

State of Hawaii
Department of Health

MOBILE INTENSIVE CARE TECHNICIAN

ADULT & PEDIATRIC STANDING ORDERS



June 2018

Emergency Medical Services
&
Injury Prevention System Branch

AUTHORIZED EMS FORMULARY

Acetaminophen <i>(Elixir and Tablet)</i>	Dextrose D50%
Adenosine	Diazepam
Albuterol <i>(Inhaler and Nebulizer)</i>	Diazepam Auto Injector
Amiodarone	Dopamine
Aspirin	Epinephrine 1:1,000
Atropine	Epinephrine 1:10,000
Atropine Auto Injector	Etomidate
Diphenhydramine <i>(Oral and Injectable)</i>	Fentanyl
Calcium Gluconate	Glucagon
Dextrose D10%	Glucose <i>(Oral)</i>
Dextrose D25%	Ipratropium Nebulizer Dose Vial
	Lidocaine 1%
	Lidocaine 20%

Lorazepam
Magnesium Sulfate
Midazolam
Morphine Sulfate
Naloxone
Nitroglycerin
(Sublingual)
Norepinephrine
Ondansetron
Oxytocin
2-PAM/Pralidoxime
Auto Injector
Sodium Bicarbonate
Sodium Thiosulfate
Succinylcholine
Vinegar (Topical)

APPROVED MEDICAL ABBREVIATIONS

AAA	abdominal aortic aneurysm
ACLS	advanced cardiac life support
AHA	American Heart Association
ALS	advanced life support
AMS	altered mental status
APGAR	newborn evaluation score <i>(Appearance/Pulse/Grimace/ Activity/Respiration)</i>
ASAP	as soon as possible
AV	atrioventricular
BP	blood pressure
BVM	bag-valve-mask device
CCO	comfort care only
CHF	congestive heart failure
CPA	cardiopulmonary arrest
CPAP	continuous positive airway pressure
CPR	cardiopulmonary resuscitation

DNR	do not resuscitate
ECG	electrocardiogram
ED	emergency department
EKG	electrocardiogram
EMS	emergency medical services
ETA	estimated time of arrival
EtCO ₂	end-tidal carbon dioxide
ETCO ₂	continuous waveform capnography
ET	endotracheal
ETT	endotracheal tube
ga	gauge
GCS	Glasgow Coma Scale
GI	gastrointestinal
HP	high performance
HP-CPR	high performance cardiopulmonary resuscitation
HR	heart rate
IM	intramuscular
IN	intranasal

IO	intraosseous
IV	intravenous
LPM	liters per minute
MI	myocardial infarction
MICT	mobile intensive care technician
NALS	neonatal advanced life support
NRP	neonatal resuscitation program
NS	normal saline
NTG	nitroglycerine
ODT	orally dissolving tablet
O ₂	oxygen
POLST	provider orders for life sustaining treatment
PALS	pediatric advanced life support
PATI	paralytic assisted tracheal intubation
PEA	pulseless electrical activity
PO	by mouth
PO _x	pulse oximetry
PPE	personal protective equipment

PVAD	pre-existing vascular access device
ROSC	return of spontaneous circulation
RR	respiratory rate
RSI	rapid sequence intubation
SBP	systolic blood pressure
SO	standing orders
SOB	shortness of breath
SGA	supraglottic airway
STEMI	ST-segment elevation myocardial infarction
TKO	to keep open
VF	ventricular fibrillation
VS	vital signs
VT	ventricular tachycardia

UNITS OF MEASURE		
bpm		beats per minute
cc		cubic centimeters
gm		gram
g/kg		gram per kilogram
kg		kilogram
mcg		microgram
mcg/kg		microgram per kilogram
mEq/kg		milliequivalent per kilogram
mg		milligram
mg/dL		milligram per deciliter
mg/kg		milligram per kilogram
mg/mL		milligram per milliliter
mL		milliliter
mL/kg		milliliter per kilogram
mm		millimeter
mmHg		mm of mercury (Torr)

GENERAL GUIDELINES

These Standing Orders shall allow paramedics to perform time sensitive procedures and treatments prior to communication with the Base Station Physician. Paramedics may, at their discretion, because of how ill a patient appears or because of mechanism of injury, administer oxygen, apply continuous cardiac monitoring, and establish prophylactic IV access with a saline lock or IV solution at TKO rate even if the circumstances are not covered in the following specific Standing Orders.

Besides the provision of treatment, paramedics and EMTs are also expected to perform and document an appropriate assessment of the patient including a history

and physical examination to the extent of their abilities. These should be done whenever possible and as appropriate to the situation.

These Standing Orders outline standard treatment guidelines for specific patient presentations. However, it is recognized that in some cases, it may be more appropriate for certain items within the orders to be done simultaneously, or in a different sequence (except for procedures that require a specific sequence of actions; e.g. RSI), or may possibly be deemed unnecessary, based on the specific situation. It should also be remembered that prehospital care is often performed in a stressful environment with time critical decisions. Prehospital providers will use these Standing Orders and treatment

protocols in conjunction with their training and experience to do what they believe is best for the patient. It is likely that there will sometimes be circumstances that may arise which are not covered by these protocols. In those situations, providers shall function within their scope of practice and should use all available resources as appropriate, including on-line medical consultation with the base station if needed, to provide the best possible patient care.

EMTs are authorized to initiate IVs and perform manual external defibrillation under the direction and personal supervision of a paramedic if the EMT has completed a State approved IV / Defibrillation course of training.

Whenever in doubt as to the next step in ongoing patient care, or if important

information should be relayed to the
Emergency Department:

**COMMUNICATE WITH BASE STATION
PHYSICIAN FOR FURTHER ORDERS**

PART 1: PROCEDURES AND SKILLS

1-1. Continuous Positive Airway Pressure (CPAP)

Apply CPAP if **ALL** of the following conditions below are present and there are no contraindications:

- 1) The patient is awake and can cooperate with CPAP;
- 2) CPAP mask fits the patient;
- 3) The patient is able to maintain an open airway;
- 4) The patient exhibits two or more of the following:
 - a) Respiratory rate greater than 20 breaths per minute.
 - b) Oxygen saturation of less than 94% while on oxygen, or persistent dyspnea.

- c) Accessory muscles are used during respiration.
 - d) Rales audible to auscultation are present.
- 5) If CPAP fails, consider ET intubation, or do BVM / BVM with Supraglottic Airway (SGA).

Monitor O₂ saturation and continuous waveform EtCO₂, place on cardiac monitor, and establish IV access.

PART 1: PROCEDURES AND SKILLS

1-2. End Tidal Carbon Dioxide (EtCO₂)

Use continuous wave EtCO₂ with any critically ill patient, advanced airway or sepsis patients.

PART 1: PROCEDURES AND SKILLS

1-3. Intraosseous (IO) Vascular Access

IO can be used for critically ill patients with urgent need for an IV and no available veins for regular IV access. A careful skin prep is done and the proximal tibia is the preferred site for IO.

PART 1: PROCEDURES AND SKILLS

1-4. Oxygen Administration

The decision to administer oxygen shall be based upon the patient's presentation and guidelines below. Adjust the method of supplemental oxygen to the patient's needs:

- 1) No supplemental O₂ needed if:
 - a) The patient has no complaint and no appearance of shortness of breath; and,
 - b) Pulse oximetry "PO_x" shows an O₂ saturation \geq 94%.
- 2) A nasal cannula with O₂ at 2 LPM will be applied if:
 - a) The patient has a complaint of SOB with no appearance of SOB; and,
 - b) PO_x shows an O₂ saturation of \geq 94%.

- 3) A non-rebreather mask with O₂ at 10-15 LPM (just enough flow to keep the reservoir inflated) will be applied if the patient has any of the following:
 - a) Complaint of SOB;
 - b) Appearance of SOB;
 - c) Altered mental status “AMS”;

AND

 - d) The PO_x shows an O₂ saturation < 94%.
- 4) The oxygen regulator flow rates should not exceed 15 LPM. Higher LPM settings empty the oxygen tank faster with no treatment benefit.
- 5) Three diagnoses that are exceptions, that should all be given high flow 15 LPM O₂:
 - a) Barotrauma / decompression sickness;

- b) Suspected carbon monoxide poisoning; and,
 - c) Suspected cyanide exposure.
- 6) Bag Valve Mask “BVM” with O₂ at no more and no less than 15 LPM will be used to assist/ventilate the patient if the patient has any of the following:
- a) Complaint of SOB;
 - b) Appearance of SOB;
 - c) AMS;
- AND**
- d) Absent or inadequate ventilations.

PART 1: PROCEDURES AND SKILLS

1-5. Pain Reduction

For isolated extremity trauma, or significant burns, pain medication may be used selectively and cautiously, with the goal of partial relief of the pain while avoiding: over sedation, hypotension and obscuring head or torso injuries.

