2024 EMS Update Class Outline

Instructors: EMSA Director, Ryan Rosander and EMSA Medical Director, Dr. Bill Mulkerin

Introductions of EMSA staff and ALS providers (10 MIN).

Bulletin review (10 MIN):

- Policy #343, FTO Program/April 8th 2024 and Q/A
- Airway management, ETI, SGA, and cardiac arrest SLOEMSA bulletin/June 7th, 2024 and Q/A
- Reminder that 4 BSM are required for reaccreditation after 1/1/2025

New medications with formularies (5 MIN):

- Amiodarone and Q/A

Revised Protocols:

- Protocol #641 CARDIAC ARREST (ATRAUMATIC) with Q/A (5 MIN)
- Protocol #643 VENTRICULAR TACHYCARDIA WITH PULSES with Q/A (5 MIN) *

Revision to formulary (5 MIN):

- Lidocaine and Q/A

New medications with formularies (5 MIN):

- Ketamine and Q/A

Revised Protocols:

- Protocol #603 PAIN MANAGEMENT with Q/A (10 MIN)

BREAK (10 MIN)

Revised Procedures:

- Procedure #711 USE OF RESTRAINTS with Q/A (5 MIN)

Revised Protocols:

- Protocol #619 SHOCK (MEDICAL) – HYPOTENSION/SEPSIS with Q/A (5 MIN)
- Protocol #640 ADULT CARDIAC CHEST PAIN

Revised Procedures:

- Procedure #705 NEEDLE THORACOSTOMY with Q/A (5 MIN)

Revised Protocols:

- Protocol #602 AIRWAY MANAGEMENT with Q/A (5 MIN)
- Protocol #661 TRAUMATIC CARDIAC ARREST with Q/A (5 MIN)

Revised Procedures:

- Procedure #710 VASCULAR ACCESS AND MONITORING with Q/A (5 MIN)

Needle Thoracostomy/IO skills break out session (25 MIN)

Revised Policy:

- Policy #200 SCENE MANAGEMENT with Q/A (10 MIN)

New Policy:

- Policy #217 PHYSICIAN ON-SCENE with Q/A (5 MIN), Policy #219 Upgrade/Downgrade

Revised Policy:

- Policy #155 EMERGENCY MEDICAL SERVICE HELICOPTER OPERATIONS with Q/A (5 min)

EXAM (25 MIN)

17 questions, 14/17 passing score

Policy and protocol currently in committee (IF TIME LEFT, or people want to stay):

- Policy #218 UPGRADE/DOWNGRADE OR CANCELLATION OF EMS RESPONSE
- Protocol #640 CHEST PAIN (fluid bolus, Lrg bore IVs x2, Pads out and ready)
- Policy #219 ASSISTING PATIENTS WITH THEIR EMERGENCY MEDICATIONS (describe)
- Protocol #641 CARDIAC ARREST (ATRAUMATIC)

COURSE OBJECTIVES:

1. Go over all clinical ALS policy, procedure, and protocol changes that are being implemented 1/1/2025.
2. Ensure ALS providers are competent in the skills being changed in procedures and protocols.
3. Clarify the intent and answer questions regarding system changes with the EMSA Director and Medical Director.

COUNTY OF SAN LUIS OBISPO HEALTH AGENCY
PUBLIC HEALTH DEPARTMENT
Nicholas Drews, *Health Agency Director*
Penny Borenstein, MD, MPH *Health Officer/Public Health Director*

Emergency Medical Services Agency

URGENT

Bulletin 2024-02 – April 8th, 2024

PLEASE POST

Policy #343 Field Training Officer (FTO) Program

The San Luis Obispo County Emergency Medical Services Agency (SLOEMSA) has revised the Field Training Officer (FTO) Program to meet the system's current needs. Policy #343 has successfully passed the committee process and has been recommended for approval by the Emergency Medical Care Committee (EMCC).

Some of the changes are as follows:

- Current policy states a paramedic must have 4 years of experience to apply as an FTO; that requirement has been reduced to 2 years of experience, with one year in the county.
- Added to letters of recommendation to include an applicant's agency EMS coordinator and SLOEMSA Medical Director.
- There are three additions to FTO status: FTO I, FTO II, and FTO Liason.
- To maintain FTO I or II status, an FTO must have overseen a minimum of 1 intern or accreditee within a 2-year accreditation cycle; exceptions can be granted with SLOEMSA approval.
- To retain FTO status, FTOs shall complete Policy #343 Attachment A and submit the form correlating with their reaccreditation cycle.

FTO I

- Accredits paramedics within San Luis Obispo County.
- Assisting accredited paramedics in remediation set by their agency, SLOEMSA, or both.

FTO II/Preceptor

- Performs the above FTO I duties as well as conducting paramedic internships.

FTO Liason

- Is an agency-appointed designee, the lead FTO, and the main point of contact between SLOEMSA and the FTOs.

- Attend FTO meetings set by SLOEMSA and distribute information discussed within the meetings.
- Train the FTO I in accrediting paramedics.
- Submission of any application for internship or accreditation.

Any current FTO will be grandfathered in as FTO II/Preceptor; reapplication is unnecessary. Policy #343 is in effect as of 04/01/2024; please read the policy thoroughly.

For any questions regarding this bulletin, please contact Ryan Rosander at rrosander@co.slo.ca.us. You may also call at 805-788-2513.

COUNTY OF SAN LUIS OBISPO HEALTH AGENCY
PUBLIC HEALTH DEPARTMENT
Nicholas Drews, *Health Agency Director*
Penny Borenstein, MD, MPH *Health Officer/Public Health Director*

Emergency Medical Services Agency

URGENT

Bulletin 2024-03 – June 7th, 2024

PLEASE POST

Airway Management and Cardiac Arrest Revisions

The San Luis Obispo County Emergency Medical Services Agency (SLOEMSA) has revised Airway Management, including SGA/ETI and Cardiac arrest protocols and procedures, to reduce confusion and maximize efficiency within the system. Protocol #602: Airway Management, Procedure #717: Endotracheal Intubation, Procedure #718: Supraglottic Airway Device, Protocol #641: Cardiac Arrest (Atraumatic), and Protocol #661 Traumatic Cardiac Arrest have all successfully passed the committee process and have been recommended for approval by the Emergency Medical Care Committee (EMCC).

Effective Immediately, some of the changes are as follows:

Protocol #602: Airway Management

- Adding provider discretion for which ALS airway to use, ETI or SGA.
- Removed all language about visualizing a patient's airway/vocal cords before determining which ALS airway to utilize.

Procedure #717: Endotracheal Intubation

- Revised ETI indications to include cardiac arrest regardless of ROSC.
- Removed situations where BLS techniques cannot maintain the airway from the indications list.
- Removed language about BLS airway use; this is covered in BLS protocols.
- Added after 2nd ETI attempt, the provider shall proceed to SGA.
- Added the definition of compromised airway referencing ETI indications.
- Added ETI is indicated during a cardiac arrest if the provider feels they can do so without interruption in HPCPR; otherwise, proceed directly to SGA.
- Added PCR documentation component if the provider cannot establish ALS airway.

Procedure #718: Supraglottic Airway Device

- Removed all language about visualizing a patient's airway/vocal cords before SGA utilization.
- Added SGA is indicated in cardiac arrest.
- Added PCR documentation component if the provider cannot establish ALS airway.
- Removed all language about first visualizing a patient's airway/vocal cords and then determining which ALS airway to utilize.

Protocol #641: Cardiac Arrest (Atraumatic)

- Adding provider discretion to ETI or SGA utilization.
- Removing ROSC language to ALS airway utilization.
- Added PCR documentation component if the provider cannot establish ALS airway.

Protocol #661 Traumatic Cardiac Arrest

- When utilizing Oral Intubation or Supraglottic Airways (Adults), provider discretion.
- Added PCR documentation component if the provider cannot establish ALS airway.

For any questions regarding this bulletin, please contact Ryan Rosander at rrosander@co.slo.ca.us. You may also call at 805-788-2513.

Base Station requirement for EMS personnel renewals continued:

- Compliance for year 2023 is proof of one BSM.
  - If your credentials expire on or before 6/30/23, no BSMs required.
  - Expiration of 7/31/23 – 12/31/23, one BSM is required.
  - Expiration of 1/31/24 – 6/30/24, two BSMs are required.
  - Expiration of 7/31/24 – 12/31/24, three BSMs are required.
  - Expiration of 1/31/25 and after requires four BSMs.

- **Initial MICN orientations:** Field and Med Com Orientations will be required for all initial MICNs applying on or after April 1st, 2023. A list of ALS providers and contacts, along with Med Com contacts for scheduling these orientations will be attached to this bulletin.

If you have any questions, please contact Rachel Oakley at roakley@co.slo.ca.us.

AMIODARONE (Cordarone®)

Classification: Class III Antiarrhythmic

Action: Prolongs cardiac repolarization. Also has sodium channel blockade, beta adrenergic blockade, and calcium channel blockade effects.

