Sierra – Sacramento Valley Emergency Medical Services Agency

Regional Executive Director
John Poland, Paramedic

Medical Director
Troy M. Falck, MD, FACEP, FAAEM

JPA Board Chairperson
Jim Holmes, Placer County Supervisor

Address & Contact Information
535 Menlo Drive, Suite A
Rocklin, CA 95765
(916) 625-1702
info@ssvems.com
www.ssvems.com

Serving Butte, Colusa, Glenn, Nevada, Placer, Shasta, Siskiyou, Sutter, Tehama, & Yuba Counties

ADMINISTRATIVE BULLETIN

Date: February 20, 2025

To: EMS System Participants

From: Troy M. Falck MD, FACEP, FAAEM, Medical Director
John Poland, Regional Executive Director

Subject: S-SV EMS Prehospital Policy/Protocol Update #76

Enclosed are S-SV EMS Policy/Protocol Update #76 documents that become effective April 1, 2025. Please be aware of the following information related to this update:

- As discussed during the January Regional Emergency Medical Advisory Committee (REMAC) meeting, we are transitioning from a June/December policy/protocol update schedule to an April/October policy/protocol update schedule.
- We are in the process of reviewing/re-evaluating our current REMAC and policy/protocol update processes, with input from EMS system participants. Additional information and any future proposed changes related to this matter will be communicated accordingly.
- EMS system participants are responsible for distribution of new/revised S-SV EMS policies/ protocols to their personnel. In addition to the update summary information contained on the following two (2) pages, all ALS/BLS policies/protocol documents included in this update packet, except for the following, are marked up to indicate specific revisions:
  - Policy 809: New policy, markups not applicable.
  - M-2P Protocol: Page 1 new protocol, markup not applicable. No changes on page 2.
  - OB-G2 Protocol: New protocol, markup not applicable.
  - PR-2 Protocol: New protocol (replacing policies 1102 & 1103), markup not applicable.
  - PR-3 Protocol: Significant additional/revised wording to incorporate manufacturer procedure language. Mark up version unreadable/unusable.
- Final versions of all new/revised policy/protocol documents will be published on the S-SV EMS website (www.ssvems.com) and the S-SV EMS mobile applications prior to April 1, 2025.

POLICY UPDATES SUMMARY		
Policy #	**Policy Title**	**Summary of Changes & Notes**
201 & 201-A	S-SV EMS Agency Organization Chart & Staff Responsibilities	• Updated S-SV EMS Organizational Chart and staff responsibilities document to reflect recent staff changes.
220	S-SV EMS Policy/Protocol Actions	• Additional public comment procedure language. • Additional policy/protocol corrections language. • Transition from June/December policy/protocol update schedule to April/October policy/protocol update schedule.
505-A	Hospital Capabilities	• Updated Control Facility (CF) for Colusa County from Enloe Medical Center to Adventist Health +Rideout.
506	STEMI Receiving Center Designation Criteria, Requirements & Responsibilities	• Routine review, no substantive changes. • Added a STEMI receiving center patient diversion notification documentation submission email address.
510	Rapid Re-Triage & Interfacility Transport Of STEMI, Stroke, Trauma & Critically Ill Patients	• Added language allowing a hospital to request a ground ambulance through the 911 system for interfacility transport of critically ill patients whose condition requires time-sensitive intervention or emergent care beyond the capabilities of the sending facility. Ground ambulances shall only be requested through the 911 system for this purpose when the patient requires emergent interfacility transport (as determined by the transferring physician) and no other transport resource is available.
701	ALS Provider Agency Inventory Requirements	• Addition of commercial pelvic binder required equipment for ALS transport providers, pursuant to S-SV EMS Regional Trauma QI Committee recommendations. • Updated pleural decompression equipment requirements.
703	LALS Provider Agency Inventory Requirements	• Addition of commercial pelvic binder required equipment for LALS transport providers pursuant to S-SV EMS Regional Trauma QI Committee recommendations.
809	EMS Naloxone Leave Behind Program	• New policy to allow EMS providers the ability to implement an optional naloxone leave behind program.
1007	EMS Student Field Training	• Additional/updated EMS student field training language, including the ability of EMT students to complete their supervised clinical experience on a BLS ambulance.
1110-F	Infrequently Used Skills Checklist – Needle Cricothyrotomy	• Updated infrequently used skills checklist to reflect recent applicable protocol changes.
1110-G	Infrequently Used Skills Checklist – Pleural Decompression	• Updated infrequently used skills checklist to reflect recent applicable protocol changes.

PROTOCOL UPDATES SUMMARY		
Protocol #	**Protocol Title**	**Summary of Changes & Notes**
C-3	Bradycardia With Pulses	• Updated midazolam dose range to 2.5 - 5 mg IV/IO. • Deleted "*For pts ≥65yo Midazolam dosing is limited to 2mg. Fentanyl dosing is limited to 25mcg".* • Added analgesic dosing clinical judgement language.
C-4 & C-4 LALS	Tachycardia With Pulses	• Updated midazolam dose to a range of 2.5 - 5 mg IV/IO. • Updated fentanyl dose to a range of 25 - 50 mcg IV/IO • Deleted *"For pts ≥65yo, Midazolam is limited to 2.5 mg & Fentanyl is limited to 25 mcg".* • Added analgesic dosing clinical judgement language.
M-8 & M-8 LALS	Pain Management	• Deleted all ketamine contraindications, except pregnancy. • Deleted *"Do not administer midazolam to pts ≥65yo".* • Updated language to read *"consider reducing fentanyl doses to 25 mcg for pts ≥65yo".* • Added analgesic dosing clinical judgement language.
OB-G2 & OB-G2 LALS	Obstetric Emergencies	• New protocol to allow for standing order treatment of obstetric emergencies, including the administration of magnesium sulfate (paramedic personnel), & midazolam (AEMT II and paramedic personnel) when indicated.
T-1 & T-1 LALS	General Trauma Management	• Updated commercial pelvic binder utilization language.
T-3 & T-3 LALS	Suspected Moderate/ Severe TBI	• Removed oral glucose administration.
T-4 & T-4 LALS	Hemorrhage	• Updated approved commercial tourniquet device & approved hemostatic agent language.
M-2P & M-2P LALS	Newborn Care/ Neonatal Resuscitation	• New protocol title & number. Expansion of the previous Neonatal Resuscitation Protocol (C1-N) to include Newborn Care assessment/treatment procedures.
M-6P & M-6P LALS	Pediatric General Medical Treatment	• Updated language to consider PO acetaminophen if pt is febrile & <4 yo & removal of base/modified base hospital order requirement for PO acetaminophen administration.
PR-2 & PR-2 LALS	Airway & Ventilation Management	• Conversion of policy 1102 to protocol format & merging with needle cricothyrotomy policy 1103. • Additional language stating, *"an i-gel SGA is the preferred advanced airway device & should be attempted prior to ET intubation unless video laryngoscopy is available & the ALS provider has completed training for that device"*. • Updated ET tube introducer utilization language. • Increased midazolam dosing for patients with an advanced airway who require sedation to maintain a patent airway.
PR-3	Pleural Decompression	• Updated 'INDICATIONS' language based on input from the S-SV EMS Regional Trauma QI Committee. • Updated/additional manufacturer recommended procedure language for the Capnospot® and SPEAR® devices.

S-SV EMS Update #76 Policies

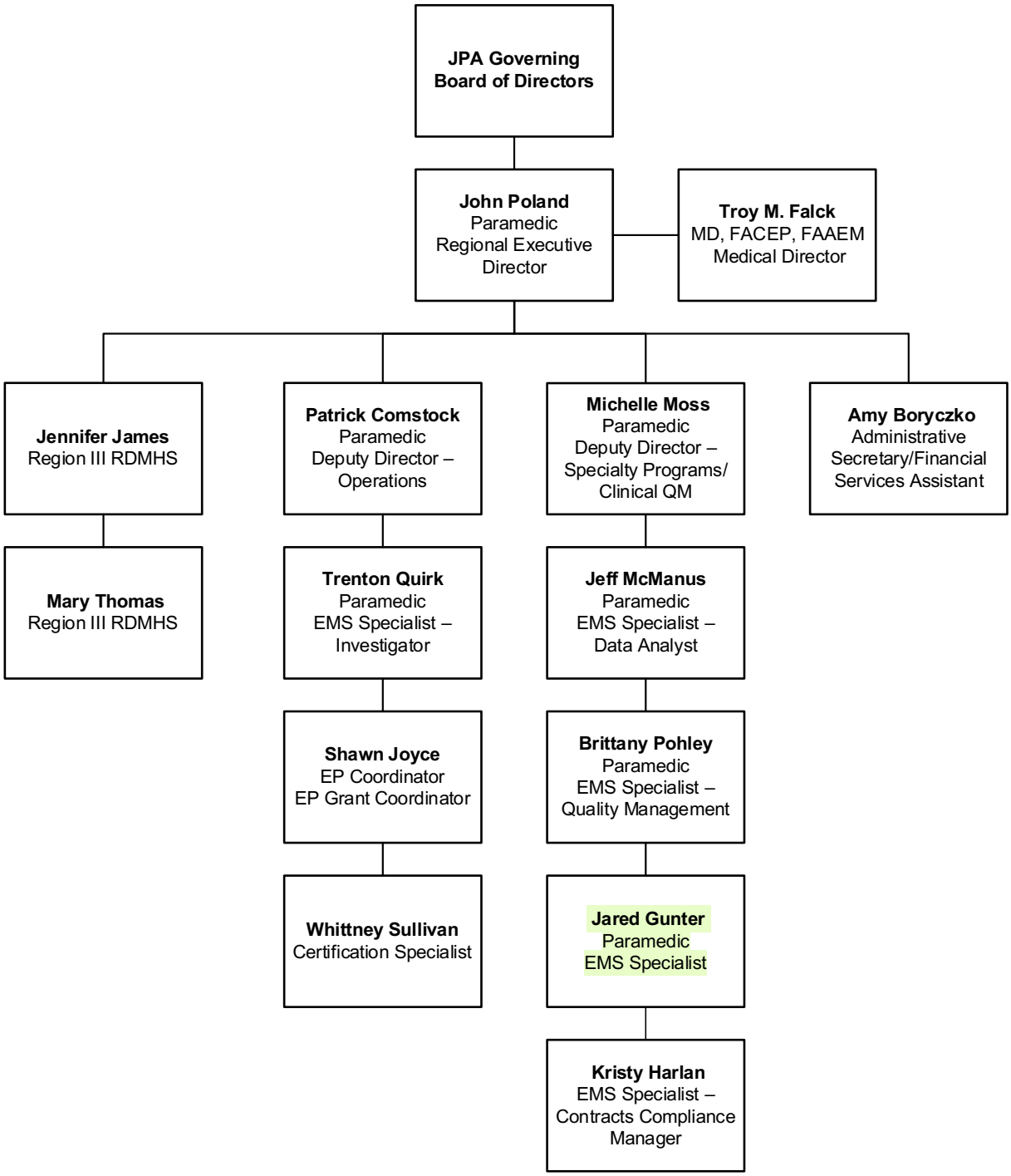
S-SV EMS Agency Staff Primary Responsibilities

201-A

Name, Title, & Contact Info	Primary Responsibilities
John Poland, Paramedic **Regional Executive Director** John.Poland@ssvems.com (916) 625-1719	• S-SV EMS member county BOS, CAO & PHO contact • S-SV EMS legal counsel contact • Hospital administration contact • S-SV EMS & personnel oversight • S-SV EMS contracts • S-SV EMS fiscal management • S-SV EMS EMS Plan • S-SV EMS EMS system policies/protocols • Region III RDMHC/S program oversight
Troy M. Falck, MD **Medical Director** Troy.Falck@ssvems.com (916) 625-1715	• Medical control, direction & oversight of the S-SV EMS system and all EMS personnel within the S-SV EMS region • Assist in the development/approval of all S-SV EMS policies and treatment protocols
Patrick Comstock, Paramedic **Deputy Director – Operations** Patrick.Comstock@ssvems.com (916) 625-1714	• EMS training programs approval/oversight • S-SV EMS personnel credentialling & investigation/ enforcement program oversight/management • S-SV EMS RFPs, provider agreements, & permitting oversight/ management • EMCC/EMAG/HPP/HP liaison • S-SV EMS data system oversight • S-SV EMS personnel oversight
Michelle Moss, Paramedic **Deputy Director – Specialty Programs/Clinical Quality Management** Michelle.Moss@ssvems.com (916) 625-1711	• Regional STEMI/stoke/trauma systems oversight/management • Regional HEMS program oversight/management • Regional specialty systems contracting oversight • Clinical quality management (QA/QI) oversight/management • EMS for children/pediatric specialty center liaison • S-SV EMS data system/patient registries oversight • S-SV EMS personnel oversight
Amy Boryczko **Administrative Secretary/ Financial Services Assistant** Amy.Boryczko@ssvems.com (916) 625-1712	• Secretary to the S-SV EMS Regional Executive Director • Secretarial support for S-SV EMS staff • Clerk of the Board to the S-SV EMS JPA Governing Board • Technical/clerical support for HPP & other grant activities • Assist with S-SV EMS fiscal management • Placer County Auditor-Controller's Office liaison
Jennifer Johnson **Region III RDMHS** Jennifer.Johnson@ssvems.com (530) 722-6615	• Region III Regional Disaster Medical Health Specialist (RDMHS) program operational responsibilities • EMCC/EMAG/HPP/EP liaison
Mary Thomas **Region III RDMHS** Mary.Thomas@ssvems.com (530) 722-6615	• Region III Regional Disaster Medical Health Specialist (RDMHS) program operational responsibilities • EMCC/EMAG/HPP/EP liaison

Name, Title, & Contact Info	Primary Responsibilities
Trenton Quirk, Paramedic **EMS Specialist – Investigator** Trenton.Quirk@ssvems.com (916) 625-1716	• Processing/managing California DOJ and/or FBI CORI background and subsequent arrest/disposition records • Overseeing/assisting with S-SV EMS investigation and personnel enforcement related matters • Assist with S-SV EMS operational duties as necessary
Shawn Joyce **EP/EP Grant Coordinator** Shawn.Joyce@ssvems.com (916) 625-1718	• Emergency preparedness (EP) & EP grant coordination
Whitney Sullivan **Certification Specialist** info@ssvems.com (916) 625-1702	• EMS personnel certification, accreditation, & authorizations • Assist with S-SV EMS operational duties as necessary
Jeff McManus, Paramedic **EMS Specialist – Data Analyst** Jeff.McManus@ssvems.com (916) 625-1721	• Supports S-SV EMS & EMS system participants with the EMS data system and patient data registries • Analysis/reporting of statistical EMS & specialty program data • HIE data oversight • Assist with S-SV EMS QA/QI activities as necessary
Brittany Pohley, Paramedic **EMS Specialist – QM** Brittany.Pohley@ssvems.com (916) 625-1724	• EMS system participant QA/QI primary liaison • Development, coordination, and oversight of EMS QA/QI activities/initiatives • QI indicator reporting to the S-SV EMS and EMS system participants • Development, oversight, planning, and coordination of S-SV EMS initiated training/education programs
Jared Gunter, Paramedic **EMS Specialist** Jared.Gunter@ssvems.com (916) 625-1717	• Oversight/coordination of the S-SV EMS Regional Emergency Medical Advisory Committee (REMAC) process • S-SV EMS clinical data auditing, analysis, and reporting • Assist with prehospital provider contract compliance • Assist with EMS training programs approval/oversight • Assist with S-SV EMS QA/QI activities as necessary
Kristy Harlan **EMS Specialist – Contracts Compliance Manager** Kristy.Harlan@ssvems.com (916) 625-1722	• EMS system participant liaison • Prehospital provider contract compliance • Internal/external compliance reporting • Assist with S-SV EMS QA/QI activities as necessary

Sierra – Sacramento Valley EMS Agency Program Policy			
S-SV EMS Agency Organizational Chart			
	Effective: 1/5/2025	Next Review: As Needed	**201**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE



Sierra – Sacramento Valley EMS Agency Program Policy			
S-SV EMS Policy/Protocol Actions			
	Effective: 04/01/2025	Next Review: 01/2028	**220**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To provide a mechanism for creation, review, revision, or removal of S-SV EMS policies and/or treatment protocols (collectively referred to in this policy as 'policy/protocol action').

AUTHORITY:

A. HSC, Division 2.5, § 1797.107, 1797.171, 1797.172, 1797.176, 1797.202, 1797.220, and 1798.

B. CCR, Title 22.

POLICY:

A. Prehospital provider organizations shall not institute patient care policies/protocols that conflict with those established by the S-SV EMS Agency. This does not apply to treatment protocols developed by air ambulance or ground critical care transport providers for RN personnel.

B. New policies/protocols are developed as necessary based on EMS system needs.

C. Consideration of proposed policy/protocol actions will be given to suggestions/ requests from EMS system participants.

D. Existing S-SV EMS policies/protocols are routinely reviewed a minimum of every three (3) years but may be reviewed on a more frequent basis, as necessary.

PROCEDURE:

A. Policy/protocol action input may be solicited from individuals, organizations, and/or advisory committees. S-SV EMS may also establish an ad hoc committee to recommend policy actions as necessary.

B. Approval of policy/protocol actions will occur as follows:

1. Proposed policy/protocol actions are listed on the S-SV EMS Regional Emergency Medical Advisory Committee (REMAC) meeting agenda for consideration.

2. The REMAC meeting agenda and all proposed policy actions will be distributed to EMS system participants and posted on the S-SV EMS website a minimum of 30 days prior to the applicable REMAC meeting in which they will be considered.

3. *Public comments on proposed policy/protocol actions listed on the applicable REMAC meeting agenda will be taken during the review/discussion of that item. Individuals unable to attend the meeting may provide written public comment on any item listed on the applicable REMAC meeting agenda, no later than seven (7) calendar days prior to the scheduled meeting date, by using a written public comment electronic form link included on the agenda.*

4. Policy/protocol actions listed on the applicable REMAC meeting agenda may be approved by a majority vote of the REMAC members present at the meeting. If necessary, proposed policy actions may be continued to subsequent REMAC meetings until a consensus is reached by the committee.

5. All REMAC approved policy/protocol actions shall also be approved by the S-SV EMS Medical Director and Regional Executive Director prior to implementation.

6. *S-SV EMS may make non-substantive corrections to approved policy/protocol actions to address any technical defect, error, irregularity, or omission prior to final publication.*

C. Implementation of policy actions will occur as follows:

1. New policies/protocols will be assigned an S-SV EMS policy/protocol number.

2. An effective date and next review date will be assigned to all policies/protocols.

3. The S-SV EMS Medical Director and Regional Executive Director will approve and sign the policy/protocol.

4. EMS system participants will be notified of the applicable policy/protocol action and implementation date. Policy/protocol updates are routinely released on a bi-annual basis for either an *April 1st or October 1st* ~~*June 1st or December 1st*~~ implementation but may be released more frequently as necessary.

D. Some policy/protocol actions may require immediate action to maintain compliance with statutes/regulations, or to preserve medical control/integrity of the EMS system. Policy/protocol actions of this type may be implemented by S-SV EMS as urgency measures and scheduled for discussion at the next regularly scheduled REMAC meeting, if necessary.

Sierra - Sacramento Valley EMS Regional Hospital Capabilities (505-A)

Hospital Type Abbreviations/Definitions

BASE (Base Hospital): EMS medical direction provided by MICNs and ED physicians.
MOD (Modified Base Hospital): EMS medical direction provided by ED physicians only (no MICNs).
REC (Receiving Hospital): Unable to provide EMS medical direction, but able to receive ambulance patients.

Stroke Center Abbreviations

PSC - Primary Stroke Center **TSC -** Thrombectomy Capable Stroke Center **CSC -** Comprehensive Stroke Center

Hospitals Located Within The S-SV EMS Region

Hospital Name	County	Hospital Type	Helispot/ Helipad	Trauma Center	Stroke Center	STEMI Center	L&D	Other
Enloe Medical Center	Butte	BASE	X	Level II	PSC	X	X	
Orchard Hospital	Butte	REC	X					
Oroville Hospital	Butte	BASE	X		PSC		X	
Colusa Medical Center	Colusa	MOD	X					
Glenn Medical Center	Glenn	REC	X					
Sierra Nevada Memorial Hospital	Nevada	MOD	X		PSC		X	
Tahoe Forest Hospital	Nevada	BASE	X	Level III	PSC		X	
Kaiser Roseville Medical Center	Placer	MOD			PSC	X	X	
Sutter Auburn Faith Hospital	Placer	MOD			PSC			
Sutter Roseville Medical Center	Placer	BASE	X	Level II	TSC	X	X	
Mayers Memorial Hospital	Shasta	BASE	X					
Mercy Medical Center Redding	Shasta	BASE	X	Level II	TSC	X	X	
Shasta Regional Medical Center	Shasta	BASE	X		PSC	X		
Fairchild Medical Center	Siskiyou	BASE	X	Level IV	PSC		X	
Mercy Medical Center Mt. Shasta	Siskiyou	BASE	X	Level III	PSC		X	
St. Elizabeth Community Hospital	Tehama	BASE	X	Level III	PSC		X	
Adventist Health +Rideout	Yuba	BASE	X	Level III	PSC	X	X	

S-SV EMS Designated MCI Control Facilities (CFs)

Control Facility (CF)	Coverage Area
Enloe Medical Center	Butte & Glenn Counties
Adventist Health +Rideout	Colusa, Sutter & Yuba Counties
Sutter Roseville Medical Center	Western Slope of Nevada & Placer Counties
Tahoe Forest Hospital (Back-Up: REMSA)	Tahoe Basin & Eastern Slope of Nevada & Placer Counties
Mercy Medical Center Redding	Shasta, Siskiyou & Tehama Counties

Sacramento County Hospitals

Sierra - Sacramento Valley EMS Regional Hospital Capabilities (505-A)

Hospital Name	County	Hospital Type	Helispot/ Helipad	Trauma Center	Stroke Center	STEMI Center	L&D	Other
Kaiser Sacramento Medical Center	Sac.	REC			PSC			
Kaiser South Sacramento Medical Center	Sac.	REC	X	Level II	CSC	X	X	
Mercy General Hospital	Sac.	REC			PSC	X	X	VAD
Mercy Hospital of Folsom	Sac.	REC	X		PSC		X	
Mercy San Juan Medical Center	Sac.	REC	X	Level II	CSC	X	X	
Methodist Hospital	Sac.	REC			PSC		X	
Sacramento VA Medical Center	Sac.	REC						
Sutter Sacramento Medical Center	Sac.	REC	X		PSC	X	X	VAD
UC Davis Medical Center	Sac.	BASE	X	Level I & Pediatric	CSC	X	X	VAD & Burn

Nevada Hospitals

Hospital Name	County	Hospital Type	Helispot/ Helipad	Trauma Center	Stroke Center	STEMI Center	L&D	Other
Northern Nevada Medical Center	Washoe	REC	X		PSC	X		
Northern Nevada Sierra Medical Center	Washoe	REC			PSC	X	X	
Renown Regional Medical Center	Washoe	REC	X	Level II	CSC	X	X	
Renown South Meadows Medical Center	Washoe	REC						
St. Mary's Regional Medical Center	Washoe	REC	X		PSC	X		

Oregon Hospitals

Hospital Name	County	Hospital Type	Helispot/ Helipad	Trauma Center	Stroke Center	STEMI Center	L&D	Other
Providence Medical Center	Jackson	REC	X	Level III	X	X	X	
Rogue Regional Medical Center	Jackson	REC	X	Level II	X	X	X	
Sky Lakes Medical Center	Klamath	REC	X	Level III			X	

Sierra – Sacramento Valley EMS Agency Program Policy		
STEMI Receiving Center Designation Criteria, Requirements & Responsibilities		
Effective: 04/01/2025	Next Review: 01/2028	**506**
Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish STEMI receiving center (SRC) designation criteria, requirements and responsibilities.

AUTHORITY:

A. California Health and Safety Code, Division 2.5, Chapter 2 § 1797.67 & 1797.88, Chapter 6 § 1798.102, 1798.150, 1798.170 and 1798.172.

B. California Code of Regulations, Title 13, § 1105 (c).

C. California Code of Regulations, Title 22, Division 9, Chapter 7.1.

DEFINITIONS:

A. **Percutaneous Coronary Intervention (PCI)** – A procedure used to open or widen a narrowed or blocked coronary artery to restore blood flow supplying the heart, usually done on an emergency basis for a STEMI patient.

B. **Primary PCI –** Urgent balloon angioplasty (with or without stenting), without the previous administration of fibrinolytic therapy or platelet glycoprotein IIb/IIIa inhibitors, to open the infarct-related artery during an acute myocardial infarction with ST-segment elevation.

C. **ST-Elevation Myocardial Infarction (STEMI)** – A clinical syndrome defined by symptoms of myocardial infarction in association with ST-segment elevation on EKG.

D. **STEMI Receiving Center (SRC)** – A licensed general acute care facility that has emergency interventional cardiac catheterization capabilities, meets the minimum STEMI care requirements contained in California Code of Regulations (Title 22, Division 9, Chapter 7.1, § 100270.124), and is designated as a SRC by S-SV EMS.

E. **STEMI Referring Hospital (SRH)** – A licensed general acute care facility that does not have emergency interventional cardiac catheterization capabilities, and transfers STEMI patients to SRCs for PCI services when necessary.

POLICY:

A. Criteria for assessment, identification, treatment and transport of prehospital suspected STEMI patients shall be based on S-SV EMS Chest Pain/Suspected Symptoms of Cardiac Origin Protocol (C-6).

B. The following shall be met for a hospital to be designated as a SRC by S-SV EMS:

1. Be licensed by the California Department of Public Health Services as a general acute care hospital.

2. Have a special permit for basic or comprehensive emergency medical service pursuant to the provisions of California Code of Regulations Title 22, Division 5.