For these cases:

Administer oxygen [see 1-4. Oxygen Administration]

- 1) Establish normal saline IV at TKO rate.
- 2) If systolic BP is >100 mm Hg, administer either:
 - a) Morphine Sulfate 2 mg IV; or,
 - b) Fentanyl 50 mcg IV.

If systolic BP is still >100 mm Hg, may repeat:

Morphine Sulfate 2 mg IV; or,
Fentanyl 50 mcg IV.

For other severely painful conditions, communicate with base station physician for narcotic orders.

If the patient develops respiratory depression or difficulty after administration of pain medication, support their respiration as needed, trying to avoid a full reversal with Naloxone. If necessary give Naloxone 0.5 mg IV and repeat as needed up to a total dose of 2mg. If the IV has been lost, administer Naloxone 2mg intranasal (IN) using an atomizer or mister device. You must use the higher concentration form when administering Naloxone IN.

PART 1: PROCEDURES AND SKILLS

1-6. Rapid Sequence Intubation “RSI” or Paralytic Assisted Tracheal Intubation “PATI”

1-6-a. Indications

- 1) Inability to maintain oxygen saturation > 90% by any other more conventional means;
- 2) Inadequate ventilation; and,
- 3) Unable to protect airway.

As much as possible, hyper-oxygenation should be attempted pre-RSI, by administering high flow O₂ by mask, and also by doing **apneic oxygenation** via nasal prongs at 15 LPM before and during RSI.

1-6-b. Preparation

- 1) Start / increase pre-oxygenation.

- 2) Assure suction is available and set up.
- 3) Establish and secure an IV or an IO.
- 4) Place cardiac monitor and PO_x on patient.
- 5) Prepare waveform capnography.
- 6) Ready intubation equipment and supplies.
- 7) Setup alternate airway adjuncts: SGA and BVM.
- 8) Restrain patient, as appropriate.

1-6-c. Medication and RSI perform these steps, in this order

- 1) Preoxygenate.
- 2) Administer Etomidate 0.3 mg/kg up to a max dose of 30 mg IV/IO.
- 3) If Etomidate is not available, give Midazolam 0.1 mg/kg up to a maximum single dose of 10 mg IV/IO.

- You may repeat the Midazolam 0.1 mg/kg if it is needed to a maximum total dose of 0.3 mg/kg.
- 4) Support ventilation to the extent needed after giving sedation, using BVM with attached supplemental high flow O₂.
 - 5) Administer Succinylcholine 1.5 mg/kg IV/IO up to a maximum single dose of 200 mg.
 - 6) Apply backward, upward, rightward pressure to larynx (BURP maneuver) to facilitate intubation.
 - 7) Intubate and assess ET tube placement.
 - 8) Secure ET tube position and reassess tube placement.
 - 9) Monitor continuous waveform capnography/EtCO₂ to ensure ongoing correct tube placement.

- 10) Administer additional Midazolam, or add Midazolam after Etomidate, as needed for continued patient sedation up to a total of 0.3 mg/kg.
- 11) Any sedation should be administered by slow IV push.
- 12) If relaxation is inadequate to allow intubation after 1-2 minutes, recheck IV quality. If needed, start a new IV/IO, then repeat the same dose of Succinylcholine and sedation, and re-attempt tracheal intubation.
- 13) If unable to intubate the paralyzed patient, insert SGA.
- 14) If unable to insert SGA, use BVM assisted ventilation with maximal attention to technique.
- 15) Ventilation optimal rates: When bagging the intubated patient and/or setting the ventilator rate, consider

the clinical situation pre-intubation and pick a respiratory rate that is appropriate.

- a) Normal = 12 /minute with a tidal volume of 8 cc/kg;
- b) Asthma = Slow, 8 /minute with a tidal volume of 6 cc/kg; and,
- c) Acidosis = Fast, 20 /minute with a tidal volume of 8 cc/kg.

PART 1: PROCEDURES AND SKILLS

1-7. Shock / Hypovolemia

For systolic BP < 90 mmHg which is considered to be secondary to hypovolemia:

- 1) Administer supplemental oxygen as needed, [see 1-4. Oxygen Administration]
- 2) Establish IV access with Normal Saline “NS” and infuse at a rapid rate.
- 3) If unable to start IV within 2 minutes, you may choose to obtain vascular access by IO
- 4) Do not delay transport
- 5) Establish second vascular access with NS while en-route: Infuse NS at a rapid rate until the BP is \geq 90 mmHg systolic (110 if a severe head injury is also present), then reduce to a TKO rate and monitor VS

6) If BP does not improve check for signs of a cardiogenic cause on the ECG monitor, or signs of obstructive shock such as neck vein distention and if these signs are present, reduce IV/IO infusion rate to TKO

PART 1: PROCEDURES AND SKILLS

1-8. Spinal Motion Restriction

Consider immobilizing a patient with a significant mechanism of injury if:

- 1) Decreased alertness: Any alteration in mental status? GCS < 15?
- 2) Intoxication: Any evidence of alcohol or drug intoxication?
- 3) Neuro exam: Any focal motor or sensory deficit? Any transient deficit that has resolved?
- 4) Distracting injuries: Any painful injury that might distract the patient from the pain of a spinal injury?
- 5) Exam: Any tenderness or pain over the midline of the cervical spine?
- 6) Extremes of age: be extra cautious in those patients younger than 5 years or older than 65 years.

Apply a cervical collar and perform spinal motion restriction as below:

- 1) Spinal motion restriction should be considered for any patient who has been subjected to mechanisms of injury that have a high index of suspicion for cervical, thoracic, lumbar or spinal cord injury.
- 2) Firmly secure the torso to EMS stretcher or conforming device (e.g., vacuum splint).
- 3) Use of a hard surface backboard should be avoided, but may be considered for cases in which:
 - a) The backboard is used for extrication from a scene / vehicle, but it should be removed after the patient is placed on the EMS stretcher.

- b) Removal of the backboard would delay the transport of a critical patient.
- c) The backboard is needed for CPR chest compressions.

PART 1: PROCEDURES AND SKILLS

1-9. Taser Dart Removal

Consider scene safety and medic safety, even with police present. The patient with embedded darts is at high risk for AMS, and for having injuries from an altercation or from a Taser-related fall. The darts are removed with a quick pull, the puncture wounds cleaned with alcohol and covered with band-aids. Do and document a good overall exam for injuries, ventilation, and mental status. Consider transporting the patient to ED for dart removal with darts embedded in eye, face, neck or genitals.

PART 1: PROCEDURES AND SKILLS

1-10. Termination of Resuscitation

Cardiac Arrest

- 1) If cardiac arrest patient has had ALS resuscitation for ≥ 20 minutes and is in asystole, or no Return of Spontaneous Circulation / ROSC, the case should be considered for field pronouncement.
- 2) Consider transporting patients when there are concerns for scene safety, provider safety, or if the scene is in a very public place.

Traumatic Cardiac Arrest

- 1) If patients are in asystole after significant blunt trauma or penetrating trauma, strongly consider field pronouncement.

2) Consider transporting patients when there are concerns for scene safety, provider safety, or if the scene is in a very public place.

PART 1: PROCEDURES AND SKILLS

1-11. Needle Thoracostomy

Suspect tension pneumothorax in the patient who has decreased breath sounds unilaterally or throughout the lungs and persistent hypoxia with poor lung compliance. Particularly, at risk are patients with severe blunt trauma or penetrating trauma to the chest or abdomen who are receiving positive pressure ventilation. Note that additional signs of tension pneumothorax such as tracheal deviation and subcutaneous emphysema may be absent.

- 1) Establish an IV access and provide high flow oxygen.
- 2) Consider diagnostic mimics like improper endotracheal tube placement (ETT too deep) and

- hemothorax. Also consider your ETA to the ED, and time to communicate a possible diagnosis and trauma activation alert to the ED.
- 3) If the oxygen saturation cannot be maintained above 90% and there is either BP \leq 80 mmHg systolic (impending cardiac arrest) or PEA then perform a needle thoracostomy to decompress the suspected tension pneumothorax.
 - 4) Do this at the midclavicular line at the 2nd intercostal space or at the anterior axillary line 5th intercostal space.
 - 5) Use a special long and large catheter: 14 ga X 3 ¼" length.
 - 6) Insert the needle into the chest wall perpendicular to the rib. Once the needle contacts the rib, then direct the

needle over the rib into the target interspace.

- 7) Leave the catheter in place.
- 8) Post procedure: recheck VS, lung sounds, PO_x, and then report any changes to the ED.