Indications:

1. Cardiac Arrest with Ventricular Fibrillation or Ventricular Tachycardia without Pulses
2. Ventricular Tachycardia with Pulses

Contraindications:

1. **Second Degree Type II Heart Block**
2. **Third Degree Heart Block**
3. **Junctional Bradycardia**
4. **Ventricular ectopy associated with bradycardia.**
5. **Idioventricular rhythm**
6. **Known allergy or sensitivity to Amiodarone.**

Adverse Effects: **CNS: Hypotension, Rhythm Disturbances, Bradycardia, CHF, Cardiac Arrest, Shock, Heart Block, SIADH**
Respiratory: Respiratory Depression, Pulmonary Toxicity
GI: Vomiting, Hepatotoxicity
Skin: Rash
Integumentary: Anaphylaxis
Musculoskeletal: Rhabdomyolysis
Renal: Acute Renal Failure

Administration:

ADULT DOSE

Ventricular Fibrillation/ Ventricular Tachycardia without Pulses:

- **300mg (50 mg/ml) IV/IO push; if rhythm persists 5 minutes after initial dose, 150mg IV/IO push refractory dose.**

Ventricular Tachycardia with Pulses:

- **150mg IV/IO drip over 10 min; repeat in 5 min to a total of 300mg.**

****Add amiodarone to a 100cc bag of Normal Saline with macro drip tubing and mix well.**

PEDIATRIC DOSE

Ventricular Fibrillation/ Ventricular Tachycardia without Pulses:

- **5mg/kg IV/IO push; repeat every 5 min to a max of 15mg/kg**

Ventricular Tachycardia with Pulses:

- **5mg/kg IV/IO over 30 min (using 100cc bag Normal Saline)**

****Add Amiodarone to a 100cc bag of Normal Saline with macro drip tubing and mix well.**

Onset: Immediate

Duration: 10-20 Minutes

CARDIAC ARREST (ATRAUMATIC)

ADULT	PEDIATRIC (≤34 KG)
BLS Procedures	

• Universal Algorithm #601
• High Performance CPR (HPCPR) (10:1) per Procedure #712
  • Continuous compressions with 1 short breath every 10 compressions
• AED application (if shock advised, administer 30 compressions prior to shocking)
• Pulse Oximetry
  • O_2 administration per Airway Management Protocol #602
	• Same as Adult
	• CPR compression to ventilation ratio
	  • Newborn - CPR 3:1
	  • Neonate - 1 day to 1 month – CPR 15:2
	  • >1 month – HPCPR 10:1
	• AED – pediatric patient >1 year
	• Use Broselow tape or equivalent if available

ALS Procedures	

Rhythm analysis and shocks
• At 200 compressions begin charging the defibrillator while continuing CPR
• Once fully charged, stop CPR for rhythm analysis
• **Defibrillate V-Fib/Pulseless V-tach –** Shock at ~~120J~~ the maximum manufacturer setting and immediately resume CPR. Subsequent shocks will also be at the maximum manufacturer setting.
• After 3rd shock, pt remains in refractory V-Fib or V-Tach, consider vector change defibrillation. (See notes)
  • ~~Subsequent shock, after 2 mins of CPR: 150J, then 200J~~
  • ~~Recurrent V-fib/Pulseless V-tach use last successful shock level~~
• **No shock indicated** – dump the charge and immediately resume CPR
 	
V-Fib/Pulseless V-Tach and Non-shockable Rhythms
• **Epinephrine 1:10,000** 1mg IV/IO repeat every 3-5 min
  • Do not give epinephrine during first cycle of CPR
 	
V-Fib/Pulseless V-Tach
• **Amiodarone** 300mg IV/IO push; if rhythm persists after 5 min, administer 150mg IV/IO push refractory dose.
	• **Emphasize resuscitation and HPCPR rather than immediate transport**
	
	Rhythm analysis and shocks
	• Coordinate compressions and charging same as adult
	• **Defibrillate V-Fib/Pulseless V-Tach** – shock at 2 J/kg and immediately resume CPR
	  • Subsequent shock, after 2 mins of CPR: 4J/kg
	  • Recurrent V-Fib/Pulseless V-tach use last successful shock level
	• **No shock indicated –** dump the charge and immediately resume CPR
	
	V-Fib/Pulseless V-Tach and Non-shockable Rhythms
	• **Epinephrine 1:10,000** 0.01 mg/kg (0.1 ml/kg) IV/IO not to exceed 0.3mg, repeat every 3-5 min
	  • Do not give epinephrine during first cycle of CPR
	
	V-Fib/Pulseless V-Tach
	• **Amiodarone** 5mg/kg IV/IO push; repeat every 5 min to a max of 15mg/kg.

ROSC with Persistent Hypotension

- Push-Dose Epinephrine 10 mcg/ml 1ml IV/IO every 1-3 min
  - Repeat as needed titrated to SBP >90mmHg
  - See notes for mixing instructions

OR

- Epinephrine Drip start at 10 mcg/min IV/IO infusion
  - Consider for extended transport
  - See formulary for mixing instructions

Base Hospital Orders Only

~~ROSC with Persistent Hypotension~~

- ~~**Push-Dose Epinephrine 10 mcg/ml** 1ml IV/IO every 1-3 min~~
  - ~~Repeat as needed titrated to SBP >90mmHg~~
  - ~~See notes for mixing instructions~~

~~***OR***~~

- ~~**Epinephrine Drip** start at 10 mcg/min IV/IO infusion~~
  - ~~Consider for extended transport~~
  - ~~See formulary for mixing instructions~~

Contact STEMI Receiving Center (French Hospital)

- Refractory V-Fib or V-Tach not responsive to treatment
- Request for a change in destination if patient rearrests en route
- Termination orders when unresponsive to resuscitative measures
- As needed

Contact appropriate Base Station per Base Station Report Policy #121

Contact closest Base Hospital for additional orders

ROSC with Persistent Hypotension for Age

- **Push-Dose Epinephrine 10 mcg/ml** 1 ml IV/IO (0.1 ml/kg if <10kg) every 1-3 min
  - Repeat as needed titrated to age appropriate SBP
  - See notes for mixing instructions

OR

- **Epinephrine Drip** start at 1 mcg/min, up to max of 10 mcg/min IV/IO infusion
  - Consider for extended transport
  - See formulary for mixing instructions

- As needed

Notes

- **Mixing Push-Dose Epinephrine 10 mcg/ml (1:100,000):** Mix 9 ml of Normal Saline with 1 ml of **Epinephrine 1:10,000**, mix well.
- Use manufacturer recommended energy settings if different from listed.

- Assess for reversible causes: tension PTX, hypoxia, hypovolemia, hypothermia, hyperkalemia, hypoglycemia, overdose.
- Vascular access – IV preferred over IO – continue vascular access attempts even if IO access established).
- Consider Oral Intubation or Supraglottic Airways (Adults), provider discretion.
- If the provider cannot accomplish an ALS airway, they should document in the PCR why an ALS airway wasn't accomplished.
- Once an SGA has been placed, it should not be removed for an ETI.
- Stay on scene to establish vascular access, provide for airway management, and administer the first dose of epinephrine followed by 2 min of HPCPR.
- Adult ROSC that is maintained:
- Obtain 12-lead ECG and vital signs.
- Transport to the nearest STEMI Receiving Center ***regardless of 12-lead ECG reading***.
- Maintain O2 Sat greater than or equal to 94%.
- Monitor ETCO2
- Termination for patients > 34 kg – Contact SRC (French Hospital) for termination orders.
- If the patient remains pulseless and apneic following 20 minutes of resuscitative measures, with persistent ETCO2 values < 10 mmHg, consider termination of resuscitation.
- Documentation shall include the patient's failure to respond to treatment and of a non-viable cardiac rhythm (copy of rhythm strip).
- Contact and transport to the nearest Base Hospital.
- Receiving Hospital shall provide medical direction/termination for pediatric patients.
- Lidocaine may be substituted for Amiodarone with SLOEMSA authorization (via Policy #205 Attachment C) when Amiodarone stock is unavailable. Refer to Lidocaine Formulary for dosages.
- Lidocaine may be substituted for Amiodarone with SLOEMSA authorization (via Policy #205 Attachment C) when Amiodarone stock is unavailable. Refer to Lidocaine Formulary for dosages.
- While treating Cardiac Arrest, only one antiarrhythmic may be given to one patient. ALS providers shall not switch between Amiodarone and Lidocaine for the treatment of Cardiac Arrest.
- **Vector change defibrillation**: The two pad placements are anterior-lateral and anterior-posterior. Vector change is the change in pad position placement from one to the other.