3. Be accredited by a Centers for Medicare and Medicaid Services approved deeming authority.

4. Have a cardiac catheterization laboratory (cath lab) license.

5. Have intra-aortic balloon pump capability.

6. Have cardiovascular surgical services available on site. If cardiovascular surgical services are not available on site, the SRC must have a rapid transfer plan and written agreement in place with a facility that provides cardiovascular surgical services. The expectation is that for emergency cases, the patient will arrive at the cardiac surgical hospital within one (1) hour of the decision to operate.

7. Be available for treatment of STEMI patients twenty-four (24) hours per day, seven (7) days per week, three hundred and sixty-five (365) days per year.

8. Have a communication system for notification of a prehospital suspected STEMI patient, including 12-lead EKG receiving capabilities.

9. Have established protocols for triage, diagnosis, and cath lab activation following notification of a prehospital suspected STEMI patient.

10. Maintain a STEMI team call roster (including a cardiologist with PCI privileges and other appropriate cath lab team members).

11. Have a single call activation system to activate the cath lab team directly.

12. Ensure the cath lab team is available within 30 minutes of call activation.

13. Have written protocols in place for the identification of STEMI patients.

14. Have a process in place for the treatment and triage of simultaneously arriving STEMI patients.

15. Agree to accept all prehospital suspected STEMI patients according to applicable S-SV EMS policies/protocols.

16. Agree to accept all STEMI patients from adjacent SRHs, and have transfer plans/ agreements in place to ensure rapid transport of these patients to the SRC.

17. Perform a minimum of 36 Primary PCI and 200 total PCI procedures annually.

18. Have the following STEMI Program oversight staff:

- One STEMI Program Medical Director who is a physician board certified/ eligible in interventional cardiology with active PCI privileges at the SRC, and one STEMI Program Medical Co-Director who is a physician board certified/ eligible in emergency medicine with active privileges to practice in the emergency department at the SRC.
  - STEMI Program Medical Director/Co-Medical Director responsibilities:
    - Oversight of STEMI program patient care.
    - Participation in development of STEMI Program clinical practice guidelines/protocols.
    - Coordination of STEMI program staff and services.
    - Authority/accountability for STEMI Program quality and performance improvement.
    - Establish and monitor STEMI Program quality control.
    - Regular participation in S-SV EMS Regional STEMI QI Committee activity.
- One STEMI Program Manager who is an RN trained/certified in critical care nursing and affiliated with the cardiac catheterization laboratory at the SRC, and one STEMI Program Co-Manager who is an RN trained/certified in critical care nursing and affiliated with the emergency department at the SRC.
  - STEMI Program Manager/Co-Manager responsibilities:
    - Support the STEMI Program Medical Director/Co-Medical Director functions.
    - Acts as the STEMI Program EMS liaison.
    - Assures EMS-SRC STEMI data sharing.
    - Manages EMS-SRC STEMI QI activities.
    - Authority/accountability for STEMI Program quality and performance improvement.
    - Regular participation in S-SV EMS Regional STEMI QI Committee activity.

19. Have job descriptions and an organizational structure clarifying the relationship between the STEMI medical directors, STEMI program manager, and the STEMI team and hospital administration.

20. Have a quality improvement (QI) process in place to track and improve treatment (acutely and at discharge) with American College of Cardiology (ACC) and American Heart Association (AHA) guidelines-based Class 1 therapies. At a minimum, this process will evaluate performance in meeting the following AHA/ ACC STEMI Receiving Center Achievement Measures:

    - Fibrinolysis within 30 minutes of ED arrival, if administered.
    - SRC Arrival to PCI ≤90 minutes for patients arriving by non-EMS modes of transport.
    - EMS First Medical Contact (FMC) to PCI ≤90 minutes, or ≤120 minutes when transport time is prolonged (≥45 minutes).

21. Have a QI process in place to provide ongoing feedback to adjacent SRHs on patients transferred for STEMI services. At a minimum, this QI process shall evaluate and provide SRH feedback of the following:

    - SRH STEMI patient door-to-first ECG time (goal <10 minutes).
    - SRH STEMI patient door-to-transfer time (goal <30 minutes).
    - SRH STEMI patient door-to-fibrinolysis time, if applicable (goal <30 minutes).
    - Operational issues related to STEMI patient transfer delays.
    - Proportion of STEMI patients receiving fibrinolysis prior to transport when the system cannot achieve times consistent with ACC/AHA guidelines for primary PCI.
    - Proportion of STEMI-eligible patients receiving any reperfusion (PCI or fibrinolysis) therapy.

22. Conduct regularly scheduled multidisciplinary team meetings to evaluate outcomes and quality improvement data. Operational issues should be reviewed, problems identified, and solutions implemented.

23. Provide CE opportunities, minimum of four (4) hours per year, for EMS personnel in areas of 12-lead EKG acquisition and interpretation, as well as assessment and management of STEMI patients.

24. Provide public education about STEMI warning signs and the importance of early utilization of the 9-1-1 system.

25. Comply with all data collection, QI and performance standards as defined in S-SV EMS SRC contracts.

C. SRC diversion of STEMI patients shall only occur during times of an internal disaster or when the cath lab is otherwise unavailable.

1. Notification shall be made to the following entities at least 24 hours prior to any planned event, or as soon as possible for any unplanned event, resulting in the cath lab being unavailable:

   - S-SV EMS.
   - SRC emergency department – to include a status posting on EMResource indicating that the cath lab is unavailable.
   - Appropriate adjacent SRC(s).
   - Appropriate prehospital provider agencies.

2. All appropriate entities shall be notified as soon as possible when the cath lab is subsequently available.

3. An S-SV EMS ambulance patient diversion form describing such events shall be submitted ~~to S-SV EMS~~ *by email to Duty.Officer@ssvems.com* by the end of the next business day.

PROCEDURE:

A. The SRC applicant shall be designated after satisfactory review of written documentation and an initial site survey conducted by S-SV EMS representatives or designees and completion of a contract between the hospital and S-SV EMS.

B. Designated SRCs shall have verification reviews by S-SV EMS representatives or designees conducted every three (3) years.

C. Failure to comply with the criteria and performance standards outlined in this policy and/or SRC contracts may result in probation, suspension or rescission of SRC designation. Compliance will be solely determined by S-SV EMS.

Sierra – Sacramento Valley EMS Agency Program Policy		
Rapid Re-Triage & Interfacility Transport Of STEMI, Stroke, Trauma & Critically Ill Patients		
Effective: 04/01/2025	Next Review: 01/2028	**510**
Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish the procedures for rapid re-triage and interfacility transport (IFT) of acute STEMI, stroke, trauma *or critically ill patients whose condition requires time-sensitive intervention or care beyond the capabilities available at the sending facility*. This process involves direct ED to ED transfer of patients that have not been admitted to the hospital.

AUTHORITY:

A. HSC, Division 2.5, Chapter 2, § 1797.67 and 1797.88, Chapter 6 § 1798.102, 1798.150, 1798.170, and 1798.172.

B. CCR, Title 22, Division 9, Chapter 7, 7.1 & 7.2

DEFINITIONS:

A. **STEMI Patient Rapid Re-Triage –** The rapid evaluation, resuscitation, and transfer of a STEMI patient from a STEMI Referral Hospital (SRH) to a STEMI Receiving Center (SRC).

B. **Stroke Patient Rapid Re-Triage –** The rapid evaluation, resuscitation, and transfer of an acute stroke patient from a non-stroke facility to a stroke receiving center.

C. **Trauma Patient Rapid Re-Triage –** The rapid evaluation, resuscitation, and transfer of a seriously injured patient from a non-trauma facility, or a lower-level Trauma Center, to a Trauma Center that can provide a higher level of trauma care.

D. ***Critically Ill Patient Re-Triage –*** *The rapid evaluation, resuscitation, and transfer of a critically ill or injured patient requiring time-sensitive intervention or specialty care that cannot be provided at the sending facility.*

POLICY:

A. STEMI patients from a hospital within the S-SV EMS region shall be accepted for transfer by a SRC unless the SRC is on STEMI diversion or internal disaster.

B. Acute stroke patients requiring a higher level of care than can be provided at the sending facility, should be accepted for transfer by a stroke receiving center unless the stroke receiving center is on stroke diversion or internal disaster.

C. Trauma patients from a hospital within the S-SV EMS region meeting 'Emergency' ("Red Box") or 'Urgent' transfer re-triage criteria shall be accepted for transfer unless the Trauma Center is on trauma diversion or internal disaster.

D. Critically ill or injured patients should be transferred to the closest appropriate receiving facility with capabilities to care for the patient's time-sensitive condition.

RAPID RE-TRIAGE AND IFT PROCEDURES:

A. STEMI Patients:

1. A 12-lead EKG should be obtained within ten minutes of patient arrival at a SRH.

2. Immediately after a STEMI is identified, contact the SRC to arrange transfer. Contact the SRC interventional cardiologist as needed.

3. If SRH arrival to PCI at the SRC is anticipated to be >90 minutes, administration of lytic agents should be considered in patients that meet thrombolytic eligibility criteria. Contact the SRC early to discuss coordination of care. The goal for door to thrombolytics is <30 minutes.

4. Patients with an SRH identified STEMI should be transferred within 45 minutes utilizing the most appropriate transport resources based on patient condition and needs.

B. Acute Stroke Patients:

1. Evaluate patients with signs/symptoms of an acute stroke as soon as possible.

2. Acute stroke patients requiring a higher level of clinical care than can be provided at the sending facility should be transferred as soon as possible.

3. Contact the closest most appropriate stroke receiving center to discuss patient status and request transfer. If transfer is accepted, arrange for appropriate transport resources based on patient condition and needs.

C. Trauma Patients:

1. Rapid re-triage and transfer of trauma patients shall be based on the North Regional Trauma Coordinating Committee Guidelines for Transfer to a Trauma Center Criteria (incorporated into this policy for reference).

2. Emergency Transfer ("Red Box") Trauma Patients:

   - The goal is to transfer patients meeting any 'Emergency Transfer' ("Red Box") Trauma Re-Triage Criteria within one (1) hour of arrival at the sending facility.
   - Contact the closest appropriate Trauma Center as soon as possible and identify the patient as meeting "Red Box" criteria.

3. Urgent Transfer Trauma Patients:

   - The goal is to transfer patients meeting any 'Urgent Transfer' criteria within four (4) hours of arrival at the transferring facility.
   - Contact the closest most appropriate Trauma Center to discuss patient status and request transfer. If transfer is accepted, arrange for appropriate transport resources based on the patient's condition and needs.

D. IFT Procedures:

1. Unless medically necessary, avoid using medication drips that are not in the paramedic scope of practice to avoid transfer delays.

2. If patient care has been initiated that exceeds the paramedic scope of practice, the sending hospital may consider sending a nurse or other qualified medical staff with the ground ambulance. Air ambulances or nurse staffed ground critical care transport (CCT) units may also be utilized if necessary and their response time is appropriate.

3. The patient should be ready for transport and records/staff should be prepared and available for EMS transport personnel upon arrival at the sending facility. Availability of records should not delay the transport of patients in need of emergency transfer. If complete documentation is not sent with the ambulance, it should be faxed/electronically transmitted to the receiving hospital in sufficient time that it will arrive prior to the patient if possible.

4. For patients requiring emergency transfer, contracted advanced life support (ALS) transport providers should be utilized when agreements are in place and the transport unit is available within ten (10) minutes of the initial request. The jurisdictional ALS transport provider may be requested via 9-1-1 when the contracted ALS provider is not readily available.

Guidelines for Transfer to a Trauma Center

North Regional Trauma Coordinating Committee

Emergency Transfer: *Call the Trauma Center for immediate consult and/or acceptance. Avoid unnecessary studies that would delay the transfer. The goal is transfer within 1 hour of arrival.*

- Systolic blood pressure <90 mm Hg
- Labile blood pressure despite 2L of IV fluids or requiring blood products to maintain blood pressure
- GCS ≤8 or lateralizing signs
- Penetrating injuries to head, neck, chest or abdomen
- Fracture/dislocation with loss of distal pulses &/or ischemia
- Pelvic ring disruption or unstable pelvic fracture
- Vascular injuries with active arterial bleeding

URGENT TRANSFER: *Call the Trauma Center and initiate transfer as soon as any of the following are identified. Avoid unnecessary studies. The goal is transfer within 4 hours of arrival.*

Physiologic

- For a child, labile blood pressure despite 20 ml/kg of fluid resuscitation
- Patients requiring blood products to maintain their blood pressure

Note:
1. For pediatric patients, systolic blood pressure <70 plus 2 times the age should suggest hypotension
2. Systolic blood pressure <110 may represent shock in patients >65 years of age

Extremity Injuries

- Amputation of extremity proximal to wrist or ankle
- Open long-bone fractures
- Two or more long-bone fracture sites*
- Crush injury/mangled extremity

*A radius/ulna fracture or tibia/fibula fracture are considered one site

Neck & Thoracic Injuries

- Tracheobronchial injury
- Esophageal trauma
- Great vessel injury
- Major chest wall injury with ≥3 rib fractures &/or pulmonary contusion
- Pneumothorax or hemothorax with respiratory failure
- Radiographic evidence of aortic injury
- Known or suspected cardiac injury

Neurological Injuries

- GCS deteriorating by 2 points during observation
- Open or depressed skull fracture
- Acute spinal cord injury
- Spinal fractures, unstable or potentially unstable
- Neurologic deficit

Abdominal Injuries

- Evisceration
- Free air, fluid or solid organ injury on diagnostic testing

Pelvic/Urogenital

- Bladder rupture

Burn Injuries

- Second or third-degree thermal or chemical burns involving >10% of total body surface area in patients <15 years or >55 years of age
- Second or third-degree thermal or chemical burns involving the face, eyes, ears, hands, feet, genitalia, perineum, and major joints
- Third-degree burns >5% of the body surface area in any age group
- Electrical burns, including lightning injury
- Burn injury with inhalation injury

Co-Morbid Factors

- Adults >55 years of age with significant trauma
- Significant torso injury with advanced co-morbid disease (cardiac or respiratory disease, insulin-dependent diabetes, morbid obesity, immunosuppression or End Stage Renal Disease requiring dialysis)
- Patients taking anti-coagulant medication or platelet inhibitors
- Children <14 years of age with significant trauma
- Traumatic injury and pregnancy >20 weeks gestation

Note: All transfers must be in accordance with both state and federal EMTALA laws

Reference: American College of Surgeons, Committee on Trauma, Interfacility Transfer of Injured Patients: Guidelines for Rural Communities, 2002

Sierra – Sacramento Valley EMS Agency Program Policy			
ALS Provider Agency Inventory Requirements			
	Effective: 04/01/2025	Next Review: 01/2028	**701**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish a standardized inventory for ALS response vehicles in the S-SV EMS region.

AUTHORITY:

A. HSC, Div, 2.5, § 1797.204, 1797.206, 1797.214, 1797.218, 1797.220, & 1798.

B. CCR, Title 13.

C. CCR, Title 22, Div. 9, Ch. 3.3.

D. CVC, § 2418.5.

POLICY:

All S-SV EMS Agency approved ALS response vehicles shall carry the minimum equipment and supply inventory listed in this policy. Reasonable variations may occur; however, any exceptions or additions shall have prior S-SV EMS Agency approval.

Radio Equipment & Miscellaneous Equipment/Supplies	ALS Transport	ALS Non-Transport
Mobile UHF Med-Net Radio	1	Optional
Portable UHF Med-Net Radio **OR** Mobile Telephone	1	1
Maps (paper or electronic covering normal service area)	1	1
DOT Emergency Response Guidebook (ERG)	1	1
FIRESCOPE Field Operations Guide (FOG)	1	1
NEMSIS Version 3.4 Compliant Electronic PCR System	1	1
Refusal of EMS Care Forms	10	5
Triage Ribbon System	Optional	Optional
DMS All Risk Triage Tags	10	10
Triage Kit (MCI vests for 'Triage Unit Leader' and 'Medical Group Supervisor', pens, trauma shears, clipboard, patient tracking sheets, START Triage reference sheet, barrier tape, glow sticks)	1	Optional
Non-Sterile Gloves (various sizes)	10 pr. each	10 pr. each
Infection Control Kit with Particulate Filter Respirator (N95, etc.)	1 per crew	1 per crew
Antiseptic Hand Wipes **OR** Waterless Hand Sanitizer	10 **OR** 1	10 **OR** 1
Covered Waste Container (red biohazard bags acceptable)	1	1
Adult, Pediatric & Thigh BP Cuff	1 each	1 each
Stethoscope	1	1
Flashlight **OR** Penlight	1	1
Bedpan **OR** Fracture Pan	1	0
Urinal	1	0
Sharps Container	1	1
Padded Soft Wrist & Ankle Restraints	1 set	Optional
Lightweight, Sheer, Protective Mesh Hood (Spit Hood)	Optional	Optional
Pillows, Sheets, Pillowcases & Towels	2 each	0
Blankets	2	1
Emesis Basin/Disposable Emesis Bags	2	1
Length Based Pediatric Resuscitation Tape	1	1
Ambulance Cot & Vehicle Securing Equipment	1	0
Collapsible Stretcher/Breakaway Flat	1	Optional
Soft Stretcher/Portable Patient Transport Unit (MegaMover, etc.)	Optional	Optional
Stair Chair	Optional	Optional

Biomedical Equipment/Supplies	ALS Transport	ALS Non-Transport
Mechanical Chest Compression Device (S-SV EMS approved)	Optional	Optional
Thermometer	1	1
Pulse Oximeter	1	1
Portable Monitor/Defibrillator (capable of synchronized cardioversion, transcutaneous pacing, 12 Lead ECG with printout and waveform capnography)	1	1
Spare Monitor/Defibrillator Battery	1	1
Adult Defibrillator Electrodes **OR** Paddles with Pads/Gel	2 sets	2 sets
Pediatric Defibrillator Electrodes **OR** Paddles with Pads/Gel	1 set	1 set
Monitor/Defibrillator Electrode Leads/Wires	2 sets	1 set
Monitor/Defibrillator ECG Paper	1 roll	1 roll
Adult/Pediatric ECG Electrodes	48	24
CO-Oximeter	Optional	Optional
Glucometer	1	1
Glucometer Test Strips	10	5
Lancets	10	5
Airway & Oxygen Equipment/Supplies	**ALS Transport**	**ALS Non-Transport**
Ambulance Mounted ‘H’ or ‘M’ Oxygen Tank	1	0
Ambulance Wall Mounted Oxygen Regulator with Liter Flow	1	0
Portable ‘D’ or ‘E’ Oxygen Cylinder	2	1
Portable Oxygen Regulator with Liter Flow	1	1
Nasal Cannula	4	2
Adult Non-Rebreather Oxygen Mask	4	2
Pediatric Oxygen Mask	2	1
Handheld Nebulizer & Aerosol/Nebulizer Mask	2 each	1 each
Disposable CPAP Circuit with Mask	2	1
Adult Bag Valve Mask (BVM) With S, M & L Adult Masks	1	1
Pediatric Bag Valve Mask (BVM) With Neonate & Child Masks	1	1
BVM PEEP Valve	Optional	Optional
Inspiratory Impedance Threshold Device (ITD)	Optional	Optional
Oropharyngeal Airways: Sizes 40 mm – 110 mm or Equivalent	2 each	1 each

Airway & Oxygen Equipment/Supplies (continued)	ALS Transport	ALS Non-Transport
Nasopharyngeal Airways: Sizes 20 Fr – 34 Fr or Equivalent	2 each	1 each
Water Soluble Lubricant	2	1
Ambulance Mounted Suction Unit	1	0
Portable Mechanical Suction Unit	1	1
Spare Suction Canisters/Bags with Lids	2	Optional
Tonsillar Tip Suction Handle	2	1
Suction Catheters: Sizes 6 Fr – 14 Fr	1 each	1 each
Video Laryngoscope Device with Adult & Pediatric Blades	Optional	Optional
Laryngoscope Handle	1	1
Straight (Miller) Laryngoscope Blades: Sizes 0 – 4	1 each	1 each
Curved (Macintosh) Laryngoscope Blades: Sizes 3, 4	1 each	1 each
Spare Laryngoscope Handle Batteries	1 set	1 set
Spare Laryngoscope Blade Bulb (if not using disposable blades)	1	1
Magill Forceps: Adult & Pediatric	1 each	1 each
Cuffed Endotracheal Tubes: Sizes 6.0, 6.5, 7.0, 7.5, 8.0, 8.5	2 each	1 each
Adult Endotracheal Tube Stylet	2	1
Flex Guide ETT Introducer	2	1
i-gel Airway Devices: Sizes 1.0, 1.5, 2.0, 2.5	1 each	1 each
i-gel Airway Devices: Sizes 3, 4, 5	1 each	1 each
Advanced Airway Tube/Device Holder	2	1
Mainstream $EtCO_2$ Disposable Capnography Circuit	2	1
Sidestream $EtCO_2$ Disposable Capnography Circuit, Adult	2	1
Sidestream $EtCO_2$ Disposable Capnography Circuit, Pediatric	2	1
Cricothyrotomy Equipment (one of the following sets) • Adult & pediatric transtracheal catheters or minimum 12 ga x 3” airway catheter; **OR** • Adult (4.0 mm) & pediatric (2.0 mm) Rusch QuickTrach Needle Cricothyrotomy Device;	1 set	1 set
Minimum 14 ga x 3.25” Pleural Decompression Catheter with Capnospot® Pneumothorax Decompression Indicator **OR** Simplified Pneumothorax Emergency Air Release (SPEAR®) Device	2	2
Needle Thoracostomy Catheter One-Way Valve	Optional	Optional

Immobilization Equipment/Supplies	ALS Transport	ALS Non-Transport
Kendrick Extrication Device (KED) or Equivalent	1	Optional
Adult Long Spine Board with Straps	2	1
Pediatric Spine Board	1	1
Head Immobilization Set	2	1
Rigid C-Collars: Sizes Pediatric & S, M, L Adult **OR** Adjustable	2 each	2 each
XCollar Plus	Optional	Optional
Approved Commercial Pelvic Binder	1	Optional
Arm & Leg Splints (SAM, cardboard, vacuum, etc.)	2 each	2 each
Traction Splint	1	1
Obstetrical Equipment/Supplies	**ALS Transport**	**ALS Non-Transport**
OB Kit (gloves, cord clamps, dressings, bulb syringe, cap, etc.)	2	1
Bandaging Equipment/Supplies	**ALS Transport**	**ALS Non-Transport**
Band-Aids	10	10
Bandage Shears	1	1
1” & 2” Adhesive Tape Rolls	2 each	1 each
Non-Sterile 4x4 Compresses	50	10
Sterile 4x4 Compresses	10	5
2”, 3” or 4” Kling/Kerlix Rolls	5	2
Triangular Bandages	4	2
Surgipads	Optional	Optional
Trauma Dressing	2	1
Petroleum Gauze	2	2
Chest Seal (Asherman, Bolin, Halo, HyFin, SAM or equivalent)	Optional	Optional
Approved Hemostatic Agent	Optional	Optional
Approved Commercial Tourniquet Device	2	2
Hydrogen Peroxide	Optional	Optional
1000 mL Sterile Irrigation Solution	2	1
Potable Water	2 liters	2 liters
Cold Packs & Heat Packs	4 each	2 each

IV/IO Access & Medication Administration Equipment/Supplies	ALS Transport	ALS Non-Transport
Alcohol Swabs	20	10
Chlorhexidine Swabs/Skin Prep	5	5
IV Start Pack or Equivalent (with tourniquet)	4	2
IV Catheter: Sizes 14 ga, 16 ga, 18 ga, 20 ga	6 each	2 each
IV Catheter: Sizes 22 ga, 24 ga	4 each	2 each
Micro-Drip & Macro-Drip IV Set **OR** Selectable Drip IV Set	4 each	2 each
Blood Administration Set	Optional	Optional
Buretrol Set	Optional	Optional
IV Flow Regulator Set (Dial-A-Flo)	Optional	Optional
IV Extension Set	4	2
Saline Locks	Optional	Optional
3-Way Stopcock	2	1
10 mL NS Vials or Pre-Filled Syringes	Optional	Optional
IV Fluid Pressure Infusion Bag	1	1
IV Fluid Warmer	Optional	Optional
Syringes: Sizes: 1 mL, 3 – 5 mL, 10 mL	3 each	2 each
50 – 60 mL Syringe	1	1
22 ga, 25 ga Safety Injection Needles	2 each	2 each
Filter Needle (only if utilizing medications in ampules)	2	2
Vial Access Cannulas	2	2
Mucosal Atomizer Device (MAD)	2	2
Arm Boards: Sizes Short & Long	2 each	1 each
Vacutainer Holder, Needle & Blood Collection Tubes	Optional	Optional

IO Equipment (one of the following sets)

- Pediatric Bone Injection Gun or New Intraosseous Device (2 Transport, 1 Non-Transport)
- Adult New Intraosseous Device (2 Transport, 1 Non-Transport)

OR

- EZ-IO, SAM IO, or BD IO Driver (1 Transport, 1 Non-Transport)
- 15 mm Needle Set (Optional)
- 25 mm Needle Set
  - If carrying 15 mm Needle Set (1 Transport, 1 Non-Transport)
  - If not carrying 15 mm Needle Set (2 Transport, 1 Non-Transport)
- 45 mm Needle Set (1 Transport, 1 Non-Transport)

IV Solutions	ALS Transport	ALS Non-Transport
Lactated Ringers 1000 mL Bag	Optional	Optional
Normal Saline and/or 5% Dextrose 100 mL Bag (*required if not utilizing pre-mixed Acetaminophen, Amiodarone, Magnesium Sulfate, & TXA)	Optional (see note*)	Optional (see note*)
Normal Saline 250 mL Bag	2	1
Normal Saline 1000 mL Bag	6	2
Medications	**ALS Transport**	**ALS Non-Transport**
Acetaminophen – IV (1000 mg)	2	2
Acetaminophen – PO (32 mg/mL)	960 mg	960 mg
Activated Charcoal	50 gm	Optional
Adenosine (6 mg/2 mL)	3	3
Albuterol (2.5 mg/3 mL)	6	4
Amiodarone (150 mg/3 mL)	6	3
Aspirin (chewable tablets)	8	8
Atropine (1 mg/10 mL)	2	2
Calcium Chloride (1 gm/10 mL)	4	2
Dextrose 10% (250 mL bag)	3	2
Diphenhydramine (50 mg/1 mL)	2	2
Diphenhydramine elixir (100 mg)	1	1
Epinephrine 1:1,000 (1 mg/1 mL – 1 mL vial or ampule)	5	5
Epinephrine 1:10,000 (1 mg/10 mL)	8	4
Glucagon (1 mg)	1	1
Glucose Oral Product (minimum 15 gm)	2	1
Ipratropium (500 mcg/2.5 mL)	2	2
Ketorolac (30 mg/1 mL)	2	2
Lidocaine 2% (100 mg/5 mL)	2	2
Mark-1/DuoDote Kit	Optional	Optional
Magnesium Sulfate (1 gm/2 mL)	10 gm	10 gm
Naloxone (2 mg/2 mL)	4	2
Nitroglycerin 0.4 mg (tablet bottle or aerosol spray)	2	1
Ondansetron (4 mg/2 mL)	6	2

Medications (continued)	ALS Transport	ALS Non-Transport
Ondansetron Oral Disintegrating Tablets (4 mg)	4	2
Racemic Epinephrine	Optional	Optional
Sodium Bicarbonate (50 mEq/50 mL)	2	1
Tranexamic Acid (1 gm)	2	1
Controlled Substances	**ALS Transport**	**ALS Non-Transport**
Controlled Substances Locking Storage Container	1	1
Controlled Substances Tracking Sheet	1	1
Carpuject Holder (only if utilizing capuject supplied medications)	1	1
Fentanyl (50 mcg/1 mL concentration)	400 mcg minimum 1000 mcg maximum	400 mcg minimum 1000 mcg maximum
Ketamine (50 mg/1 mL concentration)	200 mg minimum 1000 mg maximum	200 mg minimum 1000 mg maximum
Midazolam (5 mg/1 mL concentration)	20 mg minimum 60 mg maximum	20 mg minimum 60 mg maximum

Sierra – Sacramento Valley EMS Agency Program Policy			
LALS Provider Agency Inventory Requirements			
	Effective: 04/01/2025	Next Review: 04/2028	**703**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish a standardized inventory for LALS response vehicles in the S-SV EMS region.