PART 1: PROCEDURES AND SKILLS

1-12. Transport Interfacility

A paramedic will accept an order to transfer a patient by 911 ambulance from one medical facility to another (whether directly or as a segment of an air ambulance transfer) if **ALL** of the following conditions are met:

- 1) The order comes from a Hawaii Base Station Physician, on duty in the ambulance service region;
- 2) The paramedic is adequately informed of the patient's diagnosis, condition, medications, allergies, and expected course during ambulance transport;
- 3) Also important to know is the patient's Provider Orders for Life-Sustaining Treatment / POLST / Comfort Care

- Only / CCO / Do Not Resuscitate / DNR status; and,
- 4) There is an accepting physician at the destination facility, and the destination facility agrees to receive the patient.

A request from a non-hospital medical facility should be treated as a 911 ambulance call rather than as an interfacility transfer. The paramedic may use Standing Orders during transfer, if indicated, and shall communicate with the receiving hospital if he / she does this.

PART 1: PROCEDURES AND SKILLS

1-13. Trauma / Bleeding Control

- 1) Extremity wounds
 - a) Apply direct pressure using a gloved hand or finger and very little gauze.
 - b) If direct pressure does not control the bleeding within 1-2 minutes, proceed quickly to a tourniquet (commercial tourniquet preferred).
 - c) Tourniquet should be placed proximally on the thigh or upper arm.
 - d) If 1st tourniquet does not stop the bleeding, apply an additional tourniquet close to the first one (proximally, if possible).
- 2) Wounds outside the chest and abdominal cavities (i.e. in the axilla or

groin): do direct pressure first, then consider packing the wound by layering a roll of gauze into the wound, followed by application of direct pressure over the wound packing.

PART 1: PROCEDURES AND SKILLS

1-14. Documentation Protocol for a Patient's Refusal to Transport: See Appendices

PART 2: ADULT STANDING ORDERS

2-1. Cardiovascular

Most Cardiology topics will be managed according to the latest version of the AHA/ACLS Textbook and algorithms. Check them for current details.

PART 2: ADULT STANDING ORDERS

2-1 Cardiovascular

2-1-a. Cardiac Arrest

Patients will be managed with ACLS and special attention to consistently doing High Performance CPR (**HP-CPR**), including:

- 1) Begin Chest Compressions
 - a) Rate of 110/minute (use a metronome timer if available)
 - b) Depth of 2 - 2.5 inches = 5 - 6 cm (“push hard”)
 - c) Change compressors at least every 1 - 2 minutes
 - d) Continuous chest compressions / **minimal** interruptions
- 2) Apply AED or Defibrillator / Monitor, then shock if a shockable rhythm or when advised by AED
- 3) BVM

- a) Intersperse one breath every 10 chest compressions
 - b) Avoid over ventilation (10-12 breaths per minute, 6-8 cc/kg)
 - c) ET intubation only if able to do so without interrupting chest compressions for more than 3-5 seconds
 - d) ET intubation only if there are enough personnel to perform chest compressions and BVM properly
 - e) Other options include supraglottic airway devices
 - f) Do ALS when there are adequate staffing resources / personnel to provide chest compressions and ventilations properly, and then do ACLS per AHA current Guidelines
- 4) HP - CPR Goals:

- a) Maximize time spent on quality chest compressions (a goal is > 90% of the time). Minimize pauses and interruptions.
 - b) Pauses for no more than a few seconds including for IV access and for inserting airway devices.
 - c) If patient meets criteria for death, has a valid POLST form or a CCO DNR bracelet or pendent, then do not initiate HP CPR unless other circumstances warrant it.
- 5) Post CPA successful resuscitation cases are very unstable and the Paramedic should be vigilant for recurrent VT/ VF, and ensure adequate manpower in the ambulance before transporting.
 - 6) Termination of Resuscitation: Field pronouncements and avoiding futile transports of clinically dead CPA cases

[see 1-10. Termination of Resuscitation]

- a) If cardiac arrest patient has had ALS resuscitation for ≥ 20 minutes with no return of spontaneous circulation “ROSC” and is in asystole, the case should be considered of field pronouncement.
- b) Consider transporting patient in cardiac arrest, who are asystole, when there are concerns such as scene safety, provider safety, and CPA in a public place.

PART 2: ADULT STANDING ORDERS

2-1 Cardiovascular

2-1-b. Chest Pain

For ongoing or recent chest discomfort suggestive of myocardial ischemia:

- 1) Administer O₂ [see 1-4. Oxygen Administration]. N supplemental O₂ is used if PO_x is $\geq 94\%$.
- 2) If pain persists, BP > 100 mmHg systolic and there are no contraindications, administer nitroglycerin “NTG” 0.4 mg sublingual spray or tablet. Contraindications include the recent use of drugs for erectile dysfunction (generic names end in “afil”) and also evidence of right ventricular infarction such as an inferior myocardial infarction “MI” with hypotension. May repeat NTG

- every 5 minutes if BP remains > 100 mmHg systolic.
- 3) Obtain 12-lead ECG. If significant ST elevations are present, notify receiving hospital as soon as possible, using the phrase “STEMI Alert”. Transport to the closest appropriate hospital, preferably one with percutaneous coronary intervention / PCI capability.
 - 4) Whether pain persists or has resolved, administer aspirin 162 mg orally if the patient has no history of allergic reaction to aspirin. If the patient has a recent history of gastrointestinal bleeding contact the base station physician before administering the aspirin.
 - 5) Establish IV with NS at TKO rate.

6) If chest pain is unrelieved by 3 doses of NTG, communicate for additional orders.

PART 2: ADULT STANDING ORDERS

2-1 Cardiovascular

2-1-c. Congestive Heart Failure and Pulmonary Edema

For patients with dyspnea and rales present in both lungs, with absence of fever (<100°F) then:

- 1) Administer O₂ [see 1-4. Oxygen Administration]
- 2) Apply continuous positive airway pressure [see 1-1. Continuous Positive Airway Pressure (CPAP)]
- 3) Establish IV at TKO rate
- 4) If BP < 90 mmHg systolic, give norepinephrine 4-12 mcg per minute via automatic IV infusion pump, adjusted to maintain BP of 100 - 110 mmHg. To do this, put 4 mg into 500 ml of NS (= 8 mcg/ ml). Start the

infusion at $\frac{1}{2}$ ml/minute, and titrate rate to get desired BP \geq 100-110 mmHg systolic.

- 5) If BP greater than 90 mmHg systolic and no contraindications (for NTG contraindications [see 2-1-b. Chest Pain]) administer NTG 0.4 mg sublingual spray or tablet. May repeat every 5 minutes up to a total of 5 doses if BP \geq 100 mmHg systolic

PART 2: ADULT STANDING ORDERS

2-1 Cardiovascular

2-1-d. Dysrhythmias

For all bradycardia / tachycardia / PEA / asystole patients, see the current AHA ACLS guidelines and algorithms.

PART 2: ADULT STANDING ORDERS

2-1 Cardiovascular

2-1-e. CPA in Renal Dialysis Patient

Because a renal dialysis patient in CPA (of any type) can have profound hyperkalemia, administer these medications as soon as the IV has been established. These medications are in addition to any other applicable SO. These orders should be carried out whether or not the patient has had a recent dialysis.

- 1) Calcium gluconate 10% solution, give 10 ml IV/IO push.
- 2) Flush IV/IO line thoroughly.
- 3) Sodium bicarbonate 1 mEq/kg IV/IO push.
- 4) If no change, flush IV line thoroughly and repeat steps 1-3, again.

**CONTINUE CARDIAC ARREST STANDING
ORDERS**

PART 2: ADULT STANDING ORDERS

2-2 Central Nervous System

2-2-a. Altered Mental Status

- 1) Check respiratory status and PO_x .
- 2) Check blood glucose: if < 70 mg/dl treat as directed in Hypoglycemia SO
- 3) If blood glucose ≥ 70 mg/dl and $PO_x < 94\%$ on supplemental O_2 , or respiratory rate ≤ 6 per minute, then support respiration as needed.
- 4) If the patient seems to be over sedated administer naloxone 0.4 – 2 mg intranasal “IN”/IV/IO. May repeat doses as needed, titrating initially, then larger doses until respiratory status improved.
- 5) If the history and physical exam suggest a probable fentanyl or carfentanyl overdose, consider giving

- higher dose of naloxone, until a total dose of ≥ 8 + mg has been given.
- 6) When giving naloxone IN, you must use the 1 mg/ml (stronger concentration) vials or the special new 4 mg per nostril / 0.1 ml nasal mister device.
 - 7) If patient is not improved and no IV is available, give naloxone 2 mg IM

PART 2: ADULT STANDING ORDERS

2-2 Central Nervous System

2-2-b. Excited Delirium Syndrome / Severe Agitation

Patients with excited delirium or severe agitation are so agitated and uncontrollable that they pose a danger to themselves and others. There is a very high risk for sudden cardiac arrest, so sedation is urgent. Scene safety and safety while transporting is essential. Consider getting police to help ensure the safety of the medics and patient.