VENTRICULAR TACHYCARDIA WITH PULSES

ADULT	PEDIATRIC (≤34 KG)
BLS	
• Universal Protocol #601 • Pulse Oximetry • O2 administration per Airway Management Protocol #602	Same as Adult
ALS	
Stable • **Amiodarone** 150mg IV/IO drip over 10 min; if rhythm persists after 5 min, administer a refractory dose of 150mg for a total of 300mg. • Using a 100cc bag of Normal Saline and macro tubing (10gtts/ml): add Amiodarone and mix well. Run at 1.5gtts/second. **Unstable** • Consider **Midazolam** up to 2mg slow IV or 5 mg IN (split into two doses 2.5 mg each nostril) to pre-medicate • Synchronized/Unsynchronized cardioversion sequences (see notes) • After first cardioversion: - **Amiodarone** 150mg IV/IO drip over 10 min; if rhythm persists after 5 min, administer a refractory dose of 150mg for a total of 300mg.	**Stable** • **Amiodarone** 5mg/kg IV/IO drip over 30 minutes. • Using a 100cc bag of Normal Saline and macro drip tubing (10gtts/ml): add Amiodarone and mix well. Run at 1gtt every 2 seconds. **Unstable** • Synchronized/Unsynchronized cardioversion sequences (see notes) • **Midazolam** 0.1 mg/kg IV/IN not to exceed 2 mg to pre-medicate prior to cardioversion. • After first cardioversion: - **Amiodarone** 5mg/kg IV/IO drip over 30 minutes.
Base Hospital Orders Only	
• **Additional Amiodarone** • As needed	• **Additional Amiodarone** • As needed

Notes

- Obtain a 12-lead ECG before and after conversion, if possible.
- Vascular access may be omitted prior to cardioversion if in extremis.
- QRS ≥ 0.12 seconds typical for VT in adults
- QRS ≥ 0.09 seconds typical for VT in pediatrics
- Malignant PVCs – that may pose heightened risk of precipitating sustained dysrhythmias: short coupling interval <0.3 seconds, multifocal, couplets, and frequent occurrence, call base for possible Amiodarone.
- Irregular Wide-complex tachycardia (Torsade's de Pointes) requires unsynchronized cardioversion.
- Synchronized/Unsynchronized Sequences (if synchronized mode is unable to capture use unsynchronized cardioversion)
- Lidocaine may be substituted for Amiodarone with SLOEMSA authorization (Policy #205 Attachment C) when Amiodarone stock is unavailable. Refer to Lidocaine Formulary for dosages.

- While treating Ventricular Tachycardia with Pulses, only one antiarrhythmic may be given to one patient. ALS providers shall not switch between Amiodarone and Lidocaine for the treatment of Ventricular Fibrillation/Pulsating Ventricular Tachycardia.
- Use manufacturer recommended energy setting if different from below.

Adult	Pediatric
100 J	1 J/kg
120 J	2 J/kg
150 J	2 J/kg
200 J	

(*start at 120J unsynchronized in adult patients with Torsade's de Pointes)

LIDOCAINE (Xylocaine®)

Classification: Antidysrhythmic agent

Action: Suppresses ventricular ectopy by stabilizing the myocardial cell membrane.

Indications:

1. Cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia
2. Post conversion or defibrillation of ventricular rhythms with base contact.
3. Ventricular tachycardia with pulse present
4. Symptomatic/malignant ventricular ectopy
5. Pain Management following IO Placement

Contraindications:

1. **2° degree type II heart block**
2. **3° degree heart block**
3. **Junctional bradycardia**
4. **Ventricular ectopy associated with bradycardia**
5. **Idioventricular rhythm**
6. **Known allergy to Lidocaine or sensitivity to other anesthetics (report to base).**

Adverse Effects:

Cardiovascular
Bradycardia
Hypotension
Arrest
Blurred vision

Respiratory
Dyspnea
Depression
Apnea

Gastrointestinal
Nausea/vomiting

Neurological
Dizziness
Drowsiness
Paresthesia
Restlessness
Slurred speech
Disorientation
Seizures
Lightheadedness
Tinnitus
Muscle twitching

Administration:

ADULT DOSE

1. **V-Fib/pulseless V-Tach (with SLOEMSA Authorization):** 1.5 mg/kg IVP/IO, repeat every 3-5 minutes, not to exceed 3 mg/kg.
2. **V-Tach with a pulse (with SLOEMSA Authorization):** 1.5 mg/kg IVP, may repeat with 0.75 mg/kg IVP every 5-10 minutes, not to exceed 3 mg/kg.
3. **Pain Management following IO Placement:** 0.5mg/kg (total max dose of 40mg) slow IO push over 60 seconds.

PEDIATRIC DOSE

1. **V-Fib/pulseless V-Tach (with SLOEMSA Authorization):** 1 mg/kg IVP/IO. May repeat every 5 minutes, not to exceed 3 mg/kg.
2. **V-Tach with a pulse (with SLOEMSA Authorization):** 1 mg/kg IVP/IO, may repeat with 0.5 mg/kg IVP/IO every 5-10 minutes, not to exceed 3 mg/kg.
3. **Pain Management following IO Placement:** 0.5mg/kg (total max dose of 40mg) slow IO push over 60 seconds.

Onset: 30 - 90 seconds

Duration: 10 - 20 minutes

Notes:

- Lidocaine may be used as backup to Amiodarone with SLOEMSA authorization (using Policy #205 Attachment C) in cases where Amiodarone stock is unavailable. In cases when Lidocaine is substituted for Amiodarone, the minimum stock of Lidocaine shall mimic the same numbers as Amiodarone.
- In cases of premature ventricular contractions, assess need and treat underlying cause. Needs include: chest pain, syncope, R on T situations, multifocal and paired PVCs, bigeminy and trigeminy, and PVCs at 6-12 per minute. See appropriate protocols as needed.
- Lidocaine is to be administered no faster than 50mg/min, except in patients in cardiac arrest.

Ketamine Hydrochloride (Ketalar®)

Classification: Nonopioid Analgesic (sub-dissociative doses)

Actions: In sub-dissociative doses, provides analgesia by non-competitively blocking NMDA receptors to reduce glutamate release and by binding to sigma-opioid receptors.

Indications: **Moderate to Severe pain due to:**

1. Multisystem trauma with head, thoracic, or abdominal injuries.
2. Significant extremity trauma, dislocations, or burns.
3. Acute pain management for medical patients.
4. Pain management substitute for patients with an opioid tolerance.

Contraindications:

1. Conditions in which an increase in blood pressure would be hazardous (see notes)
2. Hypersensitivity
3. Known history of schizophrenia
4. Acute Coronary Syndrome
5. Pregnancy

Precautions:

1. **History of severe Coronary Artery Disease**

Adverse Effects:

>10%
Cardiovascular: Tachycardia, hypertension, increase in cardiac output
Neurological: Dizziness, Tonic-Clonic Movement (non-seizure)

1-10%
Cardiovascular: Bradycardia, hypotension
Neurological: Dysphoria, partial dissociation, nystagmus

<1%
Anaphylaxis, arrhythmia, hypersalivation, hypertonia, laryngospasm*, respiratory depression/apnea, dysuria

Administration:

ADULT DOSE
Pain Management
1. 0.3 mg/kg (max of 30mg) in 100mL Normal Saline, administer IV/IO over 10 minutes one time dose.
2. 0.5mg/kg (max of 40mg) IM

When mixing Ketamine into 100mL bag, **label the bag** with "Ketamine/mg amount".

PEDIATRIC DOSE
*****Ketamine usage is not allowed for pediatric patients*****

Onset: IV onset 30-60 seconds, peak in less than 5 minutes.

Duration: Distribution half-life: 15 minutes
Duration of analgesia: 20-45 minutes

Notes:

- Risk of adverse neurological events is decreased with sub-dissociative doses and slow rate of administration.
- Mix adult dose of ketamine in 100mL bags of normal saline.
- Ketamine may cause a slight increase in blood pressure and shall be avoided in hypertensive emergencies, dissecting aneurysms, hypertensive heart failure, and acute coronary syndrome.
- Ketamine should be considered as first line analgesic agent when fentanyl is contraindicated due to hypotension, pathology or injury inhibiting respiration, evidence of hypovolemic/hemorrhagic shock, or multisystem trauma with high potential for internal hemorrhage.
- Ketamine may be considered as preferable to fentanyl for patients that may have opioid tolerance due to habituation or addiction, and in patients where fentanyl use has other significant precautions.
- Ketamine is a potent anesthetic and dissociative agent in higher doses and is associated with higher incidents of significant adverse effects. This is **NOT** an approved use for prehospital care in the County of San Luis Obispo.

PAIN MANAGEMENT

ADULT	PEDIATRIC (≤34 kg)
BLS	

• Universal Protocol #601
• **Pulse Oximetry**
  ○ O_2 administration per Airway Management Protocol #602
• **Medical** (non-cardiac)
  ○ Position of comfort
  ○ Nothing by mouth
• **Cardiac chest pain –** Chest Pain/Acute Coronary Syndrome Protocol #640
• **Trauma –** General Trauma Protocol #660
  ○ Splint, ice, elevate as indicated
	• Universal Protocol #601
	• **All causes of pain -** consider age/situation appropriate distraction techniques.
	  ○ Video Viewing
	  ○ Calm environment
	  ○ Caregiver support
	• **Medical**
	  ○ Position of comfort
	  ○ Nothing by mouth
	• Otherwise, same as adult

ALS Standing Orders	
MODERATE or SEVERE PAIN **Acute Pain:** • Fentanyl 50-100 mcg SLOW IV (over 1 min.), may repeat after 5 min. if needed (not to exceed 200 mcg total) OR • Ketamine 0.3mg/kg (max of 30mg) in 100mL Normal Saline, administer IV/IO over 10 minutes one time dose. **IF DIFFICULTY OBTAINING IV** • Fentanyl 50-100 mcg IM/IN (use 1 mcg/kg as guideline), may repeat after 15 min. if needed (not to exceed 200 mcg total) OR • Ketamine 0.5mg/kg (max of 40mg) IM one time dose. **Acute Pain –** multisystem trauma with head/thoracic/abdominal injuries, significant extremity trauma: • Ketamine 0.3mg/kg (max of 30mg) in 100mL Normal Saline, administer IV/IO over 10 minutes one time dose. OR	**MODERATE or SEVERE PAIN** (Use age-appropriate indicators) **Acute Pain –** BP > age-based min., unimpaired respirations, GCS normal for age: ntanyl 1.5 mcg/kg IN (split between nares) ntanyl 1 mcg/kg 1M and IM routes) may repeat after 15 min. if needed t to exceed 4 doses) **IF IV ALREADY ESTABLISHED** ntanyl 1 mcg/kg SLOW IV (over 1 min), may repeat er 5 min. if needed (not to exceed 4 doses)

• Ketamine 0.5mg/kg (max of 40mg) IM one time dose. Contraindications for Fentanyl include SBP < 90 mmHg, hypoxia, and impaired respiration. Contraindications for Ketamine include pregnancy, HX of Schizophrenia, hypertensive emergencies, and coronary chest pain. Pain Management following IO Placement: • Lidocaine 0.5mg/kg (Total max dose of 40mg) slow IO push over 60 seconds.	
Base Hospital Orders Only	

• **Fentanyl administration with**
  ○ ALOC
  ○ SBP < 90 mmHg
  ○ Chronic pain
• Additional doses of Fentanyl
• One additional dose of Ketamine
• As needed
	• Same as adult
	• As needed.

