2023-2024 PROTOCOL CHANGELOG

➢ S-101 GLOSSARY OF TERMS

- **BE-FAST + FAST-ED**
  - **Previous:** BE-FAST – Prehospital Stroke Scale in assessment of possible TIA or stroke patients
  - **Revision:** 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 BE-FAST.

  - **Previous: E = E**yes: Blurred/double or loss of vision, asymmetric pupils
  - **Revision:** Removed asymmetric pupils

  - **Previous**: **A = A**rms and/or legs: Unilateral weakness exhibited by a drift or drop, numbness/tingling
  - **Revision:** Removed numbness/tingling
  - **Rationale:** Asymmetric pupils and numbness/tingling were removed per our neurology subject matter experts.

  - **Revision: Added FAST-ED**
    - **F = Facial Palsy**
    - **A = Arm Weakness**
    - **S = Speech Changes**
    - **T = Time**
    - **E = Eye Deviation**
    - **D = Denial/Neglect**
  - **Rationale:** Adding FAST-ED severity scale to BE-FAST is not only consistent with the EMS National Guidance to assess using both a prehospital stroke scale and a prehospital severity scale, but also supports the Stoke Consortium's diligent work vetting an appropriate severity scale for San Diego County.

- **Perilaryngeal Airway Adjunct (PAA) Options**
  - **Previous:** Esophageal Tracheal Airway Device (ETAD): The "Combitube" is the only such airway approved for prehospital use in San Diego County.
  - **Revision:** Updated "Esophageal Tracheal Airway Device (ETAD): The "Combitube" to "Supraglottic airway (SGA): The "i-gel**"**

  - **Previous:** Laryngeal-Tracheal (LT) airway: The "King Airway" is the only such airway approved for prehospital use in San Diego County.
  - **Revision:** Updated "Laryngeal-Tracheal (LT) airway" to "Retroglottic airway"

- **Rationale:** EMSA inclusion of the SGA to the EMS SOP for paramedics, and best evidence supports adult use of this PAA.
- **Rationale:** PAA language was updated to be more accurate on the classifications of airway devices

- **Unstable**
  - **Previous:** ≥ 15 years (known or apparent age)
  - **Revision:** 15 years or older (known or apparent age)

  - **Previous:** ≤ 14 years (known or apparent age)
  - **Revision:** 14 years or younger (known or apparent age)
  - **Rationale:** Simplified age criteria removing ≥ and ≤ symbols

S-103 BLS/ALS AMBULANCE INVENTORY

- **BLS Optional Items:**
  - **Revision:** Added burn sheets
  - **Rationale:** Burn sheets help to cool the burn and reduce risk of infection.

  - **Revision:** Added a footnote:
    - Agencies may use over-the-counter (OTC) optional items that are FDA approved. All added optional items must have LEMSA approval. Agencies must validate training, education, and QA reporting processes prior to use.
  - **Rationale:** Added to allow for use of OTC items as necessary by agencies without having to specifically outline them as optional items.

  - **Revision:** Added Buprenorphine-naloxone (Suboxone®) (for agencies participating in the Buprenorphine Pilot Program)

  - **Previous:** Positive pressure breathing valve, maximum flow 40 L/min
  - **Revision:** Removed Positive pressure breathing valve, maximum flow 40 L/min

  - **Revision:** Added Positive end expiratory pressure (PEEP) valve (will become a mandatory item on July 1, 2024)
  - **Rationale:** Improves oxygenation and decreases risks of hypoxia, barotrauma, lung hyperinflation, and gastric insufflation. The of PEEP should be considered for any patient who requires mechanical ventilation.

- **A. Airway Adjuncts**
  - **Previous:** Esophageal tracheal double lumen airway (kit)
  - **Revision:** Removed Esophageal tracheal double lumen airway (kit)

  - **Previous:** Perilaryngeal/tracheal airway (King Airway: sizes 3, 4, 5)

- **Revision:** Retroglottic airway (King Airway: sizes 3, 4, 5)

- **Revision:** Added Supraglottic airway (i-gel: sizes 3, 4, 5)
- **Revision:** Added Minimum Requirement for supraglottic airway (i-gel: sizes 3, 4, 5) - 1 each
- **Rationale:** EMSA inclusion of SGAs to the EMS SOP. Evidence supports adding the i-gel SGA adjuncts.