Treatment:

- 1) Midazolam 10 mg IN. You must use the higher concentration (5 mg/ml) when giving this medication IN. Administer half the dose into each nostril using a

- mucosal atomizer device. May repeat dose x 1 after 15 minutes, if needed.
- 2) Establish IV with NS at TKO rate.
 - 3) Place patient on cardiac monitor.
 - 4) Place PO_x and continuous wave capnography “ETCO₂”.
 - 5) Check glucose and treat as needed.
 - 6) Check temperature. Patient is at high risk for severe hyperthermia. Cool patient as needed.
 - 7) If needed, administer midazolam 2 mg IV. May repeat every 2 minutes for a total of 6 mg (this is in addition to the initial IN midazolam).
 - 8) Contact base station so they can prepare for receiving this patient and also if needed for additional medication orders.

9) Be prepared to support airway and breathing with O₂ [see 1-4. Oxygen Administration]

10) If midazolam for IV is unavailable, substitute with:

a) Diazepam 5 mg IV for an initial dose. Repeat every two minutes up to a maximum of 3 doses (15 mg total IV dose). Call for further orders if additional sedation is still needed.

OR USE

b) Lorazepam 2 mg IV for an initial dose. Repeat every 2 minutes up to a maximum of 3 doses (6 mg total IV dose). Call for further orders if additional sedation is still needed.

PART 2: ADULT STANDING ORDERS

2-2 Central Nervous System

2-2-c. Seizures and Status Epilepticus

Continuous generalized seizures or repeated seizures without return to consciousness.

- 1) Administer O₂ [see 1-4. Oxygen Administration]
- 2) Check blood glucose [see 2-6 Metabolic]
- 3) If seizure has lasted more than 5 minutes since it began, administer midazolam 10 mg IN or IM. You must use midazolam 5 mg/ml (stronger concentration) when administering by the IN route. Administer half the total dose in each nostril using a mucosal atomizer device. If midazolam is not available, go directly to the next

paragraph to start the IV and give diazepam IV without any delay.

- 4) If seizure activity does not stop in 2 minutes, establish IV with NS at TKO rate. Administer diazepam 5 mg slow IV push. This dose of IV diazepam may be repeated once if seizure activity does not stop after an additional 2 minutes. If seizure continues more than 5 minutes after the 2nd diazepam IV dose, call for further orders.
- 5) Monitor oxygenation and be prepared to support airway.
- 6) If diazepam for IV use is unavailable, substitute with one of these:
 - a) Lorazepam 2 mg IV for an initial dose. If seizure activity does not stop in 2 minutes, repeat dose once. If seizure continues more

than 5 minutes after the 2nd lorazepam dose call the base station physician for further orders.

OR USE

- b) Midazolam 2 mg IV for an initial dose. If seizure activity does not stop in 2 minutes, repeat once. If seizure continues more than 5 minutes after the 2nd midazolam dose call the base station physician for further orders.
- 7) Monitor respiratory status and support as needed. Avoid intubation if PO_x can be maintained above 90% with supplemental O₂.

PART 2: ADULT STANDING ORDERS

2-2 Central Nervous System

2-2-d. Stroke

- 1) If a stroke or Cerebral Vascular Accident / CVA is suspected, find specific new focal neuro deficits, use the LA Prehospital Stroke Scale/ LAPSS and get information from family / caregivers. Try for minimal scene time and bring a family member or another reliable historian in the ambulance, if possible. Go to the closest hospital appropriate for CVAs.
- 2) Check glucose, start IV and cardiac monitor.
- 3) Get the time of onset of the event, or a best estimate of this event time from family members, or the time the patient was last seen to be normal.

- 4) The MICT or the EMT should do a brief early communication for any possible stroke, and if the physical exam indicates this, include the attention getting phrase “Stroke Code: LAPSS Positive” with the above information.
- 5) The MICT on arrival in the hospital ED will state that they have a patient with “Stroke Code: LAPSS Positive” to encourage quick evaluation.

PART 2: ADULT STANDING ORDERS

2-3 Environmental

2-3-a. Allergic Reactions

Minor

Administer diphenhydramine 25 – 50 mg
PO/IV/IM

Major / Anaphylaxis

- 1) Administer O₂ [see 1-4. Oxygen Administration]
- 2) Administer epinephrine 1:1,000 (1 mg/1 ml) dose 0.3 mg IM
- 3) Establish IV NS and give 250 ml rapid infusion as needed to maintain BP > 90 mmHg systolic.
- 4) Administer diphenhydramine 25 mg IV. Repeat if needed in 10 minutes. If IV is unavailable administer diphenhydramine 50 mg IM.

- 5) In case of wheezing or respiratory distress administer aerosolized albuterol 5 mg (2 vials) with ipratropium 0.5 mg (1 vial) and repeat nebulizer treatment if needed.
- 6) If patient persistently hypotensive continue IV NS bolus. If unable to establish IV the establish IO access.
- 7) If patient remains in critical condition, administer epinephrine IV or IO at 0.1 mg increments titrated up to 0.5 mg. For more accurate dosing, use the dilute form 1:10,000 which is 0.1 mg/ml. Have the IV running briskly, and give the IV epinephrine dose slowly, over 1-2 minutes.
- 8) Monitor cardiac monitor and VS.
- 9) If no IV or IO access available repeat epinephrine 1:1,000 0.3 mg IM 5 minutes after 1st dose, if still in shock.

PART 2: ADULT STANDING ORDERS

2-3 Environmental

2-3-b. Burns

Types: thermal, electrical, chemical, and radiation

- 1) General considerations: Monitor airway and support as needed. If there is no indication for intubation, administer oxygen [see 1-4. Oxygen Administration]. Use high flow at 15 liters for suspected cyanide or carbon monoxide.
- 2) Establish IV with Normal Saline. If the burn is second or third degree and involves more than 15% of the patient's total body surface area, administer a 500 ml NS fluid bolus.
- 3) Remove rings, bracelets, and other constricting items.

- 4) Treat the patient's pain per the pain reduction [see 1-5 Pain Reduction].
- 5) Cover the burn with dry sheet or dressing. If the burn surface area is less than 15 %, then a wet or cold water-soaked dressing may be used for pain relief. Avoid direct contact of ice with burned area.

Burns: Special Considerations:

- 6) Chemical Burn:
 - a) Dust off chemical, remove clothing, irrigate wound with NS.
 - b) For Eye exposure irrigate with NS for 15 minutes.
- 7) Electrical Burn:
 - a) Do not contact patient until source of electrical shock is safely removed.

- b) Monitor cardiac rhythm
 - c) Obtain history of the nature of electrical source (AC/DC), voltage, and amperage.
- 8) Radiation Burns – are possible from industrial or medical radiation sources.
- a) Consider scene safety, and involving the County HazMat Team
 - b) The person harmed by radiation is not likely be an ongoing source of radiation dangerous to others.

PART 2: ADULT STANDING ORDERS

2-3 Environmental

2-3-c. Drowning

- 1) Administer oxygen per [see 1-4. Oxygen Administration]. Early, optimized and continuous respiratory support is our most important action in this diagnosis.
- 2) Start an IV.
- 3) For wheezing, [see 2-8-b. Bronchospasm].
- 4) If indicated, apply Continuous Positive Airway Pressure (CPAP) [see 1-1. Continuous Positive Airway Pressure]

PART 2: ADULT STANDING ORDERS

2-3 Environmental

2-3-d. Heat Illness

- 1) **HEAT EXHAUSTION** (= **NO** mental status change)
 - a) Remove patient from hot environment and remove outer layers of clothing
 - b) Check VS / Temperature (core Temp if possible)
 - c) Cool body with ice packs (to groin, axilla, and neck), wet cool towels, evaporative cooling with air conditioning and fans, but avoid making patient shiver.
 - d) Cardiac monitor
 - e) Check Glucose and treat as needed

- f) IV NS (250 ml boluses, repeat as needed up to 2 L) for rehydration if indicated.
- 2) **HEAT STROKE** (= **with** mental status change)
- a) Heat stroke is a time sensitive, life threatening condition involving hyperthermia.
 - b) Measure Temp – a core temp is preferable
 - c) **COOL the patient as quickly as possible** to $\leq 102^{\circ}\text{F}$. (This may require staying at the scene to achieve rapid cooling).
 - i. If patient is in ice water bath immersion, let patient remain there for a few minutes until AMS improves and/or core temp is $\leq 102^{\circ}\text{F}$ (avoid causing hypothermia). This will likely take