Notes

- Consider doses of Fentanyl 25 mcg for initial dose in elderly (>65 y/o) and for maintenance doses
- Use clinical judgement if a patient has difficulty using pain scale, or their reported pain is inconsistent with clinical impression.
  - Consider using FACES scale in adults with barriers to communication (below)
- Do not withhold appropriate pain medication due to short transport times.
- Strongly consider initiating pain management on scene if movement is expected to be painful for patient (unless unstable condition requires rapid transport).
- Ketamine is a potent anesthetic and dissociative agent in higher doses and is associated with higher incidents of significant adverse effects. This is **NOT** an approved use for prehospital care in the County of San Luis Obispo.
- Ketamine may be considered as preferable to fentanyl for patients that may have opioid tolerance due to habituation or addiction, and in patients where fentanyl use has other significant precautions.
- Ketamine should be considered as first line analgesic agent when fentanyl is contraindicated due to hypotension, pathology, or injury inhibiting respiration, or multisystem trauma with high potential for internal hemorrhage.
- Ketamine administration to pediatric patients is **NOT** approved for use in the County of San Luis Obispo.
- When mixing Ketamine into 100mL bag, **label the bag** with “Ketamine/mg amount”.

USE OF RESTRAINTS

ADULT	PEDIATRIC (≤34KG)

BLS

- Universal Protocol #601
- Pulse Oximetry – O_2 administration per Airway Management Protocol #602
- Application of restraints – see Notes
- Evaluate restrained extremities for pulse quality, capillary refill, color, nerve and motor function every 15 minutes

ALS Standing Orders

Severely agitated or aggressive patients that interfere with patient care, or patient/crew safety refer to Behavioral Protocol #613

Base Hospital Orders Only

As needed

Notes

- Restraints for prehospital use must be either padded leather or a soft material and allow for quick release
  - No hard plastic ties
  - No "sandwiching" the patient between backboards or like devices
  - No restraining hands and feet behind the patient ("hog-tying")
  - No methods or material applied in a manner that cause respiratory, vascular or neurological compromise
  - Patient may not be transported in the prone position
  - No handcuffs or restraints of any kind behind patient's back.
- Indications
  - For patients who are violent, or may harm themselves or others during field treatment or transport
- Documentation shall include:
  - Reasons and time restraints were applied
  - Which agency/personnel applied the restraint
  - Evaluation of restrained extremities for pulse quality, capillary refill, color, nerve and motor function every 15 minutes
  - Evaluation of respiratory status
- Method of application shall allow for monitoring of vital signs and shall not restrict the ability to protect the patient's airway, or compromise neurological or vascular status
- Restraints applied by law enforcement and not approved for use by EMS personnel:
  - Require the officer to remain available at the scene or during transport to remove or adjust restraints for patient safety
  - Must allow for straightening of the abdomen and chest to allow for full tidal volume respirations
- Aggressive or violent behavior may be a symptom of medical conditions such as head trauma, alcohol, drug related problems, metabolic disorders, stress or psychiatric disorders.

ADULT CARDIAC CHEST PAIN/ACUTE CORONARY SYNDROME

FOR USE IN ADULT PATIENTS

BLS

- Universal Protocol #601 Pulse Oximetry
  - O_2 administration per Airway Management Protocol #602
- **Aspirin** 162 mg PO (non-enteric coated) chewable tablets
- May assist with administration of patient's prescribed **Nitroglycerin** with SBP ≥ 100 mmHg

ALS Standing Orders

- Obtain 12-lead ECG early
- **Nitroglycerin** 0.4 mg SL tablet or spray
  - Repeat every 5 min
- **Nitroglycerin Paste** 1 inch (1 Gm) may be considered after initial dose(s) of SL Nitroglycerin
- **HOLD NITROGLYCERIN** and consult base if:
  - 500 mL fluid bolus has been administered and SBP is trending towards or drops < 100 mmHg or in the presence of other signs/symptoms of hemodynamic instability.
  - Evidence of Right Ventricular Infarction (RVI) – see Notes

MODERATE or SEVERE PAIN

- **Refractory to Nitroglycerin**
  - **Fentanyl** 25-50 mcg SLOW IV (over 1 min), titrated to pain improvement, maintain SBP ≥ 100 mmHg
    - May repeat after 5 min if needed (not to exceed 200 mcg total)

If difficulty obtaining IV

  - **Fentanyl** 50-100 mcg IM/IN (use 1 mcg/kg as guideline)
    - May repeat after 15 min if needed (not to exceed 200 mcg total)

Base Hospital Orders Only

- **Nitroglycerin** with
  - Significant decrease in SBP after administration
  - Patients taking erectile dysfunction medications
  - Atrial fibrillation with RVR
  - Evidence of RVI
- Additional **Fentanyl**

Persistent hypotension

- **Additional Normal Saline** bolus up to 500 mL
- **Push-Dose Epinephrine 10 mcg/mL** 1mL IV/IO every 1-3 min
  - Repeat as needed to maintain SBP >90 mmHg
  - See notes for mixing instructions

OR

- **Epinephrine Drip** start at 10 mcg/min IV/IO infusion
  - Consider for extended transport
  - See formulary for mixing instructions
- As needed

Notes

- Acute Coronary Syndrome – a group of conditions resulting from acute myocardial ischemia – including: chest/upper body discomfort, shortness of breath, nausea/vomiting, or diaphoresis
- Evidence for RVI: All inferior STEMI should be evaluated for ST elevation in V4R

- Atrial fibrillation with RVR is atrial fibrillation with a ventricular rate > 100
- Early notification of the SRC with "STEMI Alert" with a 12-lead ECG reading of ***Acute MI Suspected*** or equivalent based on monitor type.
- Large bore IVs are preferred in "STEMI Alerts".
- "STEMI Alerts" consider a secondary large bore IV with NS lock to assist the Cath Lab in tubing changes
- Have defibrillation pads out and ready on all "STEMI Alerts".
- On "STEMI Alerts," clear the patient's chest of clothing or any obstructions to the rapid placement of defibrillation pads, not including safety harnesses.
- **Mixing Push-Dose Epinephrine 10 mcg/mL (1:100,000)**: Mix 9 mL of **Normal Saline** with 1 mL of **Cardiac Epinephrine 1:10,000 (0.1 mg/mL)**, mix well

SHOCK (MEDICAL) - HYPOTENSION/SEPSIS

ADULT	PEDIATRIC (≤34 KG)
BLS	
• Universal Algorithm #601 • Pulse Oximetry • 02 administration per Airway Management Protocol #602 • Place in supine position if tolerated	Same As Adult
BLS Optional Scope	
Pulse Oximetry - O2 administration per Airway Management Policy # 602	
ALS Standing Orders	
SBP < 100 mmHg or other signs of hypotension • Normal Saline 500 mL IV/IO - Repeat x1 if hypotension persists • Consider establishing secondary IV access • Consider 12-lead ECG • If shock is due to trauma refer to General Trauma Protocol #660 **Persistent Hypotension** • Push-Dose Epinephrine 10mcg/mL 1 mL IV/IO every 1-3 minutes - Repeat as needed titrated to SBP >90mmHg - See notes for mixing instructions **OR** • Epinephrine Drip starting at 10mcg/min IV/IO infusion - Consider for extended transport - See formulary for mixing instructions	**Signs of hypotension specific to age** - see Universal Protocol #601 Attachment A • Normal Saline 20 mL/kg IV/IO not to exceed 500 mL - Repeat x1 if hypotension persists • Consider establishing secondary IV access • If shock is due to trauma refer to General Trauma Protocol #660
Base Hospital Orders Only	
• As needed	• As needed
Notes	
• **Mixing Push-Dose Epinephrine 10 mcg/mL (1:100,000): Mix 9mL of Normal Saline with 1mL of Epinephrine 1:10,000, mix well** • Fluids should always be given prior to initiating Push-Dose Epinephrine • Consider the underlying causes of shock • Use caution with fluid challenges if signs of CHF of liver or renal failure • Keep patient warm • Treatable/Reversible considerations: - Hypoxemia	

- Tachycardia/Bradycardia
- Hyper/Hypothermia
- Hypovolemia
- Altered Mental Status
- Fractures/Bleeding/Tension Pneumothorax
- Anaphylaxis
- Chest pain
- Overdose

NEEDLE THORACOSTOMY

ADULT	PEDIATRIC (≤34KG)

BLS

Universal Protocol #601

BLS Optional

Pulse Oximetry – O_2 administration per Airway Management Protocol #602

ALS Standing Orders

- Locate mid-clavicular 2nd intercostal space or mid-axillary 4th intercostal space on affected side
- Prep site with povidone-iodine and alcohol
- With syringe attached, insert large bore IV catheter (maximum 10 Ga.) at a 90° angle slightly superior to the rib
- Once in the pleural space diminished resistance should be noted with air and/or blood return
- Holding the needle, advance the catheter and remove the needle allowing pressure to be relieved
- Secure the catheter and provide for a one-way valve
- Assess and reassess lung sounds

Base Hospital Orders Only

- As needed

Notes

Indication: Tension pneumothorax with significant respiratory compromise, traumatic cardiac arrest.

