Sierra – Sacramento Valley Emergency Medical Services Agency

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ADMINISTRATIVE BULLETIN

Date: July 25, 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 #77

Enclosed are S-SV EMS Policy/Protocol Update #77 documents, effective October 1, 2025. Please be aware of the following information related to this update:

- 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 pages, all applicable policy and protocol documents included in this update packet are marked up to identify specific revisions.
- S-SV EMS 'Mechanical Chest Compression Devices' Policy (No. 1106) has been rescinded as part of this update. These devices are still allowed to be utilized by appropriately trained EMS system participants, in accordance with applicable S-SV EMS pulseless arrest treatment protocols. We are developing a new 'Approved EMS Equipment' policy to provide additional clarification related to these matters. In the interim, EMS system participants interested in purchasing/utilizing mechanical chest compression devices different than the brand/model of previously approved devices, should contact S-SV EMS for consultation prior to purchase.
- S-SV EMS Policy/Protocol Manual Section 1100 has also been eliminated as part of this update. Policy 1110 & policy addendums 1110-A-K have been renumbered to 910 & 910-A-K and moved to Section 900. These policy and policy addendum documents are not included in this update packet as this was a renumbering process only, without other changes.
- 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 October 1, 2025.

POLICY UPDATES SUMMARY		
Policy #	**Policy Title**	**Summary of Changes & Notes**
412	Ground Ambulance Provider Rate Approval Process	• New ground ambulance provider rate approval process policy.
461	Automatic Aid/Mutual Aid/Disaster Assistance (Including EMPF, AST & MTF Resource Requests)	• Routine review, no substantive changes.
509	Trauma Center Designation Criteria, Requirements & Responsibilities	• Additional language clarifying requirements for continual compliance with ACS verification standards. • Additional QI process requirements language. • Trauma center upgrade process clarification designation.
701	ALS Provider Agency Inventory Requirements	• Updated minimum TXA requirement.
702	ALS Specialty Program Provider Inventory Requirements	• Updated minimum TXA requirement.
710	Management Of Controlled Substances	• Removal of morphine sulfate. • No other substantive changes.
806	Unified Paramedic Optional Scope Of Practice For Qualified Transport Programs	• Routine review, no substantive changes.
854	Unsafe Scene	• New unsafe scene policy.

POLICY UPDATES SUMMARY (continued)		
Policy #	**Protocol Title**	**Summary of Changes & Notes**
890	Communication Failure	• Minor revisions to maintain consistency with C-1 & C-1 (LALS) protocol updates.
910 & 910-A through 910-K	ALS/LALS Infrequently Used Skills Verification & Regional Training Module	• Renumbered policy & policy addendums only (previously 1110 & 1110-A through 1110-K). Note: These documents are not included in this update packet as this was a renumbering process only, without other changes.
915	MICN Authorization/ Reauthorization	• Clarification of MICN reauthorization CE requirements.
PPROTOCOL UPDATES SUMMARY		
Protocol #	**Protocol Title**	**Summary of Changes & Notes**
C-1 & C-1 (LALS)	Non-Traumatic Pulseless Arrest	• Revised Termination of Resuscitation (TOR) criteria (Pg. 1) • Minor revisions (Pg. 2)
C-5 & C-5 (LALS)	Ventricular Assist Device (VAD)	• Routine review, no substantive changes.
C-6 & C-6 (LALS)	Chest Discomfort/ Suspected Acute Coronary Syndrome (ACS)	• Additional language regarding posterior 12-leads. • Updated SRC consultation language. • Revised 12-lead transmission language.
R-2 & R-2 (LALS)	Respiratory Arrest	• Minor revision in the BLS management box. • Updated cardiac/EtCO2 monitoring language. • Updated treatment language referring to other applicable protocols when necessary.

PROTOCOL UPDATES SUMMARY (continued)		
Protocol #	**Protocol Title**	**Summary of Changes & Notes**
R-3 & R-3 (LALS)	Acute Respiratory Distress	• Additional on magnesium sulfate (base/modified base order only) to ALS protocol. • No changes to LALS protocol.
M-5 & M-5 (LALS)	Ingestions & Overdoses	• Clarified Poison Control contact direction language. • Updated treatment language referring to other applicable protocols when necessary.
M-8 & M-8 (LALS)	Pain Management	• Revised Ketamine contraindications. • Reorganized treatment algorithm on page 2 to provide better direction.
M-8P & M-8P (LALS)	Pediatric Pain Management	• Revised Ketamine contraindications. • Reorganized treatment algorithm on page 2 to provide better direction.
M-9 & M-9 (LALS)	CO Exposure/ Poisoning	• Additional general information in top informational box. • Clarified/additional language in the BLS & ALS treatment boxes.
N-1 & N-1 (LALS)	Altered Level of Consciousness	• Clarified/additional language in the ALS treatment box. • Updated treatment language referring to other applicable protocols when necessary.
N-2 & N-2 (LALS)	Seizure	• Additional language related to pregnant patients added to the top information box. • Updated treatment language referring to other applicable protocols when necessary. • Clarification language regarding midazolam administration.
E-1 & E-1 (LALS)	Hyperthermia	• Routine review, no substantive changes.

PROTOCOL UPDATES SUMMARY (continued)		
Protocol #	**Protocol Title**	**Summary of Changes & Notes**
T-2 & T-2 (LALS)	Crush Injury/ Crush Syndrome	• New crush injuries treatment protocol.
T-3 & T-3 (LALS)	Suspected Moderate/ Severe Traumatic Brain Injury (TBI)	• Updated treatment language referring to other applicable protocols when necessary.
T-4 & T-4 (LALS)	Hemorrhage	• Additional TXA exclusion for 'Extremity hemorrhage controlled by tourniquet. • Updated TXA dosing from 1 gm to 2 gm.
PR-1 & PR-1 (LALS)	12-Lead EKG	• Additional instruction on posterior 12-leads.
PR-2 & PR-2 (LALS)	Airway & Ventilation Management	• Clarification language related to the continued use of an already established i-gel SGA in the top 'Indications' section.
PR-3P	Pediatric Pleural Decompression	• New pediatric pleural decompression protocol (ALS only).

S-SV EMS Agency

Policy/Protocol Manual Update #77

Markup Policies

Effective October 1, 2024

Note: Final versions of approved policies will be published at www.ssvems.com and on the S-SV EMS mobile applications prior to October 1, 2024

Sierra – Sacramento Valley EMS Agency Program Policy			
Ground Ambulance Provider Rate Approval Process			
	Effective: 10/01/2025	Next Review: 04/2028	**412**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE: **New Policy - No Markups Applicable**

To establish a ground ambulance provider rate approval process to comply with applicable statutes/regulations and ensure adequate availability of ground ambulance resources within the S-SV EMS region to protect the public health and safety.

AUTHORITY:

A. HSC § 1371.56, § 1707.124, 1797.232.

B. CIC § 10126.66.

C. CCR, Title 22, Div. 9.

POLICY:

A. A health care service plan shall require an enrollee who receives covered services from a noncontracting ground ambulance provider to pay no more than the same cost-sharing amount that an enrollee would pay for the same covered services received from a contracting ground ambulance provider ("in-network cost-sharing amount"). An enrollee shall not owe the noncontracting ground ambulance provider more than the in-network cost sharing amount for covered services. A noncontracting ground ambulance provider shall only advance to collections the in-network cost-sharing amount that an enrollee individual failed to pay.