- approx. 5-8 minutes total time in ice bath immersion. Ice bath immersion is the fastest, most efficient way to rapidly cool a pt.
- ii. If no ice water bath immersion is available, cool patient with ice packs, and also use wet towels to head, torso, arms, legs with evaporative cooling methods [see 2-3-d. Heat Illness].
 - iii. IV NS giving NS 250 ml boluses up to 2 L, if not contraindicated
 - iv. Apply cardiac monitor—watch for arrhythmias
 - v. Check Glucose and treat as needed
 - vi. Watch for seizures and if needed [see 2-2-c. Seizures and Status Epilepticus]
 - vii. Notify receiving hospital early

PART 2: ADULT STANDING ORDERS

2-3 Environmental

2-3-e. SCUBA Diving Injuries / Decompression Sickness + Barotrauma

If the patient breathed underwater, and may have a diving injury (air embolism / barotrauma / decompression sickness) then:

- 1) Put the patient on high flow 15 LPM NRB mask oxygen and start an IV TKO
- 2) Manage the airway, examine the patient and look for other serious illnesses (aspiration, STEMI, trauma, etc.)
- 3) To get a reliable dive history, if possible bring along with the patient their dive computer (with regulator, if connected) and their dive buddy, or

- dive master (or their cell phone numbers).
- 4) Early communication with the receiving Emergency Department to discuss the case, including a possible IV fluid challenge.
 - 5) All patient transfers done by aircraft should be done at low altitude / sea level cabin pressure.

PART 2: ADULT STANDING ORDERS

2-4 Gastrointestinal

2-4-a. Abdominal Pain / GI Bleed

- 1) For patients with possible large GI bleeds or AAA consider starting two large bore IV lines.
- 2) For epigastric area pain consider doing an EKG.
- 3) IV pain management should be done only if needed, after a detailed communication to MD.

PART 2: ADULT STANDING ORDERS

2-4 Gastrointestinal

2-4-b. Severe Vomiting

- 1) Choose either oral or intravenous route for treatment. For oral treatment, administer Ondansetron 4 mg sublingual. Repeat once if needed after 5 minutes.
- 2) For intravenous treatment, establish IV NS at TKO rate. Administer 4 mg slowly IV, over 2 min. May repeat 4 mg IV once after 5 minutes.
- 3) Apply cardiac monitor and PO_x, and evaluate patient for possible cardiac or other serious causes of vomiting.

PART 2: ADULT STANDING ORDERS

2-5-Infectious

2-5-a. General Infectious Disease

Guidelines

For patients transported with suspected infectious diseases and a recent travel history, early notification of the receiving hospital is important so that appropriate isolation precautions may be prepared.

Use of appropriate Personal Protective Equipment and following infectious disease protocols will help protect EMS providers and their subsequent contacts from infections. These precautions include:

- 1) Routine use of gloves, and frequent hand washing.
- 2) Use of anti-bacterial hand cleansers before and after patient contact.

- 3) Avoidance of contact of hands to face.
- 4) Barrier protection from bodily fluids (gloves, gowns, boot covers).
- 5) Careful removal of protective equipment is necessary to minimize infection risk after patient contact.
- 6) Eye protection from fluids or droplets.
- 7) Mouth and nose protection from inhaled pathogens (surgical mask on patient, N-95 mask on EMS provider).
- 8) Personal immunization for healthcare workers against appropriate infectious diseases is highly recommended.

PART 2: ADULT STANDING ORDERS

2-5-Infectious

2-5-b. Sepsis

- 1) If the patient is suspected of having an infection, with ≥ 2 of these:
 - a) HR > 100 bpm
 - b) Temp > 100°F or rigors (shaking chills)
 - c) SBP < 100 mmHg
 - d) RR > 20 per minute
 - e) Altered Mental Status / Delirium / Confusion / Agitation
- 2) Then sepsis is possible and you should:
 - a) Supplemental oxygen to O₂ sat = 95-98%
 - b) IV NS 15 cc/kg up to a 1 liter bolus. This may be repeated once if SBP remains < 90 mmHg systolic.

- c) Monitor vitals, and recheck lung sounds after every 500 cc of fluid infusion.
 - d) ETCO₂ monitoring
- 3) Does the patient have any one (1) of the following toxic signs?
- a) HR > 130 bpm
 - b) SBP < 90 mmHg
 - c) RR > 30 per minute
 - d) ETCO₂ ≤ 25 mmHg
- 4) Then Severe Sepsis or Septic Shock is likely. Mortality Risk 20 – 50%, and you should:
- a) Give IV NS 30 cc/kg or up to 2 liters total.
 - b) Notify receiving ED of suspected septic shock so they can prepare for blood cultures and antibiotics on arrival.

PART 2: ADULT STANDING ORDERS

2-6-Metabolic

2-6-a. Hypoglycemia / Insulin Reaction

Check blood glucose. If blood glucose reading < 70 mg/dl perform the following steps:

- 1) If patient is alert and able to swallow and maintain their airway, administer oral glucose preparation approximately 12 - 30 grams PO *. Go to step 4 below.
- 2) If patient is not alert or is not able to swallow and protect their airway, start IV NS at TKO rate and give glucose 12.5 gm IV (25 ml of 50% dextrose solution **)
- 3) If unable to start IV, give glucagon 1 mg IM.

4) Recheck blood glucose. Treat as needed

*Oral glucose preparations are commonly available ranging from 4 gm tablets to 15 gm of gel, as a single unit dose or as multiple doses.

**If D50W is unavailable, other solutions (D25W, D10W or D5W may be used, with the amounts given titrated to clinical improvement while minimizing fluid overload. Fluid choices in order to give 12.5 gm of glucose (Dextrose):

D50 = 25 cc

D10 = 125 cc

D25 = 50 cc

D5 = 250 cc

PART 2: ADULT STANDING ORDERS

2-6-Metabolic

2-6-b. Hyperglycemia

Notify receiving hospital of high glucose level.

PART 2: ADULT STANDING ORDERS

2-7-Pregnancy

2-7-a. Active Labor: Not Imminent

- 1) IV saline lock
- 2) Position patient in the left lateral recumbent position.

PART 2: ADULT STANDING ORDERS

2-7-Pregnancy

2-7-b. Active Labor: Impending Newborn Delivery

- 1) Administer O₂ 10 - 15 liters per minute via mask.
- 2) Start IV saline lock and prepare for delivery of newborn.
- 3) Check the perineum for crowning of the head, or prolapsed cord. If prolapse is present, do the following:
 - a) Instruct patient not to push.
 - b) Position patient in knee-chest position (facing down).
 - c) Use gloved fingers to lift presenting part, and relieve compression of the cord.
- 4) For any OB complications (such as prolapsed cord, breech, shoulder,

- dystocia, etc.), **COMMUNICATE** with base station physician and stress the presence of the complicating factor.
- 5) If labor progresses to delivery:
 - a) Control the baby's head to assist the mother: place one hand over the fetal head and apply minimal stabilizing pressure to prevent explosive birth and to carefully catch the baby.
 - b) Feel for cord wrapped around neck and, if present, lift it gently over the head. If cord is too tight to lift over the head, double clamp the cord, then cut it between the clamps.

After delivery continue care as follows -

Baby:

- 1) Just after delivery, place baby on mother's abdomen.

- 2) Suction baby's mouth and nose with bulb syringe as needed to clear baby's airway.
- 3) Clamp cord approximately 10 inches from the baby and second clamp 2 inches further towards mother. Cut the cord between the clamps.
- 4) Keep the newborn warm, dry, wrapped.
- 5) Do APGAR evaluations at 1 minute and 5 minutes.
- 6) Follow Neonatal / Newborn Resuscitation Pediatric SO or current NRP / NALS / PALS guidelines.

After delivery - Mother:

- 1) After "routine" healthy delivery of the baby and also the placenta, then apply firm rubbing pressure to the uterus through the lower abdominal wall.

- 2) If post-partum vaginal bleeding is severe: Add Oxytocin 20 units to 1 liter NS and run wide open until bleeding is controlled, or until 1 liter is infused.
- 3) If excessive hemorrhage or shock, [see 1-7. Shock/Hypovolemia].

PART 2: ADULT STANDING ORDERS

2-7 Pregnancy

2-7-c. Eclampsia

Pregnancy-related hypertension and hyper-reflexia, possibly progressing to seizures

- 1) Check glucose and treat if hypoglycemia [see 2-6-a. Hypoglycemia/Insulin Reaction].
- 2) Cardiac monitor
- 3) Minimize lights, noise, other stressors
- 4) Position left lateral recumbent.
- 5) Magnesium Sulfate 4 gm IV (in 100 ml NS) drip given slowly, over 20 minutes
- 6) If seizures continuing 5 min after beginning IV Magnesium Sulfate, administer Midazolam 2 mg IV/IN/IO/IM.
- 7) Continuous assessment of patient's airway, VS, and mental status.