AUTHORITY:

California Health and Safety Code, Division 2.5, § 1797.204 and 1797.220.

California Code of Regulations, Title 22, Division 9.

California Code of Regulations, Title 13.

California Vehicle Code, Section 2418.5.

Emergency Medical Services Authority Guidelines and Recommendations, Highway Patrol Handbook 82.4.

POLICY:

All S-SV EMS approved LALS response vehicles shall carry the minimum equipment and supply inventory listed in this policy. Reasonable variations may occur; however, any exceptions or additions shall have prior S-SV EMS approval.

Radio Equipment & Miscellaneous Equipment/Supplies	LALS Transport	LALS Non Transport
Mobile UHF Med-Net Radio	1	Optional
Portable UHF Med-Net Radio **OR** Mobile Telephone	1	1
Maps (paper or electronic covering normal service area)	1	1
DOT Emergency Response Guidebook (ERG)	1	1
FIRESCOPE Field Operations Guide (FOG)	1	1
NEMSIS Version 3.5 Compliant Electronic PCR System	1	1
Refusal of EMS Care Forms	10	5
Triage Ribbon System	Optional	Optional
DMS All Risk Triage Tags	10	10
Triage Kit (MCI vests for 'Triage Unit Leader' and 'Medical Group Supervisor', pens, trauma shears, clipboard, patient tracking sheets, START Triage reference sheet, barrier tape, glow sticks)	1	Optional
Non-Sterile Gloves (various sizes)	10 pr. each	10 pr. each
Infection Control Kit With Particulate Filter Respirator (N95, etc.)	1 per crew	1 per crew
Antiseptic Hand Wipes **OR** Waterless Hand Sanitizer	10 **OR** 1	10 **OR** 1
Covered Waste Container (red biohazard bags acceptable)	1	1
Adult, Pediatric & Thigh BP Cuff	1 each	1 each
Stethoscope	1	1
Flashlight **OR** Penlight	1	1
Bedpan **OR** Fracture Pan	1	0
Urinal	1	0
Sharps Container	1	1
Padded Soft Wrist & Ankle Restraints	1 set	Optional
Lightweight, Sheer, Protective Mesh Hood (Spit Hood)	Optional	Optional
Pillows, Sheets, Pillowcases & Towels	2 each	0
Blankets	2	1
Emesis Basin/Disposable Emesis Bags	2	1
Length Based Pediatric Resuscitation Tape	1	1
Ambulance Cot & Vehicle Securing Equipment	1	0
Collapsible Stretcher/Breakaway Flat	1	Optional
Soft Stretcher/Portable Patient Transport Unit (MegaMover, etc.)	Optional	Optional
Stair Chair	Optional	Optional

Biomedical Equipment/Supplies	LALS Transport	LALS Non Transport
Mechanical Chest Compression Device (S-SV EMS approved)	Optional	Optional
Thermometer	1	1
Pulse Oximeter	1	1
Portable Monitor/Defibrillator **OR** AED • AEMT Providers: AED • **(AEMT II Providers Only)**: Portable monitor/defibrillator capable of synchronized cardioversion, 12 Lead ECG with printout and waveform capnography	1	1
Spare Monitor/Defibrillator Battery **(AEMT II Providers Only)**	1	1
Adult Defibrillator Electrodes **OR** Paddles With Pads/Gel	2 sets	2 sets
Pediatric Defibrillator Electrodes **OR** Paddles With Pads/Gel	1 set	1 set
Monitor/Defibrillator **OR** AED Electrode Leads/Wires	1 set	1 set
Monitor/Defibrillator ECG Paper **(AEMT II Providers Only)**	1 roll	1 roll
Adult/Pediatric ECG Electrodes **(AEMT II Providers Only)**	48	24
Glucometer	1	1
Glucometer Test Strips	10	5
Lancets	10	5
Airway & Oxygen Equipment/Supplies	**LALS Transport**	**LALS Non Transport**
Ambulance Mounted ‘H’ or ‘M’ Oxygen Tank	1	0
Ambulance Wall Mounted Oxygen Regulator With Liter Flow	1	0
Portable ‘D’ or ‘E’ Oxygen Cylinder	2	1
Portable Oxygen Regulator With Liter Flow	1	1
Nasal Cannula	4	2
Adult Non-Rebreather Oxygen Mask	4	2
Pediatric Oxygen Mask	2	1
Handheld Nebulizer & Aerosol/Nebulizer Mask	2 each	1 each
Disposable CPAP Circuit With Mask	2	1
Adult Bag Valve Mask (BVM) With S, M & L Adult Masks	1	1
Pediatric Bag Valve Mask (BVM) With Neonate & Child Masks	1	1
BVM PEEP Valve	Optional	Optional
Inspiratory Impedance Threshold Device (ITD)	Optional	Optional

Airway & Oxygen Equipment/Supplies (continued)	LALS Transport	LALS Non Transport
Water Soluble Lubricant	2	1
Oropharyngeal Airways: Sizes 40 mm – 110 mm or Equivalent	2 each	1 each
Nasopharyngeal Airways: Sizes 20 Fr – 34 Fr or Equivalent	2 each	1 each
Ambulance Mounted Suction Unit	1	0
Portable Mechanical Suction Unit	1	1
Spare Suction Canisters/Bags With Lids	2	Optional
Tonsillar Tip Suction Handle	2	1
Suction Catheters: Sizes 6 Fr – 14 Fr	1 each	1 each
i-gel Airway Devices: Sizes 1.0, 1.5, 2.0, 2.5	Optional	Optional
i-gel Airway Devices: Sizes 3, 4, 5	1 each	1 each
Advanced Airway Tube/Device Holder	2	1
Mainstream $EtCO_2$ Disposable Capnography Circuit **OR** Colorimetric Device	2	1
Sidestream $EtCO_2$ Disposable Capnography Circuit, Adult **(AEMT Providers Only)**	2	1
Sidestream $EtCO_2$ Disposable Capnography Circuit, Pediatric **(AEMT Providers Only)**	2	1
Immobilization Equipment/Supplies	**LALS Transport**	**LALS Non Transport**
Kendrick Extrication Device (KED) or Equivalent	1	Optional
Adult Long Spine Board With Straps	2	1
Pediatric Spine Board	1	1
Head Immobilization Set	2	1
Rigid C-Collars: Sizes Pediatric & S, M, L Adult **OR** Adjustable	2 each	2 each
XCollar Plus	Optional	Optional
Approved Commercial Pelvic Binder	*1* ~~Optional~~	Optional
Arm & Leg Splints (SAM, cardboard, vacuum, etc.)	2 each	2 each
Traction Splint	1	1
Obstetrical Equipment/Supplies	**LALS Transport**	**LALS Non Transport**
OB Kit (gloves, cord clamps, dressings, bulb syringe, cap, etc.)	2	1

Bandaging Equipment/Supplies	LALS Transport	LALS Non Transport
Band-Aids	10	10
Bandage Shears	1	1
1” & 2” Adhesive Tape Rolls	2 each	1 each
Non-Sterile 4x4 Compresses	50	10
Sterile 4x4 Compresses	10	5
2”, 3” or 4” Kling/Kerlix Rolls	5	2
Triangular Bandages	4	2
Surgipads	Optional	Optional
Trauma Dressing	2	1
Petroleum Gauze	2	2
Chest Seal (Asherman, Bolin, Halo, HyFin, SAM or equivalent)	Optional	Optional
Approved Hemostatic Agent	Optional	Optional
Approved Commercial Tourniquet Device	2	2
Hydrogen Peroxide	Optional	Optional
1000 mL Sterile Irrigation Solution	2	1
Potable Water	2 liters	2 liters
Cold Packs & Heat Packs	4 each	2 each
IV/IO Access & Medication Administration Equipment/Supplies	**LALS Transport**	**LALS Non Transport**
Alcohol Swabs	20	10
Chlorhexidine Swabs/Skin Prep	5	5
IV Start Pack or Equivalent (with tourniquet)	4	2
IV Catheter: Sizes 14 ga, 16 ga, 18 ga, 20 ga	6 each	2 each
IV Catheter: Sizes 22 ga, 24 ga	2 each	2 each
Micro-Drip & Macro-Drip IV Set **OR** Selectable Drip IV Set	4 each	2 each
Blood Administration Set	Optional	Optional
Buretrol Set	Optional	Optional
IV Extension Set	4	2
Saline Locks	Optional	Optional
3-Way Stopcock	1	1
10 mL NS Vials or Pre-Filled Syringes	Optional	Optional

IV/IO Access & Medication Administration Equipment/Supplies (continued)	LALS Transport	LALS Non Transport
IV Fluid Pressure Infusion Bag	1	1
IV Fluid Warmer	Optional	Optional
Syringes: Sizes: 1 mL, 3 – 5 mL, 10 mL	3 each	2 each
50 – 60 mL Syringe	1	1
22 ga, 25 ga Safety Injection Needles	2 each	2 each
Filter Needle (only if utilizing medications in ampules)	2	2
Vial Access Cannulas	2	2
Mucosal Atomizer Device (MAD)	2	2
Arm Boards: Sizes Short & Long	2 each	1 each
Vacutainer Holder, Needle & Blood Collection Tubes	Optional	Optional
EZ-IO, SAM IO or BD IO Driver (only if using mechanical IO)	1	1
Pediatric Bone Injection Gun or New Intraosseous Device **OR** EZ-IO, SAM IO or BD IO 15 mm or 25 mm Needle Set	2	1
IV Solutions	**LALS Transport**	**LALS Non Transport**
Lactated Ringers 1000 mL Bag	Optional	Optional
Normal Saline 250 mL Bag	2	1
Normal Saline 1000 mL Bag	6	2
Medications	**LALS Transport**	**LALS Non Transport**
Acetaminophen – PO (32 mg/ml)	960 mg	960 mg
Activated Charcoal	50gm	Optional
Albuterol (2.5 mg/3 mL)	6	4
Aspirin (chewable tablets)	8	8
Atropine (1 mg/10 mL) **(AEMT II Providers Only)**	2	2
Dextrose 10% (250 mL bag)	3	2
Epinephrine 1:1,000 (1 mg/1 mL – 1mL vial or ampule)	5	5
Epinephrine 1:10,000 (1 mg/10 mL) **(AEMT II Providers Only)**	8	4
Glucagon (1 mg)	1	1
Glucose Oral Product (minimum 15 gm)	2	1
Lidocaine 2% (100 mg/5 mL) **(AEMT II Providers Only)**	6	3
Mark-1/DuoDote Kit	Optional	Optional

Medications (continued)	LALS Transport	LALS Non Transport
Naloxone (2 mg/2 mL)	4	2
Nitroglycerin 0.4 mg (tablet bottle or aerosol spray)	2	1
Sodium Bicarbonate (50 mEq/50 mL) **(AEMT II Providers Only)**	2	1
Controlled Substances (AEMT II Providers Only)	**LALS Transport**	**LALS Non Transport**
Controlled Substances Locking Storage Container	1	1
Controlled Substances Tracking Sheet	1	1
Carpuject Holder (only if utilizing capuject supplied medications)	1	1
Midazolam (5mg/mL concentration)	20 mg minimum 60 mg maximum	20 mg minimum 60 mg maximum
Fentanyl (50 mg/mL concentration)	400 mcg minimum 1000 mcg maximum	400 mcg minimum 1000 mcg maximum

Sierra – Sacramento Valley EMS Agency Program Policy			
EMS Naloxone Leave-Behind Program			
	Effective: 04/01/2025	Next Review: 01/2028	**809**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE: **NOTE: New Policy - No Markup Applicable**

To establish guidelines for EMS personnel to provide intra-nasal (IN) naloxone delivery devices intended for layperson use to individuals deemed to be at risk of an opioid overdose or individuals who are considered likely to encounter and assist a person experiencing an opioid overdose.

AUTHORITY:

HSC, Div. 2.5. § 1797.220 & 1798.

POLICY:

A. Suspected opioid overdoses shall be treated according to S-SV EMS Agency protocols.

B. EMS providers may stock IN naloxone delivery devices intended for layperson use. These devices may be obtained through the following mechanisms:

   1. The California DHCS Naloxone Distribution Project (NDP): https://www.dhcs.ca.gov/individuals/Pages/Naloxone_Distribution_Project.aspx

   2. Local public health department or other community organization naloxone distribution programs that exist within the EMS providers' service area.

   3. Purchasing through the EMS providers' normal supply chain.

C. EMS personnel are authorized to provide an IN naloxone delivery device intended for layperson use to any individual who is deemed to be at risk of an opioid overdose or individuals who are considered likely to encounter and assist a person experiencing an opioid overdose.

D. EMS personnel may consider offering leave-behind IN naloxone delivery devices to lay persons who request it on a scene or in the following situations:

   1. A reversed overdose regardless of further treatment or transport disposition.

2. Prescription opioids, drug paraphernalia, or suspected opioid use are found on a scene, including bystanders who may have been using opioids.

3. An individual who self-identifies as a person who uses illicit substances or prescription opioids.

4. An individual who states that they have close contacts who use illicit substances or prescription opioids.

E. Providers may consider offering leave-behind IN naloxone delivery devices regardless of the nature of the contact between EMS personnel and the subject(s) receiving the device. Leave-behind naloxone distribution is not limited to 911/ emergency calls for service for a suspected opioid overdose.

PROCEDURE:

A. EMS personnel shall provide the following brief instructions, at a minimum, to any recipient of a leave-behind IN naloxone delivery device:

1. Encourage/remind to never use alone, as appropriate.

2. Recognition of opiate overdose and activation of 911.

3. Signs and Symptoms of opiate overdose.

4. Lay-person rescue breathing.

5. Administration of IN naloxone.

6. Post-overdose care.

B. Any EMS provider agency stocking/distribution IN naloxone delivery devices intended for layperson use shall implement and maintain appropriate methods to adequately track the distribution of such devices. This information shall be made available upon request to the S-SV EMS Agency or any organization providing such IN naloxone delivery devices.

Sierra – Sacramento Valley EMS Agency Program Policy			
EMS Student Field Training			
	Effective: 04/01/2025	Next Review: 01/2028	**1007**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish requirements for field training of EMT, AEMT and paramedic students (EMS students) in the S-SV EMS region.

AUTHORITY:

A. HSC, Division 2.5, § 1797.170, 1797.171, 1797.172, 1797.204, 1797.206, 1797.208, 1797.213, 1797.218, 1797.220, and 1798.

B. CCR, Title 22, Div. 9, Ch. 3.1, 3.2, & 3.3.

POLICY:

A. Prehospital provider agencies shall provide field training to EMS students, in accordance with CCR Title 22, S-SV EMS policies and provider agency agreements.

1. An EMT training course shall consist of not less than 24 hours (with a maximum of 48 hours, unless otherwise approved by the applicable training program) of supervised clinical experience.

   - The supervised clinical experience may be completed at ~~a~~ *one or more general* acute care hospital*(s) and/or operational ambulance provider(s) or rescue vehicle provider(s).* ~~ALS prehospital provider agency, or a combination of both.~~
   - The supervised clinical experience shall include a minimum of 10 patient contacts, wherein a patient assessment and other EMT skills are performed and evaluated.

2. An AEMT training course shall consist of not less than 40 hours (with a maximum of 120 hours, unless otherwise approved by the applicable training program) of field internship with an ALS/*LALS* prehospital provider agency.

   - Prior to beginning the field internship, the student shall have successfully completed the didactic, skills and hospital clinical education portions of the training program.

- During the field internship, the student shall demonstrate competency in the AEMT scope of practice.
- During the field internship, the student shall have a minimum of 15 LALS patient contacts and shall demonstrate competency as the team leader while delivering EMS patient care at least five (5) times.

3. A paramedic training course shall consist of not less than 480 hours (with a maximum of 720 hours, unless otherwise approved by the applicable training program) of field internship with an ALS prehospital provider agency.

    - Prior to beginning the field internship, the student shall have successfully completed the didactic, skills and hospital clinical education portions of the training program.
    - During the field internship, the student shall demonstrate competency in the paramedic scope of practice.
    - During the field internship, the student shall have a minimum of 40 ALS patient contacts.
        - An ALS patient contact shall be defined as the student performance of one or more ALS skills, except cardiac monitoring and CPR, on a patient.
        - For at least half of the ALS patient contacts, the student shall be required to provide the full continuum of care, beginning with initial patient contact upon arrival at the scene through transfer of care to hospital personnel.
        - The student shall have a minimum of 20 experiences performing the role of team lead during the field internship. A team lead shall be defined as a student who, with minimal to no prompting by the preceptor, successfully takes charge of EMS operation in the field including, at least, the following:
            - Lead coordination of field personnel,
            - Formulation of field impression,
            - Comprehensively assessing patient conditions and acuity,
            - Directing and implementing patient treatment,
            - Determining patient disposition, and
            - Leading the packaging and movement of the patient.
        - When available, up to 10 of the required ALS patient contacts may be satisfied using high-fidelity adult simulation patient contacts.
        - The field internship must be completed within six (6) months from the end of the clinical education portion of the paramedic training program.

4. EMS students are prohibited from being assigned to a field training supervisor/ preceptor who may have a conflict of interest as identified by the supervisor/ preceptor, the student, the training program, the ~~ALS~~ prehospital provider agency, or S-SV EMS
5. No more than one (1) EMS student of any level shall be assigned to a~~n ALS~~ prehospital provider response vehicle at any time.

B. EMS training programs shall enter into written agreements with ~~ALS~~ prehospital provider agencies to facilitate field training of their students.

1. ~~ALS~~ ~~p~~*P*rehospital provider agencies and/or field training supervisors shall not charge field training fees to EMT training programs/students.

2. ALS*/LALS* prehospital provider agencies may charge field internship training fees to AEMT and/or paramedic training programs/students to cover costs associated with providing field internship training, under the following conditions:

- The fees are reasonable, uniform and directly related to the costs of providing field internship training to AEMT and/or paramedic students.
- The ALS*/LALS* prehospital provider agency has a written policy that addresses the process for collection and distribution of field internship training fees.
- To prevent conflicts of interest, AEMT and paramedic students are prohibited from making payments of any kind or offering gratuities directly to field training preceptors.

C. EMS students shall be supervised by a qualified field training supervisor/preceptor throughout all aspects of their field training.

D. EMS training programs shall adequately monitor the field training of their students, in coordination with applicable ~~ALS~~ prehospital provider agencies. A paramedic training program shall conduct and document a minimum of one (1) on-site observation of the paramedic student during the field internship training.

E. Each patient contact by an EMS student shall be adequately documented by the field training supervisor/preceptor and the student in a standardized format (as required/ directed by the training program).

F. All field training supervisors/preceptors shall be authorized by the ~~ALS~~ prehospital provider agency, in coordination with the applicable EMS training program, and shall meet the following minimum qualifications:

1. EMT student field training supervisor minimum qualifications:

- Possess a current *California EMT certification*, *AEMT certification*, or paramedic license ~~and S-SV EMS Paramedic Accreditation~~.
- Not be under an active investigation by the ~~ALS~~ prehospital provider agency, S-SV EMS, *another California LEMSA*, or the California EMS Authority.
- Not be under an active clinical performance improvement plan or clinical education assignment.
- ~~Be functioning as a paramedic for an ALS prehospital provider agency at the time the field training is conducted.~~

2. *AEMT preceptor minimum qualifications:*

   - *Possess a current S-SV EMS issued California AEMT certification or California paramedic license and S-SV EMS Paramedic Accreditation.*
   - *Be working in the field as a certified AEMT or licensed paramedic for the last two (2) years.*
   - *Be working in the S-SV EMS region as an AEMT or paramedic for the last 12 months.*
   - *Not be under an active investigation by the prehospital provider agency, S-SV EMS or the California EMS Authority.*
   - *Not be under an active clinical performance improvement plan or clinical education assignment.*
   - *Be approved by the course director in coordination with the program medical director to provide training and evaluation of an AEMT trainee during field internship with an authorized service provider.*
   - *Be under the supervision of a principal instructor, the course director and/or program medical director.*
   - *Have completed a field preceptor training program, approved by S-SV EMS. The field preceptor training shall include a curriculum that will result in preceptor competency in the evaluation of AEMT students during the internship phase of the training program and the completion of the following:*
     - *Conduct a daily field evaluation of students.*
     - *Conduct cumulative and final field evaluations of all students.*
     - *Rate students for evaluation using written field criteria.*
     - *Identify LALS contacts and requirements for graduation.*
     - *Identify the importance of documenting student performance.*
     - *Review the field preceptor requirements contained in this policy and CCR Title 22.*
     - *Assess student behaviors using cognitive, psychomotor, and affective domains.*
     - *Create a positive and supportive learning environment.*
     - *Measure students against the standards of an entry level AEMT.*
     - *Identify appropriate student progress.*
     - *Counsel the student who is not progressing.*
     - *Identify training program support services available to the student and the preceptor.*
     - *Provide guidance and procedures to address student injuries or exposure to illness, communicable disease or hazardous material.*

3. ~~AEMT and/or~~ Paramedic preceptor minimum qualifications:

   - Possess a current California paramedic license and S-SV EMS Paramedic Accreditation.

- Be working in the field as a licensed paramedic for the last two (2) years.
- Be working in the S-SV EMS region as a paramedic for the last 12 months.
- Not be under an active investigation by the ALS prehospital provider agency, S-SV EMS or the California EMS Authority.
- Not be under an active clinical performance improvement plan or clinical education assignment.
- Have completed a field preceptor training program, approved by S-SV EMS in accordance with CAAHEP Standards and Guidelines for the Accreditation of Educational Programs in the Emergency Medical Services Professions. The field preceptor training shall include a curriculum that will result in preceptor competency in the evaluation of ~~AEMT and/or~~ paramedic students during the internship phase of the training program and the completion of the following:
  - Conduct a daily field evaluation of students.
  - Conduct cumulative and final field evaluations of all students.
  - Rate students for evaluation using written field criteria.
  - Identify ALS contacts and requirements for graduation.
  - Identify the importance of documenting student performance.
  - Review the field preceptor requirements contained in this policy and CCR Title 22.
  - Assess student behaviors using cognitive, psychomotor, and affective domains.
  - Create a positive and supportive learning environment.
  - Measure students against the standards of an entry level ~~AEMT or~~ paramedic ~~(as applicable).~~
  - Identify appropriate student progress.
  - Counsel the student who is not progressing.
  - Identify training program support services available to the student and the preceptor.
  - Provide guidance and procedures to address student injuries or exposure to illness, communicable disease or hazardous material.

G. EMS student responsibilities:

- Students shall complete all requirements established by the training program and ~~ALS~~ prehospital provider agency prior to the start of their field training.
- Students shall comply with all instructions and direction of their field supervisor/preceptor for the clinical care and operation of the EMS system.
- Students shall adhere to all S-SV EMS policies/protocols.
- Students shall abide by the dress code and appearance standards established by the training program and/or ~~ALS~~ prehospital provider agency.
- Students shall wear adequate identification with their name and the phrase “Student” or “Intern” while performing their field training.
- Students shall only conduct their field training with their assigned field training supervisor(s)/preceptor(s) and assigned ~~ALS~~ prehospital provider agency.

- Students shall not fulfill the minimum staffing requirements of an ambulance or fire apparatus.
- Students shall not function as an AEMT or paramedic student while on duty as an EMT.
- Students shall actively participate in training program required evaluations with their field training supervisor/preceptor.
- Students shall report (to applicable ~~ALS~~ prehospital provider agency management personnel or to S-SV EMS) any conduct of their field training supervisor/preceptor or themselves that may or did result in patient harm, or that would or did have an adverse operational impact on the EMS system.