B. Unless otherwise agreed to by the noncontracting ground ambulance provider and the health care service plan, the plan shall directly reimburse a noncontracting ground ambulance provider for ground ambulance services the difference between the in-network cost-sharing amount and the amount described, as follows:

1. If there is a rate established or approved by a local government, at the rate established or approved by the governing body of the local government having jurisdiction for that area or subarea, including an exclusive operating area pursuant to Section 1797.85 of the Health and Safety Code (HSC).

2. If the local government having jurisdiction where the service was provided does not have an established or approved rate for that service, the reasonable and customary value for the services rendered, based upon statistically credible information that is updated at least annually and takes into consideration all the following:

    - The ambulance provider's training, qualifications, and length of time in practice.
    - The nature of the services provided.
    - The fees usually charged by the ground ambulance provider.
    - Prevailing ground ambulance provider rates charged in the general geographic area in which the services were rendered.
    - Other aspects of the economics of the ambulance provider's practice that are relevant.
    - Any unusual circumstances in the case.

3. A local government has jurisdiction over the ground ambulance transport if either of the following applies:

    - The ground ambulance transport is initiated within the boundaries of the local government’s regulatory jurisdiction.
    - In the case of ground ambulance transports provided on a mutual or automatic aid basis into another jurisdiction, the local government where the noncontracting ground ambulance provider is based.

4. A payment made by the health care service plan to the noncontracting ground ambulance provider, plus the applicable cost sharing owed by the enrollee, shall constitute payment in full for services rendered.

5. Notwithstanding any other law, the amounts paid by a health care service plan for ground ambulance services shall not constitute the prevailing or customary charges, the usual fees to the public, or other charges for other payers for an individual ground ambulance provider.

C. Ground ambulance service providers remain subject to the balance billing protections for Medi-Cal beneficiaries under Section 14019.4 of the Welfare and Institutions Code.

D. A ground ambulance provider shall not require an uninsured patient or self-pay patient to pay an amount more than the established payment by Medi-Cal or Medicare fee-for-service amount, whichever is greater. A ground ambulance provider shall only advance to collections the Medicare or Medi-Cal payment amount, that an uninsured or self-pay patient failed to pay.

PROCEDURE:

A. The S-SV EMS JPA Governing Board adopted resolution #08-0825-01 that:

1. Approved S-SV EMS authorized ground ambulance provider rates, effective July 1, 2025.

2. Authorized the S-SV EMS Regional Executive Director to:

- Approve S-SV EMS authorized ground ambulance provider annual rate increases, based on changes to the San Francisco-Oakland-Hayward, CA Consumer Price Index for All Urban Consumers (CPI-U). The maximum allowable annual rate increases will be three (3) percent, or the actual increase for the applicable year (whichever is greater).
- Approve rates for new services provided by existing S-SV EMS authorized ground ambulance providers.
- Approve rates for new S-SV EMS authorized ground ambulance providers.

B. In the event changed circumstances significantly impact the costs of providing ground ambulance services within the S-SV EMS region, or there are substantial reductions in revenue caused by factors beyond the provider's control, the provider may request a special rate increase to mitigate the financial impact of such circumstances.

1. A special rate increase request shall be submitted to S-SV EMS at least thirty (30) days prior to the regularly scheduled JPA Governing Board meeting at which the item will be heard/considered.

2. The S-SV EMS JPA Governing Board shall have sole authority to approve or disapprove a ground ambulance provider special rate increase request.

C. The processes described in this policy do not apply to the following circumstances:

1. Ground ambulance providers who have an exclusive operating area (EOA) agreement with S-SV EMS that contains specific rate setting provisions.

2. Public (local government) ground ambulance providers who's governing body is responsible for publicly establishing/approving ground ambulance rates. Public ground ambulance providers shall notify S-SV EMS of any changes to their ground ambulance rates within 30 days of such change, so that S-SV EMS can comply with the reporting requirements established by applicable statutes/regulations.

D. S-SV EMS will post all currently approved ground ambulance provider rates on its internet website and provide such information to the California EMS Authority (EMSA) as required by applicable statutes/regulations.

Sierra – Sacramento Valley EMS Agency Program Policy		
Automatic Aid/Mutual Aid/Disaster Assistance (Including EMPF, AST & MTF Resource Requests)		
Effective: 10/1/2025	Next Review: 04/2028	**461**
Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE: **Routine Review - No Changes/Markups**

A. To define the conditions/circumstances under which prehospital personnel may utilize the scope of practice for which they are trained and certified/licensed/accredited for during automatic aid/mutual aid/disaster assistance responses.

B. To describe the purpose, requesting process and utilization of Paramedic Fireline (EMPF), Ambulance Strike Team (AST) and Medical Task Force (MTF) resources.

AUTHORITY:

A. HSC, § 1797.170(b), 1797.204 & 1797.220.

B. CCR, Title 22, Div. 9.

C. California Disaster and Civil Defense Master Mutual Aid Agreement (11/1950).

D. EMSA 'Ambulance Strike Team (AST)/Medical Task Force System Manual' (4/2010).

E. California Fire and Rescue Emergency Mutual Aid System, Mutual Aid Plan (02/2012).

F. Emergency Management Assistance Compact (EMAC).

G. Supplemental Interstate Compact For Emergency Mutual Assistance, July 2007.

H. FIRESCOPE California Incident Command System Position Manual Fireline Emergency Medical Technician/Fireline Paramedic (EMTF/EMPF) ICS 702 (12/2016)

DEFINITIONS:

A. **Ambulance Strike Team (AST)** – Consists of five ALS or BLS ambulances (two personnel each) and one leader in a separate command vehicle or Disaster Medical Support Unit (DMSU).

B. **Automatic Aid** – Agreements between two or more jurisdictions where the nearest available resource is dispatched to an emergency irrespective of jurisdictional boundaries, or where two or more agencies are automatically dispatched simultaneously to predetermined types of emergencies. This type of agreement is typically utilized on a routine basis.

C. **Disaster Assistance** – Requests for assistance in the event that a disaster overwhelms local resources. These requests may be under existing mutual aid agreements or the result of unforeseen needs arising from a large-scale disaster.

D. **Medical Task Force (MTF)** – Any combination of resources assembled to support a specific medical mission or operational need. All resource elements within a Task Force must have common communications and a designated leader.

E. **Mutual Aid** – Agreements between two or more jurisdictions to provide assistance across jurisdictional boundaries, when requested, as a result of the circumstances of an emergency exceeding local resources.

F. **Paramedic Fireline (EMPF)** – A paramedic who meets FIRESCOPE requirements, and is authorized by their department to provide ALS care on the fireline.

PRINCIPLES:

A. When requested by an authorized automatic aid/mutual aid/disaster assistance response requester, EMS personnel may utilize the scope of practice for which they are trained and certified/licensed/accredited according to CCR, Title 22 and their Local EMS Agency (LEMSA) policies and procedures.

B. EMPF personnel provide emergency medical care on an active fireline, division or other physically challenging assignment. These resources may also provide care in the medical unit and/or at other locations as directed by the Incident Commander or designee.

