2023-2024 PROTOCOL UPDATES

SAN DIEGO COUNTY EMS

PROTOCOLS WITH CHANGES

The following protocols have changes that become effective on July 1, 2023:

- S-101 Glossary of Terms
- S-103 BLS/ALS Ambulance Inventory
- S-104 Skills List
- P-115 ALS Medication List
- P-115A Pediatric Weight-Based Dosage Standards
- P-117 ALS Pediatric Drug Chart
- S-123 Altered Neurologic Function (Non-Traumatic)
- S-126 Discomfort / Pain of Suspected Cardiac Origin
- S-127 CPR / Arrhythmias
- S-127A ECPR Decision Algorithm
- S-132 Decompression Illness / Diving / Altitude-Related Incidents
- S-133 Obstetrical Emergencies / Newborn Deliveries
- S-134 Poisoning / Overdose
- S-135 Pre-Existing Medical Interventions
- S-136 Respiratory Distress
- S-139 Trauma
- S-141 Pain Management
- S-144 Stroke and Transient Ischemic Attack
- S-145 Opioid Withdrawal / Opioid Use Disorder
- S-145A Opioid Withdrawal / Opioid Use Disorder COWS Score
- S-163 CPR / Arrhythmias
- S-166 Obstetrical Emergencies / Newborn Deliveries
- S-167 Respiratory Distress
- S-169 Trauma
- S-173 Pain Management

S-101 GLOSSARY OF TERMS

Revision(s)

- BEFAST Prehospital Stroke Scale
  - Removed "asymmetric pupils" from the eyes assessment
  - Removed "numbness/tingling" from the arms/legs assessment
- Perilaryngeal Airway Adjunct (PAA) Options
  - Updated "Esophageal Tracheal Airway Device (ETAD): The "Combitube" to "Supraglottic airway (SGA): The "i-gel"
- Unstable
  - Removed the symbols for the age criteria and replaced with "15 years or older" and "14 years or younger"

New Addition(s)

- Added the FAST-ED Prehospital Stroke Severity Scale for patients with a positive BEFAST.

BE FAST - Prehospital Stroke Screening Scale in assessment of possible TIA or stroke patients and **FAST-ED**, Prehospital Stroke Severity Scale, for patients with a positive BEFAST.

B = **B**alance: Unsteadiness, ataxia
E = **E**yes: Blurred/double or loss of vision
F = **F**ace: Unilateral face droop
A = **A**rms and/or legs: Unilateral weakness exhibited by a drift or drop
S = **S**peech: Slurred, inability to find words, absent
T = **T**ime: Accurate Last Known Well time

F = Facial Palsy
A = Arm Weakness
S = Speech Changes
T = Time
E = Eye Deviation
D = Denial/Neglect

S-103 BLS/ALS AMBULANCE INVENTORY

Revision(s)

- Optional Items
  - Removed "Positive pressure breathing valve, maximum flow 40 L/min"
- Airway Adjuncts
  - Removed "Esophageal tracheal double lumen airway (kit) Combitube: Small adult"
  - Updated PAA language to use the classifications of supraglottic airway and retroglottic airway
- Vascular Access/Monitoring Equipment
  - Updated language for macrodrip to include "(2 must be vented if using acetaminophen vials)'
- Other Equipment
  - Updated nasogastric intubation language to clarify the requirements of needing sizes 8, 18 and one of the following: 10 or 12
- Replaceable Medications
  - Updated language for acetaminophen to include "(vials require vented tubing)"
  - Removed "ampule" from epinephrine 1:1,000

New Addition(s)

- Optional Items
  - Added burn sheets as an optional item
  - Added a footnote to allow OTC items that are FDA approved.
  - Added positive end-expiratory pressure (PEEP) valve (will become a mandatory item on July 1, 2024)
  - Added Buprenorphine-naloxone (Suboxone®) (for agencies participating in the Buprenorphine Pilot Program)
- Airway Adjuncts
  - Added supraglottic airway (i-gel: sizes 3, 4, 5)
- Replaceable Medications
  - Added tranexamic acid – 1 gm/10 mL

S-104 SKILLS LIST

Revision(s)

- Bougie
  - Updated language to "Should be used routinely during intubations"
- 12-lead EKG
  - Updated language to "If STEMI suspected, immediately notify BH, transmit 12-lead EKG to appropriate STEMI receiving center and transport.
  - Updated language to "Do no delay transport for a repeat 12-lead EKG"
- Intubation: ET/Stomal
  - Replaced multiple instances of ETAD with PAA
- Intubation: Perilaryngeal airway adjuncts
  - Updated contraindications language to "For King Airway, patient <4 feet tall"
- Nasogastric / Orogastric tube
  - Updated language to "if NG/OG tube needed in a patient with a King Airway/i-gel, insertion should be via the suction/gastric port, if available."
- Needle Thoracostomy
  - Updated language for catheter insertion and listed anterior axillary line 4th/5th ICS as the preferred position.
- Prehospital stroke screening and severity scales
  - Removed "asymmetric pupils" from the eyes assessment
  - Removed "numbness/tingling" from the arms/legs assessment

New Addition(s)

- Intranasal (IN)
  - Added "if using a mucosal atomization device, see manufacturer's guidance on accounting for dead space."
- Intubation: Perilaryngeal airway adjuncts
  - Added the i-gel and associated comments
- Needle Thoracostomy
  - Added "Anterior axillary line needle thoracostomy placement is preferred as it has a lower failure rate than midclavicular line placement."
- Positive end-expiratory pressure (PEEP) valve
  - Added PEEP as a new skill for both EMTs and paramedics
- Prehospital stroke screening and severity scales
  - Added FAST-ED

S-104 SKILLS LIST

SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Intubation: Perilaryngeal airway adjuncts • Supraglottic airway (i-gel) • Retroglottic airway (King Airway)	Apnea or ineffective respirations for unconscious patient or decreasing LOC	Gag reflex present For King Airway, patient <4 feet tall Ingestion of caustic substances Known esophageal disease Laryngectomy/stoma Suspected opioid OD prior to naloxone Able to adequately ventilate with BVM Infants and pediatric patients <15 years of age that fit on the LBRT	Extubate SO if placement issue, otherwise per BHO i-gel: Use Size 3 (yellow) for small adult – 36-60kg. Use 12 french OG tube Use Size 4 (green) for medium adult – 50-90kg. Use 12 french OG tube Use Size 5 (orange) for large adult – 90+kg. Use 14 french OG tube King Airway: Use Size 3 (yellow) for patients 4 feet – 5 feet tall. Use Size 4 (red) for patients 5 feet – 6 feet tall. Use Size 5 (purple) for patients ≥6 feet tall. Document and report **LEADSD:** Lung Sounds $EtCO_2$ Absent Abdominal Sounds Depth Size Document presence of $EtCO_2$ waveform and $EtCO_2$ numeric value at Transfer of Care **Establishment of EtCO2 prior to intubation:** The presence of $EtCO_2$ greater than zero is required prior to ET tube/PAA placement. **Exception to the mandatory use of $EtCO_2$ prior to intubation with ET tube/PAA:** - When the patient presents with intractable vomiting or airway bleeding, initial airway management should be focused on clearing of the airway with positioning of the patient (i.e., logrolling), and suctioning of the mouth and oropharynx. - If the airway assessment determines that it is still necessary to intubate the patient after clearing the airway, an ET tube/PAA may be inserted prior to obtaining $EtCO_2$ readings to secure airway. - Immediately following insertion of the advanced airway, persistent $EtCO_2$ waveform and reading (other than zero) must be maintained or the ET tube/PAA must be removed. If $EtCO_2$ drops to zero and does not increase with immediate troubleshooting, extubate, and manually ventilate the patient via BVM.