- **Previous:** Combitube: Small adult
- **Revision:** Removed Combitube: Small adult

- **B. Vascular Access/Monitoring Equipment, IV Administration Sets**
  - **Previous:** Macrodrip (2 must be vented)
  - **Revision:** Added Macrodrip (2 must be vented if using acetaminophen vials)
  - **Rationale:** Vented IV administration sets are required when using vials. This change considers flexibility for the vented tubing requirement for acetaminophen in non-vial packaging.

- **D. Other Equipment**
  - **Previous:** Nasogastric intubation setup (8, 10 or 12, 18 french)
  - **Revision:** Nasogastric intubation setup (8, 18 and one of the following: 10 or 12)
  - **Rationale:** Updated language to provide clarification on requirements.

- **F. Replaceable Medications**
  - **Previous:** Acetaminophen IV 1000 mg/100 mL (requires vented tubing)
  - **Revision:** Added (vials require vented tubing)

  - **Previous:** Epinephrine 1:1,000 – 1 mg/1mL ampule
  - **Revision: Epinephrine 1:1,000 – 1 mg/1mL <u>REMOVED ampule</u>**
  - **Rationale:** Removed ampule to allow for different packaging, to include multi-dose vials.

  - **Revision:** Added Tranexamic acid – 1 gm/10 mL
  - **Revision:** Added minimum requirement of one
  - **Rationale:** Identification and early correction of coagulopathy is important to decrease fluid and transfusion requirements, decrease complications, and improve survival.

S-104 TREATMENT PROTOCOL – SKILLS LIST

- **Bougie**
  - **Previous:** Should be use for routine intubations
  - **Revision:** Should be used routinely during intubations
  - **Rationale:** Routine use of the bougie during direct laryngoscopy improves first-

attempt intubation success rates.

- **12-lead EKG**
  - **Previous:** If STEMI/Suspected STEMI notify BH immediately and transport to the appropriate STEMI center.
  - **Revision:** If STEMI suspected, immediately notify BH, transmit 12-lead EKG to appropriate STEMI receiving center and transport.

  - **Previous:** Do not delay transport to repeat
  - **Revision:** Do not delay transport for a repeat 12-lead EKG
  - **Rationale:** Early BH notification and EKG transmission to receiving facility improves coordination and decreases percutaneous coronary intervention (PCI) door-to-device times.

- **Intranasal (IN)**
  - **Revision:** Added comment, if using a mucosal atomization device, see manufacturer's guidance on accounting for dead space.
  - **Rationale:** Added to provide direction and clarification on how to account for dead space on atomization devices.

- **Intubation: ET/Stomal**
  - **Previous:** ETAD
  - **Revision:** Removed ETAD throughout

  - **Previous:** Immediately following insertion of the advanced airway, persistent EtCO2 waveform and reading (other than zero) must be maintained or the ET tube/ETAD must be removed.
  - **Revision:** Removed ETAD
  - **Revision:** Added PAA
  - **Rationale:** ETAD is no longer an approved device. PAA is added for completeness.

- **Intubation: ET/Stomal and Perilaryngeal airway adjuncts**
  - **Previous:** ETAD throughout skill and comment sections
  - **Revision:** Removed ETAD from the skill list and all comments related to the ETAD.
  - **Rationale:** Removed the Combitube/ETAD device from inventory and skill lists.

- **Intubation: Perilaryngeal airway adjuncts**
  - **Revision:** Added Supraglottic airway (i-gel) to skill
  - **Revision:** Added comments:
    - 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

- **Rationale:** EMSA inclusion of SGAs to the EMS SOP. Evidence supports adding the i-gel SGAs.

- **Previous:** Patient <4 feet tall
- **Revision:** For King Airway, patient <4 feet tall
- **Rationale:** Patient height only applies to the King Airway devices and not i-gel devices.

- **Previous:** Immediately following insertion of the advanced airway, persistent EtCO2 waveform and reading (other than zero) must be maintained or the ET tube/ETAD must be removed.
- **Revision:** Removed ETAD
- **Revision:** Added Immediately following insertion of the advanced airway, persistent EtCO2 waveform and reading (other than zero) must be maintained or the ET tube/PAA must be removed.