C. AST/MTF resources provide an EMS operational response to disaster situations with a focus on transportation. These resources may also work in concert with California Medical Assistance Team (CAL-MAT) or other disaster medical personnel, and be used for medical and health system support in various settings including first aid sites, shelters, command posts, and Mobile Field Hospitals.

POLICY:

A. Automatic Aid/Mutual Aid/Disaster Assistance Responses Within California

1. BLS (EMR/EMT) Personnel:

- BLS personnel may utilize their basic scope of practice in a volunteer or paid capacity. There is no requirement that BLS personnel be affiliated with a prehospital provider to utilize their basic scope of practice.
- While functioning under the authority/oversight of a LEMSA approved prehospital provider during an automatic aid/mutual aid/disaster assistance response, BLS personnel may utilize the optional/expanded scope of practice for which they are trained, certified and accredited for by their LEMSA.

2. LALS/ALS (AEMT/Paramedic) Personnel:

- LALS/ALS personnel may provide LALS/ALS care anywhere in California provided all of the following conditions are met:
  - They possess a valid California AEMT Certificate or Paramedic License.
  - They are accredited by a California LEMSA.
  - They are affiliated with a California LEMSA approved LALS/ALS provider, and are functioning under the authority/oversight of the LALS/ALS provider with whom they are affiliated.
  - They utilize the scope of practice for which they are trained and accredited for by their LEMSA.

B. Automatic Aid/Mutual Aid/Disaster Assistance Responses Outside California

Prehospital personnel are normally approved to utilize the scope of practice for which they are trained and certified/licensed/accredited according to their respective classification, but must check in with the Medical Unit Leader or other appropriate incident representative for any special restrictions or credentialing requirements.

PROCEDURE:

A. General Automatic Aid/Mutual Aid/Disaster Assistance Response Requirements

1. Prehospital personnel shall follow all S-SV EMS policies/protocols during an automatic aid/mutual aid/disaster assistance response, and shall not administer any medication or perform any procedures listed as ‘Base/Modified Base Hospital Physician Order Only’ without appropriate medical control approval.

2. Controlled substances shall be obtained, secured and inventoried as indicated in S-SV EMS Management of Controlled Substances Policy (710).

3. Documentation of patient care shall be completed as indicated in S-SV EMS Prehospital Documentation Policy (605).

B. EMPF Programs

1. EMPF programs shall be approved by S-SV EMS.

2. Designation of an individual as an EMPF by an S-SV EMS approved provider verifies that the paramedic has completed standard FIRESCOPE education.

3. The EMPF position is like any other single resource position requested for incident management, and is ordered at the discretion of an Incident Commander through normal ordering channels.

4. EMPF personnel shall carry the items listed in S-SV EMS ALS Specialty Program Provider Inventory Requirements Policy (702) when responding to wildland fires to provide ALS care in this capacity.

5. The EMPF shall present their credentials to the Medical Unit Leader upon arrival at the incident. The Medical Unit Leader is responsible for verifying credentials of all EMPF personnel assigned to the incident, and shall notify S-SV EMS of any EMPF personnel not affiliated with an S-SV EMS approved prehospital provider assigned to an incident in the S-SV EMS region.

C. AST/MTF Resources:

1. AST/MTF resources shall be requested/approved by one of the following entities:

- Medical Health Operational Area Coordinator (MHOAC).
- Regional Disaster Medical Health Coordinator/Specialist (RDMHC/S).
- California State EMS Authority (EMSA).

2. Upon receipt of an official verbal or written AST/MTF resource request, S-SV EMS representatives will identify/coordinate the assignment/deployment of resources. AST/MTF resource assignments will be done in a fair and consistent manner, based on system/incident needs and provider resource availability. ASTs/MTFs may be comprised of resources from multiple different provider agencies at the discretion of S-SV EMS. Any verbal AST/MTF request shall be followed up with an official written resource request from the AST/MTF requesting/approving entity as soon as incident conditions allow.

3. Any S-SV EMS approved ground ambulance transport provider agency may participate in an AST/MTF deployment. By participating in an AST/MTF deployment, provider agencies/personnel agree to the following:

- Resources/personnel should be able to deploy within 1 – 2 hours of a request, and are expected to be self-sufficient for up to 72 hours.
- Personnel will likely be working in austere environments and performing tasks outside their normal day-to-day duties.
- Provider agencies shall not commit resources/personnel that will negatively impact their normal EMS coverage responsibilities.
- Provider agencies agree to accept the current hourly Ambulance Strike Team Reimbursement rates adopted by the California State Association of Counties (CSAC) as recommended by the Emergency Medical Services Administrators Association of California (EMSAAC). Reimbursement shall be "portal to portal" (time of dispatch to return to home base), and no billing for transport or other costs are allowed.

4. Every AST/MTF shall have a leader selected/approved by S-SV EMS. Preference will be given to those individuals who have completed the Ambulance Strike Team Leader training. Provider agencies may choose to assign additional personnel to accompany the leader for training purposes, but the cost of these additional personnel will not be reimbursed by the requesting entity, unless previously agreed to.

5. The following shall apply to AST/MTF deployments within the S-SV EMS region:

   - S-SV EMS will assign appropriate representatives (within the affected area whenever possible) to support/oversee the affected EMS system(s) and all deployed AST/MTF resources as long as necessary/appropriate.
   - S-SV EMS representatives will assess, identify and order (in coordination with the AST/MTF requesting/approving entity) additional AST/MTF support resources/personnel (EMS overhead, fleet maintenance, CISM, etc.).
   - As soon as incident conditions allow, the AST/MTF requesting/approving entity shall be responsible for providing ongoing support to the AST/MTF resources (food, lodging, medical supplies, fuel, etc.).

6. For deployments outside the S-SV EMS region, AST/MTF resources will respond to the requested reporting location and follow the direction of requesting entity or other appropriate incident management personnel.

Sierra – Sacramento Valley EMS Agency Program Policy		
Trauma Center Designation Criteria, Requirements & Responsibilities		
	Effective: 10/01/2025	Next Review: 07/2028	**509**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish Trauma Center designation criteria, requirements, and responsibilities.

AUTHORITY:

A. HSC § 1797.67, § 1797.88, § 1798.102, § 1798.150, § 1798.170, § 1798.172.

B. CCR, Title 22, Div. 9, Ch. 6.1.

DEFINITIONS:

A. **Level I Trauma Center –** A Level I Trauma Center has the greatest amount of resources and personnel for care of the injured patient. Typically, it is also a tertiary medical care facility that provides leadership in patient care, education, and research for trauma, including prevention programs.

B. **Level II Trauma Center –** A Level II Trauma Center offers similar resources as a Level I Trauma Center, differing only by the lack of research activities required for Level I Trauma Center designation.

C. **Level I and II Pediatric Trauma Center –** Level I and II Pediatric Trauma Centers focus specifically on pediatric trauma patients. Level I Pediatric Trauma Centers require some additional pediatric specialties and are research and teaching facilities.

D. **Level III Trauma Center –** A Level III Trauma Center is capable of assessment, resuscitation, and emergency surgery, if warranted. Injured patients are stabilized before transfer, if indicated, to a facility with a higher level of care according to pre-existing arrangements.

E. **Level IV Trauma Center –** A Level IV Trauma Center is capable of providing 24-hour physician coverage, resuscitation and stabilization to injured patients before they are transferred, if indicated.

