrinks swollen nasal blood vessels, reducing tissue swelling and bleeding.	

Oxytocin (Pitocin)

		P

Indications:	Control of postpartum hemorrhage	
ADULT Dose:	10 units IM, then mix 20 units in 1000ml isotonic IVF administered IV at 500 ml/hr to control postpartum hemorrhage	
Contraindications:	• Hypersensitivity Toxemia of Pregnancy • Undelivered placenta	• Undelivered baby
Precautions:	Status post cervical or uterine surgery, uterine sepsis, primipara after age 35	
Adverse Effects:	HTN, subarachnoid hemorrhage, anxiety, dysrhythmias, tetany, uterine rupture, hyponatremia	
Onset/Duration:	**Onset IV:** 1 min **Duration IV**: 30 min with a half-life of 12-17 min	**Onset IM:** 3-7 min **Duration**: 60 min with a half-life of 12-17min
Classification:	Hormone	
Action:	Synthetic hormone that causes strong uterine contractions to treat postpartum bleeding from an atonic (relaxed) uterus.	
Notes:	Use caution with vasopressors or stimulants - can cause severe hypertension. Confirm that the placenta is delivered and that there are no additional fetuses before administration.	

Prednisone

		P

Indications:	• Reactive airway disease • Allergic reaction with two or more systems involved • Pediatric Breathing Difficulty
ADULT Dose:	60 mg PO
Contraindications:	Systemic fungal infections
Pediatric Dose:	1 – 2 mg/kg PO

Prednisone *Continued*

P

Adverse Effects:	Prolonged wound healing, nausea & vomiting
Classification:	Glucocorticoid
Action:	Reduces inflammation by blocking white blood cell movement and inflammatory chemicals in the body.
Notes:	Attempt to administer medication with pudding or other palatable substance.

Procainamide (Pronestyl)

P

Indications:	• Narrow Complex tachycardia • Unstable Wide Complex Tachycardia • Refractory or Recurrent VF/V-Tach • Pediatric WPW in Narrow Complex Tachycardia • Pediatric Stable Wide Complex Tachycardia	
ADULT Dose:	Refractory or Recurrent VF/V-Tach: 300 mg every 8 min (900 mg total) **Narrow Complex**: Perfusing rhythm: 1 gram IV drip@50 mg/min or 17 mg/kg (max dose) if under 60 Kg. Followed by a drip of 1-4 mg/min IV/IO **Wide Complex**: Perfusing rhythm: 1 gram IV drip@50 mg/min or 17 mg/kg (max dose) if under 60 Kg. Followed by a drip of 1-4 mg/min IV/IO ⚠ **Stop** if rhythm converts, hypotension occurs or if QRS widens by 50%	
Contraindications:	• 2nd & 3rd AV block • Bradycardias • Torsades • Prolonged QT • Lupus	
Pediatric Dose:	4 mg/kg slow IV at 25 to 50 mg/min. ⚠ Slow IV at 25 to 50mg/min	
Precautions:	May exacerbate arrhythmias or produce paradoxical VT in Afib/Aflutter patients.	
Adverse Effects:	Anxiety, nausea, seizures, widening QRS, hypotension, CNS toxicity	
Onset/Duration:	**Onset:** 10-30 min onset	**Duration**: 3-6 hours duration
Classification:	Anti-arrhythmic	
Action:	Stabilizes heart cell membranes and slows electrical conduction, reducing abnormal heart rhythms by decreasing how easily heart tissue can be triggered.	
Notes:	Use caution with other antiarrhythmics, TCAs, or digoxin - increased risk of heart block. Watch for QT prolongation. Can cause blood pressure drop, especially with rapid IV administration. Monitor ECG and vital signs closely during treatment.	

Promethazine (Phenergan)

P

Indications:	• Cannabinoid Hyperemesis with Nausea/Vomiting • Abdominal Pain with Nausea/Vomiting • General Illness with Nausea/Vomiting	
ADULT Dose:	6.25-12.5 mg slow IV/IM Start at 6.25 mg and titrate the dose to the desired effect **Must be diluted approx 1: 10**	
Contraindications:	• Documented hypersensitivity • Comatose patients • Debilitated patients (signs of dehydration and weakness)	• Glaucoma • Concomitant CNS depressant use/administration • Children under age 2
Precautions:	Avoid SQ administration. Give as a deep IM (if ≥ 60 y/o 12.5 mg IV/IO/IM) rapid administration can cause vein irritation, phlebitis, and sclerosis Avoid concomitant use with epinephrine as it may result in hypotension. Watch for signs/symptoms of excessive sedation. Concomitant use of benzodiazepines may cause excessive sedation. Dystonic reaction (treat with Diphenhydramine)	
Adverse Effects:	Reduces seizure threshold May reduce seizure threshold in heatstroke patients. Drowsiness, sedation, ALOC, allergic reaction, dysrhythmia, nausea and vomiting, hyperexcitability, dystonic (extrapyramidal) reaction and hypertension. **Use in children may cause hallucinations, convulsions and sudden death.**	
Onset/Duration:	**Onset IV:** 5 minutes; **Duration IV:** 4-6 hours	**Onset IM:** 20 minutes **Duration**: 4-6 hours
Classification:	Anti-emetic, phenothiazine, antihistamine, H1 receptor antagonist, antivertigo agent, and antitussive	
Action:	It blocks cholinergic receptors in the vomiting center, which mediate nausea and vomiting; it competes with histamine for the H1 receptor site.	
Notes:	In case of dystonic reaction, treat with diphenhydramine. Promethazine decreases the effects of anticoagulation therapy.	

Propofol

P

Indications:	**FOR INTERFACILITY TRANSPORT** The infusion must be initiated by transferring hospital. Verify infusion rate prior to departing hospital. Ensure that drip chart comes with medication, verify CXR, verify arterial blood gas and VS are within norms **PATIENTS IN CRISIS (EXCITED DELIRIUM CONDITION)**- After initial control obtained, i.e. by police use of tasers or other means to include droperidol, midazolam, or Ketamine, intubate the patient, and then start an IV infusion with maintenance doses. See doses below. Do not discontinue until the **EMERGENCY DEPARTMENT PHYSICIAN TAKES OVER**. Decrease the infusion if hypotension respiratory depression occur.
ADULT Dose:	20-50mg IV q 10 seconds until onset. (1-2.5mcg/kg/min) to desired sedation level. Maintenance SBP >90 **Normal maintenance range: 10-20mg incremental IV bolus** Avoid rapid bolus. Do not abruptly stop drug Use dedicated line. Dilute only with normal saline to a concentration not less than 2mg/ml. Rate of administration-slow IVP
Contraindications:	Known hypersensitivity, known allergy to eggs or soy or propofol or peanuts
Pediatric Dose:	2 mg/kg IV/IO additional doses of 1 mg/kg may be administered at two minute intervals
Adverse Effects:	Hypotension, respiratory depression, and respiratory acidosis **Most common adverse reaction: hypotension**. If SBP< 90, give 500cc NS bolus (provided the patient does not have pulmonary compromise) and the turn drip rate down by 50%. Call Medical Control. Bradycardia, hypertension, and Torsades de Pointes all respond to MgSO4. Other potential side effects include: Injection site pain, involuntary muscle movement, nausea and vomiting, and anaphylaxis (rare) to soy and peanuts.
Classification:	Sedative/hypnotic/anesthetic adjunct
Action:	CNS Depressant
Notes:	Monitoring: Continuous cardiac and pulse oximetry monitoring and ETCO2 with blood pressure every 15 minutes; watch for hypotension, apnea, airway obstruction, and oxygen desaturation; document ETCO2 waveform.

Rocuronium (Zemuron)

P

Indications:	• Need for aggressive airway control and maintenance using RSI • Pediatric Sequenced Intubation
ADULT Dose:	0.6-1.2 mg/kg IV
Contraindications:	• Muscular disorders • Known hypersensitivity

Rocuronium (Zemuron) *Continued*

P

Pediatric Dose:	**RSI:** 0.6 to 1.2 mg/kg IV **For Bradycardia/Hypotension postintubation:** 0.2 to 0.5 mg/kg if needed	
Precautions:	Not recommended for RSI in Caesarean patients or those over 65 years of age.	
Adverse Effects:	• Hypotension • Altered mental status	• Increases pulmonary resistance
Onset/Duration:	**Onset:** 60-70 seconds	**Duration**: 20+ minutes
Classification:	Nondepolarizing neuromuscular blocker	
Action:	Neuromuscular blockade (Paralysis)	
Notes:	Airway control equipment must be readily available. Intubation conditions are expected in 1-2 minutes after injection. Consider lower doses in extremely debilitated patients.	

Sodium Bicarbonate

P

Indications:	• For Renal, Toxin, and severe acidosis patients with VF/VT arrest • Consider for prolonged arrest. • Profound Acidosis (EtCO2 <20) • Hyperkalemia • Altered Mental status in Overdose and Sepsis cases • Overdose/Poisoning with Na-Channel Tricyclics • Pediatric Toxic Exposure cases that have arrhythmias or AMS	
ADULT Dose:	**8.4% -** **Na-Channel TCA OD**: 1.5 mEq/kg IV, then 25 mEq in 250ml NS and run 250 ml/hr **For Renal, Toxin, and severe acidosis patients with VF/VT arrest:** 1 mEq/kg IV/IO **Asystole/PEA arrest:** 1 mEq/kg IV/IO **Hyperkalemia:** 1 mEq/kg IV/IO **Altered Mental Status? Profound Acidosis:** 50mEq IV/IO	
Pediatric Considerations:	**4.2% -** 1 mEq/kg IV/IO May achieve a 4.2% solution by mixing equal volumes of 8.4% solution and sterile water; mix well.	
Precautions:	• Do not administer in the same IV with calcium chloride. • Prepare to ventilate the patient.	
Adverse Effects:	Metabolic alkalosis, electrolyte imbalance, fluid overload	
Onset/Duration:	**Onset:** Immediate if IV, onset is less than 15 min	**Duration**: 1-2 hours

Sodium Bicarbonate *Continued*

P

Classification:	Alkalizing agent
Action:	Raises blood pH by buffering acid. Also stabilizes heart cells, helps clear certain overdoses through urine alkalinization, and corrects electrolyte imbalances.
Notes:	Don't mix with vasopressors (dopamine, epinephrine) - alkaline solution deactivates them. Will form precipitate with calcium chloride, clogging IV lines. Use separate line for administration.