- **Nasogastric / Orogastric tube**
  - **Previous:** If NG tube needed in a patient with a King Airway, insertion should be via the suction port, if available
  - **Revision:** if NG/OG tube needed in a patient with a King Airway/i-gel, insertion should be via the suction/gastric port, if available.
  - **Rationale:** Including OG, i-gel and gastric port to comments to accommodate new i-gel airway device.

- **Needle Thoracostomy**
  - **Previous:** Severe respiratory distress with unilateral or bilateral absent or diminished or absent breath sounds (unilaterally or bilaterally), and SBP < 90 mmHg, and suspected pneumothorax (Adult)
  - **Revision**: Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and SBP < 90 mmHg, and suspected pneumothorax

  - **Previous:** Severe respiratory distress with unilateral diminished breath sounds with hypotension for age (Pediatric)
  - **Revision:** Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and hypotensive for age, and suspected pneumothorax (Pediatric)

  - **Previous:**
    Insert into 2nd/3rd ICS in mid-clavicular line on the involved side.
    OR
    Insert catheter into anterior axillary line 4th/5th ICS on involved side.
    Revision:
    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)

- **Rationale:** Indication changes removes duplicative language and provides consistency by matching S-139 language. Comment changes highlight preferred versus non-preferred catheter insertion placement.

- **Positive end-expiratory pressure (PEEP) valve**
  - **Revision:** Added positive end-expiratory pressure (PEEP) valve
    - Indication: For BVM ventilation
    - Contraindications:
      Adult:
      - SBP < 90 mmHg
      - Possible pneumothorax

      Pediatric:
      - Possible pneumothorax

    - Comments:
    - 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.
  - **Rationale:** Improves oxygenation and decreases risks of hypoxia, barotrauma, lung hyperinflation, and gastric insufflation. The of PEEP should be considered for any patient who requires mechanical ventilation.

- **Prehospital stroke screening and severity scales**
  - **Previous:** Prehospital stroke scale
  - **Revision:** Removed scale and added screening and severity scales to skills title

  - **Previous:** Use BE FAST Prehospital Stroke Scale in assessment of possible TIA or stroke patients
  - **Revision:** Use BE-FAST Prehospital Stroke Screening Scale in assessment of possible TIA or stroke patients

  - **Previous**: **E**=**E**yes: Blurred/double or loss of vision, asymmetric pupils
  - **Revision:** Removed asymmetric pupils

- **Previous: A** = **A**rms and/or legs: Unilateral weakness exhibited by a drift or drop, numbness/tingling
- **Revision:** Removed numbness/tingling

- **Revision:** Added 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
- **Rationale:** Adding FAST-ED severity scale to BEFAST is not only consistent with the EMS National Guidance to assess using both a prehospital stroke scale and a prehospital severity scale, but also supports the Stoke Consortium's diligent work vetting an appropriate severity scale for San Diego County.

➢ P-115 ALS MEDICATION LIST

- **Acetaminophen:**
  - **Previous:** BHPO Required for
  - **Revision:** (Adult) BHPO required for:

  - **Previous:** BHPO Required for:
    - Major Trauma with GCS <15
  - **Revision:** Removed BHPO Required:
    - Major Trauma with GCS < 15

  - **Revision:** Added
    - (Pediatric) BHPO required for:
    - Isolated head injury
    - Acute onset severe headache
    - Drug/ETOH intoxication
    - Major trauma with GCS <15
    - Suspected active labor

- **Aspirin**
  - **Previous:** Aspirin 324 mg chewable PO should be given regardless of prior daily dose(s)
  - **Revision:** Removed should be given regardless of prior daily dose(s)

  - **Revision:** Added if aspirin is not given, document the reason
  - **Revision:** Added aspirin may be withheld if an equivalent dose has been administered by a healthcare professional

- **Rationale:** Best evidence suggests early oral aspirin administration raises short and long-term survival ratio in subjects with non-traumatic chest pain typical of an acute MI.

- **Buprenorphine-Naloxone (Suboxone®)**
  - **Revision: Added Suspected opioid withdrawal**
  - **Revision: Added S-145**
  - **Revision: Added for agencies participating in the buprenorphine LOSOP**
  - **Rationale:** Prehospital initiation of buprenorphine treatment for Opioid Use Disorder (OUD) by paramedics is an emerging intervention. Data demonstrates a significant increase in both short and long-term mortality following an opioid overdose.