POLICY:

A. Criteria for identification, treatment and transport of prehospital trauma patients shall be based on S-SV EMS Trauma Triage Criteria Policy (860) and General Trauma Management Protocol (T-1).

B. S-SV EMS will perform a trauma system needs assessment prior to designating any additional trauma centers in the S-SV EMS region.

C. The following criteria shall be met for a hospital to be designated as a Trauma Center 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. Meet all requirements contained in California Code of Regulations Title 22, Division 9, Chapter 7, for the applicable level of Trauma Center designation.

5. ***Continuously*** meet the minimum standards published in the current edition of the American College of Surgeons Committee on Trauma (ACS-COT) Resources for Optimal Care of the Injured Patient document.

6. ***Continuously*** meet the ACS-COT and/or S-SV EMS Trauma Center Verification requirements contained in this policy.

7. Agree to accept the transfer of major trauma patients whose clinical condition requires a higher level of care than can be provided at the sending facility unless the Trauma Center is on trauma diversion or internal disaster.

8. Have a written transfer agreement with a higher-level Trauma Center, if applicable, providing for the transfer of trauma patients whose clinical condition requires a higher level of care than can be provided at their facility.

9. Enter all required trauma patient data into the S-SV EMS regional trauma registry.

   - Each trauma center shall submit trauma patient data in an agreed upon format, and within the time requirements published in the most current edition of the ACS-COT Resources for the Optimal Care of the Injured Patient document.

- Each trauma center shall ensure that the data entered into the S-SV EMS regional trauma registry is valid and without known errors.
- Level I, II and III trauma centers located within the S-SV EMS region shall provide S-SV EMS with their American College of Surgeons Trauma Quality Improvement Program (ACS TQIP®) Benchmark Report on a bi-annual basis.

10. Submit all required trauma patient data to the California EMS Authority data management system, as required by California Code of Regulations Title 22, Division 9, Chapter 7.

11. Actively participate in the S-SV EMS regional trauma system quality improvement (QI) process, which includes required attendance at S-SV EMS Trauma QI meetings by the Trauma Medical Director and Trauma Program Manager.

12. Have a QI process in place to, at a minimum:

    - *Provide ongoing feedback related to trauma care for:*
        - *Transferring hospitals who transfer patients for trauma services.*
        - *EMS provider agencies for patients who meet trauma triage criteria.*
    - *Promptly resolve and/or develop Process Improvement Plans (PIPs) to address QI issues identified through the following processes:*
        - *Deficiencies/Opportunities for Improvement (OFI) identified by the ACS-COT during routine site reviews.*
        - *S-SV EMS QI process.*
        - *Internal QI process.*

13. Provide CE opportunities, a minimum of four (4) hours per year, for EMS personnel in areas of trauma care.

14. Maintain active injury prevention programs targeted at reducing preventable injuries in the community.

15. Pay the applicable initial/annual S-SV EMS Trauma Center designation fees.

D. Trauma Center diversion of patients meeting trauma triage criteria shall only occur during times of an internal disaster, or when emergent trauma services are otherwise unavailable.

1. The following entities shall be notified as soon as possible of any event resulting in trauma services being unavailable, and when trauma services are subsequently available:

    - S-SV EMS.
    - Trauma center emergency department – to include a status posting on EMResource indicating trauma services are unavailable.

- Appropriate adjacent trauma centers.
- Appropriate prehospital provider agencies.

2. An S-SV EMS ambulance patient diversion form describing such events shall be submitted to S-SV EMS by the end of the next business day.

PROCEDURE:

A. Any hospital seeking ***initial*** Trauma Center designation ***or currently designated S-SV EMS Trauma Centers seeking to change their designation level*** shall submit a letter of intent to the S-SV EMS Regional Executive Director. The letter of intent shall be on hospital letterhead and include a minimum of the following:

1. The requested level of Trauma Center designation and anticipated start date for the provision of trauma services.

2. Identification of the Trauma Program Medical Director, Trauma Program Manager ***Trauma PI RN*** and Trauma Program Registrar.

3. Confirmation of commitment and support by hospital administration and physician staff for the applicable level of Trauma Center designation, including signatures of the hospital Chief of Staff and Chief Executive Officer.

B. Within 90 calendar days of receiving a letter of intent that complies with the criteria listed in this section of the policy, S-SV EMS will perform a trauma system needs assessment. The S-SV EMS Regional Executive Director will consequently make a designation recommendation to the S-SV EMS JPA Governing Board of Directors based on the results of the trauma system needs assessment.

C. Upon direction from the S-SV EMS JPA Governing Board of Directors to proceed with the Trauma Center designation process, the following will occur:

1. S-SV EMS will establish a Trauma Center contract with the hospital.

2. ~~The hospital~~ ***Hospitals seeking initial S-SV EMS Trauma Center designation*** shall complete a Trauma Center consultative review:

- An ACS-COT Consultative Review is required for any hospital requesting Level I, II or III Trauma Center designation.
- An S-SV EMS Consultative Review is required for any hospital requesting Level IV Trauma Center designation.

3. The S-SV EMS Regional Executive Director, in consultation with the S-SV EMS Medical Director, will make a recommendation to the S-SV EMS JPA Governing

Board of Directors to grant or deny ***initial*** S-SV EMS Trauma Center designation based on the results of the consultative review, ***or based on the trauma needs assessment for Trauma Centers seeking to change their designation level.***

4. ~~The hospital~~ ***Hospitals seeking initial S-SV EMS Trauma Center designation*** shall obtain ACS-COT or Level IV S-SV EMS Verification within three (3) years of completion of the consultative review to maintain S-SV EMS Trauma Center designation.

D. Failure to maintain ACS-COT or Level IV S-SV EMS Verification or comply with any of the criteria/standards contained in this policy, applicable statutes/regulations and/or S-SV EMS Trauma Center contracts may result in probation, suspension, denial, or revocation of S-SV EMS Trauma Center designation.

E. The S-SV EMS JPA Governing Board of Directors shall have final authority in any Trauma Center designation matters.

Sierra – Sacramento Valley EMS Agency Program Policy			
ALS Provider Agency Inventory Requirements			
	Effective: 10/01/2025	Next Review: 07/2028	**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~~ 2
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			
ALS Specialty Program Provider Inventory Requirements			
	Effective: 10/01/2025	Next Review: 07/2028	**702**
	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 S-SV EMS approved ALS specialty program providers (Bike Team, Fireline and Ski Patrol).

AUTHORITY:

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

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

C. FIRESCOPE California Incident Command System Position Manual Fireline Emergency Medical Technician/Fireline Paramedic (EMTF/EMPF) ICS 702 (12/2016)

POLICY:

A. ALS specialty program provider personnel 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.

B. Any S-SV EMS approved ALS service provider may utilize appropriately trained personnel to provide ALS bike team services during special events.

C. S-SV EMS approval is required to provide ALS Fireline and ALS Ski Patrol services.

D. The Fireline Paramedic shall report to the incident with the full complement of EMS equipment/supplies. The Incident Medical Unit will re-supply the Fireline Paramedic to the best of their ability.

E. Fireline Paramedic providers should stock sufficient quantities of medical supplies and medications (especially controlled substances) to avoid the need for mid-incident restock. Incident Medical Units may not be capable of re-supplying controlled substances.

F. Controlled substances shall be secured in accordance with S-SV EMS Management of Controlled Substances policy (710) and the providers' policies and procedures.