Magnesium Sulfate may cause hypotension and decreased respiratory drive, so monitor closely.

PART 2: ADULT STANDING ORDERS

2-7 Pregnancy

2-7-d. Vaginal Bleeding in Pregnancy

Possible placenta previa or placental
abruption:

- 1) Start 2 large bore IV lines
- 2) If necessary, treat for hypovolemic shock [see 1-7. Shock/Hypovolemia].
- 3) If > 20 weeks, position patient in left lateral recumbent.

PART 2: ADULT STANDING ORDERS

2-8 Respiratory

2-8-a. Respiratory Failure

This SO applies in cases of either impending respiratory arrest or respiratory arrest as shown by:

- 1) Inability to maintain O₂ saturation \leq 90% mmHg.
- 2) Respiratory rate < 6 breaths per minute.
- 3) Extreme work of breathing.

Where a pulse exists:

- 1) Do PO_x and ETCO₂
- 2) Provide rescue breathing by assisted bag-valve mask / BVM ventilation with O₂. If patient continues to deteriorate perform tracheal intubation.

- 3) If unable to intubate successfully, perform the alternate airway management and respiratory support.
 - a) Secure airway with supraglottic airway / SGA or
 - b) Continue assisted ventilations with BVM with supplemental O₂
Establish IV NS at TKO, if not already done.
 - c) Perform RSI [see 1-6. Rapid Sequence Intubation].

PART 2: ADULT STANDING ORDERS

2-8 Respiratory

2-8-b. Bronchospasm

- 1) Administer O₂ [see 1-4. Oxygen Administration].
- 2) Administer inhalation aerosol Duo-Neb treatment: Add Albuterol 5 mg and Ipratropium 0.5 mg into nebulizer.
- 3) If initial treatment is insufficient, may repeat Duo-Neb treatments X 2.
- 4) If no response to first nebulizer treatment in the setting of a patient's history of CHF, or if pulmonary edema is suspected on examination, do not just repeat the nebulizer [see 2-1-c. Congestive Heart Failure and Pulmonary Edema].
- 5) If severely ill and no response to nebulizer treatments, consider:

- a) Epinephrine 0.3 mg 1:1,000 IM
 - b) Magnesium Sulfate 2 gm IV slow drip over 10 minutes
 - c) Epinephrine (1 mg mixed into 1,000 ml NS = 1 mcg/1 ml) IV drip 1 ml per minute
- 6) If a patient with severe bronchospasm requires tracheal intubation and is still hard to ventilate because of the bronchospasm, use the **Permissive Hypercapnea** approach, with gentle BVM bagging and a very slow BVM rate (8 per minute), with moderate tidal volume (6 cc/kg).

PART 2: ADULT STANDING ORDERS

2-8 Respiratory

2-8-c. Dyspnea

- 1) Administer O₂ [see 1-4. Oxygen Administration].
- 2) If congestive heart failure or pulmonary edema is suspected [see 2-1-c. Congestive Heart Failure and Pulmonary Edema].
- 3) If indicated, apply Continuous Positive Airway Pressure / CPAP [see 1-1. CPAP].

PART 2: ADULT STANDING ORDERS

2-8 Respiratory

2-8-d. Pneumothorax

Be aware that pneumothorax may be a cause of dyspnea, and it can also be an effect of our treatment, so avoid aggressive, high pressure ventilation with BVM or mechanical ventilator. Re-examine chest frequently and if needed, consider Needle Thoracostomy [see 1-11. Needle Thoracostomy].

PART 2: ADULT STANDING ORDERS

2-8 Respiratory

2-8-e. Pulmonary Edema / Congestive Heart Failure

For patient with dyspnea and rales present in both lungs, with the absence of fever [see 2-1-c. Congestive Heart Failure and Pulmonary Edema].

PART 2: ADULT STANDING ORDERS

2-9 Toxicology

2-9-a. General Management

- 1) Get a specific history of the poisoning, if available.
- 2) Collect pill bottles or containers at the scene.
- 3) Give supportive care if the cause of the poisoning is unknown.
- 4) Consider scene safety and personal protective equipment /PPE.

PART 2: ADULT STANDING ORDERS

2-9 Toxicology

2-9-b. Toxidromes

- 1) Depressant (opiates, benzodiazepines, alcohol).
- 2) Stimulants (cocaine, methamphetamine, other street drugs).
- 3) Hallucinogens (may be combined with other toxidromes, like stimulants).
- 4) Anticholinergic (caused by atropine, antihistamines, antidepressants, anti-parkinsonians, antipsychotics)
Symptoms: AMS, dilated pupils, fever, red dry skin).
- 5) Cholinergic: **SLUDGE** syndrome
(**S**alivation, **L**acrimation = teary eyes, **U**rination, **D**iaphoresis, **G**I upset = diarrhea, **E**mesis) Caused by some

insecticides, eating tobacco, e-cig
liquid, mushroom poisoning.

PART 2: ADULT STANDING ORDERS

2-9 Toxicology

2-9-c. Other Toxicology Topics

- 1) Carbon Monoxide “CO”: can be inhaled in a structure fire and is treated with high flow O₂. Some cardiac monitors can test for CO.
- 2) Cyanide: can be inhaled in a structure fire and causes very serious but non-specific illness. The best antidote is hydroxocobalamin = IV vitamin B12, and this is stored at the hospital. If available: Sodium Thiosulfate 12.5 g IV over 10 min.
- 3) Naloxone: reverses the opiates/narcotics but may have a shorter half-life than the ingested drug and should be titrated / dosed to get the desired effect of improved

- respiration, while avoiding abrupt narcotic withdrawal. Dose is 0.4 mg – 2 mg by IN/IV/IO, titrated up to 8 mg.
- 4) Nerve Agents: terrorist weapons, with special antidotes (pralidoxime/ 2-PAM, atropine, auto-injectors).
 - 5) Mass Psychogenic Illness: consider this when groups of several people have dramatic symptoms but not specific objective signs of severe illness.

PART 2: ADULT STANDING ORDERS

2-10 Trauma

2-10-a. Trauma: General Guidelines

Penetrating injuries and blunt trauma are time sensitive conditions which may require rapid hospital surgical intervention. EMS must expedite transport of these patients to hospitals and trauma centers. For patients with hemorrhagic shock a lower BP may be acceptable, as excessive fluid administration can lead to increased hemorrhage. Early communication with the receiving hospital is imperative so that **Trauma Activation** is facilitated. Provide condition updates to the receiving hospital for unstable patients. The paramedic shall:

- 1) Rapidly extricate and immobilize the patient if indicated [see 1-8. Spinal Motion Restriction].

- 2) Initiate transport
- 3) If patient airway and effort is unstable then support ventilation. If indicated, administer supplemental oxygen [see 1-4. Oxygen Administration]
- 4) Patients with head injury and/or shock who are breathing spontaneously and can maintain O₂ saturation > 90% should be transported without delay for definitive establishment of the airway at the hospital
- 5) Establish IV/ IO access with NS and administer fluid: in 250 mL boluses until systolic BP reaches 90mm if no head injury, or 110mm Hg in patients with suspected head injury
- 6) Once BP target is reached, then drop the infusion rate to TKO
- 7) Caution: Be aware of possible hypothermia in patients with large

- blood loss, large open wounds, or in elderly patients. If necessary cover patients with blankets and possibly turn off the air conditioning in the ambulance patient compartment
- 8) Physical exam should not repeatedly search for crepitus / manipulate the pelvis or other broken bones, since this increases pain and bleeding
 - 9) Dislodged teeth may be transported in a container with NS or milk, with care to not clean the tooth off, as this reduces the chances of successful reimplantation

PART 2: ADULT STANDING ORDERS

2-10 Trauma

2-10-b. Fractures, Extremity Injuries and Amputations

- 1) Control all major bleeding. Consider tourniquet use when direct pressure fails to control life threatening hemorrhage rapidly
- 2) Appropriate wound care: Cover open wound with sterile dressings
- 3) Splinting:
 - a) Immobilize stable fractures by placing a padded splint across the fracture, and the adjacent joints above and below
 - b) If an injured extremity is noted to be pulseless distal to an angulated fracture, a single attempt at

realignment may be performed prior to splinting

- c) Document distal vascular and neurological findings
 - d) For suspected isolated mid-shaft femur fractures without evidence of pelvic fracture, use a traction splint as indicated
- 4) Amputations: Cover amputated anatomy with saline moistened gauze, then covered by a dry dressing. Amputated body parts should be transported with cool, damp saline moistened gauze, in a sealed bag, and kept cool, but not packed directly on ice
- 5) Pain management [see 1-5. Pain Reduction]

PART 2: ADULT STANDING ORDERS

2-10 Trauma

2-10-c. Head Injuries

- 1) Perform a careful exam of the entire head and spine, and a brief neurological exam including Glasgow Coma Scale / GCS
- 2) Find out if the patient is on any blood thinner medications
- 3) Start an IV and give O₂, evaluate airway, control vomiting, and if possible, elevate the head of the bed 20 - 30 degrees
- 4) Try to avoid any hypoxic or hypotensive episodes. Keep PO_x 94-98% and BP ≥ 110 systolic
- 5) Repeat the GCS scoring for any apparent worsening on repeat neurological exams and notify the

receiving hospital of possible brain
herniation for unilateral pupil dilation
or abnormal posturing

PART 2: ADULT STANDING ORDERS

2-10 Trauma

2-10-d. Ocular Trauma

Eye injuries or periorbital injuries with possible injuries to the globe should be protected with a rigid eye shield, taped in place. Avoid any pressure on the globe.