For more information on i-gels:

[Dr Safferman EBM Presentation Are SUPRA-glottic airways all that SUPER.pdf (sandiegocounty.gov)]

S-104 SKILLS LIST

SKILL	INDICATION	CONTRAINDICATION	COMMENTS
Needle thoracostomy	Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and SBP <90 mmHg, and suspected pneumothorax (Adult) Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and hypotensive for age, and suspected pneumothorax (Pediatric)	None	Use 14-gauge, 3.25-inch IV catheter. Anterior axillary line needle thoracostomy placement is preferred as it has a lower failure rate than midclavicular line placement. Insert the catheter into the anterior axillary line 4th/5th ICS on the involved side (roughly nipple level / inframammary fold: preferred position) **OR** Insert the catheter into the midclavicular line 2nd/3rd ICS on the involved side (non-preferred position) Tape catheter securely to chest wall and leave open to air.
Positive end-expiratory pressure (PEEP) valve	For BVM ventilation	Adult: SBP <90 mmHg Possible pneumothorax Pediatric: Possible pneumothorax	Adult: PEEP should be increased slowly by 2-3 cmH20 and titrated from 5 cmH20 (initial setting) to a max of 15 cmH20 closely monitoring response and vital sign changes. Pediatric: PEEP should be increased slowly by 2-3 cmH2o and titrated from 5 cmH2o (initial setting) to a max of 10 cmH20 closely monitoring response and vital sign changes.

PAC Pearl on needle thoracostomy placement:

[2022 PAC Pearls - July.pdf (sandiegocounty.gov)]

S-115 ALS MEDICATION LIST

Revision(s)

- Acetaminophen/Fentanyl/Ketamine/Morphine
  - Removed BHPO required for major trauma with GCS <15 for adults
  - Removed route of administration examples
- Aspirin
  - Removed "Aspirin 324 mg chewable PO should be given regardless of prior daily dose(s)"
- Unstable
  - Removed the symbols for the age criteria and replaced with "15 years or older" and "14 years or younger"
- Fentanyl Citrate
  - Removed route of administration examples
- Lidocaine
  - Removed "Pulse ≥60 status post-defibrillation (defibrillation/AED)"
- Midazolam
  - Added indication for pre-existing ET tube agitation in S-135
- Naloxone
  - Updated to include new protocol S-145 and allow for use of preloaded, single-dose device.

New Addition(s)

- Acetaminophen/Fentanyl/Ketamine/Morphine
  - Added BHPO section for pediatrics
- Aspirin
  - Added if aspirin is not given, document the reason
  - Added aspirin may be withheld if an equivalent dose has been administered by a healthcare professional
- Buprenorphine-Naloxone (Suboxone®)
  - Added as a new medication for agencies participating in the buprenorphine LOSOP.
- Calcium Chloride
  - Added "Contact BH if dose exceeds par level"
- Dextrose
  - Added "In adults, may substitute D10 for D50"
- Tranexamic Acid
  - Added TXA to protocols S-133, S-139, S-166 with associated comments and contraindications

S-115 ALS MEDICATION LIST

COUNTY OF SAN DIEGO EMERGENCY MEDICAL SERVICES
POLICY/PROCEDURE/PROTOCOL
SUBJECT: TREATMENT PROTOCOL – ALS MEDICATION LIST

No. P-115
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Date: 07/1/2023

MEDICATION	INDICATIONS	PROTOCOL	COMMENTS	CONTRAINDICATIONS
TRANEXAMIC ACID	Trauma-associated hemorrhage Post-partum hemorrhage	S-139 S-133, S-166	Rapid infusion can cause hypotension Slow down infusion if nausea, vomiting, or near syncope occurs	Contraindicated in patients with: • Isolated, severe head injury • Potential need for reimplantation • Thromboembolic event within 24 hours (e.g., stroke, MI, DVT/PE)

S-115A PEDIATRIC WEIGHT-BASED DOSAGE STANDARDS

Revision(s)

- Amiodarone
  - Updated the maximum single dose from 300 mg to 150 mg.

New Addition(s)

- None

S-117 ALS PEDIATRIC DRUG CHART

Revision(s)

- Atropine
  - Changed OPP to Organophosphate
- Acetaminophen (Red/Purple/Yellow)
  - Updated language from "Acetaminophen DO NOT ADMINISTER" to "Acetaminophen IV (≥2 years of age) with associated dosage
- Epinephrine
  - Removed "(Cardiac Arrest)" from epinephrine 1:10,000
- Amiodarone (Turquoise)
  - Updated the dose from 300 mg to 150 mg
- PDC
  - Removed order types for consistency as they can be found within the treatment protocols

New Addition(s)

- Amiodarone(VF/Pulseless VT)
  - Added a footnote that antiarrhythmic dosing for stable VT per BHPO

S-123 ALTERED NEUROLOGIC FUNCTION (NON-TRAUMATIC)

Revision(s)

- Naloxone
  - Added the ability to use naloxone 4 mg nasal spray preloaded, single-dose devices as initial treatment and if the patient refuses transport
- Dextrose
  - Updated language to "Dextrose 25 gm" to allow for the use of D10 and D50

BLS	ALS
• Ensure patent airway • O_2 saturation, O_2 and/or ventilate PRN • Spinal motion restriction PRN • Position on affected side if difficulty managing secretions • Do not allow patient to walk • Restrain PRN • Monitor blood glucose SO	• Monitor/EKG • Capnography SO PRN • IV/IO SO
Symptomatic suspected opioid OD with RR <12. Use with caution in opioid-dependent, pain-management patients. • Naloxone 4 mg via nasal spray preloaded single-dose device. Administer full dose in one nostril **OR** • Naloxone 2 mg via atomizer and syringe. Administer 1 mg into each nostril. EMTs may assist family or friend to medicate with patient's prescribed naloxone in **symptomatic suspected opioid OD**	**Symptomatic suspected opioid OD with respiratory depression (RR<12, SpO_2<96%, or $EtCO_2$ ≥40 mmHg). Titrate slowly in opioid-dependent patients.** • Naloxone 2 mg IN/IM/IV SO, MR SO. Titrate IV dose to effect, **to drive the respiratory effort** **OR** • Naloxone 4 mg via nasal spray preloaded single-dose device SO. Administer full dose in one nostril, MR SO • If patient refuses transport, give additional naloxone 2 mg IM SO **OR** • Naloxone 4 mg via nasal spray preloaded single-dose device SO. Administer full dose in one nostril, MR SO
Suspected hypoglycemia or patient's blood sugar is <60 mg/dL • If patient is awake and able to manage oral secretions, give 3 oral glucose tabs or paste (15 gm total) • Patient may eat or drink, if able • If patient is unconscious, NPO	**Symptomatic hypoglycemia with altered LOC or unresponsive to oral glucose agents** • Dextrose 25 gm IV SO if BS <60 mg/dL • If patient remains symptomatic and BS remains <60 mg/dL, MR SO • If no IV, glucagon 1 mL IM SO if BS <60 mg/dL
Stroke/TIA	**Symptomatic hyperglycemia with diabetic history** • 500 mL fluid bolus IV/IO if BS ≥350 mg/dL or reads "high" SO x1, MR BHO

S-126 DISCOMFORT / PAIN OF SUSPECTED CARDIAC ORIGIN

Revision(s)

- 12-lead EKG
  - Updated the language on when to repeat a 12-lead
  - Updated the language for suspected STEMI and to send the 12-lead EKG to the STEMI receiving center
  - Added (2) footnotes: do not delay transport for a repeat 12-lead EKG and immediately transmit 12-lead EKG to the receiving center
- Aspirin
  - Removed "should be given regardless of prior daily dose(s)"
  - Added (2) footnotes: if ASA is not given, document the reason and ASA may be withheld if an equivalent dose has been administered by a healthcare professional