	Infrequently Used Skills Verification Checklist Needle Cricothyrotomy	1110-F

Name:	Date:
Provider Agency:	Evaluator:

Objective: Describe the indications/contraindications for needle cricothyrotomy and demonstrate the ability to proficiently perform the procedure.

Equipment: Appropriate PPE, cricothyrotomy manikin, antiseptic agent, tape, 10 ml syringe, 12ga ~~or 14ga~~ over-the-needle catheter ~~and jet insufflation device or~~ ~~ENK Oxygen Flow Modulator,~~ or Rusch QuickTrach® Emergency Needle Cricothyrotomy Kit and BVM.

Performance Criteria: The individual will be required to describe the indications/contraindications for needle cricothyrotomy and proficiently perform the procedure on a cricothyrotomy manikin.

Step	Description	Does	Does Not
1	Verbalizes/demonstrates use of appropriate PPE		

2	Verbalizes indications for needle cricothyrotomy:
	• Inability to maintain the airway with standard airway procedures. Typically involves patients with one or more of the following:
	  ○ Airway obstruction by uncontrolled bleeding into the oral cavity and/or vomiting
	  ○ Severe maxillofacial trauma – blunt, penetrating, or associated with mandibular fracture
	  ○ Laryngeal foreign body that cannot be removed expeditiously
	  ○ Swelling of upper airway structures
	  ○ Infection (e.g., epiglottitis, Ludwig's angina)
	  ○ Allergic reaction or hereditary angioedema
	  ○ Chemical or thermal burns to the epiglottis and upper airway		

3	Verbalizes contraindications for needle cricothyrotomy: • Age < 3 years or estimated weight <15 kg • Ability to maintain airway utilizing less invasive procedures • Conscious patient • Moving ambulance • Midline neck hematoma or massive subcutaneous emphysema		
4	Selects appropriate size catheter/device for patient size		

5	Assembles and checks the equipment:
	• If using ~~jet inflation device/ENK Oxygen Flow Modulator:~~ *12ga, 3" airway catheter*
	  ○ Attaches 10 ml syringe to ~~12/14ga~~ catheter
	  ~~○ Connects jet insufflation device/ENK Oxygen Flow Modulator to high flow oxygen source~~ *Ensure a 3.0mm endotracheal tube connector is available to attach to the catheter to the BVM following placement*
	• If using the QuickTrach Cricothyrotomy Kit, device comes pre-assembled with syringe attached		

Step	Description	Does	Does Not
6	Stabilizes larynx with thumb and forefinger and locates cricoid membrane		
7	Inserts catheter/device: • If using a 12~~/14~~ gauge catheter ~~with jet insufflation device/ENK Oxygen Flow Modulator~~, inserts needle downward through the midline of the cricoid membrane at a 45^0 ~~– 60^0~~ angle ~~toward the carina~~ *caudally* while applying negative pressure to the syringe • If using the QuickTrach Cricothyrotomy Kit, punctures cricoid membrane at a 90^0 angle		
8	Verifies needle has entered the trachea by aspirating air into syringe		
9	Advances catheter/cannula: • If using a 12~~/14~~ gauge catheter ~~with jet insufflation device/ENK Oxygen Flow Modulator~~, advances catheter over the needle ~~towards the carina~~ *caudally* • If using the QuickTrach Cricothyrotomy Kit: ○ Changes angle of insertion to 45^0 and advances to the level of the stopper ○ Removes stopper (does not advance device with needle still attached) ○ Slides plastic cannula into the trachea until flange rests on the neck		
10	Removes and properly disposes needle and syringe		
11	Secures catheter/cannula		
12	Provides Ventilation: • If using ~~Jet insufflation device/ENK Oxygen Flow Modulator~~ *a 12ga catheter*, attaches a 3.0mm endotracheal tube connector to the catheter, attaches BVM with supplemental oxygen ~~supply tubing to catheter~~ and provides ventilation using appropriate ~~inspiratory to expiratory ratio (seconds):~~ rate: ~~○ Jet insufflation device ratio – 1:4~~ ~~○ ENK Oxygen Flow Modulator ratio – 4:6~~ • If using the QuickTrach Cricothyrotomy Kit, attaches BVM to connecting tube and provides ventilation at appropriate rate • *Due to the limited efficiency of exhalation through a small catheter, does not ventilate faster than 10-12 breaths per minute (1 breath every 5-6 seconds)* • *Attaches an $ETCO_2$ monitoring device*		
13	Verifies proper placement by: • The observance of chest rise and fall ~~(jet insufflation device and QuickTrach Cricothyrotomy Kit only),~~ • Auscultation of lung sounds and the absence of subcutaneous emphysema		

	Infrequently Used Skills Verification Checklist Pleural Decompression	1110-G

Name:	Date:
Provider Agency:	Evaluator:

Objective: Describe the indications/contraindications for pleural decompression and demonstrate the ability to proficiently perform the procedure.

Equipment: *Appropriate PPE, pleural decompression manikin or simulated chest, Minimum 14 ga x 3.25" catheter designed for pleural decompression and Capnospot® Pneumothorax Decompression Indicator or Simplified Pneumothorax Emergency Air Release (SPEAR®) catheter, stethoscope, stopcock* or one way valve, tape, antiseptic agent, tape.

Performance Criteria: The individual will be required to describe the indications/contraindications for pleural decompression and proficiently perform the procedure on a manikin or simulated chest.

Step	Description	Does	Does Not
1	Verbalizes/demonstrates use of appropriate PPE		
2	Verbalizes indications for pleural decompression: • Suspected tension pneumothorax with *a history of chest trauma, unilateral* absent or diminished breath sounds & one or ~~both~~ *more* of the following: ○ ~~Combined hypotension (SBP <90) and~~ *Severe respiratory distress with an* SpO2 <94% ~~○ Penetrating injury to the thorax~~ ○ *SBP ≤90 or loss of radial pulse* ○ Traumatic cardiac arrest ~~with suspected tension pneumothorax~~		
3	Verbalizes ~~minimum catheter size~~ *correct equipment* required for procedure ~~(14 ga x 3.25")~~		
4	Verbalizes that only two (2) attempts are allowed on affected side(s) without base/ modified base hospital contact		
5	Verbalizes/identifies approved pleural decompression sites: • Mid-clavicular line in the 2nd intercostal space • Mid-axillary line in the 4th or 5th intercostal space (above the nipple line) • Anterior axillary line in the 5th intercostal space (above the nipple line)		
6	Prepares site using aseptic technique		
~~7~~	~~Removes end cap from catheter and attaches empty 10 mL syringe~~		

8	***If using a 14g x 3.25" needle/catheter with Capnospot® Pneumothorax Decompression Indicator:*** • *Attaches the Capnospot® Pneumothorax Decompression Indicator to the needle/catheter prior to insertion* • *Penetrates the skin, advancing needle/catheter with at a 90^0 angle, over the superior border of the rib* • *Advances needle/catheter through the chest wall until a positive indication of CO2 is observed via Capnospot or a "pop" is felt upon entering the pleural space* • *Holds the decompression device in place for approx. 10 seconds & observes for visible color change in the Capnospot indicator chamber (note: color change may not be reliable on pts with an open pneumothorax)* • *Advances catheter hub of the decompression device over the needle to the plane of the pt's skin* • *Remove needle after catheter has been fully inserted* • *Removes Capnospot from the needle & reapplies the Capnospot to the catheter for ongoing assessment* ***If using a Simplified Pneumothorax Emergency Air Release (SPEAR®):*** • *Inserts the SPEAR needle/catheter through skin targeting selected rib (below level of intended insertion site)* • *Places needle tip against exterior rib and confirm position – directs SPEAR over the rib and into thoracic cavity* • *Penetrates thoracic cavity – extending SPEAR approx. 3 cm beyond exterior of target rib* • *Direct needle tip toward middle of clavicle* • *Release catheter from needle by disconnecting Spin Lock* • *Advance only the catheter toward middle of clavicle using needle as stationary guide* • *Remove needle after catheter has been fully inserted*		
~~9~~	~~Advances catheter until air is freely aspirated~~		
~~10~~	~~If using a 3.25" length catheter, advances catheter over the needle until catheter hub rests against the skin~~		
~~11~~	~~Removes syringe and needle and leaves catheter in place~~		
12	*If an initial attempt at one approved site is unsuccessful, considers utilizing an alternate approved site*		
13	~~Attaches stopcock or one-way valve and secures catheter/tubing~~ *Adequately secures catheter & observes for clinical indicators of successful placement*		
14	Rechecks breath sounds and closely monitors patient status		

S-SV EMS Update #76
ALS/BLS
Protocols

Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-3
Bradycardia With Pulses	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- **Symptomatic bradycardia exists clinically when the following 3 criteria are present: 1) The HR is slow (<60/min), 2) The pt has symptoms & 3) The symptoms are due to the slow HR.**
- **Bradycardia that causes symptoms is typically <50/min. The pt's cardiac rhythm should be interpreted in the context of symptoms, & atropine/TCP utilized only for symptomatic bradycardia.**

BLS

- Manage airway & assist ventilations as necessary
- Assess V/S, including SpO_2 - reassess V/S every 3 - 5 min if possible
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%), short of breath, or signs of heart failure/shock

ALS

- Cardiac monitor, 12-lead ECG at appropriate time (do not delay therapy)
- IV/IO NS at appropriate time (may bolus up to 1000 mL for hypotension)

Persistent bradycardia with SBP <90 & any of the following signs/ symptoms of hypoperfusion?

- Acutely altered mental status
- Signs of shock
- Ischemic chest discomfort
- Acute heart failure

YES

Atropine

- 1 mg IV/IO
- May repeat every 3 - 5 mins (max total: 3 mg)
- Should not be used for wide-complex rhythms or for second-degree Type II or third-degree heart blocks

Wide-complex rhythms, second-degree Type II or third-degree heart blocks, or atropine ineffective:

Transcutaneous Pacing (TCP)

- Set initial rate at 60/minute
- Set initial current at 10 mA and increase by 10 mA increments while assessing for mechanical capture
- Once mechanical capture is achieved, adjust rate based on clinical response - most pts will improve with a rate of 60 - 70/min if the symptoms are primarily due to bradycardia
- Monitor/re-evaluate frequently, increase current as necessary to maintain mechanical capture.
- Consider sedation/pain control as needed*

If SBP remains <90 after atropine/TCP:

Push-Dose Epinephrine

- Eject 1 mL NS from a 10 mL pre-load flush syringe
- Draw up 1 mL epinephrine 1:10,000 concentration and gently mix
- Administer 1 mL IV/IO push every 1 - 5 mins
- Titrate to maintain SBP >90

NO

- Monitor & reassess
- Contact base/modified base hospital for consultation if necessary

***Transcutaneous Pacing Sedation/Pain Control**

- For pts receiving transcutaneous pacing in need of sedation/ pain control, consider one of the following:
  - **Midazolam:** ~~2~~ *2.5* - 5 mg IV/IO; **OR**
  - **Fentanyl:** 25 - 50 mcg IV/IO
- May repeat dose x 1 after 5 mins
- Fentanyl is preferred for pts with chest pain or suspected MI
- *Continuous EtCO2 monitoring required for pts receiving fentanyl or midazolam*

~~**** For pts ≥65yo Midazolam dosing is limited to 2.5mg. Fentanyl dosing is limited to 25mcg.**~~

Paramedic personnel shall utilize clinical judgement when determining the appropriate dose of midazolam or fentanyl (within the allowable range) for pts requiring TCP sedation/ pain control

Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-4
Tachycardia With Pulses	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- **Unstable pts with persistent tachycardia require immediate cardioversion.**
- **It is unlikely that symptoms of instability are caused primarily by the tachycardia if the HR is <150/min.**

BLS

- Manage airway & assist ventilations as necessary
- Assess V/S, including SpO_2 - reassess V/S every 3 - 5 min if possible
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%), short of breath, or signs of heart failure/shock

ALS

- Cardiac monitor, 12-lead ECG at appropriate time (do not delay therapy)
- IV/IO NS at appropriate time (may bolus up to 1000 mL for hypotension)

Pre-Cardioversion Sedation/Pain Control

- Consider one of the following for pts in need of sedation/pain control:
  - **Midazolam:** 2.5 - 5 mg IV/IO; **OR**
  - **Fentanyl:** 25 - 50 mcg IV/IO
- *Continuous EtCO2 monitoring required for pts receiving midazolam or fentanyl*

~~***For pts ≥65yo, Midazolam is limited to 2.5 mg & Fentanyl is limited to 25 mcg.**~~
Clinical judgement shall be utilized to determine the appropriate dose of midazolam or fentanyl for pts requiring pre-cardioversion sedation/pain control

Persistent tachycardia causing any of the following?

- Hypotension
- Acutely altered mental status
- Signs of shock
- Ischemic chest discomfort
- Acute heart failure

YES

Synchronized Cardioversion

- Initial synchronized cardioversion doses:
  - Narrow regular: 50 - 100 J
  - Narrow irregular: 120 - 200 J
  - Wide regular: 100 J
- Consider pre-cardioversion sedation/pain control
- If no response to initial shock, increase dose in a stepwise fashion for subsequent attempts
- If rhythm is wide-irregular or monitor will not synchronize, & pt is critical, treat as VF with unsynchronized defibrillation doses (protocol C-1)

NO

Wide QRS (≥0.12 seconds)?

NO

Valsalva Maneuver

YES

- **Amiodarone:** 150 mg intermittent IV/IO push over 10 mins **OR** 150 mg in 100 mL D5W or NS IV/IO infusion over 10 mins
- If Torsades de Pointes: **Magnesium Sulfate:** 2 g in 100 ml D5W or NS IV/IO infusion over 15 mins
- Contact base/modified base hospital for consultation if necessary

If no response to Valsalva Maneuver, consider:

Adenosine:

- First dose: 6 mg rapid IV/IO push
- Second dose (if rhythm does not convert within 1-2 mins): 12 mg rapid IV/IO push
- Flush IV/IO line with 20 mL NS after each dose

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-8
Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- All pts with a report of pain shall be appropriately assessed and treatment decisions/interventions shall be adequately documented on the PCR.
- A variety of pharmacological and non-pharmacological interventions may be utilized to treat pain. Consider the pt's hemodynamic status, age, and previous medical history/medications when choosing analgesic interventions.
- Treatment goals should be directed at reducing pain to a tolerable level; pts may not experience complete pain relief.

BLS

- Assess V/S including pain scale & SpO_2, every 15 mins or as indicated by pt's clinical condition
- Assess/document pain score using standard 1-10 pain scale before and after each pain management intervention and at a minimum of every 15 mins
- O_2 at appropriate rate if SpO_2 <94% or pt is short of breath
- Utilize non-pharmacological pain management techniques as appropriate, including:
  - Place in position of comfort and provide verbal reassurance to minimize anxiety
  - Apply ice packs &/or splints for pain secondary to trauma

Pain not effectively managed with non-pharmaceutical pain management techniques

Review/consider 'Medication Contraindications & Administration Notes' below & proceed to page 2

Medication Contraindications & Administration Notes

ⓘ **All slow IVP medications contained in this protocol shall be administered over 60 seconds**
ⓘ ***Clinical judgement shall be utilized to determine appropriate doses within allowable protocol ranges***

Acetaminophen
ⓘ Do not administer to pts with any of the following:
- Severe hepatic impairment
- Active liver disease

ⓘ Discontinue infusion if SBP drops to <100

Ketamine
ⓘ Do not administer to pregnant pts

~~- Multi-system trauma~~
~~- Suspected internal bleeding~~
~~- Active external bleeding~~

Ketorolac
ⓘ Do not administer to pts with any of the following:
- ≥65 yo
- Pregnancy
- NSAID allergy
- Active bleeding
- Multi-system trauma
- ALOC or suspected moderate/severe TBI
- Current use of anticoagulants or steroids
- Hx of asthma, GI bleeding, ulcers
- Hx of renal disease/insufficiency/transplant

Fentanyl/Midazolam
ⓘ Do not administer to pts with any of the following:
- SBP <100
- SpO2 <94% or RR <12
- ALOC or suspected moderate/severe TBI

ⓘ ~~Do not administer midazolam to pts ≥65 yo~~
ⓘ *Consider* reduced fentanyl doses ~~to 25 mcg~~ for pts ≥65 yo
ⓘ There is an increased risk of deeper level of sedation & airway/respiratory compromise when administering midazolam to pts receiving fentanyl

ALS

- Continuous cardiac monitoring
- IV/IO NS TKO – if indicated by pt's clinical condition or necessary for medication administration
  - May bolus up to 1000 mL if indicated by pt's clinical condition
- Administer analgesic intervention as indicated below when appropriate

Non-Trauma Related/Chronic Pain

Acetaminophen: 1 g IV/IO infusion over 15 mins **OR Ketorolac:** 15 - 30 mg IV/IO or IM

If pain not effectively managed:

- Contact base/modified base hospital for additional pain management consultation

Pain Related to Acute Injury/Burns/Frostbite

Moderate Pain

Acetaminophen: 1 g IV/IO infusion over 15 mins
OR
Ketorolac: 15 - 30 mg IV/IO or IM

If pain not effectively managed:

- Continuous $EtCO_2$ monitoring

Fentanyl: 25 - 50 mcg slow IV/IO or IM/IN every 5 mins (max cumulative dose: 200 mcg)

Severe Pain

- Continuous $EtCO_2$ monitoring

Fentanyl: 50 - 100 mcg slow IV/IO or IM/IN
OR
Ketamine: 15 - 30 mg slow IV/IO

Acetaminophen: 1 g IV/IO infusion over 15 mins

If pain not effectively managed:

- If fentanyl previously administered, may repeat fentanyl 50 - 100 mcg slow IV/IO or IM/IN every 5 mins (max cumulative dose: 200 mcg)
- If ketamine previously administered, may repeat ketamine 15 – 30 mg slow IV/IO x 1

AND/OR
Midazolam: 1 mg slow IV/IO

- May repeat 1 mg slow IV/IO x 1
- Wait 5 mins after fentanyl/ketamine administration before administering midazolam

Sierra – Sacramento Valley EMS Agency Treatment Protocol	OB-G2
Obstetric Emergencies	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- Obstetric emergencies can be high-acuity/low-frequency situations that can rapidly escalate & may include one or more of the following:
  - Premature Labor – Regular uterine contractions or cervical dilation prior to the 37th week of gestation.
  - Placenta Previa – Placenta covers the cervical opening (painless, often profuse, bright red bleeding).
  - Abruptio Placenta – Separation of placenta from the uterine wall (severe abdominal pain/abdominal rigidity).
  - Pre-Eclampsia – A condition of pregnancy characterized by high blood pressure & other symptoms.
  - Eclampsia – Seizures secondary to a pregnancy-related high blood pressure disorder.
- Pre-Eclampsia & Eclampsia may occur up to 8 weeks post-partum.
- If pt is in the 3rd trimester & has a BP >160/100, altered mental status, & visual disturbances, consult with base/ modified base for consideration of magnesium sulfate

BLS

- Determine gestational age
- Assess V/S, including SpO_2
- O_2 at appropriate rate if SpO_2 <94% or short of breath
- Pts with obstetric emergencies should be rapidly transported to the closest approriate facility
  - Transport pts >20 weeks pregnant in left lateral recumbent position

Premature Labor

- For pts <20 weeks gestation, transport to the closest appropriate facility
- For pts 20-37 weeks gestation, consult with closest base/ modified base hospital for destination determination

ALS

Consider IV/IO NS TKO

Eclampsia

ALS

- Cardiac monitor
- IV/IO NS TKO

Previous diagnosis of pre-eclampsia/ eclampsia?

NO

Active seizure:
Midazolam
- 5 mg IV/IO **OR** 10 mg IM/IN if no IV/IO access

Magnesium Sulfate
- 6 g IV/IO in 100 mL NS, infuse over 15 mins **OR** 5 g IM in each buttock if no IV/IO access

If seizure has terminated prior to midazolam administration move directly to magnesium.

YES

Active or recently completed seizure:
Magnesium Sulfate
- 6 g IV/IO in 100 mL NS, infuse over 15 mins **OR** 5 g IM in each buttock if no IV/IO access

Recurrent seizure: Midazolam: 5 mg IV/IO **OR** 10mg IM/IN

Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-1
General Trauma Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- **Limit on scene procedures for pts meeting Field Trauma Triage Criteria to:**
  - Pt assessment - Airway management - Hemorrhage control - Immobilization/splinting - SMR
- **Transport pts with known/apparent third trimester pregnancy in left-lateral position.**
- **Notify receiving hospital of a 'Trauma Alert' as soon as possible for pts meeting Field Trauma Triage Criteria.**

BLS

- Assess & support ABCs
- Assess V/S, including SpO_2
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%) or short of breath
- Control hemorrhage & immobilize/splint injuries as needed
- Initiate spinal motion restriction (SMR) if indicated (see page 3)
- Maintain body temperature, keep warm

ALS

- Consider advanced airway if indicated
- Consider $EtCO_2$ monitoring if indicated (see protocol T-3 or T-3P)
- Consider application of a pelvic binder if indicated (see page 2)
- Cardiac monitor
- Establish vascular access if indicated (see page 2)
- Consider pain management if indicated (see protocol M-8 or M-8P)

Field Trauma Triage Criteria (TTC) Pt Destination (see page 4 for TTC details)

Unmanageable Airway? — YES → **Transport to Closest Hospital**

NO ↓

Meets RED TTC? — YES →

Adult (>14yo)
- If level I or II trauma center is closest, transport to that facility
- If level III or IV trauma center is closest, contact that facility (prior to transport) for destination consultation

Pediatric (≤14yo)
- Transport to pediatric trauma center if transport time ≤45 min
- Follow adult criteria if transport time to pediatric trauma center >45 min
- Contact closest trauma center for destination consultation if needed

NO ↓

Meets YELLOW TTC? — YES →

- Contact closest trauma center for destination consultation if transport time to that facility is ≤45 min
- Contact base/modified base hospital for destination consultation if transport time to a trauma center is >45 min

Vascular Access

Need or anticipated need for fluid or medication administration?

NO → Vascular access not indicated

YES ↓

IV/IO – NS or LR

- Initiate vascular access on all pts meeting Field Trauma Triage Criteria
- Initiate second vascular access on adult pts presenting with hypotension (SBP <90 for pts <65 years of age, or SBP <100 for pts ≥65 years of age), or if thoracic/abdominal pain is present
- Fluid resuscitation guidelines:
  - Adult pts:
    - Administer 500 mL fluid boluses for signs of hypoperfusion/shock
    - Reassess hemodynamic parameters, respiratory status and lung sounds after each fluid bolus
    - Titrate fluid boluses to SBP of ≥90 for pts <65 years of age, or ≥100 for pts ≥65 years of age
  - Pediatric pts:
    - Administer 20 mL/kg fluid boluses for signs of hypoperfusion/shock
    - Reassess hemodynamic parameters, respiratory status and lung sounds after each bolus
    - Titrate fluid boluses to age appropriate SBP (max: 60 mL/kg)

Commercial Pelvic Binder

Approved Commercial Pelvic Binders: ~~1) T-POD Pelvic Stabilization Device, 2) SAM Pelvic Sling 2~~ *Any commercial pelvic binder currently recommended by the Committee on Tactical Combat Casualty Care (CoTCCC).*

- Utilization of a commercial pelvic binder is optional, and only approved for AEMT/paramedic personnel. ALS/LALS provider agencies must ensure that their personnel are appropriately trained on the application/use of the device, as misplacement of pelvic binders can significantly decrease the ability of the binder to reduce pelvic ring fractures.
- Physical exam findings which may indicate the presence of a pelvic ring fracture include, but are not limited to:
  - Crepitus when applying compression to the iliac crests
  - Perineal or genital swelling
  - Testicular/groin pain
  - Blood at the urethral meatus
  - Rectal, vaginal or perineal lacerations/bleeding
- When stabilizing a suspected pelvic ring fracture, care must be taken not to over-reduce the fracture. Over-reduction can be assessed by examining the position of the legs, greater trochanters and knees with the pt supine. The goal is to achieve normal anatomic position of the pelvis, so the lower legs should be symmetrical after stabilization.
- When clinically indicated and logistically feasible, the pelvic binder should be placed prior to extrication/movement.
- Pelvic binders should be placed directly to skin. Once applied, pelvic binders should not be removed.
- If possible, avoid log-rolling pts with a suspected pelvic fracture.

Mechanism of injury suggestive of a pelvic fracture?

NO → Pelvic binder not indicated

YES ↓

Does pt present with one or more of the following?