- Signs and symptoms may include:
  - Deteriorating respiratory status
  - Decreased SBP, increased pulse
  - Diminished lung sounds on affected side
  - Jugular vein distension
  - Hyper-resonance to percussion on affected side
  - Tracheal shift away from affected side (difficult to assess)
  - Increased resistance with ventilation (BVM, ET)
- Equipment
  - Large IV catheter (10-12 Ga.) with a syringe
  - One-way valve i.e. Asherman Seal
  - Antiseptic products, povidone-iodine/alcohol swabs
- Indication: Trauma patients who arrest after EMS arrival on scene and < 20 min from trauma center or hospital, with the suspicion of chest trauma, perform bilateral needle thoracostomy.

AIRWAY MANAGEMENT

ADULT	PEDIATRIC (≤34 kg)
BLS	

• Universal Protocol #601
• Administer O_2 as clinical symptoms indicate (see notes below)
• Pulse oximetry
• Patients with O_2 Sat ≥ 94% without signs or symptoms of hypoxia or respiratory compromise should not receive O_2
• When applying O_2 use the simplest method to maintain O_2 Sat ≥ 94%
• Do not withhold O_2 if patient is in respiratory distress
 	
• **Foreign Body/Airway Obstruction**
  ○ Use current BLS choking procedures
  ○ Basic airway adjuncts and suctioning as indicated and tolerated
	Same as Adult (except for newborns)
	• Newborn (< 1 day) follow AHA guidelines – Newborn Protocol #651

BLS Elective Skills	
• **Moderate to Severe Respiratory Distress** ○ **CPAP** as needed – CPAP procedure #703	CPAP not used for patients ≤34 kg
ALS Standing Orders	

• **Foreign Body/Airway Obstruction**
If obstruction not relieved with BLS maneuvers
  ○ Visualize and remove obstruction with Magill forceps
  ○ If obstruction persists, consider – Needle Cricothyrotomy Procedure #704
  ○ Upon securing airway monitor O_2 Sat and $ETCO_2$ – Capnography Procedure #701
• Endotracheal intubation – as indicated to control airway – Procedure #717
• Supraglottic Airway – as indicated to control airway– Procedure #718
• Needle thoracostomy with symptoms of tension pneumothorax or traumatic arrest with suspicion of chest trauma– Needle Thoracostomy Procedure #705 & Traumatic Cardiac Arrest Protocol #661
	• **Foreign Body/Airway Obstruction**
	If obstruction not relieved with BLS maneuvers
	  ○ Visualize and remove obstruction with Magill forceps
	  ○ If obstruction persists, consider – Needle Cricothyrotomy Procedure #704
	  ○ Upon securing airway monitor O_2 Sat and $ETCO_2$ – Capnography Procedure #701
	• Needle thoracostomy with symptoms of tension pneumothorax – Needle Thoracostomy Procedure #705

Base Hospital Orders Only	
• **Symptomatic Esophageal Obstruction**	• **Symptomatic Esophageal Obstruction** ○ **Glucagon** 0.1mg/kg IV not to exceed 1mg followed by rapid flush. Give oral

○ **Glucagon** 1mg IV followed by rapid flush. Give oral fluid challenge 60 sec after admin - check a blood sugar prior • As needed	fluid challenge 60 sec after admin - check a blood sugar prior • As needed

Notes

- Oxygen Delivery
  - Mild distress – 0.5-6 L/min nasal cannula
  - Severe respiratory distress – 15 L/min via non-rebreather mask
  - Moderate to severe distress – CPAP 3-15 cm H2O
  - Assisted respirations with BVM – 15 L/min
- Pediatric intubation is no longer an approved ALS skill – maintain with BLS options.
- Patients requiring an advanced airway, providers shall decide which ALS airway to utilize based on discretion.
- After placement of any advanced airway, providers shall verify placement of the advanced airway by waveform capnography and a minimum of one additional method. This additional method can be any of the following:
  - Auscultation of lung and stomach sounds.
  - Colorimetric CO2 Detector Device.
  - Esophageal Bulb Detection Device.

TRAUMATIC CARDIAC ARREST

ADULT	PEDIATRIC (≤34KG)
BLS	
• Universal Protocol #601 • Obvious Death – see Prehospital Determination of Death Policy #125 • Follow HPCPR guidelines for CPR (10:1) and minimize interruptions (< 5 seconds)	Same as Adult
BLS Optional	
Pulse Oximetry – O_2 administration per Airway Management Protocol #602	
ALS Standing Orders	
Trauma patients who arrest after EMS arrival on scene and < 20 min from trauma center • Do not delay transport • Perform ALS treatments en route • **Normal Saline** up to 500 mL – repeat x1 if no ROSC or SBP of < 90 mmHg • **Do not use Epinephrine or Lidocaine** unless the arrest is suspected to be of medical origin • Resuscitate and treat for reversible causes, i.e. hypoxia, hypovolemia, tension pneumothorax • Traumatic arrest with the suspicion of chest trauma, perform bilateral needle thoracostomy. See Needle Thoracostomy Procedure #705. **Traumatic arrest with absent signs of life on EMS arrival** • With absent signs of life consider non-initiation – Prehospital Determination of Death Policy #125	Same as Adult (except as noted below) • **Normal Saline** 20 mL/kg IV/IO – reassess and repeat
Base Hospital Orders Only	
• Trauma patients who arrest after EMS arrival on scene and > 20 min from trauma center or hospital ○ Contact SLO Trauma Center for treatment and/or destination • Termination of resuscitation • As needed	Same as Adult
Notes	

- Absent signs of life assessment include: pulseless, apneic, lack of heart and lung sounds, fixed and dilated pupils.
- Trauma Center is the preferred destination if equal or near equal distance.
- Do not delay transport for advanced airway or other treatment modalities.
- Consider medical origin in older patients with low probable mechanism of injury.
- Unsafe scene or other circumstances may warrant transport despite low potential for survival.
- Minimize disturbance of potential crime scene.
- Consider Oral Intubation or Supraglottic Airways (Adults), provider discretion.
- If the provider cannot accomplish an ALS airway, they should document in the PCR why an ALS airway wasn't accomplished.

VASCULAR ACCESS AND MONITORING

ADULT	PEDIATRIC (≤34KG)

BLS

- Universal Protocol #601
- In stable patients, providers may monitor and turn off IV lines of isotonic balanced salt solutions without medication or electrolyte additives and flowing at a maintenance rate

BLS Optional

Pulse Oximetry – O_2 administration per Airway Management Protocol #602

ALS Standing Orders

- Establish IV with drip set or saline lock as appropriate.
- Tibial plateau, humeral head, or medial malleolus Intraosseous (IO) placement may be utilized for:
  - Patients in extremis or cardiac arrest with hemodynamic instability/respiratory distress/cardiac arrest.
    AND
  - Unable to establish following attempt(s) or general suspicion of the inability to establish vascular access.
- Attempts to establish vascular access shall be continued even if IO is successful.
- If patient becomes responsive to painful stimuli following IO administration:
  - Lidocaine 0.5mg/kg (Total max dose of 40mg) slow IO push over 60 seconds.
- ALS providers can monitor and administer medications through a Pre-existing Vascular Access Device (PVAD). These pre-existing catheters are:
  - Peripheral Inserted Central Catheter (PICC Line)
  - Midline IV Catheters
- PVAD access procedure:
  - Wipe the access port with an alcohol pad to ensure aseptic technique.
  - Ensure that if your line is a dual lumen line that it is the line designated for medication administration (do not use the line utilized for blood, this can be identified by a red colored catheter or stated on the catheter).
  - Attach a 10ml syringe and draw up 5-10ml of fluid out of the line until blood is noted in the syringe. This is to ensure the line is not pre-loaded with heparin.
  - Discard the filled syringe and flush the line with an entire 10cc saline flush. This is to ensure that the line is clean and ready for medication administration.
  - Connect the syringe with the desired medication and administer according to the appropriate formulary. Follow the medication administration with an entire 10cc saline flush.
  - If any sort of cap was used to cover the port, ensure the cap is wiped down and placed back on the port following use.
  - If the patient needs an infusion from a saline bag, ALS Providers may connect the IV line to the PVAD after the line has been aspirated per instructions listed above. After the infusion is finished, ensure the line is flushed with a 10cc saline flush, and wipe the port with an alcohol pad. If any sort of cap was used to cover the port, ensure the cap is wiped down and placed back on the port following use.