Succinylcholine (Anectine)

P

Indications:	• Pediatric Sequenced Intubation • RSI	
ADULT Dose:	1.5 mg/kg IV RSI Shock/Hypotensive Patient: 2 mg/kg	
Contraindications:	Hyperkalemia	
Pediatric Dose:	2 mg/kg IV	
Precautions:	⚠ Use extreme caution in patients with recent burns, major trauma, paralysis, or spinal cord injuries - risk of severe potassium elevation and cardiac arrest.	
Adverse Effects:	• Respiratory depression • Apnea • Anaphylaxis • Hypertension • Hypotension	• Renal Failure • Hyperkalemia • Increased intraocular pressure • Dysrhythmia • Malignant hyperthermia
Onset/Duration:	**Onset:** 1 minute	**Duration**: 4-6 minutes
Classification:	Depolarizing neuromuscular blocking agent	
Action:	Short-acting depolarizing-type, skeletal muscle relaxant	
Notes:	Should not be mixed with alkaline solutions.	

Tenecteplase (TNKase)

P

Indications:	STEMI confirmed with Medical Control authorization required				
ADULT Dose:	Single IV bolus over 5sec;				
	<60kg/ 132lbs	60-70kg/ 132-154lbs	70-80kg/ 154-176lbs	80-90kg/ 176-198lbs	>90kg/ 198lbs
	30mg	35mg	40mg	45mg	50mg
Contraindications:	• Active internal bleeding • History of CVA, intracranial/intraspinal surgery or trauma past 2 months, intracranial neoplasm/arteriovenous malformation or aneurysm. • Severe uncontrolled HTN				
Precautions:	Blood vessel punctures should be minimized, especially non-compressible sites.				
Adverse Effects:	Bleeding				
Onset/Duration:	**Duration**: Rapid/90-130min half-life				
Classification:	Thrombolytic, tissue plasminogen activator				
Action:	Binds to fibrin and converts plasminogen to plasmin; it decreases systemic activation of plasminogen and the resulting degradation of circulating fibrinogen.				
Notes:	Do not give with glucose-containing solution as may precipitate. Do not use in-line filter.				

Thiamine (Betalin, Biamine, Vitamin B1)

P

Indications:	Coma and seizures of unknown origin, especially if alcohol use is suspected. Concurrent use with D50 for patients with a history of alcohol abuse. • Alcohol Withdrawal • Diabetic Emergency	
ADULT Dose:	100 -200 mg IM/IV (slow)	
Contraindications:	Known hypersensitivity	
Adverse Effects:	• Anaphylaxis (rare) • Nausea/Vomiting	• Hypotension (from rapid administration or excessive dose) • Anxiety/Agitation
Onset/Duration:	**Onset:** rapid	**Duration**: variable
Classification:	B complex vitamin	

Thiamine (Betalin, Biamine, Vitamin B1) *Continued*

P

Action:	Allows and is required for normal metabolism of glucose. Combines with ATP to form thiamine pyrophosphate coenzyme, a necessary component for carbohydrate metabolism. Provides the appropriate thiamine levels to allow glucose to be utilized in sufficient amounts, thus reversing cellular hypoglycemia secondary to thiamine deficiency

Ticagrelor (Brilinta)

P

Indications:	Confirmed STEMI in accordance with the county STEMI triage procedure.	
ADULT Dose:	180 mg PO	
Contraindications:	• Active pathological bleeding, bleeding conditions/disorders (hemophilia), peptic ulcer. • Intracranial hemorrhage. • Recent surgery, recent serious surgery (physical trauma)	
Precautions:	• Avoid use with CYP3A and P450 inhibitors (Azithromycin, oral antifungals, antivirals). • Opioids delay and reduce the absorption of Ticagrelor.	
Adverse Effects:	Bleeding and dyspnea	
Onset/Duration:	**Onset:** 2 hours onset	**Duration** (half-life) 8 hours
Classification:	Inhibitor of platelet activation and aggregation	
Action:	Blocks the P2Y12P ADP receptor inhibiting platelet activation and aggregation	

Tranexamic Acid (TXA, Cyclokapron)

P

Indications:	• Hemorrhage Control for Hemoptysis • Hemorrhage control for suspected internal bleeding. **Pregnant patients and patients on anti-coagulation medications are eligible.*

Tranexamic Acid (TXA, Cyclokapron)*Continued*

P

ADULT Dose:	**For severe, uncontrolled external bleeding or suspected profound internal bleeding:** 1 gm in 100 ml LR/NS = 10 mg/ml, over 10 minutes followed by 1 gm in 250ml NS/LR IV over 8 hour. OR 2 grams IM **Topical** :100-200 mg topical via cotton or gauze for external wound. • **Hemorrhage Control for Hemoptysis**: 500mg SVN may repeat x 1
Pediatric Dose:	15mg/kg (max 1gm) in 100ml NS/LR IV over 10 minutes, followed by 2mg/kg in 250ml NS/LR IV over 8 hours.
Contraindications:	• Greater than three hours since traumatic event • Non-hemorrhagic shock • Evidence of Disseminated Intravascular Coagulation • Isolated head injury • Neurogenic Shock (no evidence of hemorrhage) • Known history of severe renal failure • Known history of thromboembolism (relative) • Known hypersensitivity (allergy) to TXA • Hemorrhagic shock controlled with other hemostatic agents/measures.
Precautions:	• Begin infusion as soon as possible after injury, but no later than 3 hours after injury. Do not give through the same IV as Hextend or blood products. • Patients taking oral tretinoin for the treatment of leukemia may have enhanced effects. Do not give IV push – **will cause hypotension**. **Must be given over 10 minutes.** Use with caution with patients with a history of DVT, PE, known clotting disorders, or severe renal failure.
Adverse Effects:	• TXA has not been shown to cause a significant increase in deep vein thrombosis (DVT), pulmonary embolus, myocardial infarction, or stroke in published trials to date. • Dizziness • Headache • Nausea • Vomiting • Diarrhea • Orthostasis • Hypotension (with rapid administration) • Seizures (seen mainly in the pediatric cardiac surgery population) • Female patients taking or using any form of birth control containing estrogen and progestin are at increased risk for blood clots (enhanced thrombogenic effects), and TXA increases that risk.

Onset/Duration:	**Onset:** Onset of action within 4 hours after IV administration, exact time of onset unclear and variable.	**Duration**: Delayed effects up to 48 hours are consistent with anti-inflammatory actions.
Classification:	Anti-Fibrinolytic	
Action:	TXA prevents blood clot breakdown by blocking plasmin formation, helping stabilize clots and reduce bleeding.	

Verapamil

P

Indications:	Narrow complex tachycardia	
ADULT Dose:	5 mg IV/IO	
Contraindications:	Heart failure, AV block, Sick sinus syndrome, WPW, LGL syndrome	
Precautions:	Digoxin, avoid polypharmacy with other rate-related medications.	
Adverse Effects:	bradycardia, hypotension	
Onset/Duration:	**Onset:** 3-5 min	**Duration**: up to 6 hours
Classification:	Calcium channel blocker, class IV antiarrhythmic	
Action:	Inhibits calcium ion from entering the “slow channels” or select voltage-sensitive areas, slow automaticity and conduction of AV node.	

Drug Reference

Equivalents: 1kg = 2.2lb 1kg = 1000 gm

1ml = 60 mcgtts (micro tubing)
ml = 10,15,20 gtts (macro tubing)
1 L = 1000 ml
1 ml and 1 cc are interchangeable

1 gm = 1000 mg 1
1 mg = 1000 mcg

Conversions:
MULTIPLY to convert a larger unit into a smaller unit using the above table.
DIVIDE to convert a smaller unit into a larger unit using the above table.

Dosage Calculations:
To calculate the amount of drug to be drawn up or administered, use the following formula:
WHAT (type and amount of drug ordered) multiplied by the QUANTITY (volume of fluid inthe container) divided by HAVE (amount of drug in the container) = the amount to be administered.

$$\frac{\text{WHAT} \times \text{QUANTITY}}{\text{HAVE}} = \text{Amount to be administered}$$

IV Rate:
To calculate an **IV drip rate** based on the **volume of fluid to be infused over time**. (Make sure the unit of measurement of the concentration and the dosage are the same. [e.g. both in milligrams])

$$\text{Drops per minute} = \frac{\text{VOLUME to be infused in cc} \times \text{Drop factor of IV set}}{\text{Time in minutes}}$$

To calculate an **IV drip rate for a medication** that is administered based on a **specified dosage to be infused per minute.**

$$\text{Drops per minute} = \frac{\text{Dosage per minute to be administered} \times \text{Drop factor (60)}}{\text{Concentration of medication per ml}}$$

To calculate an **IV drip rate** for a medication that is administered based on a **specified dosage per kilogram of body weight per minute.**

$$\text{Drops per minute} = \frac{\text{Desired dosage per minute} \times \text{Weight in Kg} \times \text{Drop factor of IV set}}{\text{Concentration of medication per ml}}$$

Air Ambulance Transports

An air ambulance will be activated based on the Northwest Regional EMS Trauma Triage Procedures by the on-scene EMS provider or Incident Commander. Whenever possible, providers will contact Medical Control before activating an air ambulance. The decision process regarding when to mobilize an air ambulance should take into consideration site resuscitation, stabilization capabilities, and ground transport time. Dispatch may assist in contacting an air ambulance service for activation as soon as the need for air transport is identified.

Every attempt should be made to stabilize the patient before transport, including IV, airway, chest decompression or stabilization, control of external hemorrhage, and spine immobilization. Trauma-associated cardiac arrest patients should not be transferred by air ambulance. Transfer of care to air ambulance personnel will optimally occur at designated landing sites. Deviation from designated landing sites should be briefly discussed with Medical Control.

Information to have available regarding airlift transport:

- Map coordinates - township, range, and section
- Location of nearest landing zone
- Capability to transport to the landing zone
- How the landing zone is marked
- Any obstructions near the landing zone
- Relevant weather information

Provider Present at the Scene

The prehospital care provider functions under the direction of the on-duty Medical Control physician. With Medical Control permission, a physician, physician's assistant, or nurse practitioner on scene may participate in the care of a patient at the scene of any emergency in one of the following ways:

1. Take total responsibility for the management of the patient(s). If so, he/she must accompany the patient(s) to the hospital. The physician, physician's assistant, or nurse practitioner on scene must supply proof of credentials before initiation of any patient care direction or treatment.
2. Offer assistance in caring for the patient(s), allowing the prehospital care provider to remain under the control of the Medical Control Physician and within the prehospital provider's scope of practice.

In all cases, the Medical Control Physician must be contacted to specifically delegate authority to any on-scene physician. Access to communication with the Medical Control should be provided to any on-scene physician on request. Notation of Physician's identification and directive from Medical Control must be documented on the Medical Incident Report.