- **Calcium Chloride (CaCl2)**
  - **Revision:** Added contact BH if dose exceeds par level
  - **Rationale:** To provide direction when large weight-based doses are required

- **Dextrose**
  - **Revision:** Added in adults, may substitute D10 for D50
  - **Rationale:** Revised to accommodate D10 or D50 concentration. Given the ease of use, lower likelihood of extravasation injury, and wider range of patient applicability. D10 is a permanent acceptable substitute for D50.

- **Epinephrine (Push-Dose)**
  - **Revision:** Removed S-133 and S-166
  - **Rationale:** Push-dose epinephrine is not referenced in these protocols; only epinephrine.

- **Epinephrine**
  - **Revision:** Removed S-168
  - **Rationale:** This protocol references push-dose epinephrine and not epinephrine.
  - **Revision:** Added S-133 and S-166
  - **Rationale:** These were previously under the “Epinephrine (Push-Dose)” category and should be under the “Epinephrine” category instead.

- **Fentanyl Citrate**
  - **Previous:** Changing route and administration requires BHO (e.g., IV to IM or IM to IN)
  - **Revision:** Removed (e.g., IV to IM or IM to IN)
  - **Rationale:** Removed examples to avoid confusion and to provide consistency

across medications

- **Previous:** Changing analgesic requires BHO (e.g., fentanyl to ketamine)
- **Revision:** Removed (e.g., fentanyl to ketamine)

- **Previous:** BHPO required for:
  - Major trauma with GCS <15
- **Revision:** Removed Major trauma with GCS <15

- **Revision:** Added (Pediatric) BHPO required for:
  - Isolated head injury
  - Acute onset severe headache
  - Drug/EOH Intoxication
  - Major trauma with GCS <15
  - Suspected active labor

- **Glucagon**
  - **Revision:** Removed S-144
  - **Rationale:** Glucagon is not referenced in this protocol.

- **Ketamine**
  - **Previous:** Changing route and administration requires BHO (e.g., IV to IM or IM to IN)
  - **Revision:** Removed (e.g., IV to IM or IM to IN)
  - **Rationale:** Removed example to avoid confusion and to provide consistency across medications

  - **Previous:** Changing analgesic requires BHO (e.g., fentanyl to ketamine)
  - **Revision:** Removed (e.g., fentanyl to ketamine)

  - **Previous:** BHPO required for:
    - Major trauma with GCS <15
  - **Revision:** Removed Major trauma with GCS <15

- **Lidocaine**
  - **Previous:** Pulse ≥ 60 status post-defibrillation (defibrillation/AED)
  - **Revision:** Removed Pulse ≥ 60 status post-defibrillation (defibrillation/AED)
  - **Rationale:** This indication was removed under a previous cycle change.

- **Midazolam**
  - **Revision:** Added pre-existing ET tube agitation

- **Revision:** Added S-135
- **Rationale:** Added indication for midazolam administration to S-135 Pre-Existing Medical Interventions for pre-existing ETT agitation after discontinuation of pre-existing sedative.

- **Morphine Sulphate**
  - **Previous:** Changing route and administration requires BHO (e.g., IV to IM or IM to IN)
  - **Revision:** Removed (e.g., IV to IM or IM to IN)
  - **Rationale:** Removed example to avoid confusion and to provide consistency across medications.

  - **Previous:** Changing analgesic requires BHO (e.g., fentanyl to ketamine)
  - **Revision:** Removed (e.g., fentanyl to ketamine)

  - **Previous:** BHPO required for:
    - Major trauma with GCS <15
  - **Revision:** Removed Major trauma with GCS <15

  - **Revision:** Added (Pediatric) BHPO required for:
    - Isolated head injury
    - Acute onset severe headache
    - Drug/EOH Intoxication
    - Major trauma with GCS <15
    - Suspected active labor

- **Naloxone**
  - **Previous:** S-123, S-161, S-134, S-165
  - **Revision:** Added S-145

  - **Previous:** If Patient refuses transport, give an additional naloxone IM SO
  - **Revision:** If Patient refuses transport, give an additional naloxone IM SO, or IN via nasal spray preloaded single-dose device SO