Base Hospital Orders Only

- Access to tunneled/non-tunneled Central Lines for patients in extremis or cardiac arrest. Access of these central lines shall follow the PVAD access procedure listed above.
- As needed

Notes

- Peripheral IV placement is preferred to IO placement – including the external jugular.
- When establishing IV/IO access in a patient in extremis or cardiac arrest, ALS Providers will take the following into consideration:
  - When assessing a patient's vasculature and determining access to be difficult, an ALS Provider may proceed straight to IO access. Further IV attempts will continue following IO placement.
  - If the first attempt at IV placement fails, an ALS provider may consider placement of an IO prior to a second attempt.
- External Jugular (EJ) access should always be considered prior to IO placement.
- If a patient becomes responsive to painful stimuli following IO placement, Lidocaine may be administered to assist with pain management during fluid/medication administration. The total amount of Lidocaine administered to the patient shall not exceed 40mg.

BREAK

POLICY #200: SCENE MANAGEMENT

I. PURPOSE

A. To clarify the local application of Section 1798 of the Health and Safety Code as it relates to scene management and the related responsibilities of emergency medical service (EMS) first response agencies, transport services, and base hospitals in the County of San Luis Obispo.

II. POLICY

A. AUTHORITY FOR SCENE MANAGEMENT

1. Authority for the management of the scene of an emergency is vested in the appropriate public safety agency having primary investigative authority, law enforcement or fire suppression. Scene management at this highest level includes not only the safety of the EMS team and its patient(s) but other persons who may be exposed to the risks and the public. While public safety officials shall consult emergency medical services personnel in the determination of relevant risks, they retain the authority for scene management and incident command.
2. Responsibility to mitigate criminal activities and hazards lies with the appropriately trained and equipped public safety agency. EMS providers without these responsibilities will not knowingly enter a crime scene or a hazardous scene until the appropriate public safety agency has arrived, secured the scene, and deemed it reasonably ‘safe to enter’.
3. The appropriate public safety agency is responsible for the non-medical aspects of scene management. When EMS transport personnel have arrived first, there is no apparent hazard, and transport personnel are managing the non-medical aspects of the scene; the responsibility for scene management will pass to public safety personnel upon their arrival and with appropriate information exchange. If in the opinion of the EMS transport personnel, no assistance is needed and no hazards exist at the scene, they shall advise public safety; the decision whether to continue response or cancel shall be left to the public safety agency responding.
4. The Incident Commander shall make all resource ordering and canceling decisions.

B. AUTHORITY FOR PATIENT HEALTH CARE MANAGEMENT

1. Authority for patient health care management in an emergency is vested in any paramedic or other prehospital emergency personnel at the scene of the emergency who is most medically qualified. Authority to provide pre-hospital emergency medical care lies with the emergency medical technician (EMT) or paramedic (EMT-P) who initiates patient health care management. In the absence of these licensed or certified health care personnel authority shall be vested in the most appropriate medically qualified representative of public safety. All personnel will transfer authority for patient health care management

to any arriving EMS provider authorized at a higher level, including flight paramedics/registered nurses (RN), when medically appropriate.

2. Having accepted authority for patient health care management, public safety personnel authorized at the same level as EMS transport personnel may transfer the care of individual patients as soon as possible and/or when medically appropriate. The authority for each patient passes with completion of a verbal report and acceptance of the transfer of care.

3. When ALS public safety arrives on scene first and wants to maintain authority for patient healthcare management, public safety must ride into the hospital with the patient and transport personnel. In all cases, regardless of which agency maintains authority for patient healthcare management, information relating to patient healthcare management shall be shared professionally and collaboratively.

4. If there is a disagreement regarding patient care while on scene of an incident, EMS personnel shall work professionally and collaboratively to find a solution. If EMS personnel still cannot agree on patient care, Base Hospital contact shall be made, and orders followed.

C. AUTHORITY FOR PATIENT DISPOSITION

1. Patient disposition, destination, and mode of transport (ground/air) are indicated by patient's preference, clinical needs, and operational requirements. In all cases, EMS personnel, and base hospitals when included, are responsible to collaboratively determine the medically appropriate patient disposition and to advise the Incident Commander (IC) of this conclusion. However, when there is disagreement, destination is primarily a medical decision. As such, EMS personnel will comply with medical direction regarding destination, whether by protocol or base hospital order. Similarly, when there is disagreement, mode of transport is primarily an operational decision. As such, EMS personnel will comply with operational direction from the IC regarding mode of transport.

D. COMMUNICATIONS

1. Ground ambulances will be dispatched by MEDCOM. The MEDCOM dispatch channel is for ambulance dispatch, ambulance status changes (responding, at scene, available, etc), routine non-emergency traffic, and reporting new incidents (when already assigned to an incident and there is a need to report a new emergency, it shall be done on the command channel assigned by the AHJ). MEDCOM is not used for incident related communications. Ground ambulances shall always monitor their dispatch channel.

Upon dispatch, EMS transport personnel shall immediately monitor the fire command/tactical frequencies as assigned by the Authority Having Jurisdiction (AHJ). The ordering point for EMS incidents is the ECC/PSAP of the AHJ. All communication related to the incident shall be on the fire command/tactical channels assigned by the AHJ. EMS transport personnel shall respond to all AHJ radio communications if hailed while enroute, on scene of, or staging for an incident. While on scene of an incident, EMS

transport personnel shall bring their fire radio to the scene and on the appropriate command/tactical channel. Clear text (plain English) communication shall be utilized during radio communications with AHJ.

E. UNIT IDENTIFICATION

1. All EMS Transport Units shall have their radio identifier (ie M11, M31, etc) displayed on 4 sides of the ambulance in at least 4" tall numbers.
2. All EMS Transport Personnel shall have the radio identifier of their Ambulance displayed on both sides of their helmet.

F. MEDICALLY TRAINED BYSTANDERS

1. When a bystander at the scene of an emergency identifies themself as a registered nurse, off-duty EMS, or other medical professionals, emergency medical services personnel may request documentation of medical expertise (i.e., medical license or appropriate certificate) to determine the person's area of medical expertise and if appropriate, request their assistance with patient care. Emergency medical services personnel may allow correctly identified medical personnel to assist with patient care in an advisory or BLS capacity but shall maintain overall patient management. Emergency medical services personnel shall document on the patient care report the individual's name and medical qualifications if such assistance was utilized. If the bystander on scene is a physician, reference SLOEMSA Policy #217: Physician On-Scene.

III. AUTHORITY

- California Health and Safety Code, Division 2.5, Section 1797 – 1799.207
- California Code of Regulations, Title 22, Social Security, Division 9, Prehospital Emergency Medical Services

Approvals:

EMS Agency, Administrator	
EMS Agency, Medical Director	

POLICY #217: PHYSICIAN ON-SCENE

I. POLICY

A. In accordance with established procedures, appropriate emergency medical service personnel may utilize the assistance of an “on-scene” physician in patient care within San Luis Obispo County.

II. PROCEDURE

A. When at the scene of a call, if an individual offers their assistance and introduces themselves as a licensed physician in the State of California, emergency medical services personnel shall:

1. If emergency medical services personnel do not know the physician’s identity, request identification. If the patient is in extremis, defer any procedure for identification and immediately allow the physician to assist or direct patient care to the level that the physician desires.
2. Provide the physician the opportunity to read the California Medical Association “Note to Physicians on Involvement with EMS personnel” card/ Policy #217 Attachment A and describe for the physician the three levels of possible physician involvement.
3. Advise the base hospital physician of the situation and of the on-scene physician’s level of involvement.
4. If appropriate, allow the physician to speak with the base hospital physician.
5. Follow the direction of the base hospital.
6. In cases of controversy between the on-scene physician and emergency medical services personnel regarding patient care, the base hospital physician will be the final arbitrator for medical direction of the paramedic.

B. Options for Physician Assistance Include:

1. Offers Assistance Only- A physician may offer BLS level assistance as another pair of eyes or hands or in making suggestions but allows medical direction to remain with the base hospital or standard SLOEMSA prehospital protocols. In this situation, prehospital personnel shall follow their normal operational policies and procedures.
2. Offers Medical Advice and Assistance- A physician may request to speak to the base hospital physician and offer medical advice and assistance. In this situation, prehospital personnel shall follow the direction of the base hospital physician.
3. Takes Total Responsibility- A physician may take total responsibility for the care given to the patient and, if safety allows, physically accompany the patient until the patient arrives at a hospital, and the receiving physician assumes responsibility.

C. Physician Request to Utilize ALS Drug or Equipment

If a physician at the scene of a patient in extremis requests to use the prehospital unit's drug and/or equipment inventory, the requested drugs and/or equipment should be made available immediately. If a physician at the scene of a stable patient request to use the prehospital unit's drug and/or equipment inventory, the requested drugs and/or equipment should be made available after the physician is either recognized by the prehospital personnel or provides appropriate identification.

D. Role of the Paramedic

ALS personnel shall function within their accredited scope of practice only. Initially, ALS personnel should provide care identified in the "standing orders" portion of the paramedic treatment protocols. The base hospital physician should be immediately notified and informed of the patient's progress and treatment being provided. If the on-scene physician is requesting ALS personnel to perform treatment outside the accredited scope of practice or treatment only allowed with base hospital approval, ALS personnel should inform the physician of their limitations and the need to notify the base hospital physician.

The base hospital physician may direct ALS personnel to actively assist the physician as appropriate with patient care. The on-scene physician shall sign the Prehospital Care Report for all instructions given.