Emergency at a Physician's office

At a private physician's, physician's assistant, or nurse practitioner's office, the individual physician maintains the responsibility for the treatment and management decisions for the patient. During transport, treatment rendered by the prehospital provider must remain within the provider's scope of practice.

Patient Care Reports (PCR)

A copy of the ECG tracing **MUST** be attached to all copies of the PCR when **ANY** dysrhythmia or ischemic ST segment changes are encountered in the field. Per WAC requirements, all PCR must be available at the Emergency Department within 24 hours of patient arrival.

The prehospital contact report is to include:

a. Unit identification
b. Age and sex of patient
c. Severity
d. Chief complaint
e. Relevant medical history
f. Vital signs
g. Treatment given, and response to treatment
h. ETA
i. Request for additional information or treatment

Ten Critical Steps for Handling Possible
Bioterrorism Events

1 – **Maintain an index of suspicion.**	In an otherwise healthy population, some associations are very suggestive, especially when seen in clusters, high numbers, or unusual presentations.	
	"Clustered" Symptoms	Potential Bioagents
	Hemoptysis	Plague
	Flaccid Paralysis	Botulism
	Purpura	Viral Hemorrhagic Fevers (VHF)
	Wide mediastinum	Anthrax
	Centripetal rash	Smallpox
2 – **Protect yourself and your patients.**	Use appropriate personal protection equipment (PPE). Prophylaxis; vaccines, if available; or antibiotics, if risks are known.	
3 – **Adequately assess the patient.**	Review and assess the patient's history. Also, ask: • Are others ill? • Were there any unusual events? • Was there an uncontrolled food source or other environmental factor? • Was there vector exposure? • Has the patient been traveling? • What is the patient's immunization record? Perform a physical examination with special attention to the respiratory system, nervous system, skin condition, and hematologic and vascular status.	
4 – **Decontaminate as appropriate.**	Do not use bleach on exposed people. Soap, water, and shampoo are perfectly adequate for all biological and most chemical agents. Chemically contaminated clothes should be removed and discarded safely. Biologically contaminated clothes can be laundered with soap, water, and, if needed, bleach.	
5 – **Establish a diagnosis.**	Think clinically and epidemiologically; always send specimens for culture.	
	Symptom (individuals)	Possible Diagnosis
	Pulmonary	Tularemia, plague, staph enterotoxin B (SEB)
	Neuromuscular	Botulism, Venezuelan equine encephalitis (VEE)
	Bleeding/purpura	VHF, ricin, plague (late)
	Rash (various types)	VHF, T2 mycotoxin, smallpox, plague
	Flu-like symptoms	Varies
	Immediate Symptoms (large numbers)	Possible Diagnosis
	Pulmonary	SEB, mustard, Lewisite, phosgene, cyanide
	Neurologic	Nerve gases, cyanide

	Delayed Symptoms (large numbers)	Possible Diagnosis
	Pulmonary	Biologic agents, mustard, phosgene
	Neurologic	Botulism, VEE, other encephalitis
6 – **Render prompt treatment.**	**A** irway, **B** reathing, **C** irculation.	
7 – **Provide good infection control.**	• Gown, gloves, mask, handwashing, and eyewear, if necessary, are sufficient. • Recommended isolation precautions for biologic agents include: Standard Precautions – for all individuals/patients. Contact Precautions – Viral Hemorrhagic Fevers Droplet Precautions – Pheumonic Plague and Tularemia Airborne Precautions - Smallpox	
8 – **Alert the proper authorities.**	**CALL FIRST:** Your local law enforcement agency; call either 911 or your local law enforcement number. **CALL SECOND:** Your area FBI office Western WA: 206-622-0460 Eastern WA: 509-747-5196 After hours statewide in WA: 206-622-0460 **CALL THIRD:** Your local emergency management agency, or if unavailable, the WA state EM Duty Officer at: 1-800-258-5990	
9 – **Assist in the epidemiologic investigations.**	Steps in an epidemiologic investigation to determine who may be at risk • Count cases; • Relate to the at-risk population; • Make comparisons; • Develop hypotheses; • Test hypotheses; • Make inferences; • Conduct studies; • Interpret and evaluate.	
10 – **Know and spread this information.**		

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Medical Spanish

INITIAL QUESTIONING

Is there someone with you who speaks English?
¿Hay alguien con usted que hable ingles?
Ah-ee ahl-gee-ehn hohn oss-tehd keh ah-bleh enn-glehs?

I speak a little Spanish. Please answer yes or no to the following questions.
Hablo un poco de español. Por favor conteste si o no a las siguientes preguntas.
Ah-bloh oon pohr-fah-borg kokn-tehs-the see oh noh ah lahs see-gee-ehn-tehs preh-goon tahs.

Speak slowly, please.
Hable despacia, por favor.
Ah-bleh dehs-pah-see-oh, pohr fah-bohr.

What is your name?
¿Cómo se llama?
Koh-moh she yah-mah?

When did the problem start?
¿Cuándo empezó el problema?
Kwahn-doh ehm-peh-soh ehl prog-bleh-mah?

How old are you?
¿Cuántos años tiene?
Kwahn-tohs ah-nyohs tee-eh-neh?

What medicine do you take?
¿Qué medicina torna?
Keh meh-dee-see-nah toh-mah?

NUMBERS

1. uno
2. dos
3. tres
4. cuatro
5. cinco
6. seis
7. siete
8. ocho
9. neueve
10. diez
11. once
12. doce
13. trece
14. catorce
15. quince
16. dieciséis
17. diecisiete
18. dieciocho
19. diecinueve
20. viente
21. vientiuno
22. vientidós
23. veintritrés
24. veinticuatro
25. veinticinco
26. veintiséis
27. veintisiete
28. veintiocho
29. veintineuve
30. treinta

Days of the week

Lunes: Monday
Martes: Tuesday
Miércoles: Wednesday
Jueves: Thursday
Viernes: Friday
Sábado: Saturday
Domingo: Sunday

Common Medical Questions/Terms

How do you feel?
¿Cómo se siente?
Koh-moh she see-ehn-the?

What is the problem?
¿Cuál es el problema?
Kwahl ehs ehl proh-bleh-mah?

Have you had this problem before?
¿Ha tenido este problema antes?
Ah the-nee-doh ehs-the proh-bleh-mah ahn-tehs?

Do you have nausea or vomiting?
¿Tiene nausea o vómito?
Tee-eh-neh nah-oo-she-ah oh boh-meh-toh?

Don't move
No se meuva
Noh she mweh-bah

We are going to give you an IV Vamos a ponerie suero intravenoso.
Bah-mohs ah poh-nehr-leg soo-eh-roh enn-trah- beh-noh-soh.

Do you have a fever?
¿Tiene fiebre?
Tee-eh-neh fee-eh-breh?

Calm down Cálmese
Kahl-meh-sah

Where does it hurt?
¿Donde le duele?
Dohn-deh leh dweh-leh?

Show me Enséñeme
Ehn-she-nyeh-meh.

When?
¿Cuándo?
Kwahn-doh?

How?
¿Cómo?
Koh-moh?

For how long?
¿Por cuánto tiempo?
Pohr kwahn-toh tee-ehm-poh?

Why?
¿Por qué?
Pohr keh?

Relax, please
Por favor, relájese
Pohr fah-bohr, reh-lah-heh-she.

High Blood Pressure? Alta presion de la sangre?
Ahl-tah preh-see-ohn deh lah sahn-greh?

Diabetes? Diabetes?
Dee-ah-beh-tehs?

Asthma?
Asma?
Ahs-mah?

Epilepsy? Epilepsia?
Eh-pee-lep-see-ah?

Heart disease? Ehfermedad del corazón?
Ehn-fehr-meh-dad dehl koh-rah-sohn?

Stomach ulcers? Ulceras del estomago?
Ool-she-rahs dehl ehs-toh-mah-goh?

Do you take medicine?
¿Tomas usted medicina?
Toh-mah oos-tehd lah meh-dee-see-nah?

PAIN

When did the pain start?
¿Cuándo empezó el dolor?
Kwahn-doh ehm-peh-soh ehl doh-lohr?

Where did the pain start?
¿Donde empezó el dolor?
Dohn-deh ehm-peh-soh ehl doh-lohr?

Does the pain travel to another place?
¿Le viaja el dolor a otro lugar?
Leh vee-ah-hah ehl doh-lohr ah oh-troh loo-gahr?

How long does the pain last?
¿Cuánto tiempo le dura el dolor?
Kwahn-toh tee-ehm-poh leg doo-rah ehl doh-lohr?

Is it severe?
¿Es severo?
Ehs she-beh-roh?

Does it ache?
¿Es adolorido?
Ehs ah-doh-loh-ree-doh?

Is it like pressure?
¿Es opresivo?
Ehs oh-preh-see-boh?

Is the pain the same since it started?
¿Es el dolor igual desde que empezó?
Ehs ehl doh-lor ee-gwahl dehs-deh keh ehm-peh- soh?

CHEST PAIN

Pain in the chest?
¿Dolor del Pecho?
Doh=lohr dehl peh-choh?

Point to where the pain is, please.
Apunte dónde tiene el dolor, por favor.
Ah-poon-the dohn-deh tee-eh-neh ehl doh-lohr.

Does the pain travel to your left shoulder (arm)?
¿Le viaja el dolor al hombre (brazo) izquierdo? *Leh bee-ah-hah ehl doh-lohr ahl ohm-broh (brah- soh) ees-kee-her-doh?*

Is it piercing?
¿Es punzante?
Ehs poon-sahn-the?

OB / GYN

Are you having contractions?
¿Tiene contracciones?
Tee-eh-neh kohn-track-see-ohn-ehs?