Equipment/Supplies	Bike Team	Fireline	Ski Patrol
Portable Radio or Mobile Telephone	1	1	1
NEMSIS V3.5 Compliant Electronic PCR System	1	1	1
Pen, Pencil, Writing Pad	1 each	1 each	1 each
Refusal of EMS Care Forms	3	3	3
DMS All Risk Triage Tags	5	5	5
Non-Sterile Gloves	10/crew	10/crew	10/crew
Infection Control Kit/Mask	1/crew	1/crew	1/crew
Antiseptic Hand Wipes or Hand Sanitizer	5 or 1	5 or 1	5 or 1
Red Biohazard Bag	1	1	1
Adult BP Cuff	1	1	1
Pediatric BP Cuff	1	0	1
Stethoscope	1	1	1
Flashlight or Penlight	1	1	1
Sharps Container	1	1	1
Spit Hood	Optional	Optional	Optional
Emergency/Heated Blanket	1	2	1
Disposable Emesis Bags	2	Optional	2
Length Based Pediatric Resuscitation Tape	1	0	1
Thermometer (with covers as needed) Hypothermic Capable Required for Ski Patrol	Optional	1	1
Pulse Oximeter	1	1	1
Compact Semi-Automatic Defibrillator with screen, battery, monitoring and defibrillation electrodes, electrode wires and EKG paper as necessary	1	1	1
Glucometer	1	1	1
Glucometer Test Strips	4	4	4
Lancets	4	4	4
Portable Oxygen Cylinder	1	0	1
Portable Oxygen Regulator with Liter Flow	1	0	1
Adult Nasal Cannula	1	0	1
Adult Non-Rebreather Oxygen Mask	1	0	1
Pediatric Oxygen Mask	1	0	1
Handheld Nebulizer	1	0	1

Equipment/Supplies	Bike Team	Fireline	Ski Patrol
Adult BVM (with appropriate size BVM masks)	1 each	1 each	1 each
OPAs	1 kit	1 kit	1 kit
NPAs	1 kit	1 kit	1 kit
Water Soluble Lubricant	1	1	1
Handheld Manual Suction Device	1	1	1
Laryngoscope Handle & Appropriate Size Blades	1 set	1 set	1 set
Magill Forceps: Adult & Pediatric	1 each	1 adult	1 each
Cuffed Endotracheal Tubes: Sizes 6.5 & 7.5	1 each	1 each	1 each
Endotracheal Tubes: Sizes 6.0, 7.0, 8.0 & 8.5	Optional	Optional	Optional
Adult Endotracheal Tube Stylet	1	1	1
Flex Guide ETT Introducer	1	1	1
i-gel Airway Device: Sizes 1.0, 1.5, 2.0, 2.5	Optional	0	Optional
i-gel Airway Device: Size 3	Optional	Optional	Optional
i-gel Airway Device: Sizes 4 & 5	1 each	1 each	1 each
Advanced Airway Tube/Device Holder	1	1	1
Colorimetric CO2 Detector	1	1	1
Adult (4.0 mm) & pediatric (2.0 mm) Rusch QuickTrach Needle Cricothyrotomy Device	Optional	Optional	1 set
Minimum 14 ga x 3.25” Needle Thoracostomy Catheter with Capnospot® Decompression Indicator **OR** Simplified Pneumothorax Emergency Air Release (SPEAR®) Device	2	2	2
Rigid C-Collars: Adjustable Adult & Pediatric	1 each	1 adult	1 each
Backboard	0	0	1
Pelvic Binder	0	0	1
Moldable Splint or Extremity Splints	1 each	1 each	1 each
Bandage Shears	1	1	1
Band-Aids	10	10	10
1” Tape	1	1	1
Non-Sterile 4x4 Compresses	10	10	10
Sterile 4x4 Compresses	5	5	5
Kling/Kerlix Rolls	2	2	2
Coban Wraps	0	2	0

Equipment/Supplies	Bike Team	Fireline	Ski Patrol
Ace Bandage	1	2	1
Triangular Bandages	2	2	2
Trauma Dressing	2	4	2
Petroleum Gauze	2	2	2
Burn sheet	Optional	1	Optional
Chest Seal	Optional	Optional	Optional
Approved Hemostatic Agent	Optional	Optional	Optional
Approved Commercial Tourniquet Device	2	2	2
Cold Packs	2	2	0
Hot Packs	0	0	2
Eye Wash	0	1	0
Splinter Kit	0	1	0
Alcohol Preps	5	5	5
Chlorhexidine Swabs/Skin Prep	2	2	2
IV Start Pack	2	2	2
IV Catheter: Sizes 14 ga, 16 ga, 18 ga, 20 ga	2 each	2 each	2 each
IV Catheter: Size 22 ga	2 each	0	2 each
IV Administration Set (Macro-Drip or Selectable)	2	2	2
IV Extension Set or Saline Lock	2	2	2
3-Way Stopcock	1	1	1
10 mL NS Vials or Pre-Filled Syringes	Optional	Optional	Optional
Syringes (1 mL and 10 mL)	2 each	2 each	2 each
22 ga/25 ga Safety Injection Needles	2	2	2
Vial Access Cannulas	2	2	2
Mucosal Atomizer Device (MAD)	2	2	2
Adult IO Equipment (EZ-IO, SAM IO, BD IO or NIO)	1 set	Optional	1 set
Pediatric IO Equipment (EZ-IO, BIG or NIO)	1 set	0	1 set
IV Fluid Pressure Infusion Bag	1	Optional	1
Normal Saline 1000 mL (2 – 500 mL bags OK)	2	1	1
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*)	Optional (see note*)

Equipment/Supplies	Bike Team	Fireline	Ski Patrol
Acetaminophen – IV (1000 mg)	1	1	1
Adenosine (6 mg/2 mL)	3	3	3
Albuterol (2.5 mg/3 mL or MDI)	2	1	2
Amiodarone (150 mg/3 mL)	3	3	3
Aspirin (chewable tablets)	8	20	8
Atropine (1 mg/10 mL)	2	2	2
Dextrose 10% (250 mL bag)	1	1	1
Diphenhydramine (50 mg/1 mL)	2	2	2
Diphenhydramine elixir (100 mg)	Optional	1	Optional
Epinephrine 1:1,000 (1 mg/1 mL vial/ampule)	2	4	2
Epinephrine 1:10,000 (1 mg/10 mL)	4	2	4
Glucagon (1 mg)	1	1	1
Glucose Oral Product (minimum 15 gm)	1	1	1
Ipratropium (500 mcg/2.5 mL)	1	0	1
Ketorolac (30 mg/1 mL)	1	1	1
Lidocaine 2% (100 mg/5 mL)	1	Optional	1
Magnesium Sulfate (1 gm/2 mL)	2 gm	2 gm	2 gm
Naloxone (2 mg/2 mL)	2	2	2
Nitroglycerin 0.4 mg (tablet bottle or aerosol spray)	1	1	1
Ondansetron (4 mg/2 mL)	1	1	1
Ondansetron Oral Disintegrating Tablets (4 mg)	2	2	2
Racemic Epinephrine	Optional	Optional	Optional
Tranexamic Acid (1 gm)	~~1~~ 2	~~1~~ 2	~~1~~ 2
Controlled Substances Storage Container	1	1	1
Carpuject Holder (if necessary)	1	1	1

Equipment/Supplies	Bike Team	Fireline	Ski Patrol
Fentanyl (50 mcg/1 mL concentration)	200 mcg minimum 400 mcg maximum	500 mcg	200 mcg minimum 400 mcg maximum
Ketamine (50 mg/1 mL concentration)	200 mg minimum 1000 mg maximum	200 mg minimum 1000 mg maximum	200 mg minimum 1000 mg maximum
Midazolam (5 mg/1 mL concentration)	10 mg minimum 20 mg maximum	20 mg	10 mg minimum 20 mg maximum

Sierra – Sacramento Valley EMS Agency Program Policy			
Management Of Controlled Substances			
	Effective: 10/01/2025	Next Review: 04/2028	**710**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To ensure accountability in the management of controlled substances utilized by ALS/ LALS prehospital service provider agencies/personnel.