PART 2: ADULT STANDING ORDERS

2-10 Trauma

2-10-e. Shock: Hypovolemia

For systolic BP < 90 mmHg which is considered to be secondary to hypovolemia [see 1-7. Shock/Hypovolemia].

PART 2: ADULT STANDING ORDERS

2-10 Trauma

2-10-f. Death Pronouncement

Traumatic Cardiac Arrest [see 1-10. Termination of Resuscitation].

- 1) Blunt Trauma: If patients are in asystole after significant blunt trauma, strongly consider field pronouncement
- 2) Penetrating Trauma: If patients are in asystole after significant penetrating trauma, strongly consider field pronouncement
- 3) Consider transporting patients in cardiac arrest, who are in asystole, when there are concerns such as scene safety, provider safety, and cardiac arrest in a very public place

PART 3: PEDIATRIC STANDING ORDERS

P-3-1 Introduction and General Guidelines

Respiratory failure is the most common cause of cardiac arrest in pediatric patients. Oxygen should be administered by mask at high flow rates (15 liters) to any serious patient initially, then per 1-4. Oxygen Administration. The adequacy of oxygenation and ventilation must be constantly re-evaluated. Bag-valve mask ventilation is preferred for children who require ventilatory support, especially if the transport time is short. The “Broselow Tape” or another pediatric dose resuscitation estimation tool should be used to pick the correct tracheal tube size and for estimating the patient’s weight. Vascular administration (IV or IO) of resuscitation

medications is preferable to administration by the tracheal route. Some drugs can be given intranasally (IN) by atomizing or misting the dose. Resuscitation drugs administered via peripheral IV or IO should be followed by a bolus of 5 ml Normal Saline (NS). Do not delay transport attempting to initiate an IV or an IO. Pediatric Standing Orders allow IO line placement for pulseless ventricular fibrillation, ventricular tachycardia, asystole, and pulseless electrical activity. For all other conditions, an attempt to communicate with the Base Station Physician should be made first before doing an IO line.

Critical pediatric patients may have unsuspected hypoglycemia. Check blood glucose early in their resuscitation.

Pediatric cardiac and respiratory topics will now follow the most current national **PALS** and **NALS / NRP** guidelines (see appendix).

Pediatric patients are defined here as less than 13 years old. For children the size of a small adult consider using adult Standing Orders.

PART 3: PEDIATRIC STANDING ORDERS

P-3-2 Cardiovascular

- 1) See **PALS** and **NALS / NRP** current guidelines.
- 2) Cardiac arrest and peri-arrest situations should be managed with special attention to respiratory support and re-evaluation. If CPR is done, it should be High Performance CPR / HP-CPR
- 3) Dysrhythmias: treat all types per current PALS guidelines

PART 3: PEDIATRIC STANDING ORDERS

P-3-3 Central Nervous System: Seizures and Status Epilepticus

Continuous generalized seizures or repeated seizures without return to consciousness.

- 1) Administer O₂ at 15 liters/minute by mask or BVM ventilation
- 2) Do blood glucose test and [see P-3-6 Metabolic: Hypoglycemia / Insulin Reaction]
- 3) If seizure has lasted more than 5 minutes since it began, administer one dose of Midazolam 2 mg IN or IM
 - a) 5 mg/ml concentration must be used for IN route; administer half in each nostril using mucosal atomizer device
- 4) Observe response and re-evaluate for repeat dose at 2 minutes.

- 5) If Midazolam is not available, establish an IV NS at TKO then administer Diazepam 1 mg slow IV push, followed with a NS flush; reassess for seizure after 2 minutes and, if needed, may repeat dosing up to a maximum of 10 mg IV or use rectal dosing
- 6) If using rectal dosing, administer one dose of Diazepam rectally, dosed by both age and estimated weight:
 - a) For < 6 y/o give 0.5 mg/kg
 - b) For 6-11 y/o give 0.3 mg/kg
 - c) For > 11 y/o give 0.2 mg/kgUp to 10 mg maximum
- 7) If Diazepam is unavailable, substitute with Lorazepam 0.1 mg/kg slow IV push or IN mist, up to maximum 4 mg per dose

8) Monitor respiratory status and support as needed (avoid intubation if adequate oxygenation is present)

PART 3: PEDIATRIC STANDING ORDERS

P-3-4 Environmental

P-3-4-a. Allergic Reaction, Minor

Administer Diphenhydramine 1 mg/kg
PO/IV/IM.

PART 3: PEDIATRIC STANDING ORDERS

P-3-4 Environmental

P-3-4-b. Allergic Reaction, Anaphylaxis

- 1) Administer O₂ [see 1-4. Oxygen Administration]
- 2) Administer Epinephrine (1:1,000) 0.01 mg/kg IM, maximum dose 0.3 mg / 0.3 ml
- 3) Establish IV NS and give 20 ml/kg fluid bolus
- 4) Administer Diphenhydramine 1 mg/kg PO/IM/IV
- 5) In case of wheezing or respiratory distress administer aerosolized Albuterol 5 mg (2 vials) simultaneously with Ipratropium 0.5 mg (1 vial)
- 6) If patient persistently hypotensive, continue IV NS bolus 20 ml/kg

- 7) If unable to establish IV the establish IO access.
- 8) If patient remains in critical condition:
 - a. Administer Epinephrine 0.01 mg/kg IV or IO
 - b. For more accurate dosing, use the dilute form 1:10,000 which is 0.1 mg/ml
 - c. Infuse IV briskly and administer the IV Epinephrine dose slowly, over 1-2 minutes
 - d. Monitor cardiac monitor and VS
- 9) If no IV or IO access available and patient is still in shock, repeat Epinephrine 0.01 mg/kg IM 5 minutes after first dose

PART 3: PEDIATRIC STANDING ORDERS

P-3-4 Environmental

P-3-4-c. Drowning

- 1) Administer O₂ [see 1-4. Oxygen Administration]
- 2) Consider CPAP if respiratory distress persists. Apply CPAP if **all** of the following conditions are present and there are no contraindications:
 - a) BP > 90 mmHg systolic
 - b) The patient is awake and able to tolerate the CPAP
 - c) The patient can fit the mask
 - d) The patient is able to maintain an open airway
- 3) Establish an IV NS at TKO
- 4) Be aware of possible hypothermia
- 5) Prevent further heat loss
- 6) Patient should be dry

- 7) Cover the patient with blankets and turn off the air conditioner in the ambulance patient compartment
- 8) Advise receiving facility/physician of CPAP use
- 9) If respiratory status deteriorates, remove the device and assist ventilations with BVM

PART 3: PEDIATRIC STANDING ORDERS

P-3-5 Gastrointestinal: Severe Vomiting

- 1) Choose either oral or intravenous route for treatment
- 2) For oral treatment, administer sublingual Ondansetron 2 - 4 mg ODT (orally dissolving tablet). For dosing:
 - a) Cut one 4 mg ODT in 1/2 for the 2 mg dose for children ≤ 20 kg
 - b) Give the whole 4 mg tablet for children more than 20 kg
 - c) Repeat once if needed after minutes.
 - d) For a semi-cooperative child, sublingual/tucked in the cheek/anywhere in the mouth/swallowed it accidentally are all acceptable

- 3) For intravenous treatment, establish IV Normal Saline at TKO rate, administer Ondansetron IV dose = 0.1 mg / kg, max 4 mg to be given slowly over 2 minutes, with IV fluids running
- 4) If vomiting is not controlled after 5 minutes, you may repeat the initial IV dose once
- 5) Apply pulse oximeter and evaluate the patient for possible serious causes of vomiting

PART 3: PEDIATRIC STANDING ORDERS

P-3-6 Metabolic: Hypoglycemia / Insulin Reaction

Check blood glucose. If blood glucose reading **<70** mg/dl (or **<40** mg/dl in newborn) perform the following steps:

- 1) If child is alert and able to swallow and maintain their airway, give glucose oral preparation 12 - 30 grams then go to step 4
- 2) If child is not alert or is not able to swallow and maintain their airway, start IV with Normal Saline at TKO rate and give Glucose according to age as follows:
 - a) For newborns give 0.2 g/kg = 2ml/kg of 10% Dextrose Solution.
 - i. If D10W is unavailable, prepare D10NS by diluting D50W by 4:1

with saline by taking a 250 ml bag of NS, withdraw and discard 50 cc of NS, add a 50 ml D50W prefill syringe to the bag and mix

ii. Label it D10NS

iii. Draw up dose

- b) For infants and **all** children older than 1 month, give glucose 0.5 g/kg or 5 ml/kg using D10W, (max dose = 12.5 g)
- 3) If unable to obtain IV access, give Glucagon 1 mg IM (0.5 mg IM if less than one year of age)
- 4) Recheck blood glucose and treat as needed

PART 3: PEDIATRIC STANDING ORDERS

P-3-7 Newborn Resuscitation

- 1) Warm, position, suction, dry, stimulate and evaluate respirations, heart rate and color.
- 2) If heart rate is less than 100 / min, or poor respirations and / or the neonate is noted to be cyanotic and limp:
Ventilate 20 breaths in 30 seconds by mask, using positive pressure, 100% O₂, and careful technique
- 3) If heart rate is still < 60, begin cardiac compressions at rate of 120 per minute, and give: Epinephrine (use the dilute 0.1 mg / ml form, old labeling 1:10,000) dose = 0.3 ml /kg. IV / IO or: Endotracheal Epinephrine dose 0.5 - 1.0 ml/kg ET (followed by 2 ml Normal

- Saline ET flush, and restart BVM);
repeat dose every 3-5 minutes
- 4) If heart rate remains < 60 , continue CPR and assisting ventilation with BVM (preferred) or intubate with 3.5 ET tube for full term (for premature: 3.0 ET for 2-3 kg and 2.5 ET for < 2 kg), and ventilate at a rate of 40-60 breaths/minute

PART 3: PEDIATRIC STANDING ORDERS

P-3-8 Respiratory

P-3-8-a. Bronchospasm

Respiratory distress with wheezing, not involving a foreign body.

- 1) Administer oxygen by mask [see 1-4. Oxygen Administration]
- 2) If in severe respiratory distress, give 0.01 mg/kg Epinephrine IM (use the 1 mg/1 ml form, old labeling = 1:1,000): give the dose IM up to 0.3 mg maximum especially if the patient is very poorly or not inhaling the nebulized medication
- 3) Administer 1st inhalation updraft aerosol treatment with Albuterol 2.5 mg via nebulizer. If initially in severe bronchospasm or impending respiratory arrest, increase the dose in

1st updraft treatment to Albuterol 5 mg (2 vials), plus Ipratropium dosed by age:

a) $\frac{1}{2}$ vial / 0.25 mg for age < 6, and

b) 1 vial / 0.5 mg for age > 6 added to nebulizer

4) If not improving, do a 2nd inhalation updraft treatment with Albuterol 5 mg plus Atrovent 0.5 mg via nebulizer

5) If still not improving, consider Mag Sulfate IV dose 50 mg /kg (maximum 2 g dose) given slowly for one dose

6) If patient with severe bronchospasm requires intubation and is very hard to ventilate because of severe

bronchospasm, consider use of ET

Epinephrine using the dilute, 0.1 mg/ml form, (old labeling = 1:10,000)

with the dose $0.1 \text{ ml/kg} = 0.01 \text{ mg/kg}$
syringe-misted/atomized down the

- endotracheal tube to reduce the bronchospasm
- 7) After intubation the patient's lungs may remain "tight"/stiff, so you should use special BVM or ventilator settings for safety:
 - a) Use a slow rate of 8 per minute
AND
 - b) Use a low tidal volume of 6 cc per Kg
 - 8) Use the end-tidal (EtCO₂) monitor

PART 3: PEDIATRIC STANDING ORDERS

P-3-8 Respiratory

P-3-8-b. Respiratory Arrest or Inadequate Airway

Where a Pulse Exists:

- 1) Open airway and administer oxygen by bag-valve-mask ventilation
- 2) If unable to ventilate with BVM consider Endotracheal intubation
- 3) If unable to intubate, continue assisted mask ventilations with very careful technique
- 4) Establish IV with Normal Saline at TKO rate

PART 3: PEDIATRIC STANDING ORDERS

P-3-9 Toxicology

Drug Overdose

- 1) Assess airway and respirations
- 2) Apply cardiac monitor
- 3) Start IV Normal Saline at TKO rate
- 4) Evaluate for “Toxidrome” type, to help plan the patient’s treatment
- 5) In suspected serious opiate overdose, administer Naloxone 0.1 mg/kg given by IN/IV/IO
- 6) In patients with no gag reflex, transport in left lateral decubitus position and be prepared to suction, to assist with BVM, or to intubate the airway if necessary
- 7) Bring in medication bottles/street drug containers/any available overdose or poison exposure information

PART 3: PEDIATRIC STANDING ORDERS

P-3-10 Trauma

P-3-10-a. Pain Reduction

For isolated extremity trauma or significant burns, pain medication may be used selectively and cautiously, with the goal of partial relief of the pain while avoiding: over sedation, hypotension and obscuring head or torso injuries. For these cases consider Fentanyl IV 1.0 mcg/kg or Fentanyl misted IN 1.5 mcg / kg. For other cases of severe pain, communicate with the base station.

PART 3: PEDIATRIC STANDING ORDERS

P-3-10 Trauma

P-3-10-b. Hypovolemic Shock

If the patient exhibits signs of shock considered to be secondary to hypovolemia:

- 1) Administer oxygen via mask or endotracheal tube
- 2) Establish IV with Normal Saline
- 3) If unable to start IV, and patient is in critical condition consider starting an IO
- 4) Rapidly infuse Normal Saline 20 ml/kg
- 5) Do not delay transport
- 6) Be aware of possible hypothermia in patients with large blood loss or large open wounds, therefore, cover patient with blankets and turn-off the air conditioner in the ambulance patient compartment

PART 4: UPDATES AND CHANGES

Hawaii State Standing Orders – Updates and Changes

Emergency medications and procedures change rapidly as newer treatments are introduced. Every attempt has been made to update this 2018 edition of the Standing Orders with the most current emergency medical treatments. Should an error or omission be found please notify Department of Health Emergency Medical Services and Injury Prevention System Branch (EMSIPSB). Please include the following information:

Name: _____

Email address: _____

Phone: _____

Date: _____

- Topic requested for revision (procedure, equipment, medications, other)
- Standing Order section
- Change request
- Include relevant medical citation/s

E-mail to Alvin C. Bronstein MD, FACEP
EMSIPSB Chief
alvin.bronstein@doh.hawaii.gov

Mahalo,

Your Hawaii State EMS Medical Directors

APPENDICES

AP-1. Treatment Algorithm Links

AP-1-a. ACLS
in progress

AP-1-b. PALS
in progress

AP-1-c. NRP
in progress

AP-2. REFUSAL OF CARE (AGAINST MEDICAL ADVICE) PROTOCOL

Assessment: Examine the patient as thoroughly as possible.

Provide any necessary care that the patient will allow.

Document each part of this process thoroughly.

1) Mental Status

- Level of Consciousness: e.g. difficult to arouse?
- Orientation: e.g. disoriented to surroundings?
- Affect: e.g. appropriate to the situation?
- Judgment: e.g. signs of incoherence? impairment?

- Thought: e.g. hallucinations?
suicidal?
- 2) Inform patient of the nature and severity of the emergency situation
 - 3) Risks/Benefits: Advise the patient in plain language of the potential benefits of evaluation, treatment, and/or transport, and the risks associated with refusal.
 - 4) Reason for refusal should be asked. If there is a perceived lack of understanding, attempt to clarify and explain (again) the rationale for care and consequences of refusal.
 - 5) Confirm understanding: Have patient repeat back the potential consequences of their decision to demonstrate that they are aware of the risks of refusal.

- 6) Refusal Form signature: Obtain the patient's (or decision-maker's) signature on the refusal form. If the patient is uncooperative, obtain the signature of a witness to the refusal and your discussion with the patient.
- 7) Right to change decision: Inform the patient that they can call back if they change their mind.
- 8) Surrogate decision-makers (e.g. Parent, Legal Guardian, Healthcare Power of Attorney, etc.) refusing care for the patient, should have the above information explained to them and sign the refusal form.
- 9) Special situations (e.g. POLST, DNR orders, suspected child abuse, domestic violence, etc.), should follow the protocols established for that particular situation.