BLS	ALS
• Ensure patent airway • O_2 saturation PRN • Use supplemental O_2 to maintain saturation at 94-98% • O_2 and/or ventilate PRN • Do not allow patient to walk • If SBP ≥100 mmHg, may assist patient to self-medicate own prescribed NTG* SL **(maximum 3 doses, including those the patient has taken)** • May assist with placement of 12-lead EKG leads • May assist patient to self-medicate own prescribed aspirin up to a max dose of 325 mg	• Monitor/EKG • Obtain 12-lead EKG • Repeat 12-lead EKG after arrhythmia conversion or any change in patient condition[1] • If STEMI suspected, immediately notify BH, transmit 12-lead EKG to appropriate STEMI receiving center and transport[2] • Report LBBB, RBBB or poor-quality EKG • Aspirin 324 mg chewable PO SO[3,4] **If SBP ≥100 mmHg** • NTG* 0.4 mg SL SO, MR q3-5 min SO • Treat pain per Pain Management Protocol (S-141)

[1] Do not delay transport for a repeat 12-lead EKG
[2] Immediately transmit 12-lead EKG to receiving hospital for suspected STEMI patients regardless of patient presentation
[3] If aspirin is not given, document the reason
[4] Aspirin may be withheld if an equivalent dose has been administered by a healthcare professional

S-127 CPR / ARRHYTHMIAS

Revision(s)

- Ventricular Fibrillation / Pulseless VT
  - Removed "Early Base Hospital contact should be considered for persistent or recurrent VF/pulseless VT"
  - Added "q3-5 min" for amiodarone repeat timeframe
  - Added footnote "If patient meets ECPR criteria, make base hospital contact and transport IMMEDIATELY to an ECPR Receiving Center (per S-127A)"
- ROSC
  - Added footnote on STEMI Center "Do not change destination if already enroute to an ECPR Receiving Center"
- ECPR
  - Added ECPR Criteria Section
  - Added footnote "If patient meets ECPR criteria, make base hospital contact and transport IMMEDIATELY to an ECPR Receiving Center (per S-127A)"

EXTRACORPOREAL CARDIOPULMONARY RESUSCITATION (ECPR) CRITERIA[3]

Age 18-70

Witnessed cardiac arrest

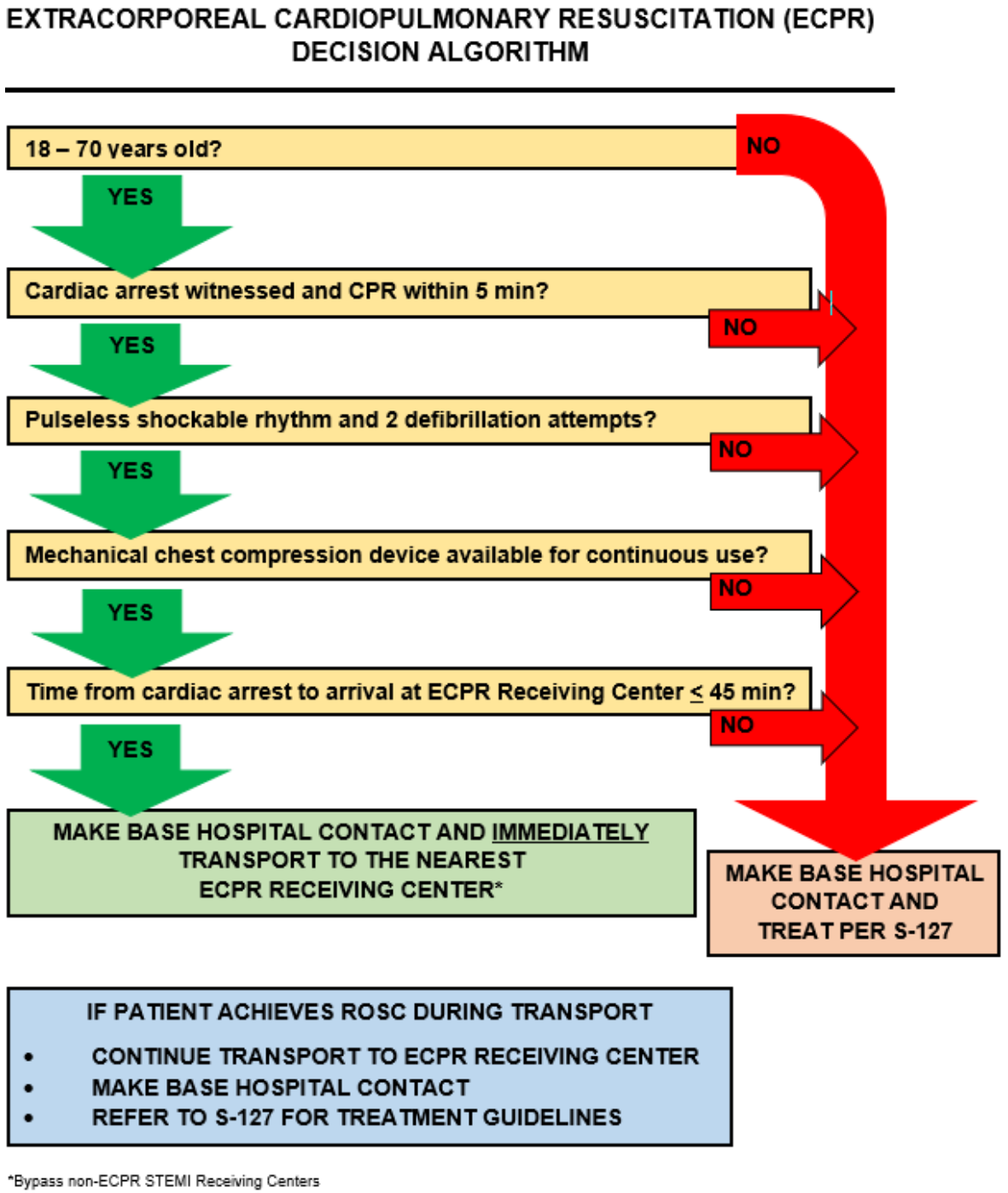
CPR
- Must be established within 5 minutes of cardiac arrest
- High-quality compressions throughout resuscitation, including during transport

Use of automated mechanical chest compression device

Refractory Ventricular Fibrillation/Pulseless VT
- Defined as persistent pulseless shockable rhythm after 2 defibrillation attempts (including AED-delivered shocks, but not AICD firings)

Time interval from cardiac arrest to arrival at ECPR receiving center <45 minutes

S-127A ECPR DECISION ALGORITHM



EXTRACORPOREAL CARDIOPULMONARY RESUSCITATION

What is ECPR?

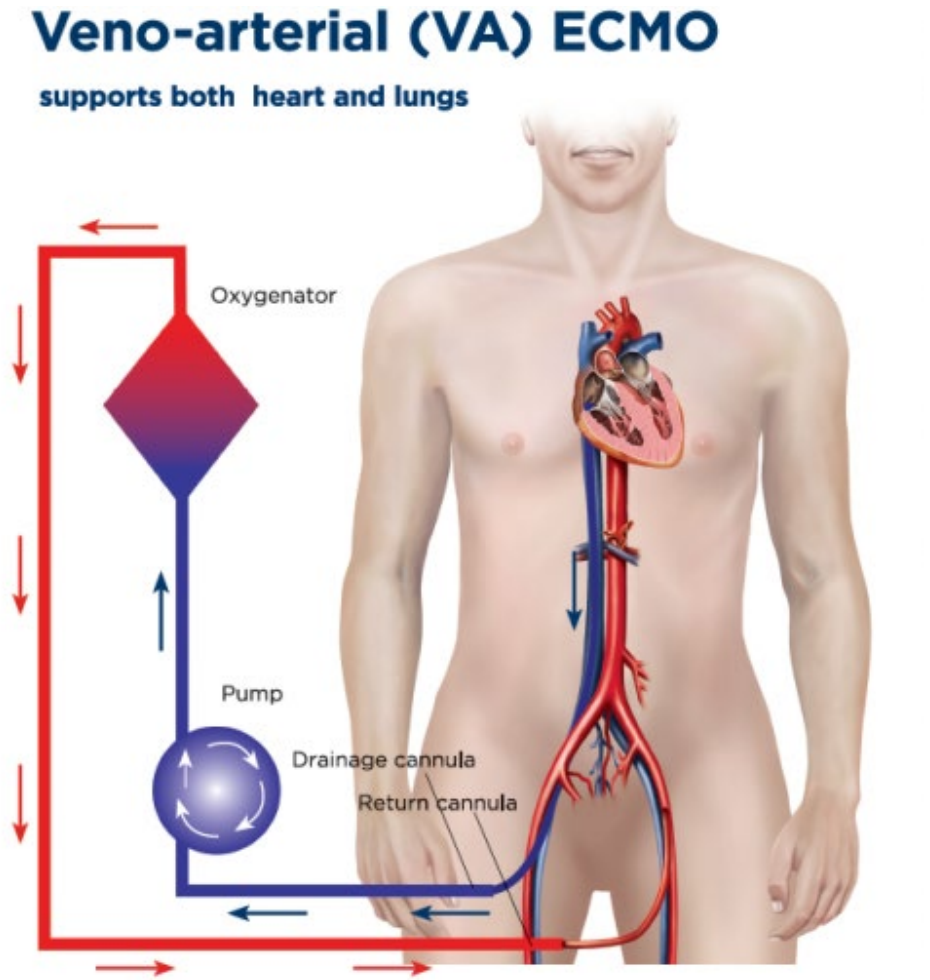
ECPR is the implantation of veno-arterial extracorporeal membrane oxygenation (VA-ECMO) in a patient who experienced a sudden and unexpected pulseless condition.