AUTHORITY:

A. Code of Federal Regulations, Title 21.

B. HSC, Div. 2.5 & Div. 10.

C. CCR, Title 22, Div. 9.

POLICY:

A. S-SV EMS Approved Controlled Substances:

1. Fentanyl.

2. Ketamine.

3. Midazolam.

~~4. Morphine.~~

B. Obtaining Controlled Substances:

Prehospital service provider agencies shall obtain controlled substances through one of the following methods:

1. The medical director of the prehospital service provider agency.

2. The base/modified base hospital shall ensure that a mechanism exists for prehospital service provider agencies to contract for the provision of controlled substances.

C. Prehospital Service Provider Agency Controlled Substances Policies/Procedures:

1. Prehospital service provider agencies shall ensure that security mechanisms and procedures are established for controlled substances, including, but not limited to:

    - Controlled substance ordering & order tracking.
    - Controlled substance receipt & accountability.
    - Controlled substance master supply storage, security & documentation.
    - Controlled substance labeling & tracking.
    - Controlled substance vehicle storage & security.
    - Controlled substance usage procedures & documentation.
    - Controlled substance reverse distribution.
    - Controlled substance disposal.
    - Controlled substance re-stocking procedures.

2. Prehospital service provider agencies shall ensure that mechanisms for investigation and mitigation of suspected controlled substance tampering or diversion are established, including, but not limited to:

    - Controlled substance testing.
    - Controlled substance discrepancy reporting.
    - Controlled substance tampering, theft & diversion prevention/detection.
    - Controlled substance usage audits.

D. Controlled Substance Security:

1. AEMT II and paramedic personnel are responsible for maintaining the correct inventory of controlled substances at all times.

2. All controlled substances shall be stored/secured in one of the following manners:

    - Preferred: Secured in a commercially developed drug locker specifically designed for controlled substance storage. The drug locker shall be securely mounted to the vehicle to prevent theft and shall have an electronic access keypad with an individual PIN code assigned to each individual authorized to access/utilize controlled substances. The drug locker shall be able to produce an electronic audit trail showing the date, time and PIN code of each instance the locker was opened. The double lock requirement does not apply to providers storing their controlled substance utilizing this method.
    - Alternative: Secured in the vehicle under double lock, in an appropriate manner to prevent theft. The outside driver/passenger/patient access door(s) of the vehicle shall not be considered one of the two locks.

3. Prehospital service provider agencies shall abide by all State and Federal laws/ regulations related to the storage/security of controlled substances.

4. Each unit shall maintain a standardized written record of the controlled substance inventory. Controlled substance inventory and administration records shall be maintained in accordance with all applicable State and Federal laws/regulations.

5. Controlled substances shall be inventoried any time there is a change in personnel. The key to access the controlled substances, if applicable, shall be in the custody of the individual who performed the inventory.

6. Any discrepancies in the controlled substance count shall be reported as soon as possible to an appropriate supervisor and the issuing agent. A discrepancy report must be appropriately documented.

E. Controlled Substances Administered to Patients:

1. Controlled substances shall be administered in accordance with applicable S-SV EMS policies/protocols.

2. The following information must be documented on a controlled substance administration record:

   - Date & time administered.
   - Unit number.
   - Patient name.
   - Drug administered.
   - Amount administered.
   - AEMT II or paramedic signature & number.

3. If only a portion of the controlled substance was administered to the patient, the remainder shall be wasted in the presence of a registered nurse or physician at the receiving hospital, or the provider's immediate supervisor. Both parties shall document this action on the controlled substance administration form.

4. Controlled substance inventories/logs are subject to inspection by the California Board of Pharmacy, Bureau of Narcotic Enforcement Administration of the Justice Department, Federal Drug Enforcement Administration, S-SV EMS, the issuing agent, and/or officers of the prehospital service provider agency.

Sierra – Sacramento Valley EMS Agency Program Policy			
Unified Paramedic Optional Scope Of Practice For Qualified Transport Programs			
	Effective: 10/1/2025	Next Review: 04/2028	**806**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE: **Routine Review - No Changes/Markup**

To specify the unified paramedic optional scope of practice for qualified transport programs, and establish provider requirements and personnel qualifications for utilization.

AUTHORITY:

A. HSC, Div. 2.5, § 1797.67, 1797.88, 1798.102, 1798.150, 1798.170 & 1798.172.

B. CCR, Title 22, Div. 9.

DEFINITIONS:

A. **Air Ambulance Provider –** A prehospital service provider agency that utilizes specially constructed, modified or equipped aircraft for the primary purpose of responding to emergency incidents and transporting critically ill and/or injured patients. An air ambulance provider utilizes a medical flight crew consisting of a minimum of two attendants certified or licensed in advanced life support.

B. **CAMTS –** Commission on Accreditation of Medical Transport Systems.

C. **CAMTS Emergency Critical Care (ECC) Accreditation –** A level of accreditation issued by CAMTS verifying that the medical transport provider has met all Emergency Critical Care (ECC) level accreditation standards. CAMTS recognizes FP-C for ECC accreditation, but also requires the FP-C to be paired with a qualified transport nurse partner.

D. **FP-C –** A 'Certified Flight Paramedic' educated and trained in critical care transport and flight medicine, who holds a current certification as an FP-C by the International Board of Specialty Certification (IBSC).

E. **FP-C in training –** A paramedic who has completed the qualified transport program's initial training but has not completed their FP-C testing/certificate. The FP-C in training must pass the FP-C exam by the end of their second year with the qualified transport program.

F. **Qualified Flight Paramedic –** A California licensed, S-SV EMS accredited and FP-C certified/FP-C in training paramedic who meets the requirements for utilization of the unified paramedic optional scope of practice. These individuals have at least three (3) years of critical care experience and have completed the qualified transport program's initial academy training with additional education in flight and altitude physiology. They work for a qualified transport program and are paired with a qualified transport nurse.

G. **Qualified Transport Program –** An S-SV EMS permitted air ambulance provider that has met the requirements to participate in the unified paramedic optional scope of practice program by obtaining/maintaining CAMTS ECC accreditation, and meeting the training, education, competencies, QI and medical direction requirements.

H. **Qualified Transport Nurse –** A registered nurse with at least three (3) years of critical care experience, who has completed the qualified transport program's initial academy training and is working on obtaining the CEN, CCRN, CFRN or CTRN certification required by the CAMTS ECC accreditation. A qualified transport nurse is employed by and practicing with the qualified transport program.