(Don't)
push. (No)
Empuje.
(Noh) Ehm-poo-heh

How many minutes do the contractions last?
¿Cuántos minutes le duran las contracciones? *Kwahn-tohs mee-noo-tohs leh doo-rahn lahs kohn- trahk-see-ohn-ehs?*

MNEMONICS

Patient Assessment	Newborn Assessment	Medical
A: Airway	**A:** Appearance	**M:** Morphine
B: Breathing	**P:** Pulse Rate	**O:** Oxygen
C: Circulation	**G:** Grimace (facial actions)	**N:** Nitrates
D: Disability	**A:** Activity	**A:** Aspirin
E: Expose	**R:** Respirations	

History	
S: Signs and symptoms	**P:** Progression of symptoms
A: Allergies	**A:** Associated chest pain
M: Medications	**S:** Sputum productions, speech, word sentences
P: Pertinent past medical history	**T:** Temperature, tiredness
L: Last oral intake	**M:** Medications the patient is currently taking
E: Events leading to injury or illness	**E:** Exercise/Exertion is normally tolerated
	D: Diagnosis (previous)

Trauma Assessment	Trauma	
Scene safety	**V:** Vitals	**T:** Tracks, Tags, Tattoos
Spinal Stabilization	**O:** Oxygen	**I:** Instability
LOC	**M:** Monitor	**C:** Crepitus
Airway	**I:** IV/Information	**S:** Scars
Breathing	**T:** Transport decision	
Oxygen	**H:** History	
Circulation	**A:** Allergies	
Arterial Bleeds	**M:** Medications	
Bare the Body		

Trauma or Pain Questions	Trauma
O: Onset	**D:** Deformities
P: Provocation, progression	**C:** Contusions
Q: Quality, pain type?	**A:** Abrasions
R: Radiation	**P:** Punctures
S: Severity	
T: Time, duration	**B:** Burns
	T: Tenderness
	L: Lacerations
	S: Swelling

Causes of Pulseless Electrical Activity (PEA) – “ ” H’s and T’s:			
H:	Hypovolemia	T:	Toxins
H:	Hypoxia	T:	Tamponade (Cardiac)
H:	Hydrogen ion – acidosis	T:	Tension Pneumothorax
H: H: H:	Hypo- / Hyperkalemia Hypoglycemia Hypothermia	T: T:	Thrombosis (Coronary or Pulmonary) Thrombosis (hypovolemia, increased ICP)

Causes of Traumatic Cardiac Arrest	
H:	Hypovolemia
0:	Oxygenation
T:	Tension Pneumothorax
T:	Tamponade (Cardiac)

Altered Mental Status (ALOC)			
A:	Alcohol, Drugs	T:	Trauma
E:	Endocrine (glands)	I:	Infection
I:	Insulin, Infection	P:	Psychiatric
O:	Overdose	S:	Shock
U:	Uremia (2U kidney insufficiency)		

Triage		Charting	
A:	Alert	S:	Subjective
P:	Responsive to Pain	O:	Objective
V:	Responsive to Verbal	A:	Assessment
U:	Unresponsive	P:	Plan

Causes of Peri-intubation Arrest		Failed Mechanical Ventilation	
H:	Hypotension	D:	Displacement
O:	Oxygenation (Hypoxia)	O:	Obstruction
P:	pH (metabolic Acidosis)	P:	Pneumothorax
		E:	Equipment Failure
		S:	Stacked Breaths

Difficult Airway		Physiologic Difficult Airway	
L:	**Look externally**	C:	**Consumption increase**
E:	**Evaluate**	R:	**Right ventricular failure**
M:	**Mallampati**	A:	**Acidosis (Metabolic)**
O:	**Obstruction or obesity**	S:	**Saturation**
N:	**Neck mobility**	H:	**Hypotension**

Difficult to Bag		Difficult to Place SGA/Adjuct	
B:	**Beard**	**R:**	**Restrictive Mouth**
O:	**Obesity**	**O:**	**Obstruction**
N:	**No teeth**	**D:**	**Distorted Airway**
E:	**Elderly > 55**	**S:**	**Stiff neck/lungs**
S	**Snores**		

Difficult Cricothyrotomy	
S:	Surgery/Disrupted Airway
H:	Hematoma
O:	Obesity or access problems
R:	Radiation
T:	Tumor

Phone Numbers

HOSPITALS		
CLALLAM		
Forks Community Hospital	**(360) 374-6271 Main (ER ext. 190)**	
Olympic Medical Center	**(360) 417-7381 Medical Reports**	(360) 417- 7000 Main (360) 417- 7724 ED
JEFFERSON		
Jefferson Healthcare	**(360) 385-7617 Medical Reports**	(360) 385-2200 Main
KING		
Harborview	**206.744.7227 (Medic One Doc)**	206.744.4074 Main
Seattle Children's Hospital Medical Center	**(206) 987-2222 Medical Reports**	(206) 987-2000 Main
Swedish First Hill	**(206) 386-2573 Medical Reports**	(206) 386-6000
Swedish Cherry Hill	**(206) 320-2111 Medical Reports**	(206) 320-2000
University of Washington Medical Center	**(206) 598-2000 Report line**	(206) 598-4000 ER
Virginia Mason Seattle	**(206) 583-6450 ED**	(206) 624-1144 Main
KITSAP		
St. Anthony's	**(253) 530-2111Medical Reports**	(253) 530-2000 Main
St. Michael's Medical Center	**(564) 240-2301 Medic Line**	**(**564) 240-2100 Main (ER)
VMFH Freestanding - Bremerton	**(360) 782-7779 Medical Reports**	(360) 782-7709 (Main)
Muliticare Freestanding -Port Orchard	**(360) 564-669-5310 Main**	
MASON		
Mason General Hospital	**(360) 426-8171 Medical Reports**	(360) 427-9595 Main (ER)
PIERCE		
Madigan Army Medical Center	**(253) 968-1396 Medical Reports**	(253) 968-1390 Main (ER)
Mary Bridge Children's Hospital	**(253) 403-1476 Medical Reports**	(253) 403-1418 Main (ER)
St. Caire's	**(253)588-2255 Medical Reports**	(253)985-8701 Main (ER)
St. Joseph's	**(253) 426-6769 Medical Reports**	(360) 956-2596 Main (ER)
Tacoma General Hospital	**(253) 627-8500 Medical Reports**	(253) 403-1050 Main (ER)
THURSTON		
Capital Medical Center	**(360) 956-2596 Medical Reports**	(360) 956-2596 (ER)
Lacey MOCED	**(564)669-5204**	
St. Peter's Hospital	**(360) 491-8888 Medical Reports**	**(360) 493-5155 (ER)**
AIR AMBULANCES		
Airlift Northwest	**(800) 426-2430**	
Life Flight	**(800) 452-7434**	
Island Air	**(360) 378-4151**	

COMMUNICATION CENTERS		
Clallam County (PENCOM)	(360) 307-5955	
Jefferson County	(360) 344-9779	
Kitsap County (CENCOM)	(360) 308-5400	
Mason County	(360) 426-5533 or	(360) 426-4441 (Shel-com)
Olympic Ambulance	(800) 445-2257	
INFORMATION		
Chem Trek	(800) 424-9300	
Coast Guard Group Seattle	(206) 217-6001	
Diver's Alert Network (DAN)	(877) 595-0625	
Department of Ecology	(425) 649-7000	
National Response & Terrorist Hotline	(800) 424-8802	
Poison Control	(800) 709-0911 (EMS ONLY)	
WA State Ferries Office-Operations	(206) 515-3456 (watch officer)	
WA State Patrol Dispatch	(360) 405-6650 (not for public use)	
Hood Canal Bridge	(360) 779-3233	
WSDOT	(253)548-2420	

Checklist Section

Airway Management

Reminder: *Resuscitate then intubate* – Risks HOp: Hypotension, Hypoxia, Hypoventilation (pH acidosis) (3)

1st READY EQUIPMENT AND TEAM	
BLS or ALS Provider	☐ Position Patient Ear 2 Notch
	☐ C-Spine PRN
	☐ Head Up 30°
	☐ 360° Patient Access
	☐ Apply EtCO2 & Prepare ETI EtCO2
	☐ Vitals, ECG, & Monitor Visible
	☐ SpO2 Opposite Side of NiBP
	☐ HiFlow NC On Patient
	☐ Suction Tested
	☐ O2 Cylinder x2 & > Half-full
	☐ NiBP Cycle q 60 Seconds
	☐ IGel Sized & Ready
	☐ Cric Kit Ready
	☐Ready ET Tube+ test cuff
	☐ Tube Tamer in Place
ALS Provider	
	☐ **Bougie Ready**
	☐ Waveform EtCO2 on monitor
	☐ DL Handle/Blade Tested
	☐ VL Handle/Blade Tested
	☐ Ventilator Pre-Flight
Team CRM - CUS **Anyone** Can Speak Up & Say	
I am **C**oncerned About…	
I am **U**ncomfortable About…	
STOP	

2nd SET FOR PROCEDURE	
ALS Provider	☐ Identify Signs of Difficult Airway, Plan A, B, C
	☐ Crew Briefed – PACE & Post Intubation Plan
	☐ Verify Patent IV/IO Access
	☐ Consider 2nd Vascular Access PRN
	☐ Sedation medication– Crosschecked & Labeled
	☐ Rocuronium – Crosschecked & Labeled
	☐ Epi Push Dose Pressor – Crosschecked & labeled
	☐ PreOx/DeN2ate/apOx
	☐ HiFlow NC ≥ 15 lpm
	☐ BVM/HME/Inline EtCO2/PEEP
	☐ Select PEEP Pressure
	☐ 2 Person 2 Hand BVM Technique
	☐ Jaw Thrust and IGEL PRN
	Go to appropriate green "**Go and Perform**" checklist

3rd GO AND PERFORM		
ALS Provider	**RSI**	
	☐ Administer Sedation medication	
	☐ **If SpO2 ≤ 94%** - Begin 3 Minute Countdown	☐ **If SpO2 ≥ 95%**- Proceed
	☐ Confirm Ability to BVM Prior to Paralysis	
	☐ Administer ROCURONIUM	
	☐ 90 Second Countdown	
	☐ Intubate	
	☐ Verify EtCO2	
	☐ Verify ETT Cuff Pressure	
	☐ Secure Tube and Communicate Depth	
	☐ Gastric Tube PRN	
	☐ Assign provider to Continuously Monitor Airway and EtCO2	
	☐ Post Intubation Sedation and Analgesia	
	☐ Titrate FiO2 or utilize a ventilator	

3rd GO AND PERFORM	
ALS Provider	**Surgical Cricothyrotomy**
	☐ Locate landmarks, palpate from bottom to top
	☐ Chlorohexidine
	☐ Use non-dominant hand to stabilize, stretch skin
	☐ Vertical incision over CT membrane (1in above – 1in below)
	☐ Visualize CT membrane, punch incision
	☐ Dilate
	☐ Insert Bougie, ensure free movement
	☐ Advance appropriately sized ETT tube 1-2cm past cuff
	☐ Verify EtCO2 & Present Bilateral Breath Sounds
	☐ Secure Tube and Communicate Depth
	☐ Gastric Tube PRN
	☐ Assign provider to Continuously Monitor Airway and Waveform EtCO2
	☐ Sedation and analgesia- Ketamine, Midazolam, Fentanyl
	☐ Titrate BVM FiO2 or utilize ventilator
	☐ If issues, check for right mainstem

Pediatric Resuscitation

PEDIATRIC TX/MED CARDS		
NORTHWEST REGION EMS		
PREMATURE	≤3 KG	(<7 lb)
GREY	4 kg	(9 lb)
PINK	6 kg	(13 lb)
RED	8 kg	(18 lb)
PURPLE	10 kg	(22 lb)
YELLOW	13 kg	(29 lb)
WHITE	16 kg	(35 lb)
BLUE	20 kg	(44 lb)
ORANGE	26 kg	(57 lb)
GREEN	32 kg	(70 lb)
BROWN	50 kg	(110 LB)

These cards were created by the hard work of Dr. Lila O'Mahoney and Central Pierce Fire and altered with NREMS logo. The suggestion is to make Pediatric Out of Hospital Cardiac Arrest bags for each color, putting the following checklist in each bag. The colored box on the side is to create tabs for the compiled bag checklists.