- Physical exam findings suggestive of a pelvic fracture
- Hemodynamic instability: HR >100 & SBP <90 (or SBP <100 in pts ≥65 years of age)
- ~~GCS ≤13~~

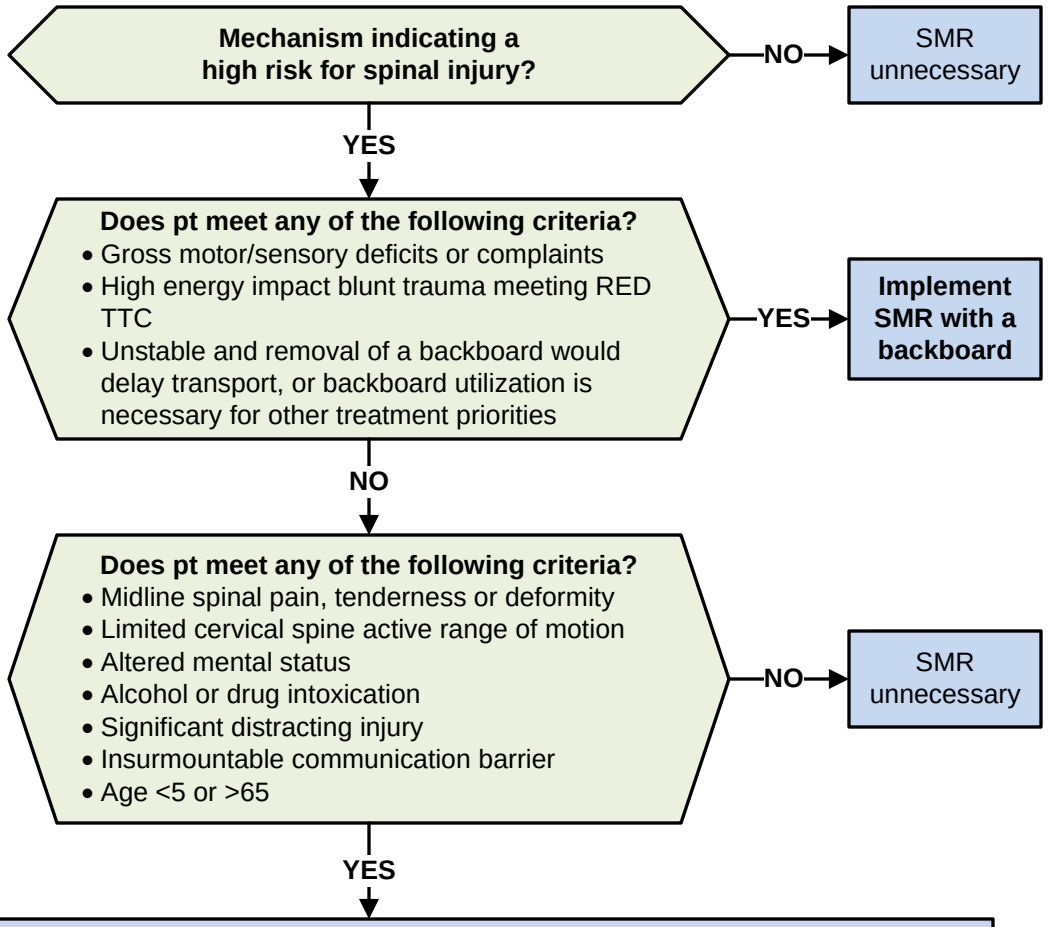
NO → Pelvic binder not indicated

YES ↓

Apply pelvic binder according to manufacturer instructions

Spinal Motion Restriction (SMR)

- A backboard shall not be utilized for pts with penetrating trauma to the head, neck or torso without evidence of spinal injury
- Helmet removal guidelines:
  - For pts who meet criteria for SMR with a backboard, football helmets should only be removed if they prevent adequate SMR or under the following circumstances:
    - If the helmet and chin strap fail to hold the head securely or prevent adequate airway control.
    - If the facemask cannot be removed.
  - Football helmets should be carefully removed to allow for appropriate SMR of pts who do not meet criteria for backboard utilization.
  - All other types of helmets (bicycle, motorcycle, etc.) should be carefully removed to allow for appropriate SMR.



Implement SMR without a backboard as follows:

- Apply a cervical collar
- Allow ambulatory pts to sit on the stretcher and then lie flat (no 'standing take-down")
- If necessary, move pt from the position found to the ambulance stretcher utilizing a device such as a KED, scoop stretcher, backboard, or if necessary, by having the pt stand and pivot to the stretcher – do not permit the pt to struggle to their feet from a seated or supine position
- Once on the ambulance stretcher, remove any hard backboard device & instruct the pt to lie still
- The head of the stretcher may be elevated 20-30^0 in a position of comfort
- Secure cross stretcher straps and over-the-shoulder belts firmly
- Pts with nausea &/or vomiting may by placed in the lateral recumbent position, maintaining the head in a neutral position using manual stabilization, padding, pillows, &/or the pt's arm

Field Trauma Triage Criteria (TTC)

RED TTC (High Risk for Serious Injury)	
Injury Patterns	**Mental Status/Vital Signs**
• Penetrating injuries to head, neck, torso, &/or proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor/sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones in a pt of any age, or one or more proximal long bone fracture in a pt ≤14 or ≥65 years of age • Suspected open proximal long bone fracture • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Continued, uncontrolled bleeding despite EMS hemorrhage control measures	**MENTAL STATUS** • **<65 years of age:** ○ GCS ≤13 • **≥65 years of age:** ○ GCS <15 (or decreased from baseline) with evidence/suspicion of a head strike **RESPIRATORY STATUS** • **All pt ages:** ○ RR <10 or >29 breaths/min ○ Resp. distress or need for resp. support ○ Room-air SpO_2 <90% **CIRCULATORY STATUS** **0-9 years of age:** • SBP <70mm Hg + (2 x age years) **10-64 years of age:** • SBP <90 mmHg **OR** HR>SBP **≥65 years of age:** • SBP <100 mmHG **OR** HR>SBP

YELLOW TTC (Moderate Risk for Serious Injury)	
Mechanism of Injury	**EMS Judgement**
• High-Risk Auto Crash ○ Partial or complete ejection ○ Significant intrusion (including roof) - >12 inches occupant site; or - >18 inches any site; or - Need for extrication for entrapped pt ○ Death in passenger compartment ○ Child (0-9 years of age) unrestrained or in unsecured child safety seat ○ Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height >10 feet (all ages)	EMS personnel should consider the following risk factors, and contact the closest trauma center or base/modified base hospital for destination consultation (see page 1), if transport to a trauma center is believed to be in the pt's best interest: • Low-level falls in young children (≤5 years of age) or older adults (≥65 years of age) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy >20 weeks • Burns in conjunction with trauma

Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-3
Suspected Moderate/Severe Traumatic Brain Injury (TBI)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

Prehospital Identification of Moderate/Severe TBI

- Any pt with a mechanism of injury consistent with a potential for a brain injury, and one or more of the following:
  - <65 years of age with a GCS ≤13, or ≥65years of age with a GCS <15 (or decrease from baseline)
  - Post-traumatic seizures
  - Multi-system trauma requiring advanced airway placement

For any patient with a suspected moderate/severe TBI, avoid/treat the three TBI "H-Bombs":
1) **H**yperventilation, 2) **H**ypoxia, 3) **H**ypotension

BLS

- Assess V/S, including continuous SpO_2 monitoring and pupil exam: Reassess V/S every 3-5 min if possible
- High-flow O_2 (regardless of SpO_2 reading)
- If continued hypoxia (SpO_2 <94%) or inadequate ventilatory effort, proceed through the following in a stepwise manner
  - Reposition airway
  - Initiate positive pressure ventilation with appropriate airway adjunct if necessary (use of a pressure-controlled BVM &/or ventilation rate timer is recommended if available)
- Avoid hyperventilation (ventilate at a rate of 10 breaths/min)
- Maintain normothermia
- Consider the concurrent need for appropriate immobilization/spinal motion restriction

ALS

- Continuous cardiac & $EtCO_2$ monitoring
- IV/IO NS TKO: For SBP <110 bolus 1000 mL N/S, then titrate additional fluids to maintain SBP ≥110
- Check blood glucose

Blood glucose ≤60 mg/dl?

YES

~~Oral glucose~~
- ~~15 - 25 gm PO~~

OR
Dextrose 10%
- 10 - 25 gm (100 - 250 mL) IV/IO

OR
Glucagon
1 mg (1 unit) IM/IN

NO

For persistent hypoxia &/or inadequate ventilatory effort:
- Supraglottic airway or endotracheal intubation
- Target EtCO2: 35-39 mmHg

- Transport to appropriate destination & notify receiving facility of a "Trauma Alert" as soon as possible (if applicable)
- Monitor & reassess

Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-4
Hemorrhage	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

Tourniquet Devices:

- **Any windlass style device included on the current Committee on Tactical Combat Casualty Care (CoTCCC) recommended Limb Tourniquets (non-pneumatic) list may be utilized by EMS personnel.**

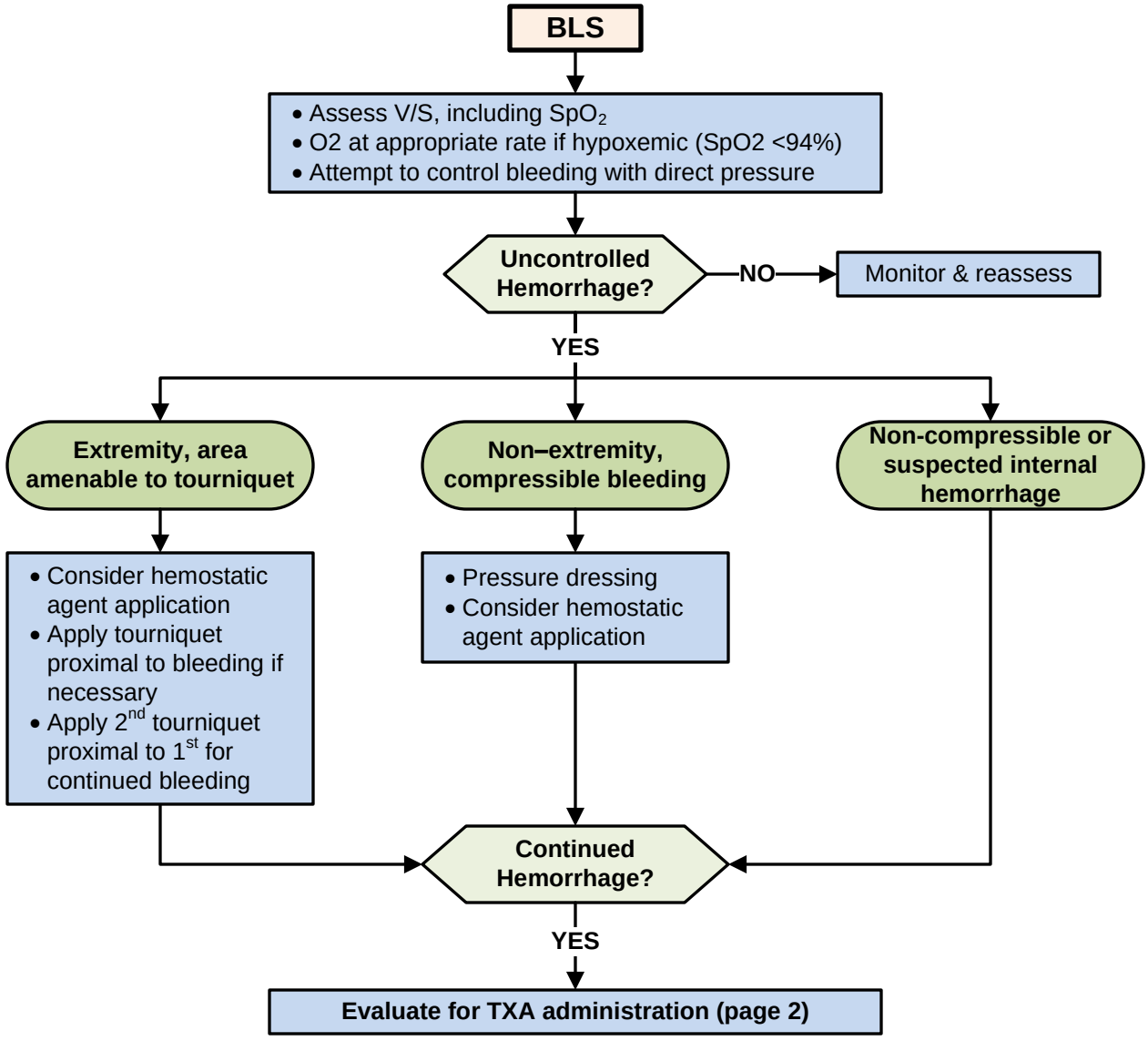
~~- Combat Application Tourniquet~~ ~~- Emergency and Military Tourniquet~~ ~~- Mechanical Advantage Tourniquet~~
~~- SAM XT Extremity Tourniquet~~ ~~- Special Ops. Tactical Tourniquet~~ ~~- RECON Medical Tourniquet~~

- Tourniquets applied by lay rescuers or other responders shall be evaluated for appropriateness and may be adjusted or removed if necessary – improvised tourniquets should be removed by prehospital personnel.
- If application is indicated and appropriate, a commercial tourniquet should not be loosened or removed by prehospital personnel unless time to definitive care will be greatly delayed (>2 hrs).

Hemostatic Dressings:

- **Any hemostatic agent that is incorporated into gauze (no loose granules/particles) included on the current Committee on Tactical Combat Casualty Care (CoTCCC) recommended Hemostatic Dressings list may be utilized by EMS personnel.**

~~- QuikClot EMS 4x4 & Combat Gauze~~ ~~- HemCon ChitoGauze XR PRO~~ ~~- HemCon ChitoGauze XR2 PRO~~
~~- HemCon ChitoGauze OTC~~ ~~- HemCon Bandage PRO~~ ~~- HemCon OneStop Bandage~~



Tranexamic Acid (TXA) Administration

TXA Administration Notes:

- Routes other than IV/IO (e.g., nebulized, topical) may be considered **(<u>with base/modified base hospital order only</u>)** for bleeding from epistaxis, lacerations, or oral trauma.
- For post-partum hemorrhage, refer to Childbirth Protocol (OB-G1).

ALS

<u>TXA INCLUSION CRITERIA</u>

Does pt meet the following inclusion criteria?

- Blunt or penetrating traumatic injury with signs/symptoms of hemorrhagic shock: including SBP <90 or <100 in pts ≥65 yo

<u>OR</u>

- Significant hemorrhage (either of the following):
  - Significant blood loss with HR >120
  - Hemorrhage not controlled by direct pressure, hemostatic agents, or commercial tourniquet application

NO → Monitor & reassess

YES

<u>TXA EXCLUSION CRITERIA</u>

Does pt. meet any of the following exclusion criteria?

- <15 yo
- Time since injury >3 hrs
- Isolated traumatic brain injury
- Thromboembolic event (i.e., stroke, MI, PE) in past 24 hrs
- Traumatic arrest with >5 mins of CPR without ROSC
- Hypotension secondary to suspected cervical cord injury with motor deficit or spinal shock

YES → Monitor & reassess

NO

<u>BASE/MODIFIED BASE HOSPITAL ORDER ONLY</u>

Tranexamic Acid (TXA) IV/IO

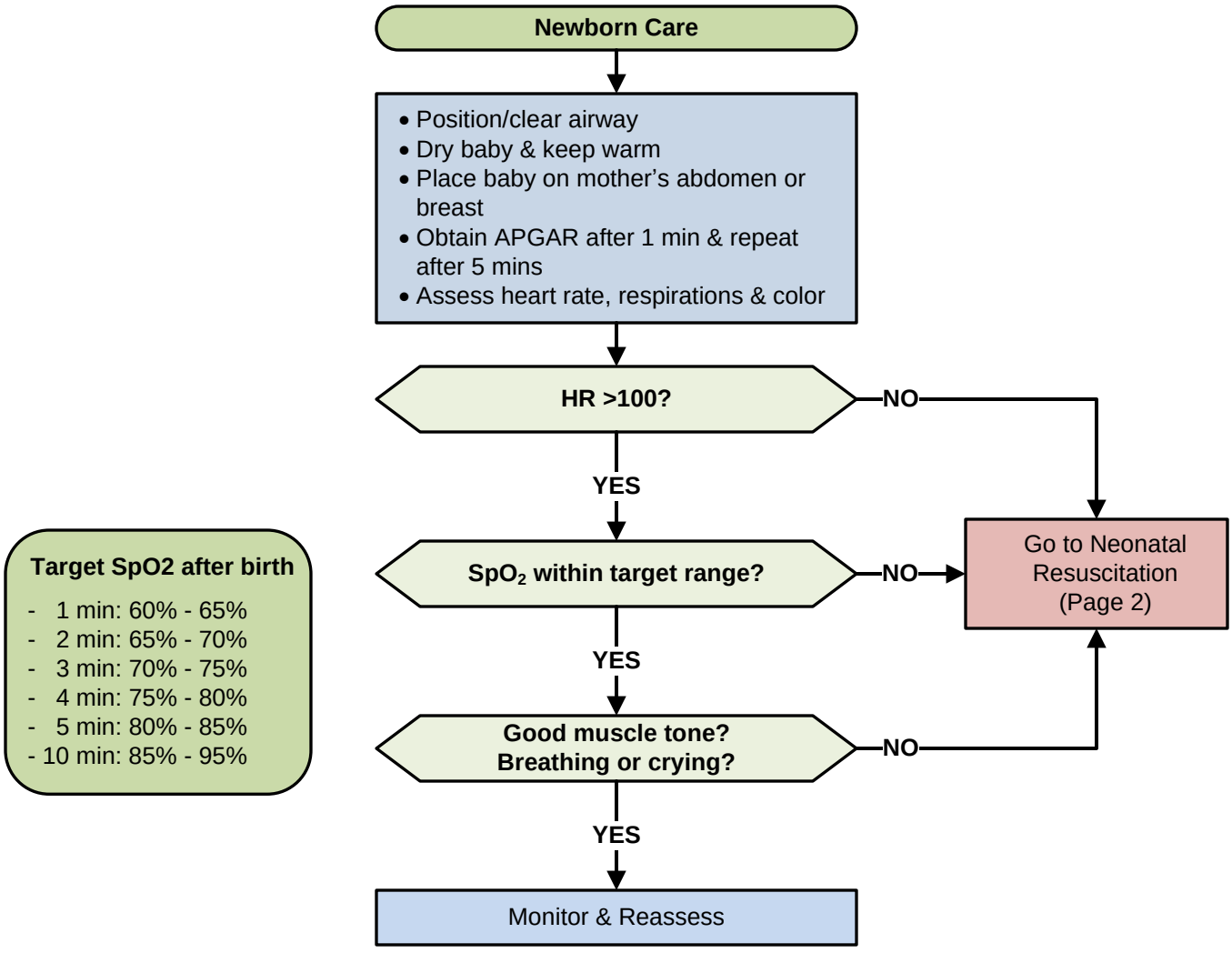
- Mix 1gm TXA in 100mL D_5W or NS and infuse over 10 mins

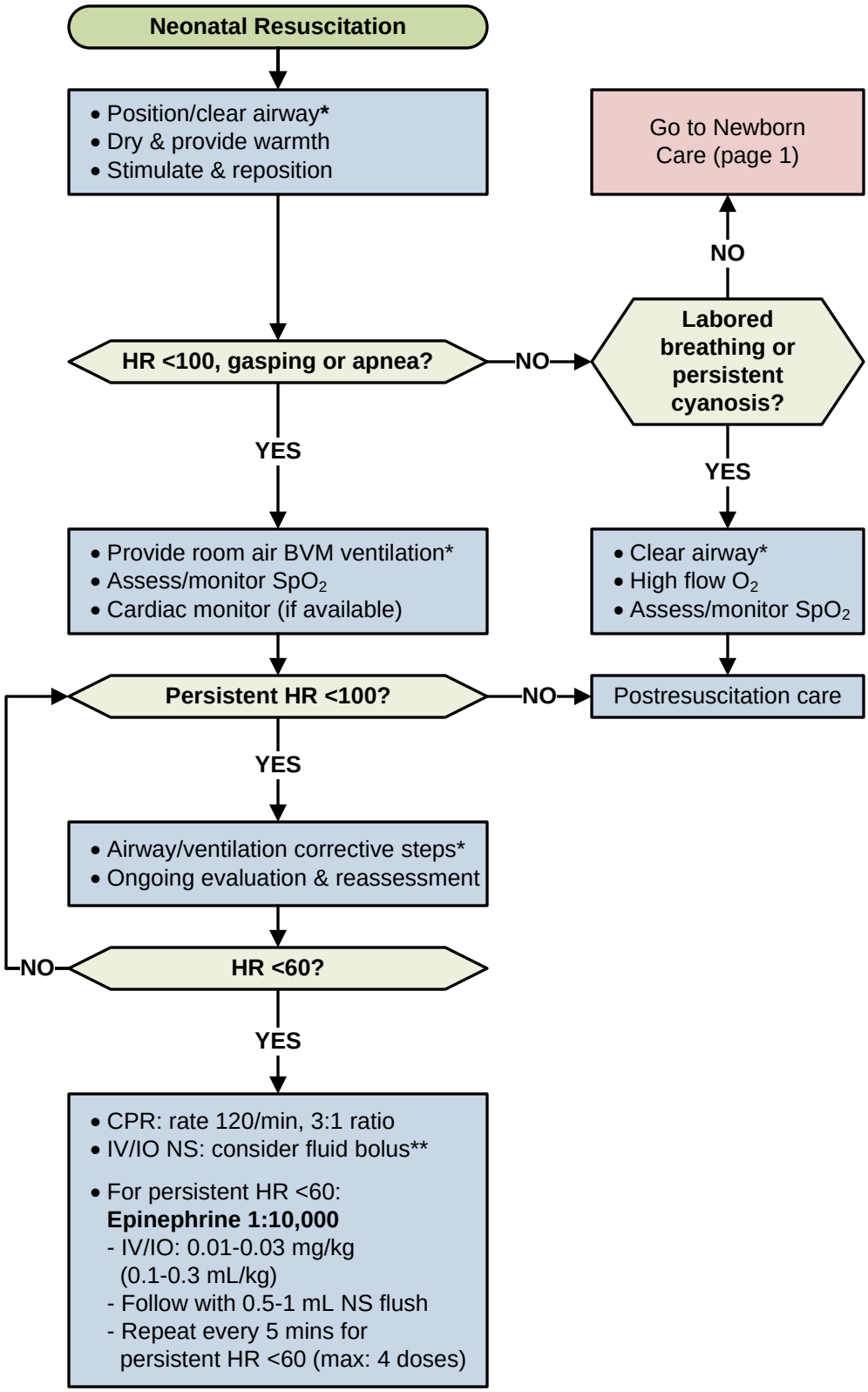
Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-2P
Newborn Care/Neonatal Resuscitation	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- A newborn/neonate is a child ≤28 days of age.
- Initial & ongoing assessments are critical to identifying and correcting life threats.
- If resuscitation is not required, EMS personnel should prioritize the following:
  - Whenever possible keep mother & baby together.
  - Maintain skin-to-skin contact between mother & baby.
  - Keep the baby warm – dry & cover the head, hands & feet.

APGAR SCORE

	Sign/Score	0	1	2
A	Appearance	Blue/Pale	Peripheral cyanosis	Pink
P	Pulse Rate	None	<100	>100
G	Grimace	None	Grimace	Cries
A	Activity	Limp	Some motion	Active
R	Respiration	Absent	Slow/irregular	Good/strong cry





***Airway/Ventilation**

- Position in a "sniffing" position to open the airway & clear secretions with a bulb syringe if necessary.
- If no improvement, & chest is not moving with BVM ventilation, the trachea may be obstructed by thick secretions/meconium. Use a bulb syringe, or suction catheter if necessary, to clear the nose, mouth & oropharynx. A laryngoscope may be used to assist in visualization of the oropharynx.
- Convert from room air to high flow O_2 for persistent bradycardia &/or cyanosis.
- If HR persistently <60, consider hypovolemia &/or pneumothorax.

****Fluid Bolus**

- Contact the base/ modified base hospital for specific fluid bolus volume direction.

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-6P
Pediatric General Medical Treatment	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

GENERAL PEDIATRIC TREATMENT PRINCIPLES

- The purpose of this protocol is to provide standing order assessment/treatment modalities for pediatric pt complaints not addressed in other S-SV EMS treatment protocols – including Nausea/Vomiting (Page 2), Brief Resolved Unexplained Event – BRUE (Page 3) & Suspected Shock/Sepsis (Page 4).
- The Neonatal Resuscitation Protocol **(~~C-1N~~ *M-2P*)** shall be used for pts during the first 28 days of life.
- Pediatric protocols shall be utilized for pts >28 days up to and including 14 years old.
- Applicable adult protocols may be utilized when there is not a pediatric protocol applicable to the pt's complaint/condition. Prehospital personnel shall consult with the base/modified base hospital for additional direction, if needed, when there is no standing order treatment protocol applicable to the pt's condition.
- A parent/reliable family member reported weight, length-based pediatric resuscitation tape or Handtevy shall be utilized for determining sizes of equipment and defibrillation/cardioversion joule settings. Once weight has been determined, medication dosing shall be based on S-SV EMS pediatric protocols.

NORMAL VITAL SIGNS & HYPOTENSION DEFINITION FOR NEONATAL & PEDIATRIC PATIENTS

Age	Normal Pulse Rate	Normal Resp. Rate	Normal SBP	Hypotension
≤28 days	100 - 205	30 - 50	60 - 80	SBP <60
29 days -12 months	90 - 180	30 - 50	70 - 100	SBP <70
1-2 years	80 - 140	24 - 40	80 - 110	SBP <70 + age x2
3-5 years	65 - 120	20 - 30	90 - 110	SBP <70 + age x2
6-9 years	60 - 120	20 - 30	100 - 120	SBP <70 + age x2
10-14 years	50 - 100	12 - 20	100 - 120	SBP <90

PEDIATRIC PROTOCOLS PROCEDURE/MEDICATION TREATMENT AGE RESTRICTIONS

- **≤28 days old:** Base/modified base hospital order required to administer a fluid bolus **(~~C-1N~~ *M-2P*)**
- **<3 years old:** Needle cricothyrotomy is not allowed (**~~PR-3~~ *PR-2*** & R-3P)
- **<4 years old:** Base/modified base hospital order required to administer the following medications:
  - Zofran/Ondansetron for nausea/vomiting (M-6P)
  - Analgesic medications for pain management (M-8P)
  - Midazolam for severe anxiety/combative symptoms (M-11P)
  - **~~PO acetaminophen for febrile symptoms (N-2P & M-6P)~~**
- **<8 years old:** CPAP is not allowed (R-3P)
- **<15 years old:** Base/modified base hospital order required to utilize the following procedures/medications:
  - Transcutaneous pacing for bradycardia (C-3P)
  - Synchronized cardioversion for tachycardia (C-4P)
  - Adenosine for tachycardia (C-4P)

BLS

- Assess V/S, including SpO_2 & temperature (if able)
- O_2 at appropriate rate if pt hypoxemic (SpO_2 <94%), short of breath, cyanotic, or has signs of shock
- Assess and obtain medical history

- Refer to other pages/sections of this protocol for specific treatment modalities as applicable:
  - Nausea/Vomiting - Page 2
  - BRUE - Page 3
  - Suspected Sepsis - Page 4

ALS

- Consider the following additional assessment/treatment modalities, as appropriate based on pt's condition & clinical presentation
  - Cardiac monitor/12-lead EKG
  - $EtCO_2$ monitoring
  - IV/IO NS 20 mL/kg, to max 1000 mL

Nausea/Vomiting

- Nausea/vomiting can be symptoms of a multitude of different causes. If possible, the specific underlying cause should be determined and treated. The use of an antiemetic may relieve symptoms while leaving the cause untreated, and possibly, more difficult to detect. EMS personnel should weigh the benefits of antiemetic use against the possible risk of making an accurate diagnosis more difficult, and the possible side effects of the antiemetic agent.
- Treatment of nausea/vomiting is indicated for pts where it may contribute to a worsening of their medical condition, or where the pt's airway may be endangered.
- EMS personnel may consider administering Zofran (Ondansetron) prophylactically, prior to or immediately after opioid administration, for a pt with a history of nausea/vomiting secondary to opioid administration. Zofran (Ondansetron) may also be administered prior to transport to a pt with a history of motion sickness.