I. **Qualified Transport Program Medical Director –** A physician board certified/eligible in emergency medicine, who meets the CAMTS ECC accreditation medical director requirements.

J. **Qualified Transport Program Physician –** A physician affiliated with the qualified transport program, who is not the qualified transport program medical director, who is board certified/eligible in emergency medicine or in the specialty appropriate for the scope of services being provided (neonate, pediatrics, critical care, etc.).

POLICY:

A. The unified paramedic optional scope of practice procedures include:

1. Pediatric intubation.

2. Rapid sequence intubation/induction (RSI) medication administration, including sedatives, paralytics, analgesics, and induction agents.

3. Ventilator initiation, maintenance and management.

B. Prehospital service provider agencies shall meet the following requirements to be approved by S-SV EMS as a qualified transport program:

1. Have a current S-SV EMS air ambulance provider permit.

2. Obtain/maintain CAMTS ECC accreditation.

3. Have a qualified transport program medical director.

4. Utilize all unified paramedic optional scope of practice procedures.

5. Provide all required optional scope of practice training, education and competency testing, which has been reviewed/approved by S-SV EMS.

6. Allow only qualified flight paramedics to utilize the unified paramedic optional scope of practice.

7. Have a unified paramedic optional scope of practice QI program, which has been reviewed/approved by S-SV EMS.

8. Collect/submit unified paramedic optional scope of practice data to S-SV EMS. Data submission elements/frequency shall be established, and modified as necessary, by S-SV EMS pursuant to EMS Medical Directors Association of California (EMDAC) and California Emergency Medical Services Authority (EMSA) requirements.

C. Paramedic personnel shall meet the following requirements to be approved by S-SV EMS to utilize the unified paramedic optional scope of practice:

1. Have a current California paramedic license.

2. Have a current S-SV EMS paramedic accreditation.

3. Completed a minimum of 200 hours of training conducted by the qualified transport program, and meet the FP-C certified/FP-C in training requirements.

4. Follow the qualified transport program provider's policies/protocols for utilization of unified paramedic optional scope of practice procedures.

5. Remain competent/proficient in the unified paramedic optional scope of practice by passing required competency testing as follows:

   - Pediatric Intubation: Quarterly (every 3 months)
   - RSI: Quarterly (every 3 months)
   - Ventilator Use: Annually

6. Be employed by a qualified transport program provider and functioning under the oversight of this provider during any transports where the unified paramedic optional scope of practice is utilized.

7. Be partnered with a qualified transport nurse, qualified transport program medical director or qualified transport program physician during any transports where the unified optional scope of practice is utilized.

D. Unified paramedic optional scope of practice medical control:

1. Medical control for the utilization of the unified paramedic optional scope of practice shall remain the primary responsibility of S-SV EMS, according to established S-SV EMS policies/protocols, and is delivered in conjunction with the qualified transport program provider's policies/protocols specific to the utilization of the unified paramedic optional scope of practice procedures.

2. During an interfacility transport, online medical control may be obtained from the sending physician, receiving physician, Qualified Transport Program Medical Director, or Qualified Transport Program Physician as necessary.

Sierra – Sacramento Valley EMS Agency Program Policy			
Unsafe Scene			
	Effective: 10/1/2025	Next Review: 07/2028	**854**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE: **New Policy - No Markups Applicable**

To establish procedures for mitigating unsafe scenes and provide direction to EMS personnel who determine that a scene cannot be made safe.

AUTHORITY

A. HSC, Division 2.5, § 1797.204, § 1797.220, § 1798.

B. CCR, Title 22, Div. 9.

DEFINITIONS:

A. **Appropriate Agency –** Any public or private agency, department, or company who could respond to an unsafe scene to make the scene safe for EMS personnel, including, but not limited to:

1. Law enforcement.
2. Animal control.
3. Fire departments/districts.
4. Environmental health.
5. Power/electric companies.
6. Tow companies.

B. **Safe Scene –** Any scene that does not pose a known or assumed threat to EMS personnel safety.

C. **Staging –** A safe location, normally within close proximity to the incident scene, where EMS personnel/resources can temporarily assemble until the scene can be made safe or EMS personnel determine that a scene cannot be made safe according to the procedures contained in this policy.

D. **Unsafe Scene** – Any scene that poses a known or assumed threat to EMS personnel safety, including, but not limited to:

1. Aggressive/violent subject, patient, or bystander(s).
2. The presence of aggressive/dangerous animals.
3. Hazardous material incidents.
4. Downed powerlines.
5. Structural instability.
6. Civil unrest.
7. The possible presence of weapons.

POLICY:

A. EMS personnel should not enter or be encouraged to enter an unsafe scene.

B. If a scene becomes unsafe after their arrival, EMS personnel should retreat to a safe location as quickly as possible.

C. EMS personnel shall request an appropriate agency to respond to an unsafe scene to attempt to make the scene safe.

PROCEDURE:

A. If EMS personnel are informed that a scene is unsafe, arrive to find an unsafe scene, or a scene becomes unsafe after their arrival, they shall request an appropriate agency to respond to make the scene safe:

1. If EMS personnel have arrived at a scene that is unsafe or later becomes unsafe:

- They may attempt to verbally de-escalate the situation, if applicable.
- They should retreat from the scene to a safe location as quickly as possible.
- Once they are in a safe location, EMS personnel shall inform dispatch of the situation and request an appropriate agency to respond.

2. Once staging, EMS personnel shall request via dispatch an ETA of the appropriate agency.

3. If an extended ETA is given, or the requested appropriate agency is unable/ unwilling to respond, EMS personnel shall immediately contact their supervisor for directions to either continue staging until the scene is safe or return to service. In making this determination, supervisor staff shall consider the following:

    - The nature of the original request for service.
    - What is causing the scene to be unsafe.
    - Alternative appropriate agencies that can be requested to make the scene safe.

4. EMS personnel may also consult with a base/modified base hospital to explain the unsafe scene and discuss possible alternative options.

B. If EMS personnel are staging due to an unsafe scene, they are considered to have 'arrived at scene' and shall follow the S-SV EMS Documentation Policy accordingly. The following information shall be documented in the ePCR for any incident where EMS personnel determine that a scene cannot be made safe and return to service:

1. The narrative section shall include the following additional information:

    - The nature of the call reported by dispatch.
    - The cause of the unsafe scene.
    - How EMS personnel remained safe, and any actions taken by EMS personnel on scene to attempt to mitigate the unsafe scene.
    - Actions taken to get an appropriate agency to respond to and/or mitigate the unsafe scene.
    - A detailed explanation of the discussion with the supervisor and the direction provided.
    - Identification of the base/modified base hospital contacted, and any direction provided by the base/modified base hospital, if applicable.
    - A statement indicating that EMS personnel returned to service due to an unsafe scene.

2. 'Patient Access' should be selected under the 'Transport Delay' drop down box.

3. 'Back in Service, No Care/Support Services Required' should be selected under the 'Crew Disposition' drop down box.

C. Prehospital provider agencies shall notify S-SV EMS (DutyOfficer@ssvems.com) by the end of the next business day of any incident where their EMS personnel determined that a scene could not be made safe and return to service.