MEDICATION CONCENTRATIONS		
Adenosine	3	mg/mL
Atropine	0.1	mg/mL
Cyanokit	25	mg/mL
Dextrose 10%	0.1	g/mL
Diphenhydramine	50	mg/mL
Epinephrine 1:1 *(IM)*	1	mg/mL
Epinephrine 1:10 *(IV/IO)*	0.1	mg/mL
Etomidate	2	mg/mL
Fentanyl	50	mcg/mL
Glucagon	1	mg/mL
Ketamine	See Dose Cards	
Lidocaine	20	mg/mL
Magnesium Sulfate	500	mg/mL
Midazolam	5	mg/mL
Narcan	1	mg/mL
Rocuronium	10	mg/mL
Solumedrol	62.5	mg/mL
Succinylcholine	20	mg/mL

Release Date: 5/2024

KETAMINE DOSAGE

VOLUME BASED ON 100 MG/ML CONCENTRATION PRIOR TO DILUTION

Peds Card Update			Ketamine concentration 100 mg/ml		
	RSI sedation dose 2 mg/kg			Maintenance dose 0.5 mg/kg	
Weight (kg)	Dose	Volume		Dose	Volume
≤3 kg PREMIE	CONTRAINDICATED			CONTRAINDICATED	
4 kg GREY					
6 kg PINK					
8 kg RED	16 mg	0.2 ml		4 mg	0.1 ml
10 kg PURPLE	20 mg	0.2 ml		5 mg	0.1 ml
13 kg YELLOW	26 mg	0.3 ml		7 mg	0.1 ml
16 kg WHITE	32 mg	0.3 ml		8 mg	0.1 ml
20 kg BLUE	40 mg	0.4 ml		10 mg	0.1 ml
26 kg ORANGE	52 mg	0.5 ml		13 mg	0.1 ml
32 kg GREEN	64 mg	0.6 ml		16 mg	0.2 ml
50 kg BROWN	100 mg	1.0 ml		25 mg	0.3 ml

KETAMINE

release date 5/24

KETAMINE DOSAGE

VOLUME BASED ON 50 MG/ML CONCENTRATION - NO DILUTION NEEDED

Peds Card Update			Ketamine concentration 50 mg/ml		
	RSI sedation dose 2 mg/kg			Maintenance dose 0.5 mg/kg	
Weight (kg)	Dose	Volume		Dose	Volume
≤3 kg PREMIE	CONTRAINDICATED			CONTRAINDICATED	
4 kg GREY					
6 kg PINK					
8 kg RED	16 mg	0.3 ml		4 mg	0.1 ml
10 kg PURPLE	20 mg	0.4 ml		5 mg	0.1 ml
13 kg YELLOW	26 mg	0.5 ml		7 mg	0.1 ml
16 kg WHITE	32 mg	0.6 ml		8 mg	0.2 ml
20 kg BLUE	40 mg	0.8 ml		10 mg	0.2 ml
26 kg ORANGE	52 mg	1.0 ml		13 mg	0.3 ml
32 kg GREEN	64 mg	1.2 ml		16 mg	0.3 ml
50 kg BROWN	100 mg	2.0 ml		25 mg	0.5 ml

KETAMINE

release date 5/24

VOLUME BASED ON 10 MG/ML CONCENTRATION - NO DILUTION NEEDED

Peds Card Update			Ketamine concentration 10 mg/ml		
	RSI sedation dose 2 mg/kg			Maintenance dose 0.5 mg/kg	
Weight (kg)	Dose	Volume		Dose	Volume
≤3 kg PREMIE	CONTRAINDICATED			CONTRAINDICATED	
4 kg GREY					
6 kg PINK					
8 kg RED	16 mg	1.6 ml		4 mg	0.4 ml
10 kg PURPLE	20 mg	2.0 ml		5 mg	0.5 ml
13 kg YELLOW	26 mg	2.6 ml		7 mg	0.7 ml
16 kg WHITE	32 mg	3.2 ml		8 mg	0.8 ml
20 kg BLUE	40 mg	4.0 ml		10 mg	1.0 ml
26 kg ORANGE	52 mg	5.2 ml		13 mg	1.3 ml
32 kg GREEN	64 mg	6.4 ml		16 mg	1.6 ml
50 kg BROWN	100 mg	10 ml		25 mg	2.5 ml

KETAMINE

release date 5/30

Pediatric Resuscitation

NWREMS EMS Ped Card Premature Neonate ≤ 3 kg

Release date 5/1/2024

Approx. Age	Newborn
Heart Rate	100 - 180
Resp. Rate	30 - 80

CPR 3:1 - Dose route IV/ETT

≤ 1 kg, < 28 weeks EGA				**Length: ≤ 40 cm**
Equipment:	ETT Size	2.5 mm (*uncuffed*)		
	ETT Insertion Depth	6-7 cm		
	DL Blade	0 Miller		
	VL Blade	HA S1/Miller S0		**i-Gel** 1.0
	Suction Cath	6 f		
Medication:		**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Epinephrine (1:10) **IV**		0.01 mg/kg	0.01 mg	**0.1 mL**
Epinephrine (1:10) **ETT**		0.1 mg/kg	0.1 mg	**1 mL**
Dextrose 10%	(**BGL < 45**)	2 mL/kg	200 mg	**2 mL**
Fluids:				
Normal Saline	(up to 2x)	10 mL/kg		**10 mL**

1 - 2 kg, 28-34 weeks EGA				**Length 41 - 46 cm**
Equipment:	ETT Size	2.5 mm (*uncuffed*)		
	ETT Inseretion Depth	7-8 cm		
	DL Blade	0 Miller		
	VL Blade	HA S1/Miller S0		**i-Gel** 1.0
	Suction Cath	6 f		
Medication:		**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Epinephrine (1:10) **IV**		0.01 mg/kg	0.02 mg	**0.2 mL**
Epinephrine (1:10) **ETT**		0.1 mg/kg	0.2 mg	**2 mL**
Dextrose 10%	(**BGL < 45**)	2 mL/kg	400 mg	**4 mL**
Fluids:				
Normal Saline	(up to 2x)	10 mL/kg		**20 mL**

2 kg - 3 kg, 34-38 weeks EGA				**Length 47 - 51 cm**
Equipment:	ETT Size	3.0 mm (*uncuffed*)		
	ETT Insertion Depth	8-9 cm		
	DL Blade	0 Miller		
	VL Blade	HA S1/Miller S0		**i-Gel** 1.0
	Suction Cath	8 f		
Medication:		**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Epinephrine (1:10) **IV**		0.01 mg/kg	0.03 mg	**0.3 mL**
Epinephrine (1:10) **ETT**		0.1 mg/kg	0.3 mg	**3 mL**
Dextrose 10%	(**BGL < 45**)	2 mL/kg	600 mg	**6 mL**
Fluids:				
Normal Saline	(up to 2x)	10 mL/kg		**30 mL**

Checklist Section

Pediatric Resuscitation

NWREMS PEDS CARD	4 KG	GREY	Release date 5/1/2024

Age	0-3 months	**ET Tube Size-** uncuffed	3.0	mm	
Heart Rate	100-180	**ET Tube Insertion Depth**	9.5	cm	
Respiratory Rate	30-60	**Suction Cath**	8	f	
Minimum S/BP	60	**Laryngoscope Blade**	1	Miller	
Fluid Bolus	80 mL (up to 3x)	**GS Video Blade**	HA S1	**i-Gel**	1.0
NG Tube	NA	**Oral Airway (OPA)**	50	mm	

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	1 mg	0.5 mL
	Ketamine	NA	NA	NA
Paralysis	Rocuronium	1 mg/kg	4 mg	0.4 mL
	Succinylcholine	2 mg/kg	8 mg	0.4 mL
Maintenance	Ketamine	NA	NA	NA
	Midazolam	0.1 mg/kg	0.4 mg	0.1 mL
	Fentanyl	1 mcg/kg	4 mcg	0.1 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.04 mg	0.4 mL
	Atropine		0.02 mg/kg	0.1 mg	0.8 mL
	Lidocaine		1 mg/kg	4 mg	0.2 mL
	Magnesium Sulfate		50 mg/kg	200 mg	0.4 mL
	Adenosine	1st dose	0.1 mg/kg	0.4 mg	0.1 mL
		2nd dose	0.2 mg/kg	0.8 mg	0.3 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	8 J
	2nd dose	4 J/kg	15 J
Cardioversion	*1st dose*	1 J/kg	4 J
	2nd dose	2 J/kg	8 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.04 mg	0.04 mL
Diphenhydramine	1 mg/kg	4 mg	0.08 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.04 mg	0.04 mL
Magnesium Sulfate	50 mg/kg	200 mg	0.4 mL
Solumedrol	2 mg/kg	8 mg	0.1 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	0.8 mg	0.2 mL
2nd choice	Midazolam IV	0.1 mg/kg	0.4 mg	0.1 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	2 g	20 mL
Glucagon	*standard dose*	0.5 mg	0.5 mL
Narcan	0.1 mg/kg	0.4 mg	0.4 mL
Cyanokit	70 mg/kg	280 mg	11 mL