  - **Previous:** If patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO
  - **Revision:** Removed if patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO

- **Revision:** Added for patients and/or other individuals suspected of opioid use disorder, provide Leave Behind Naloxone Kit with education per the Leave Behind Naloxone Program

- **Tranexamic Acid**
  - **Revision:** Added
    - Indications: Trauma-associated hemorrhage
    - Indications: Post-partum hemorrhage

  - **Revision** Added protocols
    - S-139
    - S-133, S-166

  - **Revision:** Added comments
    - Rapid infusion can cause hypotension
    - Slow down infusion if nausea, vomiting, or near syncope

  - **Revised:** Added contraindications
    - Contraindicated in patients with:
      1. Isolated, severe head injury
      2. Potential need for reimplantation
      3. Thromboembolic event within 24 hours (i.e., stroke, MI, or PE)
  - **Rationale:** The identification and early correction of coagulopathy is important to decrease fluid and transfusion requirements, decrease complications, and improve survival.

P-115A PEDIATRIC WEIGHT-BASED DOSAGE STANDARDS

- **Amiodarone IV/IO**
  - **Previous:** Maximum Single Dose 300
  - **Revision:** Maximum Single Dose 150
  - **Revision:** Consistent with PALS guidance

P-117 ALS PEDIATRIC (<15) DRUG CHART

- **Grey/Pink, Red/Purple/Yellow, White, Blue, Orange, Green, Turquoise**
  - **Revision:** Removed order types for consistency purposes
  - **Rationale:** Order types (i.e., SO, BHO, BHPO) can be found within the specific treatment protocols.

  - **Previous:** Amiodarone (VF/Pulseless VT)
  - **Revision:** Amiodarone (VT/Pulseless VT ◊)

  - **Previous:** ◊ Antiarrhythmic dosing for stable VT per BHPO
  - **Revision:** ◊ Dosing for stable VT per BHPO
  - **Rationale:** A footnote was added to delineate guidance for stable VT from the

SO orders for pulseless arrests (VF/Pulseless VT).

- **Previous:** Atropine (OPP)
- **Revision:** Atropine (Organophosphate)
- **Rationale:** Removed acronym and updated indication for completeness.

- **Red/Purple/Yellow**
  - **Previous:** Acetaminophen DO NOT ADMINISTER
  - **Revision:** Added Acetaminophen IV (≥2 years of age)
    - VOL: 21 mL
    - DOSE: 210 mg
    - CONCENTRATION: 1 gm/100 mL
  - **Rationale:** Updated section to include acetaminophen for appropriate age.

- **White, Blue, Orange, Green, Turquoise**
  - **Previous:** Epinephrine (Cardiac Arrest) IV/IO
  - **Revision:** Removed (Cardiac Arrest)
  - **Rationale:** Removed to avoid confusion and be consistent across all colors.

- **Turquoise**
  - **Previous:** Pediatric patients up to age 15 who are no longer than the LBRT are treated with adult doses
  - **Revision:** Updated language to patients up to age 15 who are longer than the LBRT are treated with adult doses except for amiodarone.
  - **Rationale:** This update considers exceptions to the LBRT guidance for adult dose considerations.

  - **Previous:** Amiodarone
    - VOL: 6 mL
    - DOSE: 300 mg
  - **Revision:** Amiodarone
    - VOL: 3 mL
    - DOSE: 150 mg
  - **Rationale:** The Amiodarone volume and dose were updated to remain consistent with PALS guidance.

S-123 ALTERED NEUROLOGIC FUNCTION (NON-TRAUMATIC)

- **ALS - Symptomatic suspected opioid OD**
  - **Previous:** Naloxone 2 mg IN/IM/IV SO, MR SO. Titrate IV dose to effect, to drive the respiratory effort
  - **Revision:** 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

- **Previous:** If patient refuses transport, give additional naloxone 2 mg IM SO
- **Revision:** 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
- **Rationale:** The changes expand discretion for administration and distribution and supports mitigating efforts of the national opioid crisis.

- **Revision:** Removed if patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO
- **Rationale:** Removed the Leave Behind Naloxone Program and moved it to a new protocol (S-145) that focuses on opioid mitigation.