What is ECMO?

ECMO stands for extracorporeal membrane oxygenation. ECMO is a form of life support for people with life-threatening illness or injury that affects the function of their heart or lungs. ECMO keeps blood moving through the body and keeps blood gasses (oxygen and carbon dioxide) in balance.

When a patient is connected to an ECMO machine, blood flows through tubing to an artificial lung in the device that adds oxygen and takes out carbon dioxide; then the blood is warmed to body temperature and pumped back into your body.

ECMO does not treat lung or heart failure, but does the jobs of the heart and lungs temporarily — allowing them to "rest." It uses a machine outside the body (extracorporeal). The machine pumps the blood, provides it with oxygen and helps the body get rid of carbon dioxide.



EXTRACORPOREAL CARDIOPULMONARY RESUSCITATION

Evidence Basis

- The ARREST Trial: https://www.thelancet.com/article/S0140-6736(20)32338-2/fulltext
- The Hyperinvasive Trial: https://www.acc.org/about-acc/press-releases/2021/05/17/04/23/hyperinvasive-care-improves-survival-in-refractory-out-of-hospital-cardiac-arrest
- Los Angeles County EMS Trial: Implementation of a regional extracorporeal membrane oxygenation program for refractory ventricular fibrillation out-of-hospital cardiac arrest - ScienceDirect

S-132 DECOMPRESSION ILLNESS / DIVING / ALTITUDE-RELATED INC.

Previous

BLS	ALS
• 100% O_2 and/or ventilate PRN • O_2 saturation PRN • Spinal stabilization PRN	• Monitor/EKG • IV/IO SO

Diving victim: A person (including a free-diver) with any symptoms after breathing sources of compressed air below the water's surface

Minor presentation (non-progressive): Minimal localized joint pain, mottling of skin surface, or localized swelling with pain

Major presentation: Symptoms listed above that are severe and/or rapidly progressing, vertigo, altered LOC, progressive paresthesia, paralysis, severe SOB, blurred vision, crepitus, hematemesis, hemoptysis, pneumothorax, trunk pain, or girdle or band-like burning discomfort

Diving victim disposition

Minor presentation

- Major trauma patient: Catchment trauma center
- Non-military patient: Routine
- Active-duty military personnel: Transport to Military Recompression Chamber, if possible. Base Hospital will contact military at (619) 556-7130 to determine chamber location.

Major presentation

- Transport all major presentations to UCSD Hillcrest
- Trauma injuries are secondary in presence of major presentation
- Divert to closest BEF, if airway is unmanageable

Military Recompression Chamber location: Naval Station 32nd Street and Harbor Drive, San Diego, CA 92136

Note: Obtain dive computer or records, if possible. Hyperbaric chamber must be capable of recompression to 165 feet.

New

BLS	ALS
• 100% O_2 via mask • Ventilate PRN • O2 saturation • Spinal stabilization PRN • Warming PRN, remove wetsuit, if able	• Monitor/EKG • IV/IO SO

Diving victim: A person with any symptoms after diving, regardless of whether compressed gasses such as air were used.

Minor symptoms (non-progressive): Minimal localized joint pain, mottling of skin surface, or localized swelling with pain

Major symptoms: Symptoms listed above that are severe and/or rapidly progressing, vertigo, altered LOC, progressive paresthesia, seizure, paralysis, severe SOB, blurred vision, crepitus, hematemesis, hemoptysis, pneumothorax, urinary retention, trunk pain, or girdle or band-like burning discomfort

Diving victim disposition

- All patients (including active-duty military) should be transported to UCSD Hillcrest Emergency Department
- Follow policy T-460 if trauma criteria are met
- Bring dive computer and gear if available

S-133 / S-166 OBSTETRICAL EMERGENCIES / NEWBORN DELIVERIES

Revision(s)

- Post-partum hemorrhage
  - Removed "Post-partum hemorrhage with SBP <90 mmHg"
  - Updated language to provide an initial 500 mL fluid bolus and MR to maintain SBP ≥90 mmHg SO
  - Added tranexamic acid treatment

MOTHER POST-DELIVERY	
BLS	**ALS**
Post-partum hemorrhage • Massage fundus vigorously • Baby to breast • High-flow O2 • Keep mother warm **Eclampsia (seizures)** • Protect airway • Protect from injury	**Post-partum hemorrhage** • Monitor/EKG • Capnography • 500 mL fluid bolus IV/IO SO, MR x2 q10 min to maintain SBP ≥90 mmHg SO • If estimated blood loss ≥500 mL and within 3 hours of delivery, tranexamic acid 1 gm/10 mL IV/IO, in 50-100 mL NS, over 10 min BHO **Eclampsia (seizures)** • Midazolam IN/IM/IV/IO to a max dose of 5 mg (d/c if seizure stops) SO, MR x1 in 10 min SO. Max 10 mg total.

S-134 POISONING / OVERDOSE

Revision(s)