Pediatric Resuscitation

NWREMS PEDS CARD — 6 KG — PINK

Release date 5/1/2024

Age	4-6 months	**ET Tube Size-** *cuffed*	3.0 mm
Heart Rate	100-180	**ET Tube Insertion Depth**	10.5 cm
Respiratory Rate	30-60	**Suction Cath**	8 f
Minimum S/BP	70	**Laryngoscope Blade**	1 Miller
Fluid Bolus	130 mL (up to 3x)	**Video Blade**	HA S2 **i-Gel** 1.5
NG Tube	NA	**Oral Airway (OPA)**	50 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	2 mg	1 mL
	Ketamine	NA	NA	NA
Paralysis	Rocuronium	1 mg/kg	6 mg	0.6 mL
	Succinylcholine	2 mg/kg	12 mg	0.6 mL
Maintenance	Ketamine	NA	NA	NA
	Midazolam	0.1 mg/kg	0.6 mg	0.1 mL
	Fentanyl	1 mcg/kg	6 mcg	0.1 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.06 mg	0.6 mL
	Atropine		0.02 mg/kg	0.1 mg	1.2 mL
	Lidocaine		1 mg/kg	6 mg	0.3 mL
	Magnesium Sulfate		50 mg/kg	300 mg	0.6 mL
	Adenosine	1st dose	0.1 mg/kg	0.6 mg	0.2 mL
		2nd dose	0.2 mg/kg	1 mg	0.4 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	15 J
	2nd dose	4 J/kg	50 J
Cardioversion	*1st dose*	1 J/kg	6 J
	2nd dose	2 J/kg	15 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.06 mg	0.06 mL
Diphenhydramine	1 mg/kg	6 mg	0.1 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.06 mg	0.06 mL
Magnesium Sulfate	50 mg/kg	300 mg	0.6 mL
Solumedrol	2 mg/kg	12 mg	0.2 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	1 mg	0.2 mL
2nd choice	Midazolam IV	0.1 mg/kg	0.6 mg	0.1 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	3 g	30 mL
Glucagon	*standard dose*	0.5 mg	0.5 mL
Narcan	0.1 mg/kg	0.6 mg	0.6 mL
Cyanokit	70 mg/kg	420 mg	17 mL

Checklist Section

Pediatric Resuscitation

NWREMS PEDS CARD	8 KG	RED	Release date 5/1/2024

Age	7-12 months	**ET Tube Size-** *cuffed*	3.5 mm
Heart Rate	100-180	**ET Tube Insertion Depth**	11 cm
Respiratory Rate	30-60	**Suction Cath**	8 f
Minimum S/BP	70	**Laryngoscope Blade**	1 Miller
Fluid Bolus	170 mL (up to 3x)	**Video Blade**	HA S2 **i-Gel** 1.5
NG Tube	10 f	**Oral Airway (OPA)**	50 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	2 mg	1 mL
	Ketamine	NA	NA	NA
Paralysis	Rocuronium	1 mg/kg	8 mg	0.8 mL
	Succinylcholine	2 mg/kg	16 mg	0.8 mL
Maintenance	Ketamine	NA	NA	NA
	Midazolam	0.1 mg/kg	0.8 mg	0.2 mL
	Fentanyl	1 mcg/kg	8 mcg	0.2 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.08 mg	0.8 mL
	Atropine		0.02 mg/kg	0.2 mg	1.6 mL
	Lidocaine		1 mg/kg	8 mg	0.4 mL
	Magnesium Sulfate		50 mg/kg	400 mg	0.8 mL
	Adenosine	1st dose	0.1 mg/kg	0.8 mg	0.3 mL
		2nd dose	0.2 mg/kg	2 mg	0.5 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	15 J
	2nd dose	4 J/kg	50 J
Cardioversion	*1st dose*	1 J/kg	8 J
	2nd dose	2 J/kg	15 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.08 mg	0.08 mL
Diphenhydramine	1 mg/kg	8 mg	0.2 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.08 mg	0.08 mL
Magnesium Sulfate	50 mg/kg	400 mg	0.8 mL
Solumedrol	2 mg/kg	16 mg	0.3 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	1.6 mg	0.3 mL
2nd choice	Midazolam IV	0.1 mg/kg	0.8 mg	0.2 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	4 g	40 mL
Glucagon	*standard dose*	0.5 mg	0.5 mL
Narcan	0.1 mg/kg	0.8 mg	0.8 mL
Cyanokit	70 mg/kg	560 mg	22 mL

Pediatric Resuscitation

NWREMS PEDS CARD 10 KG PURPLE

Release date 5/1/2024

Age	1-2 years	**ET Tube Size-** *cuffed*	3.5 mm
Heart Rate	90-170	**ET Tube Insertion Depth**	12 cm
Respiratory Rate	24-40	**Suction Cath**	8 f
Minimum S/BP	72	**Laryngoscope Blade**	1 Miller
Fluid Bolus	210 mL (up to 3x)	**Video Blade**	HA S2 **i-Gel** 2.0
NG Tube	10 f	**Oral Airway (OPA)**	60 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	3 mg	1.5 mL
	Ketamine	Refer to Ketamine dose card		
Paralysis	Rocuronium	1 mg/kg	10 mg	1.0 mL
	Succinylcholine	2 mg/kg	20 mg	1.0 mL
Maintenance	Ketamine	Refer to Ketamine dose card		
	Midazolam	0.1 mg/kg	1 mg	0.2 mL
	Fentanyl	1 mcg/kg	10 mcg	0.2 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.1 mg	1.0 mL
	Atropine		0.02 mg/kg	0.2 mg	2.0 mL
	Lidocaine		1 mg/kg	10 mg	0.5 mL
	Magnesium Sulfate		50 mg/kg	500 mg	1.0 mL
	Adenosine	1st dose	0.1 mg/kg	1 mg	0.3 mL
		2nd dose	0.2 mg/kg	2 mg	0.7 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	20 J
	2nd dose	4 J/kg	50 J
Cardioversion	*1st dose*	1 J/kg	10 J
	2nd dose	2 J/kg	20 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.10 mg	0.1 mL
Diphenhydramine	1 mg/kg	10 mg	0.2 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.1 mg	0.1 mL
Magnesium Sulfate	50 mg/kg	500 mg	1.0 mL
Solumedrol	2 mg/kg	20 mg	0.3 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	2 mg	0.4 mL
2nd choice	Midazolam IV	0.1 mg/kg	1 mg	0.2 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	5 g	50 mL
Glucagon	*standard dose*	0.5 mg	0.5 mL
Narcan	0.1 mg/kg	1.0 mg	1.0 mL
Cyanokit	70 mg/kg	700 mg	28 mL

Pediatric Resuscitation

NWREMS PEDS CARD	13 KG	YELLOW	Release date 5/1/2024

Age	2-3 years	**ET Tube Size-** *cuffed*	4.0 mm
Heart Rate	90-160	**ET Tube Insertion Depth**	13 cm
Respiratory Rate	24-40	**Suction Cath**	8 f
Minimum S/BP	74	**Laryngoscope Blade**	2 Miller
Fluid Bolus	260 mL (up to 3x)	**Video Blade**	HA S3 **i-Gel** 2.0
NG Tube	10 f	**Oral Airway (OPA)**	60 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	4 mg	2 mL
	Ketamine	Refer to Ketamine dose card		
Paralysis	Rocuronium	1 mg/kg	13 mg	1.3 mL
	Succinylcholine	2 mg/kg	26 mg	1.3 mL
Maintenance	Ketamine	Refer to Ketamine dose card		
	Midazolam	0.1 mg/kg	1 mg	0.2 mL
	Fentanyl	1 mcg/kg	13 mcg	0.3 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.1 mg	1.3 mL
	Atropine		0.02 mg/kg	0.3 mg	2.6 mL
	Lidocaine		1 mg/kg	13 mg	0.7 mL
	Magnesium Sulfate		50 mg/kg	650 mg	1.3 mL
	Adenosine	1st dose	0.1 mg/kg	1 mg	0.4 mL
		2nd dose	0.2 mg/kg	3 mg	0.9 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	50 J
	2nd dose	4 J/kg	50 J
Cardioversion	*1st dose*	1 J/kg	15 J
	2nd dose	2 J/kg	50 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.1 mg	0.1 mL
Diphenhydramine	1 mg/kg	13 mg	0.3 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.1 mg	0.1 mL
Magnesium Sulfate	50 mg/kg	650 mg	1.3 mL
Solumedrol	2 mg/kg	26 mg	0.4 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	3 mg	0.5 mL
2nd choice	Midazolam IV	0.1 mg/kg	1 mg	0.3 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	7 g	65 mL
Glucagon	*standard dose*	0.5 mg	0.5 mL
Narcan	0.1 mg/kg	1.3 mg	1.3 mL
Cyanokit	70 mg/kg	910 mg	36 mL

Pediatric Resuscitation

NWREMS PEDS CARD — 16 KG — WHITE

Release date 5/1/2024

Age	3-5 years	**ET Tube Size-** *cuffed*	4.5 mm
Heart Rate	80-140	**ET Tube Insertion Depth**	14 cm
Respiratory Rate	22-34	**Suction Cath**	8 f
Minimum S/BP	78	**Laryngoscope Blade**	2 Miller
Fluid Bolus	340 mL (up to 3x)	**Video Blade**	HA S3 **i-Gel** 2.0
NG Tube	10 f	**Oral Airway (OPA)**	60 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	5 mg	2.5 mL
	Ketamine	Refer to Ketamine dose card		
Paralysis	Rocuronium	1 mg/kg	16 mg	1.6 mL
	Succinylcholine	2 mg/kg	32 mg	1.6 mL
Maintenance	Ketamine	Refer to Ketamine dose card		
	Midazolam	0.1 mg/kg	2 mg	0.3 mL
	Fentanyl	1 mcg/kg	16 mcg	0.3 mL

CARDIAC		DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)	0.01 mg/kg	0.2 mg	1.6 mL
	Atropine	0.02 mg/kg	0.3 mg	3.2 mL
	Lidocaine	1 mg/kg	16 mg	0.8 mL
	Magnesium Sulfate	50 mg/kg	800 mg	1.6 mL
	Adenosine 1st dose	0.1 mg/kg	2 mg	0.5 mL
	2nd dose	0.2 mg/kg	3 mg	1.1 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	50 J
	2nd dose	4 J/kg	70 J
Cardioversion	*1st dose*	1 J/kg	15 J
	2nd dose	2 J/kg	50 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.2 mg	0.2 mL
Diphenhydramine	1 mg/kg	16 mg	0.3 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.2 mg	0.2 mL
Magnesium Sulfate	50 mg/kg	800 mg	1.6 mL
Solumedrol	2 mg/kg	32 mg	0.5 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	3 mg	0.6 mL
2nd choice	Midazolam IV	0.1 mg/kg	2 mg	0.3 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	8 g	80 mL
Glucagon	*standard dose*	0.5 mg	0.5 mL
Narcan	0.1 mg/kg	1.6 mg	1.6 mL
Cyanokit	70 mg/kg	1120 mg	45 mL