- **Symptomatic hypoglycemia with altered LOC or unresponsive to oral glucose agents**
  - **Previous:** D_{50} 25 gm IV SO if BS <60 mg/dl
  - **Revision:** Dextrose 25 gm IV SO if BS <60 mg/dl
  - **Rationale:** Revised to accommodate D_{10} or D_{50} concentration. Given the ease of use, lower likelihood of extravasation injury, and wider range of patient applicability. D_{10} is a permanent and acceptable substitute for D_{50}.

S-126 DISCOMFORT/PAIN FOR SUSPECTED CARDIAC ORIGIN

- **ALS**
  - **Previous:** Obtain 12-lead EKG and transmit to receiving hospital.
  - **Revision:** Obtain 12-lead EKG

  - **Revision:** Repeat 12-lead EKG after arrhythmia conversion or any change in patient condition
    - Footnote added: Do not delay transport for a repeat 12-lead EKG.
  - **Previous:** If STEMI, notify BH immediately and transport to appropriate STEMI Center
  - **Revision:** If STEMI suspected, immediately notify BH, transmit 12-lead EKG to appropriate STEMI receiving center and transport
    - Footnote: Immediately transmit 12-lead EKG for suspected STEMI patients regardless of patient presentation
  - **Rationale:** Early BH notification and EKG transmission to receiving facility increases percutaneous coronary intervention (PCI) time.

- **Previous:** Aspirin 324 mg chewable PO SO should be given regardless of prior daily dose(s)
- **Revision: deleted <u>should be given regardless of prior daily dose(s)</u>**
- **Rationale:** Best evidence suggests early oral aspirin administration raises short and long-term survival ratio in subjects with non-traumatic chest pain typical of an acute MI.

➢ S-127 CPR/ARRHYTHMIAS

- **ALS CPR Specific Protocols**
  - **Revision:** Added Extracorporeal Cardiopulmonary Resuscitation

- **Ventricular Fibrillation / Pulseless VT**
  - **Revision:** Added footnote follow ECPR criteria and protocol
  - **Revision:** Removed "Early Base Hospital contact should be considered for persistent or recurrent VF/pulseless VT"

  - **Previous:** Amiodarone 300 mg IV/IO, MR 150 mg (max 450 mg) SO
  - **Revision:** Added Amiodarone 300 mg IV/IO, MR 150 mg **<u>q3-5 min</u>** (max 450 mg) SO

  - **Revision:** Added footnote "If patient meets ECPR criteria, make base hospital contact and transport IMMEDIATELY to an ECPR Receiving Center (per S-127A)"

- **ROSC:**
  - Previous: Transport to closest STEMI Center
  - **Revision:** Added footnote to STEMI Center
    - Do not change destination if already enroute to an ECPR Receiving Center

- **Extracorporeal Cardiopulmonary Resuscitation (ECPR) Criteria**
  - Footnote: if patient meets ECPR criteria, make base hospital contact and transport IMMEDIATELY to an ECPR Receiving Center (see S-127A)
  - ECPR criteria:
    - 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-132 DECOMPRESSION ILLNESS/DIVING/ALTITUDE-RELATED INCIDENTS

- **Global Changes**
  - **Previous:** BLS
    - 100% O_2 and/or ventilate PRN
    - O_2 saturation PRN
    - Spinal stabilization
  - **Revision:** BLS
    - 100% 0_2 via mask
    - Ventilate PRN
    - 0_2 saturation
    - Spinal stabilization PRN
    - Warming PRN, remove wetsuit, if able

  - **Previous:** Diving victim: A person (including a free-diver) with any symptoms after breathing sources of compressed air below the water's surface
  - **Revision:** A person with any symptoms after diving, regardless of whether compressed gasses such as air were used.