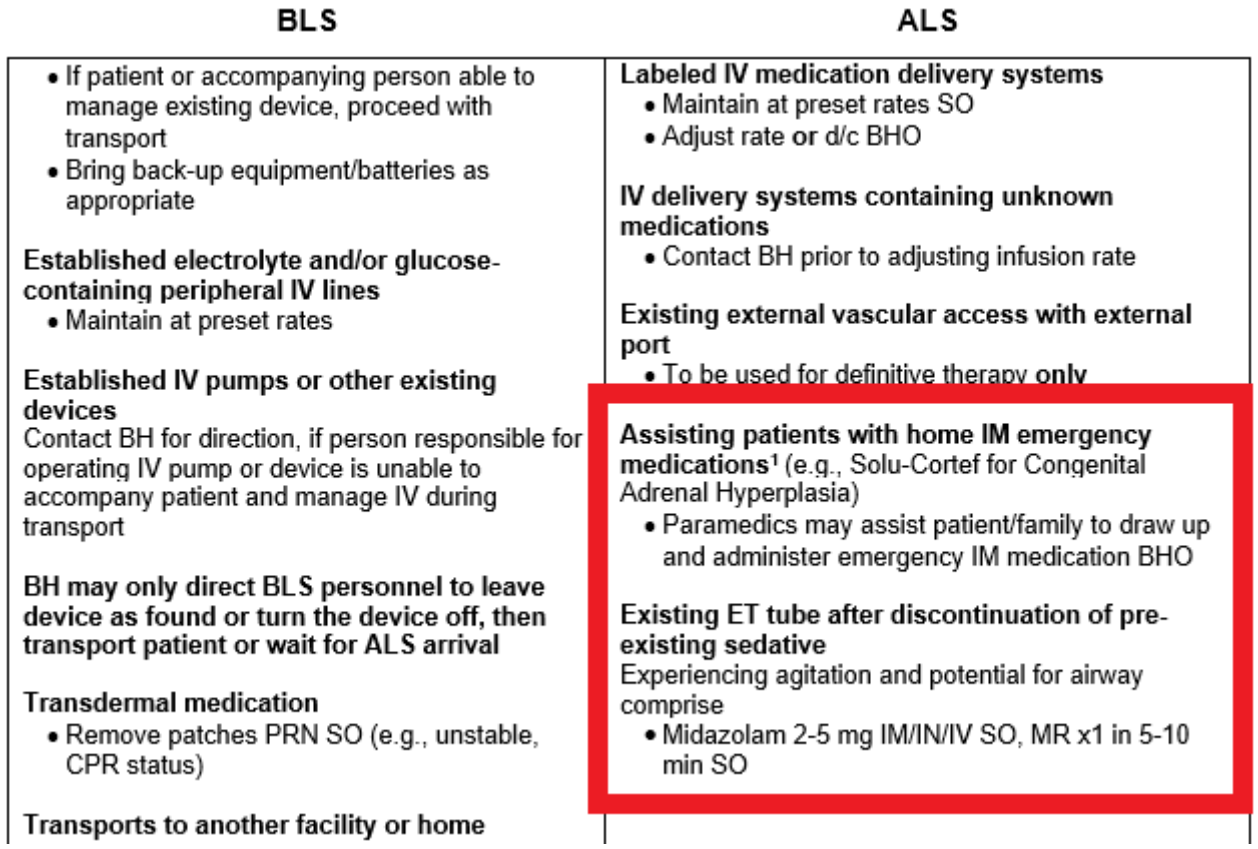
- Naloxone
  - Added the ability to use naloxone 4 mg nasal spray preloaded, single-dose devices as initial treatment and if the patient refuses transport

BLS	ALS
• Ensure patent airway • O2 saturation PRN • O2 and/or ventilate PRN • Carboxyhemoglobin monitor PRN, if available	• Monitor/EKG • IV/IO SO • Capnography SO PRN
Ingestions • Identify substance • Transport pill bottles and containers with patient, PRN	**Ingestions** • Assure patient has gag reflex and is cooperative • If not vomiting and within 60 min, activated charcoal 50 gm PO ingestion with any of the following SO: 1. Acetaminophen 2. Colchicine 3. Beta blockers 4. Calcium channel blockers 5. Salicylates 6. Sodium valproate 7. Oral anticoagulants (including rodenticides) 8. Paraquat 9. Amanita mushrooms
Skin contamination* • Remove clothes • Brush off dry chemicals • Flush with copious water	
Toxic inhalation (e.g., CO exposure, smoke, gas) • Move patient to safe environment • 100% O2 via mask • Consider transport to facility with hyperbaric chamber for suspected CO poisoning, particularly in unconscious or pregnant patients	
Symptomatic suspected opioid OD with RR <12. Use with caution in opioid-dependent, pain-management patients. • Naloxone 4 mg via nasal spray preloaded single-dose device. Administer full dose in one nostril **OR** • Naloxone 2 mg via atomizer and syringe. Administer 1 mg into each nostril. EMTs may assist family or friend to medicate with patient's prescribed naloxone in **symptomatic suspected opioid OD**	**Symptomatic suspected opioid OD with respiratory depression (RR<12, SpO_2<96%, or EtCO2 ≥40 mmHg). Titrate slowly in opioid-dependent patients.** • Naloxone 2 mg IN/IM/IV SO, MR SO. Titrate IV dose to effect, **to drive the respiratory effort** **OR** • Naloxone 4 mg via nasal spray preloaded single-dose device SO. Administer full dose in one nostril, MR SO • If patient refuses transport, give additional naloxone 2 mg IM SO **OR** • Naloxone 4 mg via nasal spray preloaded single-dose device SO. Administer full dose in one nostril, MR SO
Hyperthermia from suspected stimulant	• Atropine 2 mg IV/IM/IO SO, MR x2 q3-5 min SO. MR q3-5 min BHO

S-135 PRE-EXISTING MEDICAL INTERVENTIONS

Revision(s)

- Added "Assisting patients with home IM emergency medications"
  - Paramedics may assist patient/family to draw up and administer emergency IM medication with BHO
- Added "Existing ET tube after discontinuation of pre-existing sedative"
  - Added the ability to administer midazolam if the patient is experiencing agitation and potential for airway compromise



BLS	ALS
• If patient or accompanying person able to manage existing device, proceed with transport • Bring back-up equipment/batteries as appropriate **Established electrolyte and/or glucose-containing peripheral IV lines** • Maintain at preset rates **Established IV pumps or other existing devices** Contact BH for direction, if person responsible for operating IV pump or device is unable to accompany patient and manage IV during transport **BH may only direct BLS personnel to leave device as found or turn the device off, then transport patient or wait for ALS arrival** **Transdermal medication** • Remove patches PRN SO (e.g., unstable, CPR status) **Transports to another facility or home**	**Labeled IV medication delivery systems** • Maintain at preset rates SO • Adjust rate or d/c BHO **IV delivery systems containing unknown medications** • Contact BH prior to adjusting infusion rate **Existing external vascular access with external port** • To be used for definitive therapy only **Assisting patients with home IM emergency medications**[1] (e.g., Solu-Cortef for Congenital Adrenal Hyperplasia) • Paramedics may assist patient/family to draw up and administer emergency IM medication BHO **Existing ET tube after discontinuation of pre-existing sedative** Experiencing agitation and potential for airway comprise • Midazolam 2-5 mg IM/IN/IV SO, MR x1 in 5-10 min SO

S-136 / S-167 RESPIRATORY DISTRESS

Revision(s)

- Updated language in S-136 from "For respiratory, administer 5 quick breaths" to "For respiratory arrest, immediately start BVM ventilation"
- Added the same note to S-167 for pediatrics

S-136

Notes

- For respiratory arrest, immediately start BVM ventilation
- NTG is contraindicated in patients who have taken erectile dysfunction medications such as sildenafil (Viagra®), tadalafil (Cialis®), and vardenafil (Levitra®) within 48 hours
- NTG is contraindicated in patients who are taking similar medications for pulmonary hypertension, such as sildenafil (Revatio®) and epoprostenol sodium (Flolan® and Veletri®)
- Use caution with CPAP in patients with COPD. Start low and titrate pressure.
- Epinephrine IM: Use caution if known cardiac history, history of hypertension, SBP >150 mmHg, or age >40
- Fireline paramedics without access to O_2 may use albuterol MDI

S-167

Notes

- For respiratory arrest, immediately start BVM ventilation

*__Infection control:__ If concerned about aerosolized infectious exposure, substitute with albuterol MDI, if available

†__Infection control:__ If concerned about aerosolized infectious exposure, use patient's ipratropium bromide MDI, if available, or withhold ipratropium bromide

S-139 TRAUMA

Revision(s)