III. AUTHORITY

- Health and Safety Code, Division 2.5, Sections 1798 & 1798.6
- California Code of Regulations, Title 22, Division 9, Section 100175

IV. ATTACHMENTS

A. Note to Physicians on Involvement with EMS personnel

Approvals:

EMS Agency, Administrator	
EMS Agency, Medical Director	

NOTE TO PHYSICIANS ON INVOLVEMENT WITH EMS PERSONNEL CARD

FRONT

NOTE TO PHYSICIANS ON INVOLVEMENT WITH EMS PERSONNEL

EMS personnel operate under standard policies and procedures developed by the Local EMS Agency and approved by their Medical Director under Authority of Division 2.5 of the California Health and Safety Code. The drugs they carry and procedures they can do are restricted by law and local policy.

If you want to assist, this can only be done through one of the alternatives listed on the back of this card. These alternatives have been endorsed by CMA, State EMS Authority and CCLHO.

Assistance rendered in the endorsed fashion, without compensation, is covered by the protection of the "Good Samaritan Code" (see Business and Professional Code, Sections 2144, 2395-2298 and Health and Safety Code, Section 1799.104).

BACK

ENDORSED ALTERNATIVES FOR PHYSICIAN INVOLVEMENT

After identifying yourself by name as a physician licensed in the State of California, and, if requested, showing proof of identity, you may choose one of the following:

1. Offer your assistance with another pair of eyes, hands or suggestions, but let EMS personnel remain under base hospital control; or,
2. Request to talk to the base station physician and directly offer your medical advice and assistance; or,
3. Take total responsibility for the care given by EMS personnel and physically accompany the patient until the patient arrives at a hospital (if safety allows) and responsibility is assumed by the receiving physician. In addition, you must sign for all instructions given in accordance with local policy and procedures.

POLICY #218 UPGRADE DOWNGRADE OR CANCELLATION OF EMS RESPONSE

I. PURPOSE

A. To define the parameters by which on scene first response personnel may upgrade, downgrade, or cancel an EMS response within San Luis Obispo County.

II. POLICY

A. Cancelling an EMS Response

1. The IC or designee on scene of an incident may cancel a responding EMS resource upon determination of any of the following:

a. A patient cannot be located.

b. That the incident does not involve an injury or illness which would require assessment, treatment, or transport.

c. When the patient is a competent adult and is refusing EMS assessment and or transport.

d. The patient meets the criteria in III. C. for SLOEMSA Policy #125: Prehospital Determination of Death / Do Not Resuscitate (DNR)/End of Life Care (obvious death or no signs of life and has a verified DNR order).

B. Downgrading an EMS Response

1. The IC or designee on scene of an incident may reduce a responding EMS resource from code 3 to code 2 upon determination that, in the best judgment of the IC or designee, the illness or injury is not immediately life threatening and that the difference in code 3 and code 2 response time would not likely have an impact on patient safety/outcome. Consider hemodynamic stability, stable/unstable; see Policy #601: Universal Attachment A.

C. Upgrading an EMS Response

1. The IC or designee on the scene of an incident may upgrade a responding EMS resource from code 2 to code 3 upon determination that, in the best judgment of the IC or designee, the illness or injury is immediately life threatening or that the difference in code 2 and code 3 response time would potentially have a positive impact on patient safety/outcome. Consider hemodynamic stability, stable/unstable; see Policy #601: Universal Attachment A.

III. AUTHORITY

- California Health and Safety Code, Division 2.5, Sections 1797.204, 1797.220, & 1798
- California Code of Regulations, Title 22, Division 9, Chapter 4, Sections 100147, 100169 & 100170

Approvals:

EMS Agency, Administrator	
EMS Agency, Medical Director	

POLICY #155: EMERGENCY MEDICAL SERVICE HELICOPTER OPERATIONS

I. PURPOSE

A. To establish standardized procedures for prehospital utilization and evaluation of Emergency Medical Service (EMS) Helicopters operating in the County of San Luis Obispo (SLO) as a specialized resource providing EMS and prehospital patient transport.

II. SCOPE

A. This policy excludes EMS helicopter operations limited to search and rescue, and interfacility transfers.

III. DEFINITIONS

- Emergency Medical Services Aircraft - "Emergency Medical Services Aircraft" or "EMS Aircraft" or "EMS Helicopter" as used in this policy means any aircraft utilized for the purpose of prehospital emergency patient response and transport. EMS aircraft includes air ambulances and all categories of rescue aircraft (Title 22, Division 9, Chapter 8, Article 1, §100279)
- Air Ambulance - An "Air Ambulance" as used in this policy means any aircraft specially constructed, modified or equipped, and used for the primary purpose of responding to emergency calls and transporting critically ill or injured patients whose medical flight crew has, at a minimum, two (2) attendants certified or licensed in advanced life support (Title 22, Division 9, Chapter 8, Article 1, §100280).
- Rescue Aircraft - "Rescue aircraft" as used in this policy means an aircraft whose usual function is not prehospital emergency patient transport, but which may be utilized, in compliance with EMS policies, for prehospital emergency patient transport when use of an air or ground ambulance is inappropriate or unavailable. Rescue aircraft includes ALS rescue aircraft, BLS rescue aircraft and Auxiliary rescue aircraft. (Title 22, Division 9, Chapter 8, Article 1, §100281).
- Advanced Life Support Rescue Aircraft - An "Advanced Life Support Rescue Aircraft" or "ALS Rescue Aircraft" as used in this policy means a rescue aircraft whose medical flight crew has, at a minimum, one attendant certified or licensed in advanced life support (Title 22, Division 9, Chapter 8, Article 1, §100282).
- Basic Life Support Rescue Aircraft - A "Basic Life Support Rescue Aircraft" or "BLS Rescue Aircraft" as used in this policy means a rescue aircraft whose medical flight crew has, at a minimum, one attendant certified as an Emergency Medical Technician-IA (EMT-IA) with at least eight hours of hospital clinical training and whose field/clinical experience specified in Section 100074(c) of Title 22, California Code of Regulations, is in the aeromedical transport of patients (Title 22, Division 9, Chapter 8, Article 1, §100283).

- Auxiliary Rescue Aircraft - An "Auxiliary Rescue Aircraft" as used in this policy means a rescue aircraft which does not have a medical flight crew, or whose medical flight crew do not meet the minimum requirements established for BLS rescue aircraft (Title 22, Division 9, Chapter 8, Article 1, §100284).
- Expedited Launch Zone: Areas identified as having a 30-minute or greater ground transportation time to a Specialty Care Center with a heliport/helistop, where transportation by EMS helicopter would result in a timesaving of at least ten (10) minutes over the ground transport. SLU ECC and the County of SLO EMS Agency (EMS Agency) retain and regularly update the County of SLO Expedited Launch Zone (Attachment A and B).
- Heliport/Helistop: An area of land, water, or structure used or intended to be used for the landings and takeoffs of helicopters and includes its buildings and facilities, if any, as approved by the State of California, Department of Transportation, Division of Aeronautics.
- Emergency Landing Zone: the term used to designate an “emergency landing site” of an EMS aircraft by a public safety official.
- Incident Commander (IC): The highest-ranking representative or designee, on scene, of the public safety agency statutorily responsible for incident or scene management.
- SLU ECC: The San Luis Obispo Unit Emergency Command Center which coordinates the response of all EMS helicopters to the scene of all medical and trauma emergencies within the County of SLO where the patient’s location is known, and a nearby emergency landing zone can be reasonably assured.
- Specialty Care Center: A hospital designated and/or approved by the EMS Agency that provides specialized medical services.
- Time and Need: Considerations defined for quality improvement purposes in EMS Agency Policy #100: Continuous Quality Improvement.

IV. POLICY

A. The designated ordering point for all EMS helicopters is SLU ECC.

B. SLU ECC will coordinate EMS helicopter requests and cancellations.

C. EMS helicopters must have the capability to communicate and maintain communications with SLU ECC, EMS providers (responding and on-scene), base hospitals and other appropriate facilities or agencies.

D. Patient transport by EMS helicopter must meet both the “time and need” criteria outlined in this policy.

E. EMS helicopter service providers must develop and participate in a QI program in cooperation with the EMS Agency and other EMS system participants as outlined in the EMS Agency Policy # 100: Continuous Quality Improvement. This includes active participation in the EMS Agency Quality Improvement Work Group. All 9-1-1 EMS helicopter medical responses will be reviewed both clinically and operationally.

V. PROCEDURE

A. The closest available EMS Helicopter that is fully staffed, fueled, supplied, and prepared to immediately respond to an EMS helicopter request shall be dispatched except in the following circumstances:

1. When there is known or high likelihood for need of an EMS Rescue Helicopter, or when a nearby emergency landing zone cannot be reasonably assured, then an EMS Rescue Helicopter should be dispatched.
2. If more than one EMS Helicopter is located at the same location (e.g. Paso Robles Airport) and the response does not require an EMS Rescue Helicopter, then SLU ECC shall dispatch using the following priority:
    a. Air Ambulance
    b. ALS Rescue Helicopter
    c. BLS Rescue Helicopter
    d. Auxiliary Rescue Helicopter

B. SLU ECC will initiate the dispatch process of EMS helicopters with other EMS responding agencies when an incident is located within an Expedited Launch Zone and there is a credible report of one (1) or more of the following conditions:

1. High-risk motor vehicle accidents.
    a. Major damage to vehicle e.g. head-on/entrapment.
    b. Patient ejection (partial or complete) from an automobile.
    c. Greater than three (3) patients.
    d. Motor vehicle rollover.
    e. Deceased/ 1144 / CPR in progress on the same scene as the patient.
    f. Auto vs. Pedestrian.
    g. Incident involving bus, train, or plane.
    h. Child (age 0–9 years) unrestrained or in unsecured child safety seat.
2. Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
3. Pedestrian/bicycle rider thrown, run over, or with significant impact.
4. Fall from height > 10 feet.
5. Gun shot wound (GSW)/Stabbing.
6. Burn patients.
7. Industrial or agricultural accident.
8. Crush injuries.
9. Amputation or vascular compromise in a limb.