  - **Previous:** Minor Presentation
  - **Revision:** Minor symptoms

  - **Previous:** Major presentation
  - **Revision:** Major Symptoms, and added urinary retention

  - **Previous:** 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.
  - **Revision:** Diving victim disposition
    - Deleted: All previous diving victim disposition information
    - Added: All patients (including active-duty military) should be transported to UCSD Hillcrest Emergency Department (200 W Arbor Dr)

- Added: Follow policy T-460 if trauma criteria are met
- Added: Bring dive computer and gear if available

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

- **Post-partum hemorrhage**
  - **Previous:** Post-partum hemorrhage with SBP < 90 mmHg
    - 500 mL fluid bolus IV/IO PRN SO, MR x2 q10 min SO
  - **Revision:** Removed post-partum hemorrhage with SBP < 90 mmHg
    - 500 mL fluid bolus IV/IO PRN SO, MR x2 q10 min SO
  - **Revision:** Added 500 mL fluid bolus IV/IO SO, MR x2 q10 min to maintain SBP ≥90mmHg SO

  - **Revision:** Added 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

➢ S-134 POISONING / OVERDOSE

- **ALS - Symptomatic suspected opioid OD**
  - **Previous:** Naloxone 2 mg IN/IM/IV SO, MR SO. Titrate IV dose to effect, to drive the respiratory effort
  - **Revision:** 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

  - **Previous:** If patient refuses transport, give additional naloxone 2 mg IM SO
  - **Revision:** 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
  - **Rationale:** The changes expand discretion for administration and distribution and supports mitigating efforts of the national opioid crisis.

  - **Revision:** Removed if patient refuses transport, consider dispensing Leave Behind Naloxone 4 mg nasal spray preloaded device with education for patient and household members SO
  - **Rationale:** Removed the Leave Behind Naloxone Program and moved it to a new protocol S-145 that focuses on opioid mitigation.

➢ S-135 PRE-EXISTING MEDICAL INTERVENTIONS

- **Revision:** Added 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
- Footnote: The family members, if available, should be familiar with the proper dosage and have the necessary equipment.

- **Revision:** Existing ET tube after discontinuation of pre-existing sedative
  - Experiencing agitation and a potential for airway comprise
    - Midazolam 2-5 mg IM/IN/IV SO, MR x1 in 5-10 min SO

S-139 RESPIRATORY DISTRESS

- **Notes**
  - **Previous:** For respiratory arrest, administer 5 quick breaths
  - **Revision:** For respiratory arrest, immediately start BVM ventilation
  - **Rationale:** These changes represent suggestions from and through our QA process.

S-139 TRAUMA

- **SBP**
  - **Previous:** SBP < 80 mmHg or signs of shock
  - **Revision:** SBP < 90 mmHg or signs of shock

  - **Previous:** 500 mL fluid bolus IV/IO SO, MR x3 q15 min to maintain SBP ≥ 80 mmHg
  - **Revision:** 500 mL fluid bolus IV/IO SO, MR x3 q15 min to maintain SBP ≥ 90 mmHg

- **Trauma-associated hemorrhage**
  - **Revision:**
    - 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
  - **Rationale:** The identification and early correction of coagulopathy is important to decrease fluid and transfusion requirements, decrease complications, and improve survival.

S-141 PAIN MANAGEMENT

- **Special considerations for all main medications except acetaminophen**
  - **Previous:** Special considerations for all pain medications except acetaminophen
  - **Revision:** Special considerations for pain medications

- **Rationale:** Clarified incongruency as BHPO is required for acetaminophen special considerations.

- **Special considerations for pain medications**
  - **Previous:** 1. Changing route of administration requires BHO (e.g., IV to IM or IM to IN)
  - **Revision:** Removed (e.g., IV to IM or IM to IN)
  - **Rationale:** Removed example to avoid confusion and for consistency across medications.

  - **Previous:** 2. Changing analgesics requires BHO
  - **Revision:** 2. Changing analgesics (other than acetaminophen) requires BHO
  - **Rationale:** Added acetaminophen exception to BHO requirement.

  - **Previous:** 2. Changing analgesic requires BHO (e.g., Fentanyl to Ketamine) requires BHO
  - **Revision:** Removed (e.g., IV to IM or IM to IN)
  - **Rationale:** Removed example to avoid confusion and for consistency across medications.

  - **Previous:** 4. BHPO required prior to administration if
    - Drug/EtOH intoxication
  - **Revision:** ETOH

  - **Previous** 4. BHPO required prior to administration if
    - Major trauma with GCS <15
  - **Revision:** Removed Major trauma with GCS < 15

- **For moderate pain (score 4-6), severe pain (score 7-10)**
  - **Previous:** Fentanyl (IN dosing)
    - 3rd dose fentanyl 50 mcg IN BHO
  - **Revision:** Added 3rd dose fentanyl up to 50 mcg IN BHO
  - **Rationale:** Clarified incongruency as BHPO is required for acetaminophen special considerations.