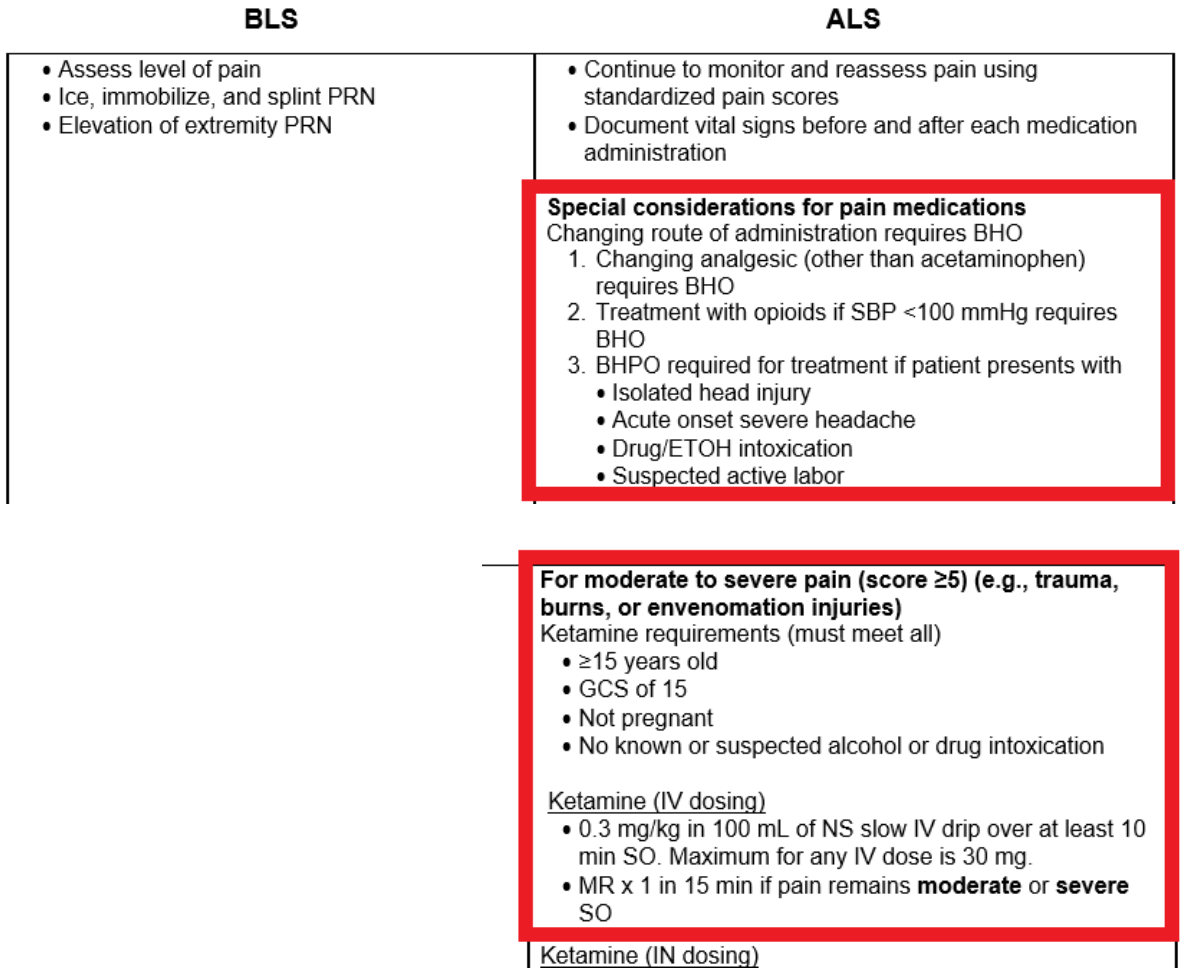
- SBP Criteria
  - Updated SBP from "<80" to "<90"
- Trauma-associated hemorrhage
  - Added tranexamic acid treatment

BLS	ALS
• Ensure patent airway • Protect C-spine • Control obvious bleeding • Spinal motion restriction per Skills List (S-104) except in penetrating trauma without neurological deficits • O2 saturation. Maintain SpO2 at 94% to 98% • O2 and/or ventilate at a rate of 10/min PRN • Keep warm • Hemostatic gauze **Abdominal trauma** • Cover eviscerated bowel with saline pads **Chest trauma** • Cover open chest wound with three-sided occlusive dressing. Release dressing if tension pneumothorax develops. • Chest seal PRN **Extremity trauma** • Splint neurologically stable fractures in	• Monitor/EKG • IV/IO SO • Capnography SO. Maintain EtCO2 35-45 mmH2O SO PRN. • Treat pain per Pain Management Protocol (S-141) **SBP <90 mmHg or signs of shock** • 500 mL fluid bolus IV/IO SO, MR x3 q15 min to maintain SBP ≥90 mmHg **Trauma-associated hemorrhage** 1. Injury <3 hours prior **AND** 2. Estimated time from injury to hospital arrival ≥45 min **AND** 3. At least one of the following: ○ At least 1 SBP <90 mmHg **OR** ○ Uncontrolled external bleeding • Tranexamic acid 1 gm/10 mL IV/IO, in 50-100 mL NS, over 10 min BHO

S-141 PAIN MANAGEMENT

Revision(s)

- Special Considerations
  - Updated language to "Special considerations for pain medications"
  - Removed route of administration examples
  - Updated language for changing analgesic with "(other than acetaminophen)"
  - Removed BHPO required for major trauma with GCS <15
- Ketamine
  - Updated indication language to "(e.g., trauma, burns, or envenomation injuries)"
  - Increased the dose from 0.2 to 0.3 mg/kg
  - Decreased the drip rate from 15 to 10 min
  - Increased the maximum dose from 20 to 30 mg



BLS

- Assess level of pain
- Ice, immobilize, and splint PRN
- Elevation of extremity PRN

ALS

- Continue to monitor and reassess pain using standardized pain scores
- Document vital signs before and after each medication administration

Special considerations for pain medications
Changing route of administration requires BHO

1. Changing analgesic (other than acetaminophen) requires BHO
2. Treatment with opioids if SBP <100 mmHg requires BHO
3. BHPO required for treatment if patient presents with
   - Isolated head injury
   - Acute onset severe headache
   - Drug/ETOH intoxication
   - Suspected active labor

For moderate to severe pain (score ≥5) (e.g., trauma, burns, or envenomation injuries)
Ketamine requirements (must meet all)

- ≥15 years old
- GCS of 15
- Not pregnant
- No known or suspected alcohol or drug intoxication

Ketamine (IV dosing)

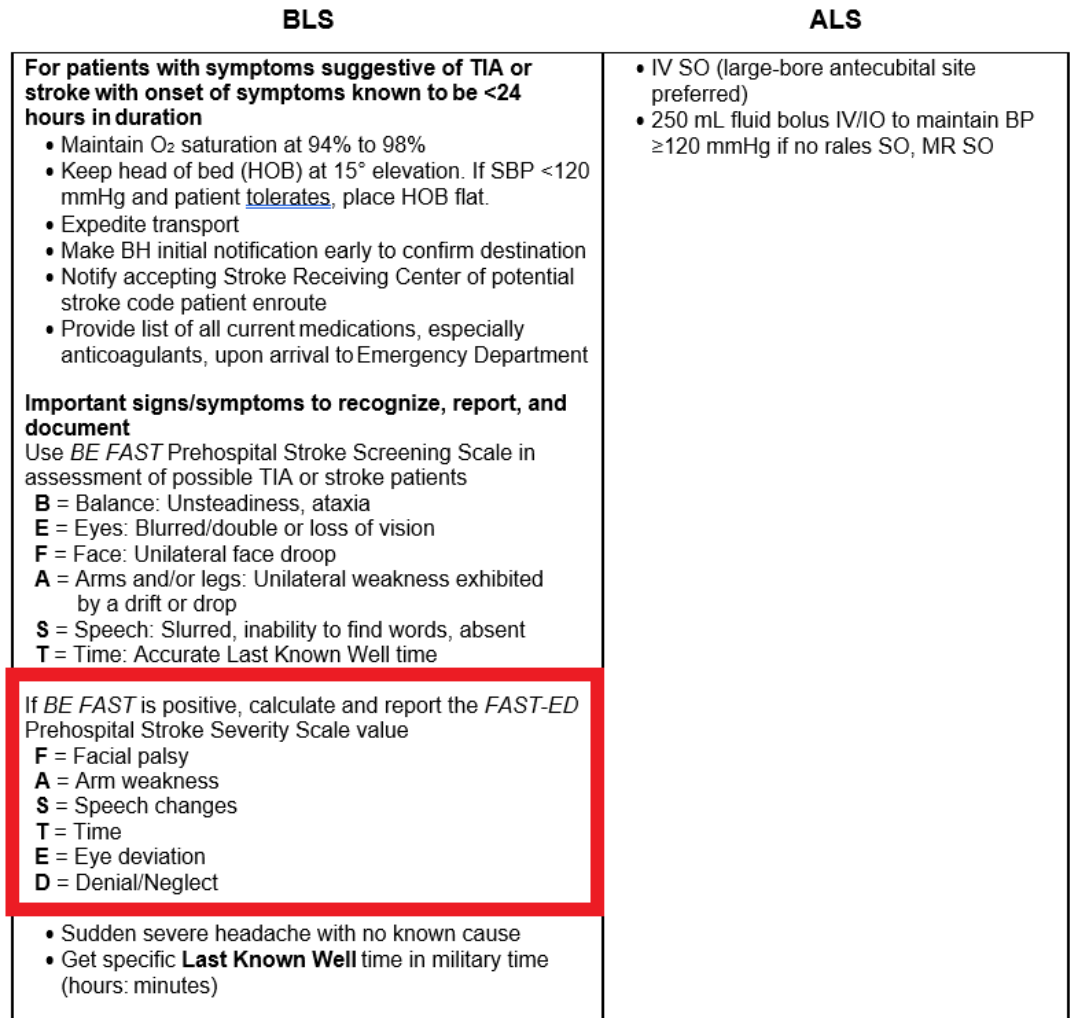
- 0.3 mg/kg in 100 mL of NS slow IV drip over at least 10 min SO. Maximum for any IV dose is 30 mg.
- MR x 1 in 15 min if pain remains **moderate** or **severe** SO