10. Active bleeding requiring a tourniquet or wound packing with continuous pressure.
11. Pregnancy complications, including seizures/convulsions.
12. Drowning/submersion.
13. Any injured or ill patients in an area inaccessible to, or with an extended ETA.
14. Other situations that are not covered, but dispatcher believes condition of patient is critical.

C. Cancellation of EMS helicopter response.

1. SLU ECC may cancel an EMS helicopter when:
    a. The IC, in consultation with the most medically qualified first responder on scene, determines it is no longer needed.
    b. Once an EMS helicopter has been dispatched, and a second EMS helicopter becomes available that reports an ETA at least five (5) minutes less than the ETA of the first EMS helicopter, SLU ECC may cancel the first EMS helicopter.
2. SLU ECC will notify the transport provider(s) and/or responding personnel of any cancellation or situational updates.

D. Responding or on-scene first responders may request an EMS helicopter when both "time and need" criteria are met.

1. Time Criteria must meet one (1) or more of the following:
    a. Transport by EMS helicopter would result in savings of at least ten (10) minutes over ground transport. (Destination criteria for Specialty Care Centers should be taken into consideration.)
    b. The scene location is difficult or inaccessible by ground transport, which could result in a prolonged response and transport.
2. Need Criteria must meet one (1) or more of the following:
    a. Responding first responders may request with a credible report of one (1) or more of the following conditions:
        (1) Conditions as outlined under section V Procedures B, 1-14 above.
    b. On-scene responder's assessment determines one (1) or more of the following conditions (some conditions may require advanced life support level of training):
        (1) Patient assessment meets the criteria of EMS Agency Policy #153: Trauma Patient Triage and Transport.
        (2) Patient assessment meets the criteria of EMS Agency Policy #152: STEMI Patient Triage and Destination.
        (3) Any hemodynamically compromised pediatric patient.
        (4) Patient assessment identifies any of the following:

- Altered mental status with no response to prehospital treatment.
- Severe respiratory compromise or respiratory arrest.
- Complications of childbirth, e.g., breech, abnormal presentation, massive blood loss, neonatal distress.
- Signs and symptoms of medical hypotension unresponsive to treatment.

(5) Patient assessment reveals unilateral weakness/paralysis, facial droop, or any signs/symptoms of CVA. (Time will be measured for flight to nearest hospital.)

(6) Patient requires code 3 transport to the hospital.

(7) EMS provider judgment

E. EMS helicopter transportation may not be suitable in the following situations:

a. Medical or traumatic cardiac arrest not responding to prehospital therapy consistent with EMS Agency Policy # 125: Prehospital Determination of Death/Do Not Resuscitate (DNR) End of Life Care.

b. Patients contaminated by hazardous material

c. Patients who are violent or have behavioral emergencies

F. Patient destination should be in accordance with the EMS Agency destination and triage policies including Policy # 151: Destination, Policy # 152: STEMI Triage and Destination, and Policy # 153: Trauma Patient Triage and Destination; however, it is ultimately the flight crew's discretion to transport the patient to any higher level of care outside the county.

VI. AUTHORITY

- California Health and Safety Code, Division 2.5, Section 1798.169.
- California Code of Regulations, Title 22, Division 9, Chapter 12 and 8; Sections 100300(c) (3) and 100291.
- California Emergency Medical Services Authority Prehospital Emergency Medical Service Aircraft Guidelines #144.

VII. ATTACHMENTS

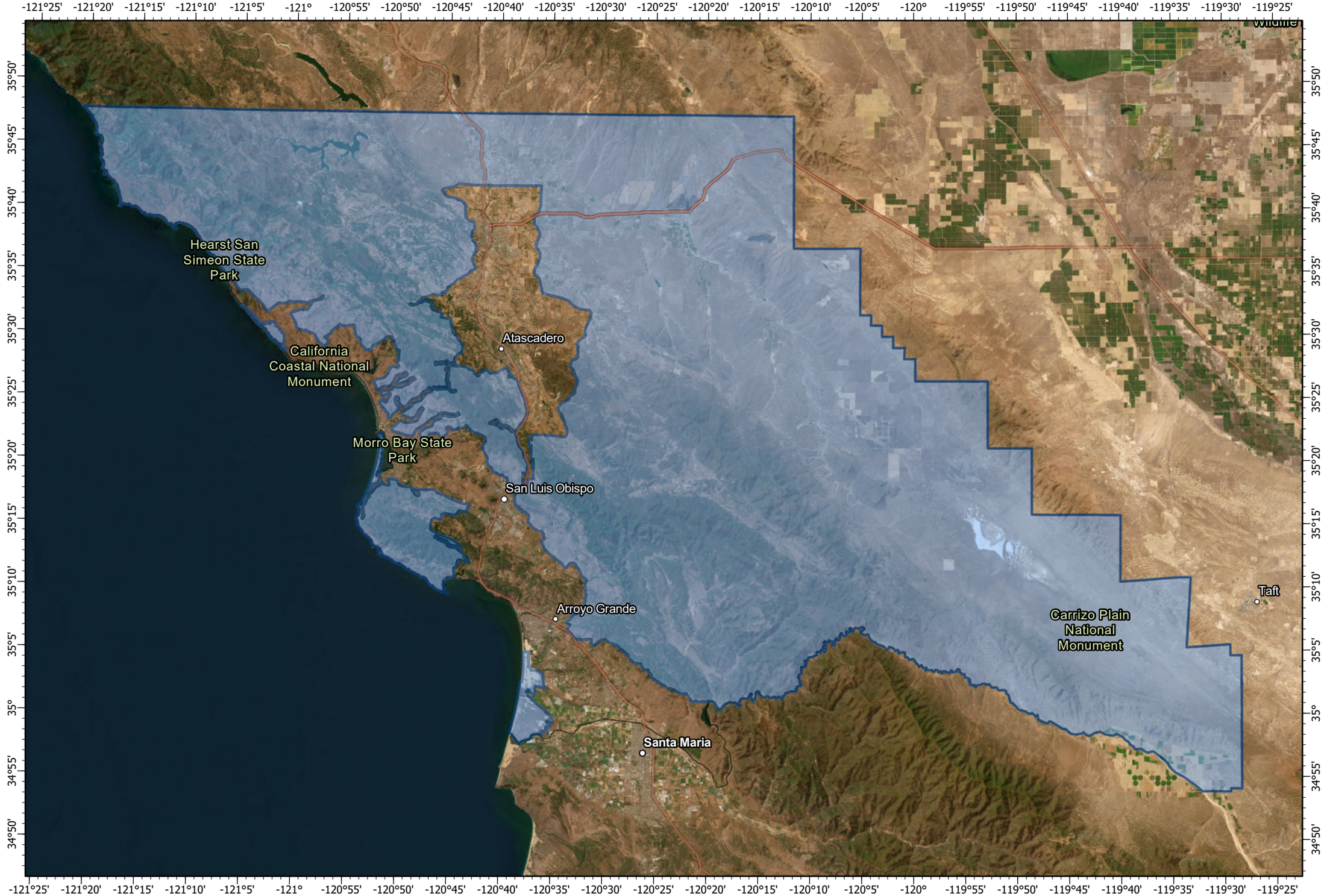
A. Expedited Launch Zones.

B. Expedited Launch Zones Map.

C. Emergency Landing Zone Selection.

Approvals:

EMS Agency, Administrator	
EMS Agency, Medical Director	



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County Boundary

Expedited Launch Zones

Expedited Launch Zones

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0 14 Miles

Emergency Landing Zone Selection

1. Choose an area in which the surface is flat, firm, and free of loose debris. If dust is suspected, wet down the area with water and inform the flight crew of this potential hazard.

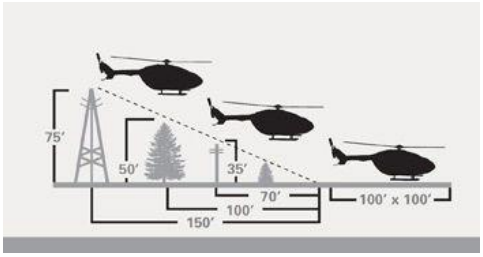
2. Follow these general guidelines for landing zone dimensions.

Daytime: 100 ft X 100 ft

Nighttime: 125 ft X 125 ft

3. The emergency landing zone should be free of people, animals, and vehicles. Special attention should be given to ensure that the zone is free of overhead obstructions such as wires, poles, and antennas. The surface of the zone should be free of stumps, irrigation equipment or any other obstruction that could interfere with the helicopter's landing gear. The landing zone official should delegate personnel as required for adequate crowd control.

4. During nighttime conditions, illuminate The emergency landing zone by positioning vehicle headlights toward the center of the zone. NEVER use flares or other items that can be easily blown by the helicopter downwash.



5. Consider HOTSAW for emergency landing zones.
H- Hazards
O- Obstructions
T- Terrain
S- Surface
A- Animals
W- Weather/wind

EXAM