Checklist Section

Pediatric Resuscitation

NWREMS PEDS CARD	20 KG	BLUE	Release date 4/5/2024

Age	5-6 years	**ET Tube Size-** *cuffed*	5.0 mm
Heart Rate	70-130	**ET Tube Insertion Depth**	16 cm
Respiratory Rate	20-30	**Suction Cath**	8 f
Minimum S/BP	82	**Laryngoscope Blade**	2 Mac or Miller
Fluid Bolus	400 mL (up to 3x)	**Video Blade**	HA S3 **i-Gel** 2.0
NG Tube	10 f	**Oral Airway (OPA)**	70 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	6 mg	3 mL
	Ketamine	Refer to Ketamine dose card		
Paralysis	Rocuronium	1 mg/kg	20 mg	2.0 mL
	Succinylcholine	2 mg/kg	40 mg	2.0 mL
Maintenance	Ketamine	Refer to Ketamine dose card		
	Midazolam	0.1 mg/kg	2 mg	0.4 mL
	Fentanyl	1 mcg/kg	20 mcg	0.4 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.2 mg	2.0 mL
	Atropine		0.02 mg/kg	0.4 mg	4.0 mL
	Lidocaine		1 mg/kg	20 mg	1.0 mL
	Magnesium Sulfate		50 mg/kg	1000 mg	2.0 mL
	Adenosine	1st dose	0.1 mg/kg	2 mg	0.7 mL
		2nd dose	0.2 mg/kg	4 mg	1.3 mL

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	50 J
	2nd dose	4 J/kg	100 J
Cardioversion	*1st dose*	1 J/kg	20 J
	2nd dose	2 J/kg	50 J

ALLERGIC REACTION / ASTHMA	DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction			
Epinephrine IM (1:1)	0.01 mg/kg	0.2 mg	0.2 mL
Diphenhydramine	1 mg/kg	20 mg	0.4 mL
Severe Asthma (after Albuterol/Atrovent)			
Epinephrine IM (1:1)	0.01 mg/kg	0.2 mg	0.2 mL
Magnesium Sulfate	50 mg/kg	1000 mg	2.0 mL
Solumedrol	2 mg/kg	40 mg	0.6 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	4 mg	0.8 mL
2nd choice	Midazolam IV	0.1 mg/kg	2 mg	0.4 mL

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	10 g	100 mL
Glucagon	*standard dose*	1 mg	1 mL
Narcan	0.1 mg/kg	2.0 mg	2.0 mL
Cyanokit	70 mg/kg	1400 mg	56 mL

Checklist Section

Pediatric Resuscitation

NWREMS PEDS CARD	26 KG	ORANGE	Release Date: 4/11/2024

Age	7-8 Years	ET Tube Size: *Cuffed*	5.5 mm
Heart Rate	70-130	ET Tube Insertion Depth	17 cm
Respritory Rate	18-30	Suction Cath	14 f
Minimum S/BP	86	Laryngoscope Blade	2 Mac or Miller
Fluid Bolus	520 mL (up to 3x)	Oral Airway (OPA)	70 mm
NG Tube	14 f	i-Gel 2.0	

RSI			DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate		0.3 mg/kg	8 mg	3.9 mL
	Ketamine		1 mg/kg	26 mg	0.26 mL
Paralysis	Rocuronium		1 mg/kg	26 mg	2.6 mL
Maintenance	Ketamine		0.5 mg/kg	13 mg	0.3 mL
	Midazolam		0.1 mg/kg	3 mg	0.5 mL
	Morphine		0.1 mg/kg	2.6 mg	0.26 mL
CARDIAC			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
	Epinephrine (1:10)		0.01 mg/kg	0.3 mg	2.6 mL
	Atropine		0.02 mg/kg	0.5 mg	5.0 mL
	Lidocaine		1 mg/kg	26 mg	1.3 mL
	Magnesium Sulfate		50 mg/kg	1300 mg	2.6 mL
	Adenosine	1st dose	0.1 mg/kg	3 mg	0.9 mL
		2nd dose	0.2 mg/kg	5 mg	1.7 mL
	Procainamide		4 mg/kg	104 mg	25-50 mg/min
SHOCK ENERGY			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Defibrillation		1st dose	2 J/kg	50 J	
		2nd dose	4 J/kg	100 J	
Cardioversion		1st dose	1 J/kg	50 J	
		2nd dose	2 J/kg	50 J	
ALLERGIC REACTION/ASTHMA			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Allergic Reaction					
	Epinephrine IM (1:1)		0.01 mg/kg	0.3 mg	0.3 mL
	Diphenhydramine		1 mg/kg	26 mg	0.5 mL
	Epinephrine (1:10)		2.6-10 mcg/min		
	Famotadine		0.25 mg/kg	6.5 mg	16.3 mL
Severe Asthma (after Albuterol/Atrovent)					
	Epinephrine IM (1:1)		0.01 mg/kg	0.3 mg	0.3 mL
	Magnesium Sulfate		50 mg/kg	1300 mg	2.6 mL
	Solumedrol		2 mg/kg	52 mg	0.8 mL
	Dexamethasone/Decadron		0.6 mg/kg	15.6 mg	3.9 mL
SEIZURE			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
	1st Choice	Midazolam IM/IN	0.2 mg/kg	5 mg	1.0 mL
	2nd Choice	Midazolam IV	0.1 mg/kg	3 mg	0.5 mL
OTHER			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
	Dextrose 10%		5 mL/kg	13 g	130 mL
	Acetaminophen		15 mg/kg	390 mg	39 mL
	Glucagon		*standard dose*	1 mg	1 mL
	Narcan		0.1 mg/kg	2.0 mg	2.0 mL
	Ketamine		0.5-2 mg/kg/hr	52 mg/hr	

Checklist Section

Pediatric Resuscitation

NWREMS PEDS CARD	32 KG	GREEN	Release date 5/1/2024

Age	9-10 years	**ET Tube Size-** *cuffed*	6.0 mm
Heart Rate	60-110	**ET Tube Insertion Depth**	18 cm
Respiratory Rate	18-30	**Suction Cath**	14 f
Minimum S/BP	90	**Laryngoscope Blade**	3 Mac or Miller
Fluid Bolus	660 mL (up to 3x)	**Video Blade**	HA S3 **i-Gel** 3.0
NG Tube	14 f	**Oral Airway (OPA)**	80 mm

RSI			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Induction	Etomidate		0.3 mg/kg	10 mg	5 mL
	Ketamine		Refer to Ketamine dose card		
Paralysis	Rocuronium		1 mg/kg	32 mg	3.2 mL
	Succinylcholine		2 mg/kg	64 mg	3.2 mL
Maintenance	Ketamine		Refer to Ketamine dose card		
	Midazolam		0.1 mg/kg	3 mg	0.6 mL
	Fentanyl		1 mcg/kg	32 mcg	0.6 mL
CARDIAC			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
	Epinephrine (1:10)		0.01 mg/kg	0.3 mg	3.2 mL
	Atropine		0.02 mg/kg	0.5 mg	5.0 mL
	Lidocaine		1 mg/kg	32 mg	1.6 mL
	Magnesium Sulfate		50 mg/kg	1600 mg	3.2 mL
	Adenosine	1st dose	0.1 mg/kg	3 mg	1.1 mL
		2nd dose	0.2 mg/kg	6 mg	2.1 mL
SHOCK ENERGY			**DOSE/KG**	**TOTAL DOSE**	
Defibrillation		*1st dose*	2 J/kg	70 J	
		2nd dose	4 J/kg	125 J	
Cardioversion		*1st dose*	1 J/kg	50 J	
		2nd dose	2 J/kg	70 J	
ALLERGIC REACTION / ASTHMA			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
Allergic Reaction					
	Epinephrine IM (1:1)		0.01 mg/kg	0.3 mg	0.3 mL
	Diphenhydramine		1 mg/kg	32 mg	0.6 mL
Severe Asthma (after Albuterol/Atrovent)					
	Epinephrine IM (1:1)		0.01 mg/kg	0.3 mg	0.3 mL
	Magnesium Sulfate		50 mg/kg	1600 mg	3.2 mL
	Solumedrol		2 mg/kg	64 mg	1.0 mL
SEIZURE			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
	1st choice	Midazolam IM/IN	0.2 mg/kg	5 mg	1.0 mL
	2nd choice	Midazolam IV	0.1 mg/kg	3 mg	0.6 mL
OTHER			**DOSE/KG**	**TOTAL DOSE**	**VOLUME**
	Dextrose 10%		5 mL/kg	16 g	160 mL
	Glucagon		*standard dose*	1 mg	1 mL
	Narcan		0.1 mg/kg	2.0 mg	2.0 mL
	Cyanokit		70 mg/kg	2240 mg	90 mL

Pediatric Resuscitation

NWREMS PED CARD Child/Adolescent 50kg

Release Date: 5/1/2024

Age	~ 11-14 years	**ET Tube Size-** *cuffed*	6.5 mm
Heart Rate	60-110	**ET Tube Insertion Depth**	19.5 cm
Respiratory Rate	18-30	**Suction Cath**	14 f
Minimum S/BP	90	**Laryngoscope Blade**	3 Mac or Miller
Fluid Bolus	1000 mL	**Video Blade**	HA S3 **i-Gel** 3-4
NG Tube	14 f	**Oral Airway (OPA)**	80 mm

RSI		DOSE/KG	TOTAL DOSE	VOLUME
Induction	Etomidate	0.3 mg/kg	15 mg	7.5 mL
	Ketamine	**Refer to Ketamine dose card**		
Paralysis	Rocuronium	1 mg/kg	50 mg	5.0 mL
	Succinylcholine	**2 mg/kg**	**100 mg**	**5.0 mL**
Maintenance	Ketamine	Refer to Ketamine dose card		
	Midazolam	**0.1 mg/kg**	**5mg (2mg inc)**	**1.0 mL**
	Fentanyl	1 mcg/kg	50 mcg	1.0 mL

CARDIAC			DOSE/KG	TOTAL DOSE	VOLUME
	Epinephrine (1:10)		0.01 mg/kg	0.5 mg	5.0 mL
	Atropine		**0.02 mg/kg**	**0.5 mg**	**5.0 mL**
	Lidocaine		1 mg/kg	50 mg	2.5 mL
	Magnesium Sulfate		**50 mg/kg**	**2000 mg**	**4.0 mL**
	Adenosine	1st dose	0.1 mg/kg	5 mg	1.7 mL
		2nd dose	**0.2 mg/kg**	**10 mg**	**3.4 mL**

SHOCK ENERGY		DOSE/KG	TOTAL DOSE
Defibrillation	*1st dose*	2 J/kg	100 J
	2nd dose	**4 J/kg**	**200 J**
Cardioversion	*1st dose*	1 J/kg	50 J
	2nd dose	**2 J/kg**	**100 J**