Ketamine (IN dosing)

S-144 STROKE AND TRANSIENT ISCHEMIC ATTACK

Revision(s)

- BE FAST
  - Removed "asymmetric pupils" from the eyes assessment
  - Removed "numbness/tingling" from the arms/legs assessment
- FAST-ED
  - If BE FAST is positive, calculate and report the FAST-ED Prehospital Stroke Severity Scale value



BLS	ALS
For patients with symptoms suggestive of TIA or stroke with onset of symptoms known to be <24 hours in duration • Maintain O_2 saturation at 94% to 98% • Keep head of bed (HOB) at 15° elevation. If SBP <120 mmHg and patient tolerates, place HOB flat. • Expedite transport • Make BH initial notification early to confirm destination • Notify accepting Stroke Receiving Center of potential stroke code patient enroute • Provide list of all current medications, especially anticoagulants, upon arrival to Emergency Department **Important signs/symptoms to recognize, report, and document** Use *BE FAST* Prehospital Stroke Screening Scale in assessment of possible TIA or stroke patients **B** = Balance: Unsteadiness, ataxia **E** = Eyes: Blurred/double or loss of vision **F** = Face: Unilateral face droop **A** = Arms and/or legs: Unilateral weakness exhibited by a drift or drop **S** = Speech: Slurred, inability to find words, absent **T** = Time: Accurate Last Known Well time If *BE FAST* is positive, calculate and report the *FAST-ED* Prehospital Stroke Severity Scale value **F** = Facial palsy **A** = Arm weakness **S** = Speech changes **T** = Time **E** = Eye deviation **D** = Denial/Neglect • Sudden severe headache with no known cause • Get specific **Last Known Well** time in military time (hours: minutes)	• IV SO (large-bore antecubital site preferred) • 250 mL fluid bolus IV/IO to maintain BP ≥120 mmHg if no rales SO, MR SO

S-144 STROKE AND TRANSIENT ISCHEMIC ATTACK

FAST-ED Severity Scale

Assessment Item	FAST-ED Score
Facial palsy:	
Normal or minor paralysis	0
Partial or complete paralysis	1
Arm weakness:	
No drift	0
Drift or some effort against gravity	1
No effort against gravity or no movement	2
Speech changes:	
Absent	0
Mild to moderate	1
Severe, global aphasia, or mute	2
Time:	
What time did the symptom start?	
What time was the patient last known well?	
Eye deviation:	
Absent	0
Partial	1
Forced deviation	2
Denial/Neglect:	
Absent	0
Extinction to bilateral simultaneous stimulation in only 1 sensory modality	1
Does not recognize own hand or orients only to one side of the body	2
Total	

S-145 OPIOID WITHDRAWAL / OPIOID USE DISORDER

County of San Diego EMS
A Division of San Diego County Fire

TREATMENT PROTOCOL	S-145
OPIOID WITHDRAWAL / OPIOID USE DISORDER	
Date: 7/1/2023	**Page 1 of 1**

BLS	ALS
• Ensure patent airway • O_2 saturation PRN • O_2 and/or ventilate PRN **Symptomatic suspected opioid OD with RR <12** • Treat per Poisoning / Overdose Protocol (S-134) **For suspected opioid withdrawal or opioid use disorder, request for ALS to provide treatment and transport[1]** **For patients and/or other individuals suspected of opioid use disorder, provide Leave Behind Naloxone Kit with education per the Leave Behind Naloxone Program[2]**	• Monitor/EKG • IV/IO SO • Capnography SO PRN **Symptomatic suspected opioid OD with respiratory depression (RR<12, SpO2<96%, or EtCO2 ≥40 mmHg)** • Treat per Poisoning / Overdose Protocol (S-134) **Complete COWS score using S-145A[1]** **For suspected opioid withdrawal with COWS score ≥7[1]** • Contact opioid withdrawal base • Buprenorphine-naloxone (Suboxone®) SL 16 mg/4 mg SL SO • Reassess after 15 min • Repeat with buprenorphine-naloxone (Suboxone®) 8 mg/2 mg SL to a max of 24 mg/6 mg BHO (opioid withdrawal base) • Recommend transport to emergency department • Ensure warm handoff **If patient declines transport:** • Verify patient contact information • Ensure warm handoff • Attempt to arrange non-EMS transport to appropriate facility • Provide naloxone kit (or Leave Behind Naloxone kit and education) • Provide MAT information, coaching, and brochure

[1] For agencies participating in the Buprenorphine Pilot Program
[2] For agencies participating in the Leave Behind Naloxone Program

S-145A COWS SCORE

Instructions
For each item, select the number that best describes the patient's sign or symptom. Rate it on just the apparent relationship to opiate withdrawal. For example, if heart rate is increased because the patient was jogging prior to assessment, the increased pulse rate would not be added to the score. The scores will be added together on the final page for a total COWS score.

Resting Pulse Rate *Measured after the patient is sitting or lying down for 1 minute* 0 = pulse rate <80 BPM 1 = pulse rate 81-100 BPM 2 = pulse rate 101-120 BPM 4 = pulse rate >120 BPM Score =	**Gastrointestinal Upset** *Over the past 30 minutes* 0 = no GI symptoms 1 = stomach cramps 2 = nausea or loose stool 3 = vomiting or diarrhea 5 = multiple episodes of diarrhea or vomiting Score =
Sweating *Over the past 30 minutes 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 of face Score =	**Tremor** *Observation of outstretched hands* 0 = no tremor 1 = tremor can be felt, but not observed 2 = slight tremor observable 4 = gross tremor or muscle twitching Score =
Restlessness *Observation during assessment* 0 = able to sit still 1 = reports difficulty sitting still, but is able to 3 = frequent shifting or extraneous movements of arms or legs 5 = unable to sit still for more than a few seconds Score =	**Yawning** *Observation during assessment* 0 = no yawning 1 = yawning 1-2 times during assessment 2 = yawning 3+ times during assessment 4 = yawning several times per minute Score =

Continued on the next page

COUNTY SAN DIEGO EMERGENCY MEDICAL SERVICES
POLICY/PROCEDURE/PROTOCOL
No. S-145 Addendum
Page: 2 of 3
SUBJECT: TREATMENT PROTOCOL - OPIOID WITHDRAWAL / OPIOID USE DISORDER COWS SCORE
Date: 07/1/2023