ALS

Zofran (Ondansetron)

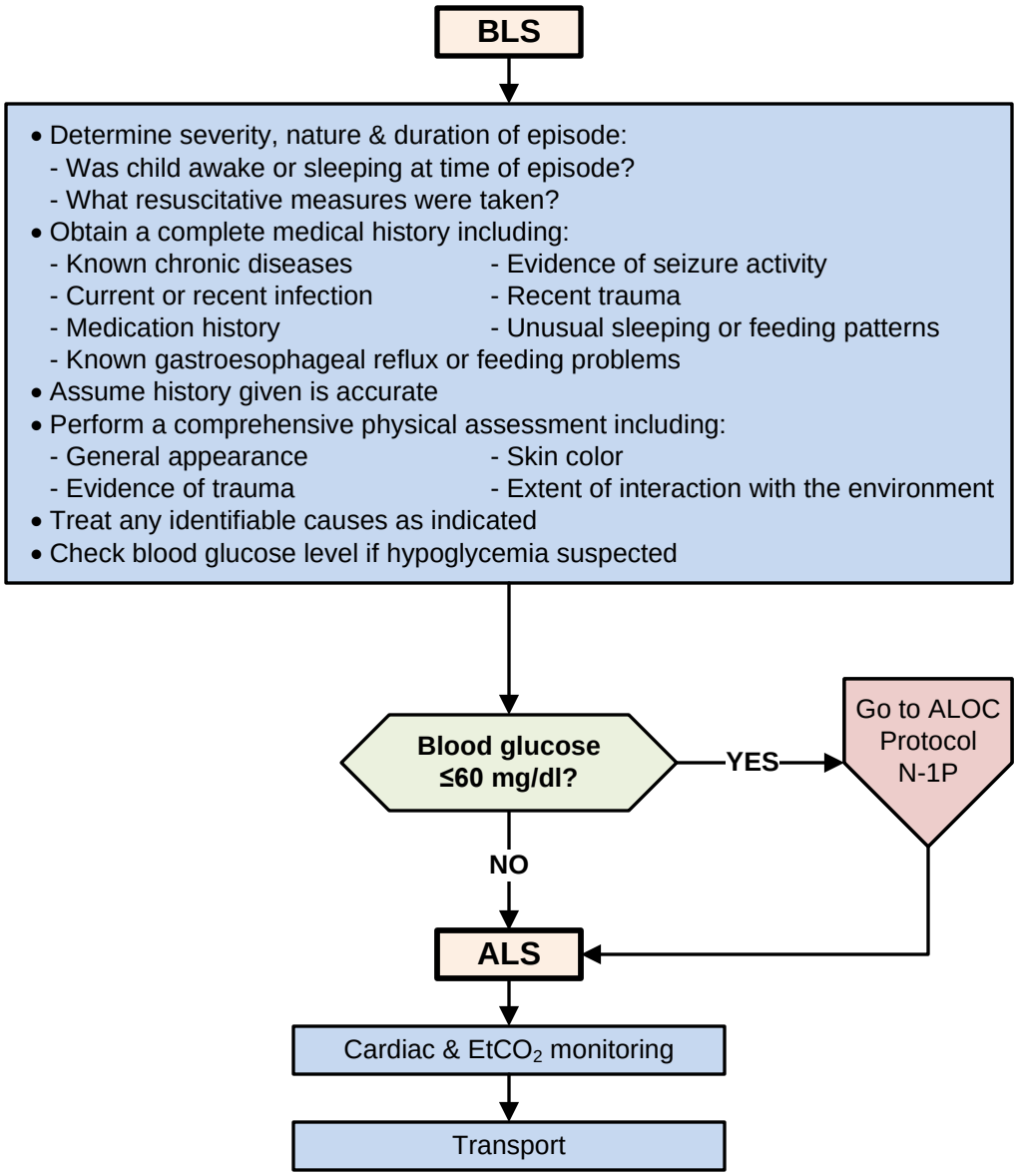
Pts (<4 yo) – BASE/MODIFIED BASE HOSPITAL ORDER ONLY
- 0.15 mg/kg (max. 4 mg) IM, or slow IV/IO (over 60 seconds)

Pts (4 - 14 yo) – Standing Order
- 4 mg oral disintegrating tablet, OR 4 mg IM, or slow IV/IO (over 30 seconds)
- Additional doses require base/modified base hospital consultation

Zofran (Ondansetron) is contraindicated during the first 8 weeks of pregnancy

Brief Resolved Unexplained Event (BRUE)

- Brief resolved unexplained event (BRUE) is an event occurring in an infant younger than one (1) year of age when the observer reports a sudden, brief (lasting <1 min, but typically <20-30 secs), and now resolved episode of any of the following:
  - Cyanosis or pallor
  - Marked change in tone (hyper- or hypotonia)
  - Absent, decreased, or irregular breathing
  - Altered level of responsiveness
- BRUE should be suspected when there is no explanation for a qualifying event after conducting an appropriate history & physical examination.
- All infants ≤1 year of age with possible BRUE should be transported by EMS for further medical evaluation. If the parent/guardian refuses EMS transport, base/modified base hospital consultation is required prior to release.
- EMS personnel shall make every effort to obtain the contact information of the person who witnessed the event, & provide this information to the receiving hospital upon pt delivery.



Suspected Shock/Sepsis

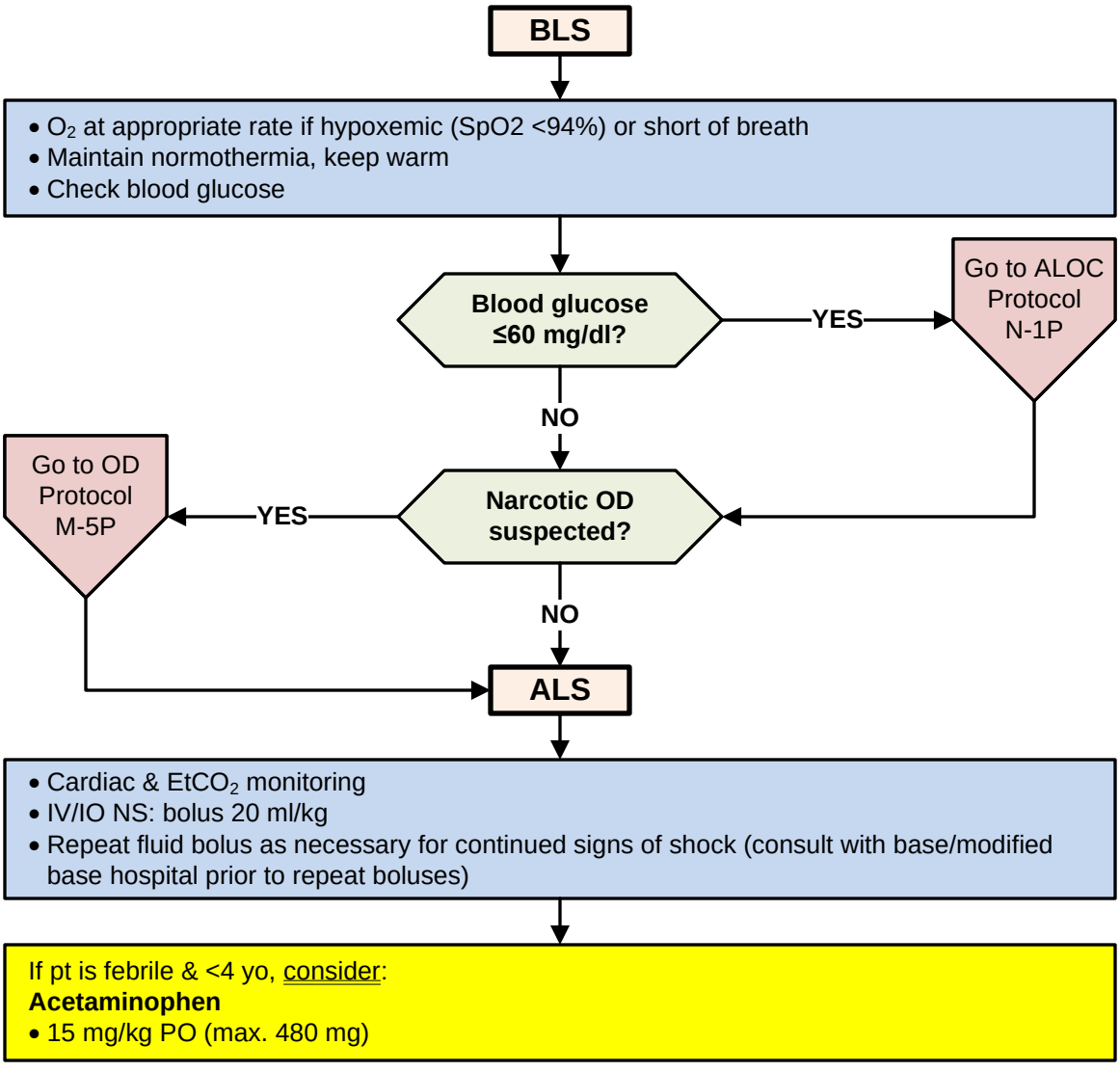
- Shock/Sepsis may be subtle and difficult to recognize.
- Early recognition of sepsis is critical to expedite hospital care and antibiotic administration.
- Septic pts are susceptible to traumatic lung injury. If BVM ventilation is necessary, avoid excessive tidal volumes.
- Obtain history including:
  - Onset and duration of symptoms
  - Fluid loss (vomiting/diarrhea)
  - Fever/Infection/Trauma/Ingestion
  - History of allergic reaction/cardiac disease or rhythm disturbance

Compensated Shock Signs/Symptoms:

- Tachycardia
- Cool extremities
- Weak peripheral pulses compared to central pulses
- Normal blood pressure

Decompensated Shock Signs/Symptoms:

- Hypotension &/or bradycardia (late findings)
- Altered mental status
- Decreased urine output
- Tachypnea
- Non-detectable distal pulses with weak central pulses



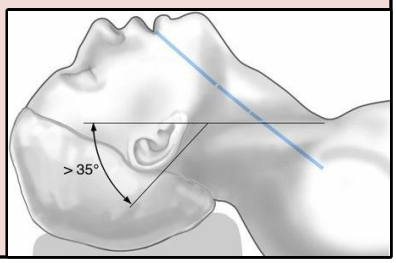
Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-2
Airway & Ventilation Managment	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

INDICATIONS

- Airway & ventilation management techniques may include: basic airway maneuvers, use of airway adjuncts (e.g., oropharyngeal or nasopharyngeal airways), & advanced airway procedures (e.g., endotracheal intubation, supraglottic airway devices, or cricothyrotomy) based on the situation & the provider's level of training – Indications for airway management may include but are not limited to:
  - Obstructed airway
  - Respiratory distress/failure
  - Altered mental status
  - Severe shock (hemorrhagic, septic, cardiogenic)
  - Cardiac arrest
  - Trauma/burns/smoke inhalation
- An i-gel SGA is the preferred advanced airway device & should be attempted prior to ET intubation unless video laryngoscopy is available & the ALS provider has completed training for that device
- During cardiac arrest, advanced airway placement should not delay or interrupt CPR & shall not be considered until after the 1st round of defibrillation (if indicated) & administration of epinephrine

BLS AIRWAY PROCEDURE

- Look, Listen, and Feel for level of responsiveness, chest movement, breath sounds, obstructions
- Positioning of unresponsive pts:
  - Place in the Head Elevated Laryngoscopy Position (HELP) to facilitate alignment of the pharyngeal, laryngeal & oral axis of the airway
  - Use the Head-Tilt/Chin-Lift, Jaw-Thrust, or Lateral Recovery Position (as appropriate)
- Remove visible obstructions &/or suction fluids as necessary, limiting suctioning to 10-15 secs
- Maintain airway patency – insert OPA/NPA as appropriate



BAG-VALVE-MASK (BVM) VENTILATION PROCEDURE

BVM ventilation should be performed by two rescuers whenever possible

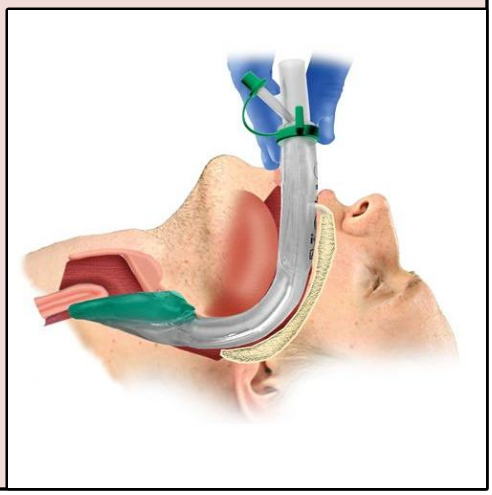
- Attach oxygen to BVM at a minimum flowrate of 10-15 L/min
- For one rescuer ventilation, position the mask over the nose & mouth & ensure a tight seal with an E-C clamp technique
- Squeeze the bag slowly, delivering breath over 1-2 secs
- Deliver only enough volume to achieve normal chest rise & fall **avoid excessive ventilation**
- If utilizing a Positive End Expiratory Pressure (PEEP) valve, maintain between 5-10 cmH_2O. Do not utilize PEEP in any of the following circumstances:
  - Suspected pneumothorax
  - Suspected TBI or increased intracranial pressure
  - Hypovolemic shock
- Ventilate to maintain SpO_2 & $EtCO_2$ within appropriate range for pt condition
- An Impedance Threshold Device (ITD) may be utilized in adult non-traumatic pulseless arrest pts; however, two rescuers are required to maintain effectiveness if no advanced airway is in place

i-gel SUPRAGLOTTIC AIRWAY (SGA) PROCEDURE

Contraindications:
- Intact gag reflex
- Caustic ingestion
- Unresolved complete airway obstruction

Relative Contraindications:
- Trismus or limited ability to open the mouth
- Oral trauma
- Distorted anatomy that prohibits device placement

- If a functioning i-gel SGA is in place & there are no clinical signs of ventilatory insufficiency, the i-gel SGA shall not be replaced by ET intubation
- Pre-oxygenate pt with high-flow O_2, via NRM or BVM as appropriate, for a minimum of 3 mins
- Administer 10-15 L/min O_2 via NC, in addition to NRM/BVM O_2 to augment pre-oxygenation
- Select the correct size i-gel SGA device
- Lubricate the back & sides of the i-gel SGA device with a water-based lubricant
- Place the pt in a sniffing position or use a Jaw-Thrust maneuver if spinal injury is suspected
- Grasp the i-gel SGA device by the proximal end with the dominant hand, making sure the cuff is pointing downwards & the airway tube is aligned in the midline
- Gently press down on the chin & introduce the soft tip into the mouth towards the hard palate
- Glide the i-gel SGA device downwards & backwards Along the hard palate with a continuous but gentle Push until a definitive resistance is felt
- Begin ventilating with a BVM at the appropriate ventilation rate
- Follow **ADVANCED AIRWAY DEVICE PLACEMENT CONFIRMATION & POST-PROCEDURE** instructions on page 3



ENDOTRACHEAL (ET) INTUBATION PROCEDURE

- ET intubation attempts should last no more than 30 secs
- Pre-oxygenate pt with high-flow O_2, via NRM or BVM as appropriate, for a minimum of 3 mins
- Administer 10-15 L/min O_2 via NC, in addition to NRM/BVM O_2 to augment pre-oxygenation
- Assemble/prepare all equipment prior to ET intubation attempt
- Consider utilizing an ET tube introducer
- Follow manufacturer's directions for use specific to the laryngoscope utilized (direct laryngoscopy or video laryngoscopy)
- Visualize the vocal cords & pass the ET tube through the cords & into the trachea, approx. 2-3 cm beyond the cords
  - *A common depth is approximately 21 cm for women/23 cm for men (measured at the teeth)*
- Inflate the ET tube cuff with 5-10 mL of air
- Begin ventilating with a BVM at the appropriate ventilation rate
- If required, prior to 2nd ET attempt ventilate with 100% oxygen for a minimum of 1 min
- Follow **ADVANCED AIRWAY DEVICE PLACEMENT CONFIRMATION & POST-PROCEDURE** instructions on page 3

NEEDLE CRICOTHYROTOMY PROCEDURE

Indications:
- Severe airway obstruction
- Failed intubation with an inability to ventilate using other methods

Contraindications:
- Pt age <3 yo or estimated weight <15 kg
- Conscious pt
- Presence of midline neck hematoma or massive subcutaneous emphysema

- Do not perform procedure in a moving ambulance
- Assemble/prepare all equipment prior to procedure attempt
- Position pt supine with the neck slight extended (if no cervical spine injury suspected)
- Locate the cricothyroid membrane
  - Palpate for the depression between the thyroid cartilage (Adam's apple) & the cricoid cartilage
- Attach a 10 mL syringe filled with 5 mL NS to the airway catheter
- **If utilizing a 12ga, 3" airway catheter:** With the bevel facing up, insert the needle through the skin at a 45^{o} angle caudally into the cricothyroid membrane penetrating the skin & cricothyroid membrane with the needle
- **If utilizing a Rusch® QUICKTRACH® Needle Cricothyrotomy Device:** Puncture the skin & underlying cricothyroid membrane at a 90^{o} angle with the needle, then adjust angle to 45^{o} after penetrating the cricothyroid membrane
- Advance the catheter/cannula, aspirating with the syringe until bubbles are observed in the NS
- Continue advancing the catheter/cannula into the trachea while withdrawing the needle
- Secure in place, ensuring it is fixed to avoid displacement
- Begin ventilating with a BVM at the appropriate ventilation rate

ADVANCED AIRWAY DEVICE PLACEMENT CONFIRMATION

- Using a stethoscope, check for the absence of gurgling sounds over the epigastrium & the presence of equal breath sounds over the lungs while observing for chest rise and fall. When an ET tube is in place, no sounds should be heard over the epigastrium. Gurgling may still be heard in pts who are breathing spontaneously or when an i-gel SGA device is in place
- Attach an $EtCO_2$ monitoring device, which must remain in place until arrival to the hospital or cessation of resuscitation efforts
- At least four (4) of the following techniques must be utilized to confirm advanced airway placement
  - Bilateral breath sounds
  - Bilateral chest rise and fall
  - Consistent $EtCO_2$ waveform
  - Change in Colorimetric CO_2 detector from purple to yellow
  - Condensation in the airway tube
  - SpO_2 rising to/or remaining above 94%
- ALS/LALS personnel must immediately confirm patency of an advanced airway placed by an EMT

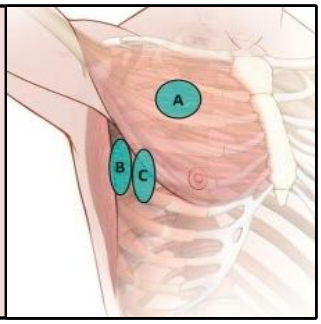
POST-PROCEDURE

- Airway patency must be reassessed at a minimum of every 15 mins and:
  - Each time the patient is moved
  - If ventilation becomes difficult
  - If vital signs, including SpO2 & EtCO2 change unexpectedly
- If a pt with an advanced airway in place regains consciousness:
  - Use restraints as necessary to avoid displacement of the advanced airway device
  - Consider sedation with **Midazolam 10 mg IV/IO/IM/IN** for adult pts (may repeat same dose x 1)
  - Contact base/modified base hospital for pediatric Midazolam dosing if needed
- Document all methods/devices used to confirm advanced airway device placement in the PCR

Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-3
Pleural Decompression	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

INDICATIONS
- Suspected tension pneumothorax with a history of chest trauma, unilateral absent or diminished breath sounds & one or more of the following:
  - Severe respiratory distress with SpO_2 <94% - SBP ≤90 or loss of radial pulse - Traumatic cardiac arrest

PRE-PROCEDURE
- Assess respiratory status
- Manage airway & assist ventilations as appropriate
- Administer high flow O_2 & monitor SpO_2
- Assess & continually monitor vital signs
- Identify & cleanse/prep site - approved sites (in preferred order):
  - **A** – Mid-clavicular line, 2nd intercostal space
  - **B** – Mid-axillary line, 4th/5th intercostal space (above nipple line)
  - **C** – Anterior axillary line, 5th intercostal space (above nipple line)



PROCEDURE

Capnospot® Pneumothorax Decompression Indicator:
- Use a minimum 14g x 3.25" needle/catheter specifically designed for pleural decompression
- Attach Capnospot Pneumothorax Decompression Indicator to needle/catheter prior to insertion
- Penetrate the skin, advancing needle/catheter with at a 90^0 angle, over the superior border of the rib
- Advance needle/catheter through the chest wall until a positive indication of CO_2 is observed via Capnospot or a "pop" is felt upon entering the pleural space
- Hold the decompression device in place for approx. 10 secs & observe for visible color change in the Capnospot indicator chamber (note: color change may not be reliable on pts with an open pneumothorax)
- Advance catheter hub of the decompression device over the needle to the plane of the pt's skin
- Remove needle after catheter has been fully inserted
- Remove Capnospot from the needle & reapply the Capnospot to the catheter for ongoing assessment

Simplified Pneumothorax Emergency Air Release (SPEAR®) Procedure:
- Insert SPEAR needle/catheter through skin targeting selected rib (below level of intended insertion site)
- Place needle tip against exterior rib and confirm position – direct SPEAR over the rib and into thoracic cavity
- Penetrate thoracic cavity – extending SPEAR approx. 3 cm beyond exterior of target rib
- Direct needle tip toward middle of clavicle
- Release catheter from needle by disconnecting Spin Lock
- Advance only the catheter toward middle of clavicle using needle as stationary guide
- Remove needle after catheter has been fully inserted

- Adequately secure catheter & observe for clinical indicators of successful placement
- If an initial attempt at one approved site is unsuccessful, consider utilizing an alternate approved site
- Two attempts allowed on affected side(s) without base/modified base hospital contact

POST-PROCEDURE
- Reassess breath sounds & administer high flow O_2
- Continuous cardiac, SpO_2 & $EtCO_2$ monitoring
- Assess & document vital signs every 3 - 5 mins (if possible)
- Monitor Capnospot® (if used) & breath sounds for signs of development of tension pneumothorax

S-SV EMS Update #76
LALS (AEMT)
Protocols

Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-4 (LALS)
Tachycardia With Pulses	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- **Unstable pts with persistent tachycardia require immediate cardioversion (AEMT II).**
- **It is unlikely that symptoms of instability are caused primarily by the tachycardia if the HR is <150/min.**

BLS

- Manage airway and assist ventilations as necessary
- Assess V/S, including SpO_2 - reassess V/S every 3 - 5 min if possible
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%), short of breath, or signs of heart failure/shock

LALS

- Cardiac monitor **(AEMT II)**, 12-lead ECG **(AEMT II)** at appropriate time (do not delay therapy)
- IV/IO NS at appropriate time (may bolus up to 1000 mL for hypotension)

Persistent tachycardia causing any of the following?

- Hypotension
- Acutely altered mental status
- Signs of shock
- Ischemic chest discomfort
- Acute heart failure

NO →
- Monitor & reassess
- Contact base/ modified base hospital for consultation if necessary

YES

Synchronized Cardioversion (AEMT II)

- Initial synchronized cardioversion doses:
  - Narrow regular: 50 - 100 J
  - Narrow irregular: 120 - 200 J
  - Wide regular: 100 J
- Consider pre-cardioversion sedation/pain control
- If no response to initial shock, increase dose in a stepwise fashion for subsequent attempts
- If rhythm is wide-irregular or monitor will not synchronize, & pt is critical, treat as VF with unsynchronized defibrillation doses (protocol C-1)

Pre-Cardioversion Sedation/ Pain Control (AEMT II)

- Consider one of the following for pts in need of sedation/pain control:
  - **Midazolam:** 2.5 - 5 mg IV/IO; **OR**
  - **Fentanyl:** 25 - 50 mcg IV/IO
- Continuous $EtCO_2$ monitoring required for pts receiving midazolam or fentanyl

Clinical judgement shall be utilized to determine the appropriate dose of midazolam or fentanyl for pts requiring pre-cardioversion sedation/pain control

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-8 (LALS)
Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- All pts with a report of pain shall be appropriately assessed and treatment decisions/interventions shall be adequately documented on the PCR.
- A variety of pharmacological and non-pharmacological interventions may be utilized to treat pain. Consider the pt's hemodynamic status, age, and previous medical history/medications when choosing analgesic interventions.
- Treatment goals should be directed at reducing pain to a tolerable level; pts may not experience complete pain relief.

BLS

- Assess V/S including pain scale & SpO_2, every 15 mins or as indicated by pt's clinical condition
- Assess/document pain score using standard 1-10 pain scale before and after each pain management intervention and at a minimum of every 15 mins
- O_2 at appropriate rate if SpO_2 <94% or pt is short of breath
- Utilize non-pharmacological pain management techniques as appropriate, including:
  - Place in position of comfort and provide verbal reassurance to minimize anxiety
  - Apply ice packs &/or splints for pain secondary to trauma

Pain not effectively managed with non-pharmaceutical pain management techniques

Pain related to acute injury/ burns/frostbite?