- **For moderate to severe pain (score ≥5) with trauma, burns, or envenomation injuries**
  - **Previous:** For moderate to severe pain (score ≥5) with trauma, burns, or envenomation injuries
  - **Revision:** For moderate to severe pain (score ≥5) (e.g., trauma, burns, or envenomation injuries)
  - **Rationale:** Clarified examples versus actual requirements.

- **Previous:** 0.2 mg/kg in 100 ml of NS slow IV drip over 15 min SO. Maximum for any IV dose is 20 mg.
- **Revision:** 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.
- **Rationale:** Best practice supports increase in IV dose and a reduction in time for administration.

➢ S-144 STROKE AND TRANSIENT ISCHEMIC ATTACK

○ BE-FAST + FASTED

- **Previous:** Use BE-FAST Prehospital Stroke Scale in assessment of possible TIA or stroke patients.
- **Revision:** Use BE-FAST Prehospital Stroke Screening Scale in assessment of possible TIA or stroke patients

- **Revision:** Removed “asymmetric pupils” from the eyes assessment in BE-FAST
- **Revision:** Removed “numbness/tingling” from the arms/legs assessment in BE-FAST
- **Rationale:** Asymmetric pupils and numbness/tingling were removed per our neurology subject matter experts.

- **Revision:** Added 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
- **Rationale:** Included FAST-ED severity scale to BEFAST. This action is not only consistent with the EMS National Guidance to assess using a prehospital stroke scale, and a prehospital severity scale, but also supports the Stoke Consortium’s diligent work vetting an appropriate severity scale for San Diego County.

➢ S-145 / S-145A OPIOID WITHDRAWAL / OPIOID USE DISORDER

- **Revision:** New protocols

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

➢ S-163 PEDIATRIC CPR ARRYTHMIAS

- **Ventricular Fibrillation/Pulseless VT, Persistent VF/VT after 3 defibrillation attempts**
  - **Previous:** Lidocaine per drug chart IV/IO SO, MR per Drug Chart IV/IO q5 min SO
  - **Revision:** Lidocaine per drug chart IV/IO SO, MR per drug chart x1 q5 min SO
    - Added MR x1, and removed redundant IV/IO
- **Adjunct Cardiac Devices**
  - **Revision:** Added 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

- **Rationale:** Added the section to pediatrics for consistency and to provide treatment guidelines for these situations.

➢ S-167 RESPIRATORY DISTRESS

- **Notes**
  - **Added:** For respiratory arrest, immediately start BVM ventilation
  - **Rationale:** Added for consistency between adult and pediatric protocols.
  - **Rationale:** These changes represent suggestions from and through our QA process.

➢ S-169 PEDIATRIC TRAUMA

- **Suspected Pneumothorax**
  - **Previous:** Severe respiratory distress with unilateral diminished breath sounds and hypotensive for age
  - **Revision:** Severe respiratory distress with diminished or absent breath sounds (unilaterally or bilaterally), and hypotensive for age, and suspected pneumothorax
  - **Rationale:** Updated language to be consistent with the adult indications.

➢ S-173 PEDIATRIC PAIN MANAGEMENT

- **Special Considerations**
  - **Revision:** Moved this section to the top to be consistent with S-141
  - **Previous:** 1) Changing route of administration requires BHO (e.g., IV to IM or IN to IV)
  - **Revision:** Removed example (e.g., IV to IM or IN to IV)
  - **Rationale:** Removed example to avoid confusion and for consistency across medications.

- **Special Considerations**
  - **Previous:** 3) Multiple trauma with GCS < 15
  - **Revision:** Replaced “Multiple” with “Major”
  - **Rationale:** Updated language for consistency.

- **Acetaminophen**
  - **Revision:** Added for mild pain (score 1-3) or moderate pain (score 4-6)
  - **Rationale:** For clarification and consistency in pain management treatment.

- **Fentanyl / Morphine**
  - **Revision:** Added for moderate pain (score 4-6) or severe pain (score 7-10)
  - **Rationale:** For clarification and consistency in pain management treatment.