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 Score =	**Anxiety or Irritability** 0 = none 1 = patient reports increasing irritability or anxiousness 2 = patient obviously irritable or anxious 4 = patient so irritable or anxious that participation in the assessment is difficult Score =
Bone or Joint Aches *If the patient was having pain previously, only the additional component attributed to opioid withdrawal is scored* 0 = not present 1 = mild, diffuse discomfort 2 = patient reports severe diffuse aching of joints or muscles 4 = patient is rubbing joints or muscles and is unable to sit still because of discomfort Score =	**Gooseflesh Skin (Goosebumps)** 0 = skin is smooth 3 = piloerection of skin can be felt or hairs standing up on arms 5 = prominent piloerection Score =
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 Score =	**Total Score** *Sum of all 11 criteria* Score = **Interpretation** Score >5 = no active withdrawal Score 5-12 = mild withdrawal Score 13-24 = moderate withdrawal Score 25-36 = moderately severe withdrawal Score >36 = severe withdrawal Interpretation =

COUNTY SAN DIEGO EMERGENCY MEDICAL SERVICES
POLICY/PROCEDURE/PROTOCOL
No. S-145 Addendum
Page: 3 of 3
SUBJECT: TREATMENT PROTOCOL - OPIOID WITHDRAWAL / OPIOID USE DISORDER COWS SCORE
Date: 07/01/2023

Patient's Name	Date & Time of Assessment
Assessing Paramedic's Name	**Interpretation of Assessment**

A digital version of this tool can be found at: https://tinyurl.com/yc7v95jn

OR by scanning the QR code

SCAN ME

S-163 CPR / ARRHYTHMIAS

Revision(s)

- Ventricular Fibrillation / Pulseless VT
  - Added "MR per drug chart x1"
- Adjunct Cardiac Devices
  - Added this section to the pediatric protocol

ADJUNCT CARDIAC DEVICES

Transport equipment and any knowledgeable family/support persons to ED with patient

VAD
- Contact BH and VAD coordinator
- Follow protocols for CPR and treatment of arrhythmias, including use of cardioversion, pacing, and defibrillation PRN

TAH
- Contact BH and TAH coordinator
- Treatment per BHO

Wearable defibrillators (vest)
- If vest device is broadcasting specific verbal directions, follow device's prompts
- If device not broadcasting directions and patient requires CPR or cardiac treatment, remove vest and treat

Malfunctioning pacemakers
- Treat per applicable arrythmia protocol
- Treat pain per Pain Management Protocol (S-173) PRN

Reported/witnessed AICD firing ≥2
- Amiodarone per drug chart BHPO

OR
- Lidocaine per drug chart BHPO

S-169 TRAUMA

Revision(s)

- Needle Thoracostomy
  - Updated language to be consistent with adult indications

BLS	ALS
• Ensure patent airway • Protect C-spine • Control obvious bleeding • Spinal motion restriction per Skills List (S-104) except in penetrating trauma without neurological deficits • O2 saturation. Maintain SpO2 ≥90%. • O2 and/or ventilate PRN • Keep warm • Hemostatic gauze **Abdominal trauma** • Cover eviscerated bowel with saline pads **Chest trauma** • Cover open chest wound with three-sided occlusive dressing. Release dressing if tension pneumothorax develops. • Chest seal PRN **Extremity trauma** • Splint neurologically stable fractures in position as presented. Traction splint PRN. • Reduce grossly angulated long bone fractures with no pulse or sensation PRN BHO • Direct pressure to control external hemorrhage	• Monitor/EKG • IV/IO SO • Capnography SO. Maintain EtCO2 35-45 mmHg SO PRN. • Treat pain per Pain Management Protocol (S-173) **Signs of shock or hypotensive for age** • Fluid bolus IV/IO SO per drug chart, MR x3 q15 min to maintain adequate perfusion **Crush injury with compression of extremity or torso ≥2 hours** Just prior to extremity being released • IV/IO fluid bolus per drug chart • $NaHCO_3$ IV/IO per drug chart SO **Grossly angulated long bone fractures** • Reduce with gentle unidirectional traction for splinting SO **Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and hypotensive for age, and suspected pneumothorax** • Needle thoracostomy SO

S-173 PAIN MANAGEMENT

Revision(s)

- Special Considerations
  - Moved this section to the top to be consistent with S-141
  - Removed route of administration examples
  - Updated language from "Multiple trauma" to "Major trauma"
- Acetaminophen
  - Added a subsection for mild/moderate pain
- Fentanyl/Morphine
  - Added a subsection for moderate/severe pain

BLS	ALS
• Assess level of pain • Ice, immobilize, and splint PRN • Elevate extremity trauma PRN	• Continue to monitor and reassess pain as appropriate • Document vital signs before and after each medication administration **Special considerations for pain medications** 1. Changing route of administration requires BHO 2. Document **adequate perfusion** prior to opioid administration 3. Changing type of opioid analgesic while treating patient requires BHO 4. BHPO required for treatment if patient presents with • Isolated head injury • Acute onset severe headache • Drug/ETOH intoxication • Suspected active labor • Major trauma with GCS <15 **For mild pain (score 1-3) or moderate pain (score 4-6)** • Acetaminophen* IV per drug chart in 100 ml of NS over 15 min SO **For moderate pain (score 4-6) or severe pain (score 7-10)** • <10 kg, fentanyl IV/IN per drug chart BHO, MR BHO • >10 kg, fentanyl IV/IN per drug chart SO, MR BHO • If fentanyl unavailable, morphine IV/IM per drug chart SO, MR BHO

POLICIES WITH CHANGES

The following policies have changes that become effective on July 1, 2023:

- S-411 Reporting of Suspected Child, Dependent Adult, or Elder Abuse/Neglect

S-411 REPORTING OF SUSPECTED CHILD, DEPENDENT ADULT, OR ELDER ABUSE/NEGLECT

Revision(s)

- Definitions
  - Abuse: Updated language from "treatment" to "action"
  - Mandated Reporters: Updated language to include children, as this was missing in the past
- Procedures – Child Abuse/Neglect
  - Added an additional hotline number for reporting
  - Added additional reporting information
  - Added a footnote to clarify that prehospital personnel are only expected to provide the information they have knowledge of
  - Updated language to include the option of faxing the report or submitting online
- Procedures – Dependent Adult and Elder Abuse/Neglect
  - Updated language with the new reporting number
  - Updated language to include the option of emailing the report

V. PROCEDURES

A. Child Abuse/Neglect

1. Suspicion of Child Abuse/Neglect is to be reported by prehospital personnel by telephone to the Child Abuse Hotline at (858) 560-2191 or (800) 344-6000 immediately, or as soon as possible. Be prepared to give the following information[1]:
   a. Name, agency, and phone number of person making report
   b. Name, address, and age of the child
   c. Present location of the child
   d. Nature and extent of the abuse/neglect
   e. Information that led reporting person to suspect child abuse/neglect
   f. Location where incident occurred, if known
   g. Presence of siblings or other children in the home
   h. Names of parents or caregivers
   i. Names and contact information of other relatives
   j. Name of school child attends
   k. If the child receives services through an Individualized Education Program (IEP) or has a current diagnosis
   l. If the child has developmental delays or medical concerns
   m. Description of injury, behavior, or concerns
   n. Other information as requested
2. Telephone report must be followed by a written report within 36 hours using "Suspected Child Abuse Report" Form SS8572. Form SS8572 can be accessed on the CoSD EMS website at www.sandiegocountyems.com. The mailing address for this report is:

   CWS Hotline
   8911 Balboa Avenue
   San Diego, CA 92123

   The report may be faxed to (858) 467-0412 or submitted online at cwsmra.sandiegocounty.gov.
3. The identity of all persons who report under this article shall be confidential and disclosed only between child protective agencies, agencies receiving or investigating the report, or to counsel representing a child protective agency, or to the District Attorney in a criminal prosecution or by court order.