NO →
- Contact base/modified base hosp. for pain management consultation
- May proceed with LALS treatment in the event of communication failure, if indicated by pt's condition

YES

LALS

- Continuous cardiac & $EtCO_2$ monitoring if administering fentanyl &/or midazolam
- IV/IO NS TKO – if indicated by pt's clinical condition or necessary for medication administration
  - May bolus up to 1000 mL if indicated by pt's clinical condition

Fentanyl (AEMT II): 25 - 50 mcg slow IV or IM/IN – may repeat every 5 mins to max cumulative dose of 200 mcg

Pts with severe pain from acute isolated extremity injuries (including hip & shoulder), not adequately relieved by other methods/analgesics:

Midazolam (AEMT II): 1 mg slow IV – may repeat in 5 mins to max cumulative dose of 2 mg

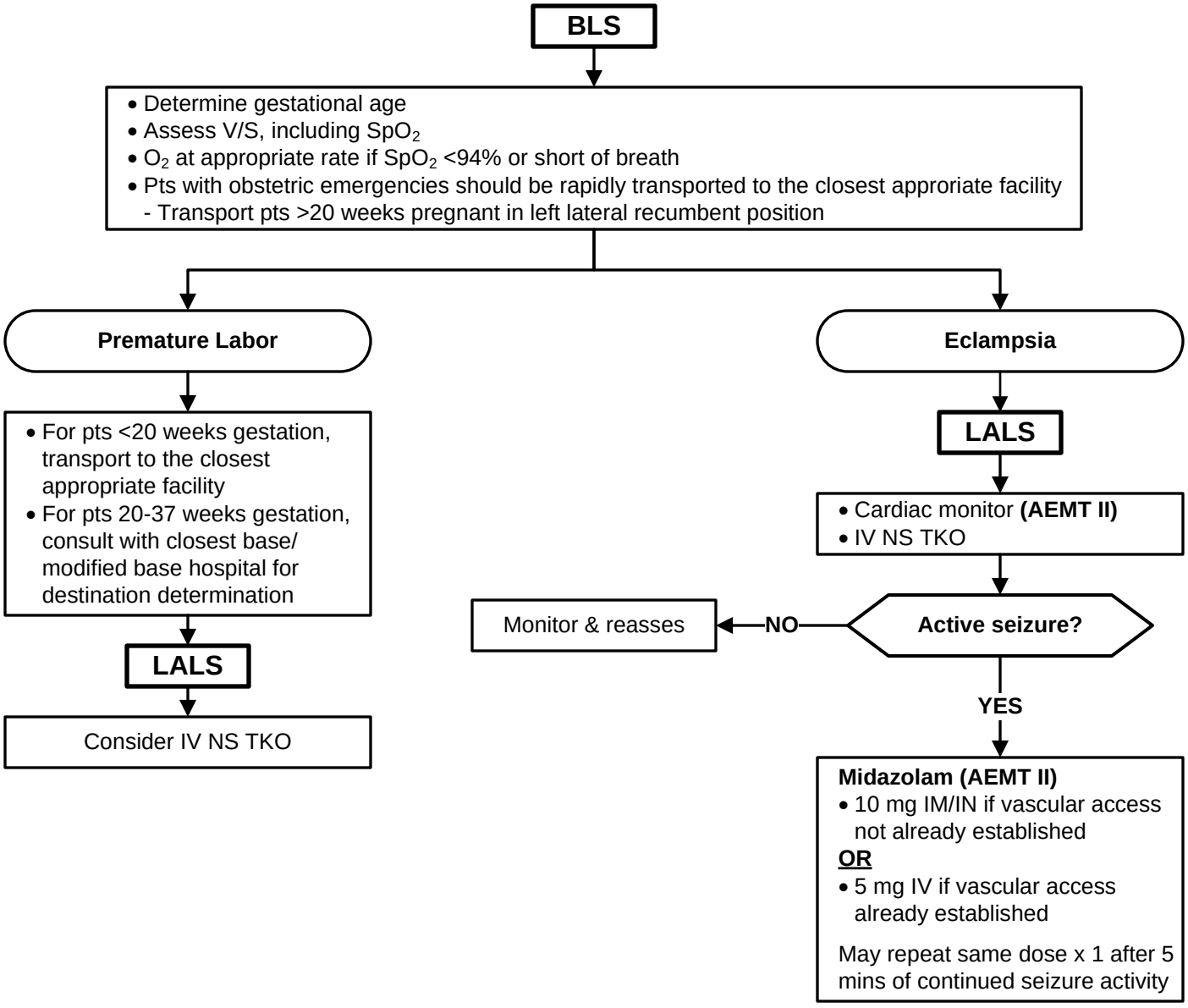
Fentanyl/Midazolam Contraindications & Administration Notes

ⓘ Clinical judgement shall be utilized to determine appropriate doses within allowable protocol ranges
ⓘ Administer fentanyl/midazolam IV doses over 60 seconds
ⓘ Do not administer fentanyl/midazolam to pts with any of the following:
- SBP <100 - SpO2 <94% or RR <12 - ALOC or suspected moderate/severe TBI

ⓘ Consider reducing fentanyl doses to 25 mcg for pts ≥65 yo
ⓘ There is an increased risk of deeper level of sedation & airway/respiratory compromise when administering midazolam to pts receiving fentanyl

Sierra – Sacramento Valley EMS Agency Treatment Protocol	OB-G2 (LALS)
Obstetric Emergencies	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- Obstetric emergencies can be high-acuity/low-frequency situations that can rapidly escalate & may include one or more of the following:
  - Premature Labor – Regular uterine contractions or cervical dilation prior to the 37th week of gestation.
  - Placenta Previa – Placenta covers the cervical opening (painless, often profuse, bright red bleeding).
  - Abruptio Placenta – Separation of placenta from the uterine wall (severe abdominal pain/abdominal rigidity).
  - Pre-Eclampsia – A condition of pregnancy characterized by high blood pressure & other symptoms.
  - Eclampsia – Seizures secondary to a pregnancy-related high blood pressure disorder.
- Pre-Eclampsia & Eclampsia may occur up to 8 weeks post-partum.
- If pt is in the 3rd trimester & has a BP >160/100, altered mental status, & visual disturbances, consult with base/ modified base for consideration of magnesium sulfate



Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-1 (LALS)
General Trauma Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- **Limit on scene procedures for pts meeting Field Trauma Triage Criteria to:**
  - Pt assessment - Airway management - Hemorrhage control - Immobilization/splinting - SMR
- **Transport pts with known/apparent third trimester pregnancy in left-lateral position.**
- **Notify receiving hospital of a 'Trauma Alert' as soon as possible for pts meeting Field Trauma Triage Criteria.**

BLS

- Assess & support ABCs
- Assess V/S, including SpO_2
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%) or short of breath
- Control hemorrhage & immobilize/splint injuries as needed
- Initiate spinal motion restriction (SMR) if indicated (see page 3)
- Maintain body temperature, keep warm

LALS

- Consider advanced airway if indicated
- Consider $EtCO_2$ monitoring **(AEMT II)** if indicated (see protocol T-3 LALS or T-3P LALS)
- Consider application of a pelvic binder if indicated (see page 2)
- Cardiac monitor **(AEMT II)**
- Establish vascular access if indicated (see page 2)
- Consider pain management if indicated (see protocol M-8 LALS or M-8P LALS)

Field Trauma Triage Criteria (TTC) Pt Destination (see page 4 for TTC details)

Unmanageable Airway? — YES → **Transport to Closest Hospital**

NO ↓

Meets RED TTC? — YES →

Adult (>14yo)
- If level I or II trauma center is closest, transport to that facility
- If level III or IV trauma center is closest, contact that facility (prior to transport) for destination consultation

Pediatric (≤14yo)
- Transport to pediatric trauma center if transport time ≤45 min
- Follow adult criteria if transport time to pediatric trauma center >45 min
- Contact closest trauma center for destination consultation if needed

NO ↓

Meets YELLOW TTC? — YES →
- Contact closest trauma center for destination consultation if transport time to that facility is ≤45 min
- Contact base/modified base hospital for destination consultation if transport time to a trauma center is >45 min

Vascular Access

Need or anticipated need for fluid or medication administration?

NO → Vascular access not indicated

YES ↓

IV/IO (AEMT IO use authorized for pediatric pts only) – NS or LR

- Initiate vascular access on all pts meeting Field Trauma Triage Criteria
- Initiate second vascular access on adult pts presenting with hypotension (SBP <90 for pts <65 years of age, or SBP <100 for pts ≥65 years of age), or if thoracic/abdominal pain is present
- Fluid resuscitation guidelines:
  - Adult pts:
    - Administer 500 mL fluid boluses for signs of hypoperfusion/shock
    - Reassess hemodynamic parameters, respiratory status and lung sounds after each fluid bolus
    - Titrate fluid boluses to SBP of ≥90 for pts <65 years of age, or ≥100 for pts ≥65 years of age
  - Pediatric pts:
    - Administer 20 mL/kg fluid boluses for signs of hypoperfusion/shock
    - Reassess hemodynamic parameters, respiratory status and lung sounds after each bolus
    - Titrate fluid boluses to age appropriate SBP (max: 60 mL/kg)

Commercial Pelvic Binder

- Approved Commercial Pelvic Binders: Any commercial pelvic binder currently recommended by the Committee on Tactical Combat Casualty Care (CoTCCC)
- Utilization of a commercial pelvic binder is optional, and only approved for AEMT/paramedic personnel. ALS/LALS provider agencies must ensure that their personnel are appropriately trained on the application/use of the device, as misplacement of pelvic binders can significantly decrease the ability of the binder to reduce pelvic ring fractures.
- Physical exam findings which may indicate the presence of a pelvic ring fracture include, but are not limited to:
  - Crepitus when applying compression to the iliac crests
  - Perineal or genital swelling
  - Testicular/groin pain
  - Blood at the urethral meatus
  - Rectal, vaginal or perineal lacerations/bleeding
- When stabilizing a suspected pelvic ring fracture, care must be taken not to over-reduce the fracture. Over-reduction can be assessed by examining the position of the legs, greater trochanters and knees with the pt supine. The goal is to achieve normal anatomic position of the pelvis, so the lower legs should be symmetrical after stabilization.
- When clinically indicated and logistically feasible, the pelvic binder should be placed prior to extrication/movement.
- Pelvic binders should be placed directly to skin. Once applied, pelvic binders should not be removed.
- If possible, avoid log-rolling pts with a suspected pelvic fracture.

Mechanism of injury suggestive of a pelvic fracture?

NO → Pelvic binder not indicated

YES ↓

Does pt present with one or more of the following?

- Physical exam findings suggestive of a pelvic fracture
- Hemodynamic instability: HR >100 & SBP <90 (or SBP <100 in pts ≥65 years of age)

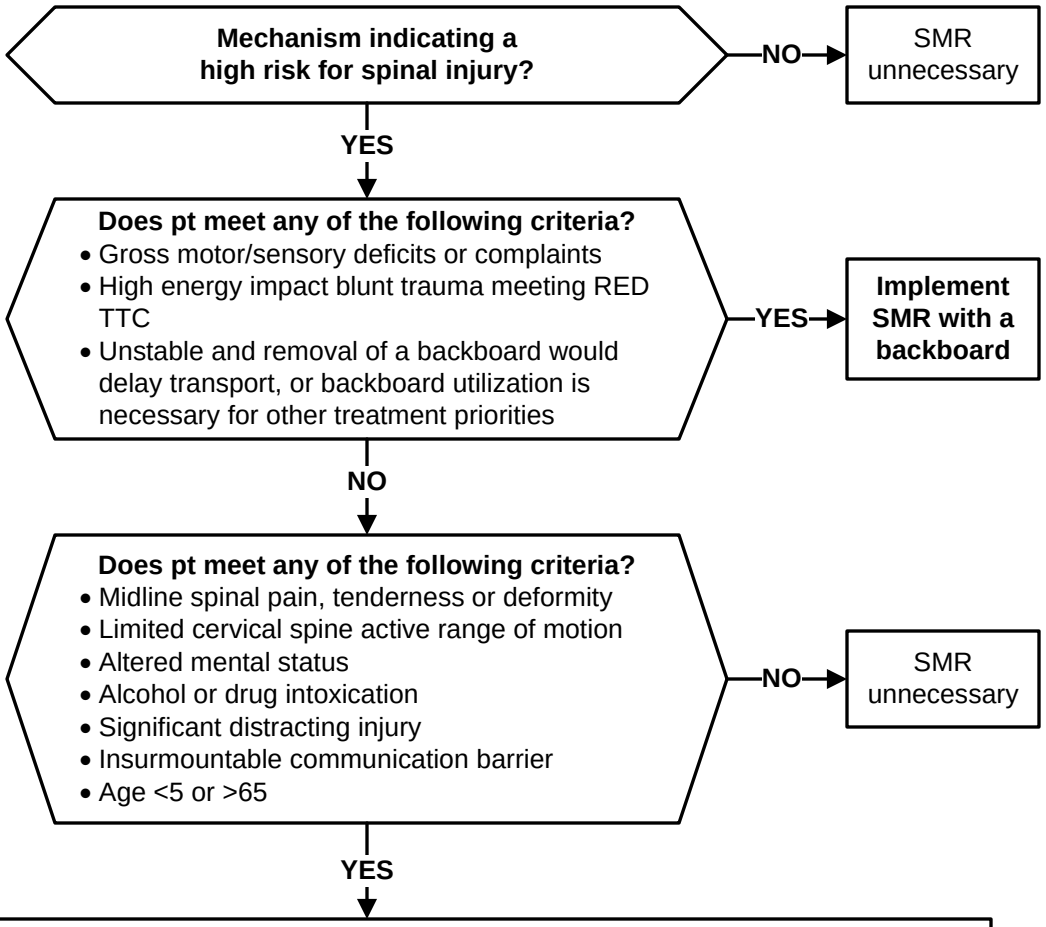
NO → Pelvic binder not indicated

YES ↓

Apply pelvic binder according to manufacturer instructions

Spinal Motion Restriction (SMR)

- A backboard shall not be utilized for pts with penetrating trauma to the head, neck or torso without evidence of spinal injury
- Helmet removal guidelines:
  - For pts who meet criteria for SMR with a backboard, football helmets should only be removed if they prevent adequate SMR or under the following circumstances:
    - If the helmet and chin strap fail to hold the head securely or prevent adequate airway control.
    - If the facemask cannot be removed.
  - Football helmets should be carefully removed to allow for appropriate SMR of pts who do not meet criteria for backboard utilization.
  - All other types of helmets (bicycle, motorcycle, etc.) should be carefully removed to allow for appropriate SMR.



Implement SMR without a backboard as follows:

- Apply a cervical collar
- Allow ambulatory pts to sit on the stretcher and then lie flat (no 'standing take-down")
- If necessary, move pt from the position found to the ambulance stretcher utilizing a device such as a KED, scoop stretcher, backboard, or if necessary, by having the pt stand and pivot to the stretcher – do not permit the pt to struggle to their feet from a seated or supine position
- Once on the ambulance stretcher, remove any hard backboard device & instruct the pt to lie still
- The head of the stretcher may be elevated 20-30^0 in a position of comfort
- Secure cross stretcher straps and over-the-shoulder belts firmly
- Pts with nausea &/or vomiting may by placed in the lateral recumbent position, maintaining the head in a neutral position using manual stabilization, padding, pillows, &/or the pt's arm

Field Trauma Triage Criteria (TTC)

RED TTC (High Risk for Serious Injury)

Injury Patterns

- Penetrating injuries to head, neck, torso, &/or proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor/sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones in a pt of any age, or one or more proximal long bone fracture in a pt ≤14 or ≥65 years of age
- Suspected open proximal long bone fracture
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Continued, uncontrolled bleeding despite EMS hemorrhage control measures

Mental Status/Vital Signs

MENTAL STATUS

- **<65 years of age:**
  - GCS ≤13
- **≥65 years of age:**
  - GCS <15 (or decreased from baseline) with evidence/suspicion of a head strike

RESPIRATORY STATUS

- **All pt ages:**
  - RR <10 or >29 breaths/min
  - Resp. distress or need for resp. support
  - Room-air SpO_2 <90%

CIRCULATORY STATUS

0-9 years of age:
- SBP <70mm Hg + (2 x age years)

10-64 years of age:
- SBP <90 mmHg **OR** HR>SBP

≥65 years of age:
- SBP <100 mmHG **OR** HR>SBP

YELLOW TTC (Moderate Risk for Serious Injury)

Mechanism of Injury

- High-Risk Auto Crash
  - Partial or complete ejection
  - Significant intrusion (including roof)
    - >12 inches occupant site; or
    - >18 inches any site; or
    - Need for extrication for entrapped pt
  - Death in passenger compartment
  - Child (0-9 years of age) unrestrained or in unsecured child safety seat
  - Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with significant impact (motorcycle, ATV, horse, etc.)
- Pedestrian/bicycle rider thrown, run over, or with significant impact
- Fall from height >10 feet (all ages)

EMS Judgement

EMS personnel should consider the following risk factors, and contact the closest trauma center or base/modified base hospital for destination consultation (see page 1), if transport to a trauma center is believed to be in the pt's best interest:

- Low-level falls in young children (≤5 years of age) or older adults (≥65 years of age) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy >20 weeks
- Burns in conjunction with trauma

Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-3 (LALS)
Suspected Moderate/Severe Traumatic Brain Injury (TBI)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

Prehospital Identification of Moderate/Severe TBI

- Any pt with a mechanism of injury consistent with a potential for a brain injury, and one or more of the following:
  - <65 years of age with a GCS ≤13, or ≥65years of age with a GCS <15 (or decrease from baseline)
  - Post-traumatic seizures
  - Multi-system trauma requiring advanced airway placement

For any patient with a suspected moderate/severe TBI, avoid/treat the three TBI "H-Bombs":
1) **H**yperventilation, 2) **H**ypoxia, 3) **H**ypotension

BLS

- Assess V/S, including continuous SpO_2 monitoring and pupil exam: Reassess V/S every 3-5 min if possible
- High-flow O_2 (regardless of SpO_2 reading)
- If continued hypoxia (SpO_2 <94%) or inadequate ventilatory effort, proceed through the following in a stepwise manner:
  - Reposition airway
  - Initiate positive pressure ventilation with appropriate airway adjunct if necessary (use of a pressure-controlled BVM &/or ventilation rate timer is recommended if available)
- Avoid hyperventilation (ventilate at a rate of 10 breaths/min)
- Maintain normothermia
- Consider the concurrent need for appropriate immobilization/spinal motion restriction

LALS

- Continuous cardiac & $EtCO_2$ monitoring **(AEMT II)**
- IV/IO NS TKO: For SBP <110 bolus 1000 mL N/S, then titrate additional fluids to maintain SBP ≥110
- Check blood glucose

Blood glucose ≤60 mg/dl?

YES →

Dextrose 10%
- 10 - 25 gm (100 - 250 mL) IV/IO

OR

Glucagon
- 1 mg (1 unit) IM/IN

NO ↓

For persistent hypoxia &/or inadequate ventilatory effort:
- Supraglottic airway
- Target $EtCO_2$: 35-39 mmHg **(AEMT II)**

- Transport to appropriate destination & notify receiving facility of a "Trauma Alert" as soon as possible (if applicable)
- Monitor & reassess

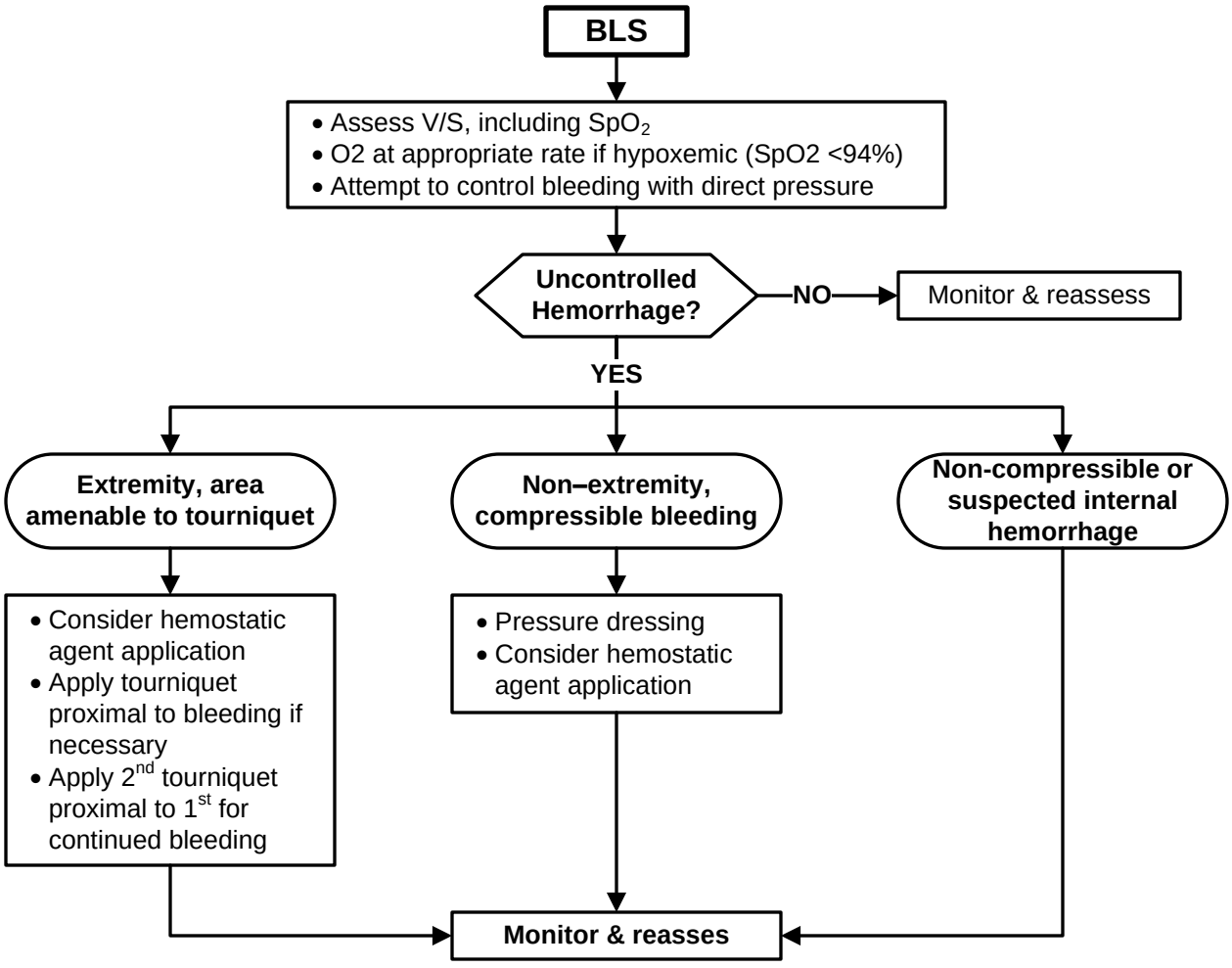
Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-4 (LALS)
Hemorrhage	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

Tourniquet Devices:

- Any windlass style device included on the current Committee on Tactical Combat Casualty Care (CoTCCC) recommended Limb Tourniquets (non-pneumatic) list may be utilized by EMS personnel.
- Tourniquets applied by lay rescuers or other responders shall be evaluated for appropriateness and may be adjusted or removed if necessary – improvised tourniquets should be removed by prehospital personnel.
- If application is indicated and appropriate, a commercial tourniquet should not be loosened or removed by prehospital personnel unless time to definitive care will be greatly delayed (>2 hrs).

Hemostatic Dressings:

- Any hemostatic agent that is incorporated into gauze (no loose granules/particles) included on the current Committee on Tactical Combat Casualty Care (CoTCCC) recommended Hemostatic Dressings list may be utilized by EMS personnel.