ALLERGIC REACTION / ASTHMA		DOSE/KG	TOTAL DOSE	VOLUME
Allergic Reaction				
	Epinephrine IM (1:1)	**0.01 mg/kg**	**0.3 mg**	**0.3 mL**
	Diphenhydramine	1 mg/kg	50 mg	1.0 mL
Severe Asthma (after Albuterol/Atrovent)				
	Epinephrine IM (1:1)	0.01 mg/kg	0.3 mg	0.3 mL
	Magnesium Sulfate	**50 mg/kg**	**2000 mg**	**4.0 mL**
	Solumedrol	2 mg/kg	100 mg	1.6 mL

SEIZURE		DOSE/KG	TOTAL DOSE	VOLUME
1st choice	Midazolam IM/IN	0.2 mg/kg	10 mg	2.0 mL
2nd choice	**Midazolam IV**	**0.1 mg/kg**	**5mg (2mg inc)**	**1.0 mL**

OTHER	DOSE/KG	TOTAL DOSE	VOLUME
Dextrose 10%	5 mL/kg	25 g	250 mL
Glucagon	***standard dose***	**1 mg**	**1 mL**
Narcan	0.1 mg/kg	2 mg repeat PRN	2.0 mL
Cyanokit	**70 mg/kg**	**3500 mg**	**140 mL**

County Specific Protocols

Insert here and number as follows:

Clallam County Pg. 244-A
Jefferson County Pg. 244-B
Mason County Pg. 244-C
Kitsap County Pg. 244-D
West Olympic Peninsula Pg. 244-E

MASON COUNTY EMS & TRAUMA COUNCIL

Behavioral Health Response Policy – Mason EMS Clinical Policy

CHAPTER: 2000 NUMBER: 2150 DATE: 6-21-18

APPROVED: Joe Hoffman, M.P.D _____

APPROVED: Greg Seals, Chair Greg Seals

I. Purpose

A. To establish and ensure consistent response to behavioral health emergencies throughout Mason County, with emphasis on patient, provider, and community safety, while ensuring dignity for individuals experiencing behavioral challenges from mental health disorders or substance abuse disorders.

II. Persons Affected

A. EMS Response personnel
B. Medical Services Officers
C. Mason County Law Enforcement
D. Behavioral Health Providers
E. Receiving medical facilities

III. Policy

A. Mason County EMS providers will safely and appropriately assist those experiencing behavioral health crises. This assistance includes on scene interventions, transport to appropriate facilities, and specialized follow up care where available. This policy is not intended to replace individual agency response policies and procedures, but to provide guidance to member agencies and field providers.

B. Definitions

1. Behavioral Health Navigator- An individual who works with a multidisciplinary team to support patients and address the social determinants that impact the patient's health by linking the patient with resources.
2. CARES- Community assistance referral and education services
3. Designated Crisis Responder- An individual identified by statute to evaluate if a person represents a harm to self/others, or is gravely disabled and in at imminent risk, or if there is a nonemergent risk due to a substance use disorder or mental disorder
4. Behavioral health- The connection between physical health and the well-being of the mind
5. Behavioral health crisis- Any situation in which a person's behavior puts them at risk of hurting themselves or others.
6. Crisis intervention officer/team- A community-based approach to intervene with incidents involving individuals with mental illness and/or addiction disorders.
7. Vulnerable person/population- Those who by race/ethnicity, age, or socioeconomic status are disadvantaged by inadequate healthcare.

8. Mental health professional- A health care provider or social and human services provider who offers services for the purpose of improving an individual's mental health or to treat mental disorders.
9. Behavioral Health Report- a supplement to ESO patient care report documenting a behavioral health patient incident.
10. Alternate destination – A transport destination other than an emergency department. See Alternate Destination Policy
11. Order of apprehension to detain – RCW 71.05.153- A DCR may issue an order of apprehension to detain (also known as a "custody authorization" or "custody order") specifying the patient in question be taken to an emergency department, crisis triage or crisis center.
12. Force Protection-Force protection refers to the concept of protecting fire/EMS personnel, civilians, facilities, equipment and operations from threats or hazards in order to preserve operational effectiveness
13. Implied Consent- Implied consent is consent which is not expressly granted by a person, but rather implicitly granted by a person's actions and the facts and circumstances of a particular situation.
14. Voluntary transport- Transport from one location to the next under informed consent.
15. Involuntary transport- Transport from one location to the next without informed consent and under the intent of implied consent.
16. Grave disability- A person is a threat to self or others based on their expressed thoughts, beliefs, actions, or inability to care for self.
17. Safety Plan- A plan and contract between a patient and healthcare provider for safety. It will include **names of 2 individuals and phone numbers the patient can contact for help, 2 safe activities to use as diversion, and a safe location to go to in order to avoid stressors**.

IV. Procedures

A. Dispatch
   i. Dual dispatch Law Enforcement/EMS
   ii. Requesting law enforcement as "force protection" vs. enforcement activities
   iii. Additional resources when patient restraint is likely
      1. Dispatching or notifying shift supervisor or BC for every field/scene pickup order
      2. Units shall dispatch or notify a BC or shift supervisor for pick up orders and/or chemical/physical restraint, when safe to delay

B. On Scene
   i. Access to the patient and scene safety.
      1. Emphasis on behavior at the time rather than known diagnoses, assumptions, or history
      2. When possible, make contact with patient outside. Obtain contact number for patient from dispatch.
   ii. Role of law enforcement- Aiding with scene safety for EMS crews and force protection.

iii. Assess patient's issues/agenda, capacity for decisions and BARS score (page 39 patient care protocols)

V. Disposition

A. Patients may transition between categories below

i. **Re-evaluate the scene and safety of your crew and the patient.**

B. Category I

i. A patient who does not request transport to hospital or crisis center. These patients are seeking resources.
ii. These patients have insight and capacity to make decisions.
iii. They are NOT actively suicidal or homicidal, and do not meet a definition of grave disability.
iv. These patients can make a safety plan as an interim.
v. Make contact with specialty resources when available, also look at past utilization of these resources effectiveness.
    1. **Mason County QRT 360-801-2020**
    2. **TeleCare Outreach 360-462-3016**
    3. **CCS Wrap Around/WISE : 13 to 18 years old 360-878-8248 or 789-6186**
    4. **Crisis Clinic 360-586-2777**
vi. Patient in Category I should sign a "Non-transport" release and the patient can wait for resources to meet with them. Document their safety plan in your narrative.

C. Category II

i. These are patients with some capacity and insight experiencing suicidal or homicidal ideation, or exacerbation of their chronic mental health disorders.
ii. In their capacity, they **are requesting** transport for treatment.
iii. Their consent is informed and their decision is voluntary.
iv. Transport to
    1. ED
    2. Alternate destination (Crisis Center or Detox)
    3. Destination can be influenced by
        a. Closest appropriate facility
        b. Anticipated hospital as directed by DCR
        c. Jurisdiction of BHO (Behavioral Health Organization)

D. Category III

i. These are patients who are gravely disabled by their suicidal/homicidal ideation, intoxication, or exacerbation of their chronic mental health disorder.
ii. They will lack the capacity and insight to make decisions
iii. Their consent for treatment is implied and their transport will be involuntary.
iv. EMS providers can gain access to the patient and the scene is safe
v. Contact DCR for on-scene evaluation OR contact DCR to describe the patient grave disability and **request an order for apprehension** be faxed to the intended destination. **DCR 360-754-1338**

vi. If DCR is unable to respond or cannot be reached **AND** you can **SAFELY** access the patient, contact base station for an order to transport the patient as they are "a threat to themselves or others".

vii. EMS providers may physically and/or chemically restrain patient **AS INDICATED** and document appropriately.

E. Category IV

i. These are violent, proclaim/threaten violence, possess a weapon, unable to gain safe and sustained access to the patient, and/or the scene is unsafe.

1. **Is the patient harming or threatening harm to people or property?**
2. **Is the patient threatening to harm themselves with a weapon?**
3. **Are there bystanders that appear to present a threat to the patient or responders?**
4. **Is there an identifiable risk factor that presents an unusual or extraordinary threat to the health and safety of responders?**

ii. **If any of the above is encountered, do not enter the scene. Stage and contact law enforcement.**

iii. IF LAW ENFORCEMENT DOES NOT RESPOND OR WILL NOT ENGAGE IN THE INCIDENT:

1. Contact your supervisor.
   a. Request additional fire resources. Two-person units should consider calling for an additional resource prior to any contact with the patient. Two-person units should not attempt to manage incidents where safety is in doubt.
   b. Supervisor will review and confirm risk assessment and use this review to guide further fire agency actions.
2. Whenever feasible, communicate directly with a LE officer about the case (options include face-to-face, via radio, MDT group chat, or cell phone). Confirm their intentions regarding their response.
3. When appropriate, request a phone number from dispatch to call and ask the patient to come outside or meet EMS personnel at a location that provides a greater margin of safety. Dispatch can act as intermediary for communication with patient. Any contact with the patient (e.g., phone, verbal, etc.) will be documented.
4. If patient contact is attempted, consider requesting a contact timer from MACECOM (at 3- to 5-minute intervals)
5. If the supervisor identifies that the fire agency may not safely enter (or remain on) the scene or safely contact the patient, the supervisor will attempt to update the reporting party.
6. Contact by dispatch with the reporting party will be attempted prior to leaving the scene if no patient contact can be attempted. Dispatch should be notified upon implementation of the decision to leave the scene.

VI. Documentation

ii. Personnel will use appropriate forms/etc. – Unusual Incident form

iii. 100% MSO review of pickup orders, physical restraint, or chemical restraint

iv. Use of Involuntary Psychiatric Hold or Patient Restraints

1. Triggers MSO review

v. Documentation in ESO/ERS

1. Descriptive overview of physical characteristics of the scene.

a. Example: Responded to an unconscious person in a car in a parking lot.

2. Description of the danger or safety elements involved.

a. Example: Person is in a vehicle; crew cannot see the persons hands or if there are weapons.

b. Example: The person will not engage with providers attempt to contact.

c. Example: The person indicates they do not want help, approached, bothered.

3. List and describe measures used to attempt to engage the patient.

a. Example: Attempted to call out to the person from a distance.

b. Example: Attempted to use the public address system to contact the person.

c. Describe other specific mitigation measures.

4. List and describe measures used to attempt to create safety.

a. Example: Requested law enforcement and/or mental health professionals and/or CRP.

b. Example: Attempted to evaluate the scene from a distance.

c. Describe other specifically identified hazards.

5. Describe why safety could not be established.

a. Example: Unable to gain reasonable cooperation from person.

b. Because the person was threatening firefighters.

c. Example: Law Enforcement could/would not respond or engage.

6. Document exposure to violence or threats of violence in ESO personnel module.

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