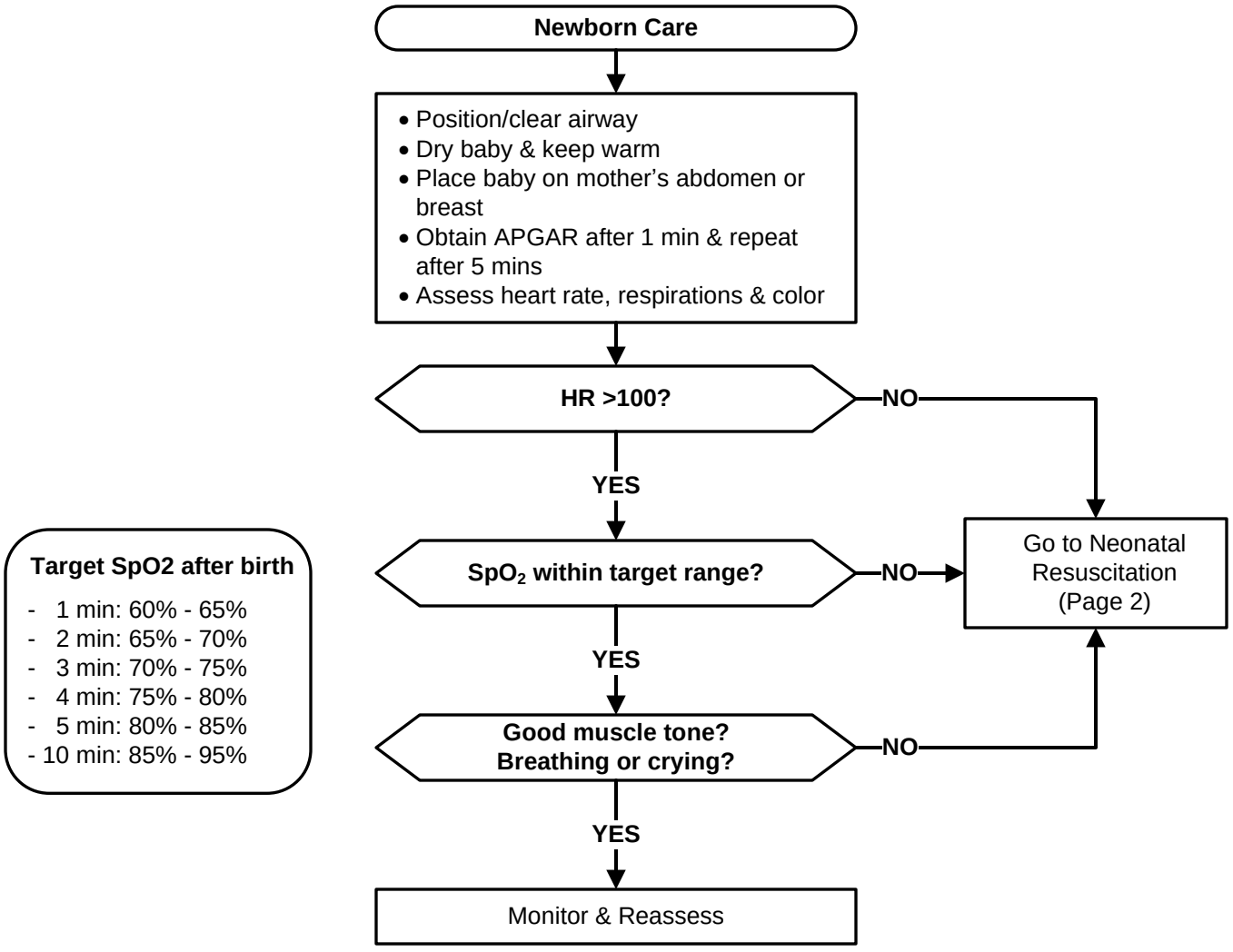


Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-2P (LALS)
Newborn Care/Neonatal Resuscitation	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

- A newborn/neonate is a child ≤28 days of age.
- Initial & ongoing assessments are critical to identifying and correcting life threats.
- If resuscitation is not required, EMS personnel should prioritize the following:
  - Whenever possible keep mother & baby together.
  - Maintain skin-to-skin contact between mother & baby.
  - Keep the baby warm – dry & cover the head, hands & feet.

APGAR SCORE

	Sign/Score	0	1	2
A	Appearance	Blue/Pale	Peripheral cyanosis	Pink
P	Pulse Rate	None	<100	>100
G	Grimace	None	Grimace	Cries
A	Activity	Limp	Some motion	Active
R	Respiration	Absent	Slow/irregular	Good/strong cry

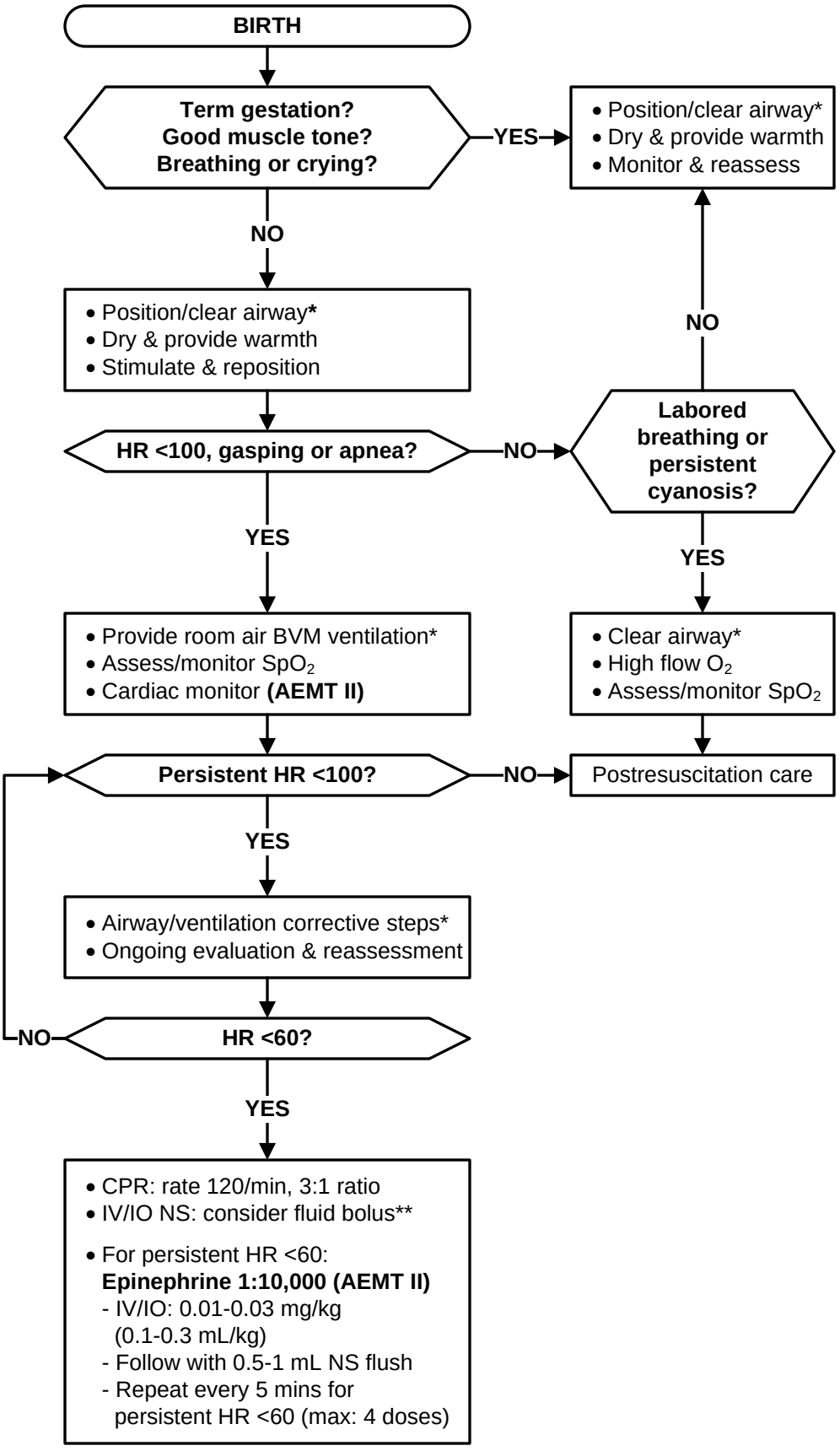


***Airway/Ventilation**

- Position in a "sniffing" position to open the airway & clear secretions with a bulb syringe if necessary.
- If no improvement, & chest is not moving with BVM ventilation, the trachea may be obstructed by thick secretions/meconium. Use a bulb syringe, or suction catheter if necessary, to clear the nose, mouth & oropharynx.
- Convert from room air to high flow O_2 for persistent bradycardia &/or cyanosis.
- If HR persistently <60, consider hypovolemia &/or pneumothorax.
- Target SpO_2 after birth:
  - 1 min: 60% - 65%
  - 2 min: 65% - 70%
  - 3 min: 70% - 75%
  - 4 min: 75% - 80%
  - 5 min: 80% - 85%
  - 10 min: 85% - 95%

****Fluid Bolus**

- Contact the base/ modified base hospital for specific fluid bolus volume direction.



Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-6P (LALS)
Pediatric General Medical Treatment	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

GENERAL PEDIATRIC TREATMENT PRINCIPLES

- The purpose of this protocol is to provide standing order assessment/treatment modalities for pediatric pt complaints not addressed in other S-SV EMS treatment protocols – including Brief Resolved Unexplained Event – BRUE (Page 3) & Suspected Shock/Sepsis (Page 4).
- The Newborn Care/Neonatal Resuscitation Protocol (M-2P) shall be used for pts during the first 28 days of life.
- Pediatric protocols shall be utilized for pts >28 days up to and including 14 years old.
- Applicable adult protocols may be utilized when there is not a pediatric protocol applicable to the pt's complaint/condition. Prehospital personnel shall consult with the base/modified base hospital for additional direction, if needed, when there is no standing order treatment protocol applicable to the pt's condition.
- A parent/reliable family member reported weight, length-based pediatric resuscitation tape or Handtevy shall be utilized for determining sizes of equipment and defibrillation/cardioversion joule settings. Once weight has been determined, medication dosing shall be based on S-SV EMS pediatric protocols.

NORMAL VITAL SIGNS & HYPOTENSION DEFINITION FOR NEONATAL & PEDIATRIC PATIENTS

Age	Normal Pulse Rate	Normal Resp. Rate	Normal SBP	Hypotension
≤28 days	100 - 205	30 - 50	60 - 80	SBP <60
29 days - 12 months	90 - 180	30 - 50	70 - 100	SBP <70
1-2 years	80 - 140	24 - 40	80 - 110	SBP <70 + age x2
3-5 years	65 - 120	20 - 30	90 - 110	SBP <70 + age x2
6-9 years	60 - 120	20 - 30	100 - 120	SBP <70 + age x2
10-14 years	50 - 100	12 - 20	100 - 120	SBP <90

PEDIATRIC PROTOCOLS PROCEDURE/MEDICATION TREATMENT AGE RESTRICTIONS

- **≤28 days old:** Base/modified base hospital order required to administer a fluid bolus (N-2P)
- **<4 years old:** Base/modified base hospital order required to administer the following medications:
  - Analgesic medications for pain management – **AEMT II** (M-8P)
  - Midazolam for severe anxiety/combative symptoms – **AEMT II** (M-11P)
- **<8 years old:** CPAP is not allowed (R-3P)

BLS

- Assess V/S, including SpO_2 & temperature (if able)
- O_2 at appropriate rate if pt hypoxemic (SpO_2 <94%), short of breath, cyanotic, or has signs of shock
- Assess and obtain medical history

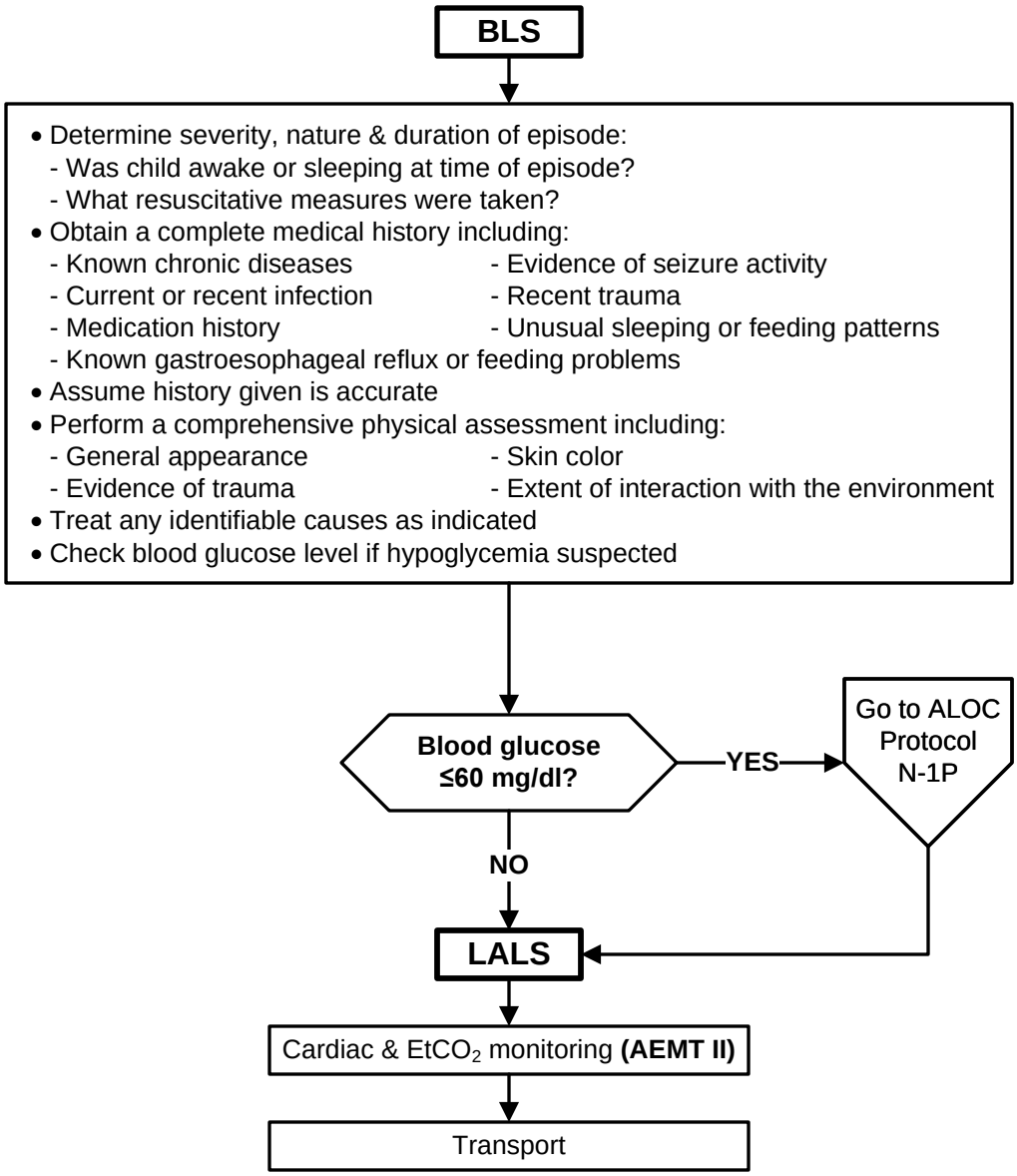
- Refer to other pages/sections of this protocol for specific treatment modalities as applicable:
  - BRUE - Page 3
  - Suspected Sepsis - Page 4

LALS

- Consider the following additional assessment/treatment modalities, as appropriate based on pt's condition & clinical presentation
  - Cardiac monitor/12-lead EKG **(AEMT II)**
  - $EtCO_2$ monitoring **(AEMT II)**
  - IV/IO NS 20 mL/kg, to max 1000 mL

Brief Resolved Unexplained Event (BRUE)

- Brief resolved unexplained event (BRUE) is an event occurring in an infant younger than one (1) year of age when the observer reports a sudden, brief (lasting <1 min, but typically <20-30 secs), and now resolved episode of any of the following:
  - Cyanosis or pallor
  - Marked change in tone (hyper- or hypotonia)
  - Absent, decreased, or irregular breathing
  - Altered level of responsiveness
- BRUE should be suspected when there is no explanation for a qualifying event after conducting an appropriate history & physical examination.
- All infants ≤1 year of age with possible BRUE should be transported by EMS for further medical evaluation. If the parent/guardian refuses EMS transport, base/modified base hospital consultation is required prior to release.
- EMS personnel shall make every effort to obtain the contact information of the person who witnessed the event, & provide this information to the receiving hospital upon pt delivery.



Suspected Shock/Sepsis

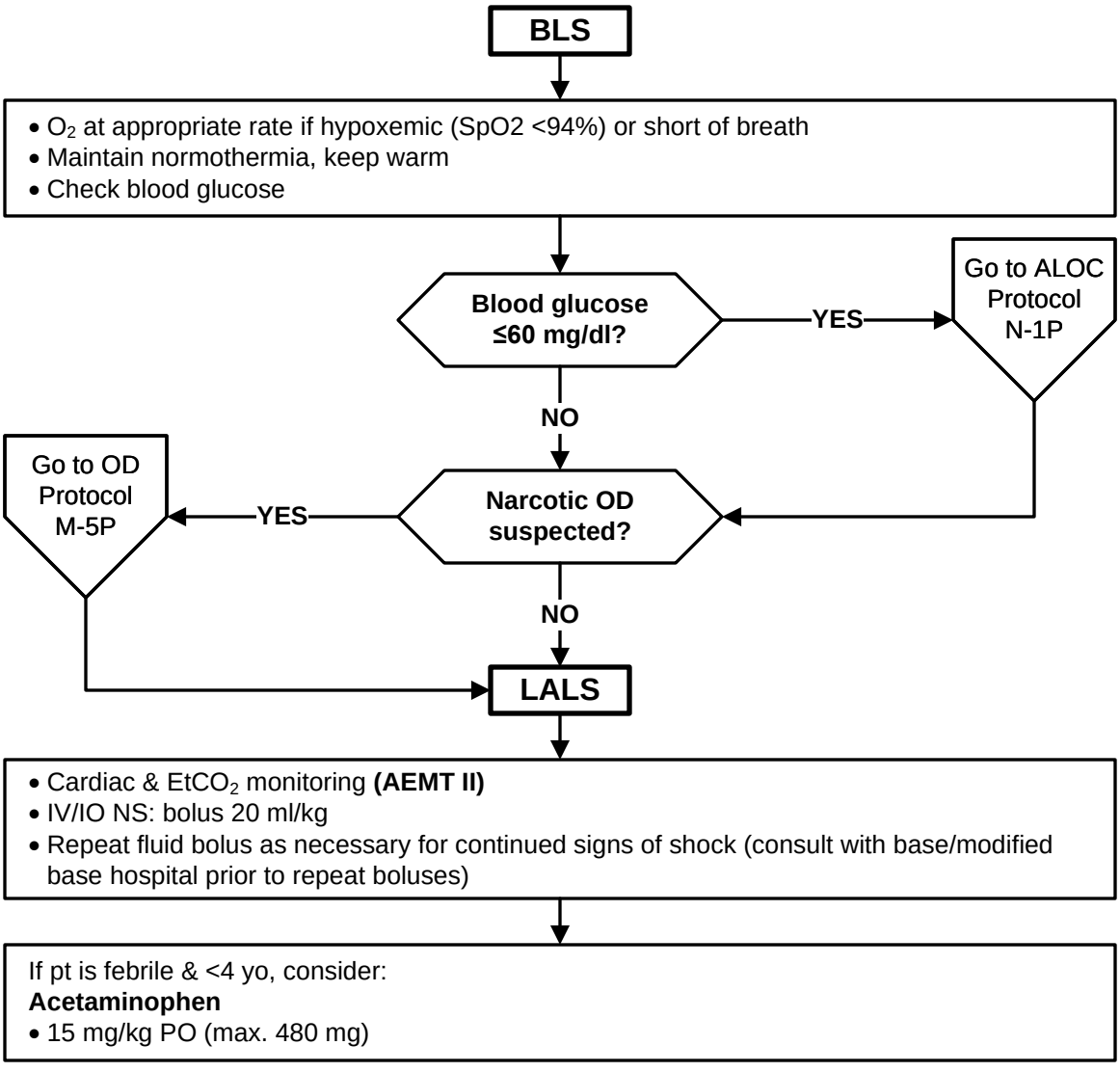
- Shock/Sepsis may be subtle and difficult to recognize.
- Early recognition of sepsis is critical to expedite hospital care and antibiotic administration.
- Septic pts are susceptible to traumatic lung injury. If BVM ventilation is necessary, avoid excessive tidal volumes.
- Obtain history including:
  - Onset and duration of symptoms
  - Fluid loss (vomiting/diarrhea)
  - Fever/Infection/Trauma/Ingestion
  - History of allergic reaction/cardiac disease or rhythm disturbance

Compensated Shock Signs/Symptoms:

- Tachycardia
- Cool extremities
- Weak peripheral pulses compared to central pulses
- Normal blood pressure

Decompensated Shock Signs/Symptoms:

- Hypotension &/or bradycardia (late findings)
- Altered mental status
- Decreased urine output
- Tachypnea
- Non-detectable distal pulses with weak central pulses



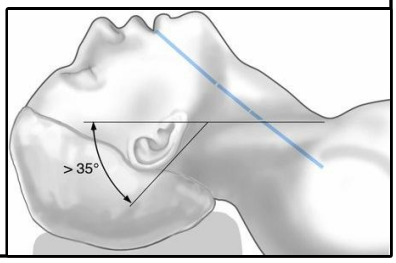
Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-2 (LALS)
Airway & Ventilation Managment	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

INDICATIONS

- Airway & ventilation management techniques may include: basic airway maneuvers, use of airway adjuncts (oropharyngeal/nasopharyngeal airways & supraglottic airway devices) based on the situation – Indications for airway management may include but are not limited to:
  - Obstructed airway
  - Respiratory distress/failure
  - Altered mental status
  - Severe shock (hemorrhagic, septic, cardiogenic)
  - Cardiac arrest
  - Trauma/burns/smoke inhalation
- During cardiac arrest, advanced airway placement should not delay or interrupt CPR & shall not be considered until after the 1st round of defibrillation (if indicated) & administration of epinephrine

BLS AIRWAY PROCEDURE

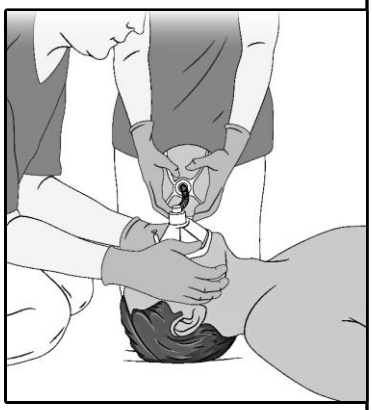
- Look, Listen, and Feel for level of responsiveness, chest movement, breath sounds, obstructions
- Positioning of unresponsive pts:
  - Place in the Head Elevated Laryngoscopy Position (HELP) to facilitate alignment of the pharyngeal, laryngeal & oral axis of the airway
  - Use the Head-Tilt/Chin-Lift, Jaw-Thrust, or Lateral Recovery Position (as appropriate)
- Remove visible obstructions &/or suction fluids as necessary, limiting suctioning to 10-15 secs
- Maintain airway patency – insert OPA/NPA as appropriate



BAG-VALVE-MASK (BVM) VENTILATION PROCEDURE

BVM ventilation should be performed by two rescuers whenever possible

- Attach oxygen to BVM at a minimum flowrate of 10-15 L/min
- For one rescuer ventilation, position the mask over the nose & mouth & ensure a tight seal with an E-C clamp technique
- Squeeze the bag slowly, delivering breath over 1-2 secs
- Deliver only enough volume to achieve normal chest rise & fall **avoid excessive ventilation**
- If utilizing a Positive End Expiratory Pressure (PEEP) valve, maintain between 5-10 cmH_2O. Do not utilize PEEP in any of the following circumstances:
  - Suspected pneumothorax
  - Suspected TBI or increased intracranial pressure
  - Hypovolemic shock
- Ventilate to maintain SpO_2 & $EtCO_2$ within appropriate range for pt condition
- An Impedance Threshold Device (ITD) may be utilized in adult non-traumatic pulseless arrest pts; however, two rescuers are required to maintain effectiveness if no advanced airway is in place

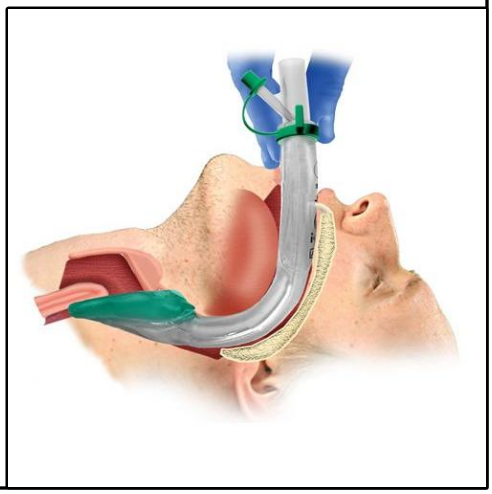


i-gel SUPRAGLOTTIC AIRWAY (SGA) PROCEDURE

Contraindications:
- Intact gag reflex
- Caustic ingestion
- Unresolved complete airway obstruction

Relative Contraindications:
- Trismus or limited ability to open the mouth
- Oral trauma
- Distorted anatomy that prohibits device placement

- Pre-oxygenate pt with high-flow O_2, via NRM or BVM as appropriate, for a minimum of 3 mins
- Administer 10-15 L/min O_2 via NC, in addition to NRM/BVM O_2 to augment pre-oxygenation
- Select the correct size i-gel SGA device
- Lubricate the back & sides of the i-gel SGA device with a water-based lubricant
- Place the pt in a sniffing position or use a Jaw-Thrust maneuver if spinal injury is suspected
- Grasp the i-gel SGA device by the proximal end with the dominant hand, making sure the cuff is pointing downwards & the airway tube is aligned in the midline
- Gently press down on the chin & introduce the soft tip into the mouth towards the hard palate
- Glide the i-gel SGA device downwards & backwards Along the hard palate with a continuous but gentle Push until a definitive resistance is felt
- Begin ventilating with a BVM at the appropriate ventilation rate
- Follow **ADVANCED AIRWAY DEVICE PLACEMENT CONFIRMATION & POST-PROCEDURE** instructions on page 3



ADVANCED AIRWAY DEVICE PLACEMENT CONFIRMATION & POST-PROCEDURE

- Using a stethoscope, check for the absence of gurgling sounds over the epigastrium & the presence of equal breath sounds over the lungs while observing for chest rise and fall. Gurgling may still be heard in pts who are breathing spontaneously or when an i-gel SGA device is in place
- Attach an $EtCO_2$ monitoring device, which must remain in place until arrival to the hospital or cessation of resuscitation efforts
- At least four (4) of the following techniques must be utilized to confirm advanced airway placement
  - Bilateral breath sounds
  - Bilateral chest rise and fall
  - Consistent $EtCO_2$ waveform
  - Change in Colorimetric CO_2 detector from purple to yellow
  - Condensation in the airway tube
  - SpO_2 rising to/or remaining above 94%
- LALS personnel must immediately confirm patency of an advanced airway placed by an EMT
- Airway patency must be reassessed at a minimum of every 15 mins and:
  - Each time the patient is moved
  - If ventilation becomes difficult
  - If vital signs, including SpO2 & EtCO2 change unexpectedly
- If a pt with an advanced airway in place regains consciousness:
  - Use restraints as necessary to avoid displacement of the advanced airway device
  - Consider sedation with **Midazolam 10 mg IV/IO/IM/IN (AEMT II)** for adult pts (may repeat x 1)
  - Contact base/modified base hospital for pediatric Midazolam dosing if needed
- Document all methods/devices used to confirm advanced airway device placement in the PCR