Sierra – Sacramento Valley EMS Agency Program Policy			
Communication Failure			
	Effective: 10/01/2025	Next Review: 04/2028	**890**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To define conditions under which prehospital personnel may utilize certain *limited advanced life support (LALS)* or advanced life support (ALS) procedures/medications in the event of a communication failure.

AUTHORITY:

A. HSC, Division 2.5, § 1797.84, 1797.185, 1797.220, 1798, 1798.100, & 1798.102.

B. CCR, Title 22, Division 9.

POLICY:

If during patient care an AEMT or paramedic attempts but cannot establish/maintain adequate base/modified base hospital contact:

A. They may continue to utilize procedures/medications listed in S-SV EMS standing order policies/protocols, as warranted by the patient's condition.

B. Procedures/medications designated as Base/Modified Base Hospital Order Only may be utilized under communication failure conditions, as warranted by the patient's condition.

C. The following procedures/medications designated as Base/Modified Base Hospital Physician Order Only shall not be utilized without a direct order from a base/modified base hospital physician:

1. Terminating resuscitative efforts *in adult pulseless arrest patients,* utilizing the BLS termination of resuscitation criteria *or when all ALS termination of resuscitation criteria are not met* ~~if no ROSC in an adult pulseless arrest patient~~ (Reference No. C-1/*C-1 LALS*).

2. Administration of activated charcoal (Reference No. M-5/*M-5 LALS*).

3. Utilization of the Nerve Agent Treatment Protocol (Reference No. E-8/*E-8 LALS*).

PROCEDURE:

In each instance where LALS/ALS procedures and/or medications are utilized under communication failure conditions, the AEMT or paramedic shall:

A. Attempt to establish base/modified base hospital contact by telephone and/or radio throughout the call, as circumstances permit.

B. Provide a verbal report to the base/modified base hospital MICN or physician upon voice contact, if applicable.

C. Document the existence and reason for the communication failure condition in the patient care report (PCR).

Sierra – Sacramento Valley EMS Agency Program Policy			
MICN Authorization/Reauthorization			
	Effective: 10/01/2025	Next Review: 04/2028	**915**
	Approval: Troy M. Falck, MD – Medical Director		SIGNATURE ON FILE
	Approval: John Poland – Executive Director		SIGNATURE ON FILE

PURPOSE:

To establish a process for obtaining authorization or reauthorization as a Mobile Intensive Care Nurse (MICN) within the S-SV EMS region. MICN means a registered nurse (RN) authorized by the S-SV EMS Medical Director to provide instructions to prehospital EMS personnel according to approved S-SV EMS policies/protocols.

AUTHORITY:

A. HSC, Div. 2.5, § 1797.56, 1797.204, 1797.206, 1797.218, 1797.220, 1798, 1798.2, 1798.100, 1798.102 & 1798.105.

B. CCR, Title 22, Div. 9.

C. BPC, § 2725.

POLICY:

A. An individual shall comply with the initial authorization requirements and obtain S-SV EMS MICN authorization prior to functioning as a MICN in the S-SV EMS region.

B. A MICN shall comply with the reauthorization requirements, prior to the expiration date of their current authorization, to maintain S-SV EMS MICN authorization. Failure to comply with the reauthorization requirements means that the MICN has failed to maintain authorization and shall not function as a MICN in the S-SV EMS region until all reauthorization requirements are met.

C. A MICN shall only provide instructions to prehospital personnel when they are on-duty in a S-SV EMS base hospital emergency department.

PROCEDURE:

MICN Initial Authorization Requirements:

A. To be eligible for initial MICN authorization, an individual shall comply with the following requirements:

1. Be currently licensed as an RN in California.

2. Be currently employed in a S-SV EMS base hospital emergency department and be recommended for MICN authorization by the base hospital.

3. Have a minimum of six months (1040 hours) of clinical experience within the last 24 months in an acute care hospital emergency department.

4. Meet one of the following training program criteria:

    - Successful completion of a S-SV EMS approved MICN training program (including the four-hour ground ambulance ride-along and base hospital orientation components) within the previous 12 months.
    - Successful completion of a S-SV EMS approved MICN training program within the previous 12 – 24 months, successful completion of a MICN training program from another California LEMSA within the previous 24 months, or possess a current/valid MICN authorization from another California LEMSA, and complete the following additional requirements within the previous 90 days:
        - A minimum four-hour ride-along with a S-SV EMS approved ALS 911 ground ambulance provider, which includes two ALS contacts, or two ALS patient scenarios conducted by the paramedic.
        - A base hospital orientation with the S-SV EMS designated base hospital.

5. Attend the S-SV EMS Paramedic Accreditation course within the last 90 days (note: this training may also be conducted by S-SV EMS representatives during the initial MICN training program).

6. Submit a completed MICN initial authorization application.

7. Provide documentation/evidence of the items listed above, in addition to copies of the following current/valid items:

    - U.S. state-issued driver's license or photo identification card.
    - Healthcare Provider CPR recognition.
    - ACLS recognition.
    - PALS or APLS recognition.

8. Pay the S-SV EMS MICN initial authorization fee.

B. S-SV EMS will issue a MICN authorization certificate within ten business days to eligible individuals who apply for initial MICN authorization and comply with the initial authorization requirements listed in this policy. The effective date of the MICN authorization certificate will be the day the certificate is issued, and the expiration date will be the last day of the month two years from the effective date of the initial authorization.

MICN Reauthorization:

A. A MICN shall comply with the following requirements, prior to the expiration date of their current authorization, to be eligible for S-SV EMS MICN reauthorization:

1. Submit a completed MICN reauthorization application.

2. Maintain and provide copies of the following current/valid items:

   - California RN license.
   - U.S. state-issued driver's license or photo identification card.
   - Healthcare Provider CPR recognition.
   - ACLS recognition.
   - PALS or APLS recognition.

3. Complete 12 hours of EMS continuing education during the current authorization cycle as follows:

   - ~~A minimum of~~ *Field care audits (four hours) – Review of base hospital audio tapes and/or written patient care records.* ~~of prehospital care focused recorded or written patient care reports.~~
   - *Field experience (four hours)* ~~– A minimum four-hour~~ Ride-along with a S-SV EMS approved ALS 911 ground ambulance provider, which *must* include two ALS contacts, or two ALS patient scenarios conducted by the paramedic.
   - ~~The remaining four hours may be from either of the categories above, or the MICN may complete an additional four hour ride-along with a S-SV EMS approved ALS non-transport provider, which includes two ALS contacts, or two ALS patient scenarios conducted by the paramedic.~~
   - *EMS CE topics (four hours) – CEs may be obtained from one of the sources:*
     - *Attendance at an S-SV EMS Paramedic Accreditation course (limit – one per year).*
     - *Attendance at an S-SV EMS REMAC meeting (limit – two per year).*
     - *Completion of the S-SV EMS Annual Regional Training Module.*
     - *Attendance at formal field care case reviews.*
     - *EMS related continuing education offered by an S-SV EMS approved CE provider.*

4. Maintain employment in a S-SV EMS base hospital emergency department and provide documentation of base hospital reauthorization recommendation.

5. Pay the S-SV EMS MICN reauthorization fee.

B. S-SV EMS will issue a MICN authorization certificate within ten business days, to eligible individuals who apply for MICN reauthorization and comply with the MICN reauthorization requirements listed in this policy. If the reauthorization requirements are met within six months prior to the current authorization expiration date, the effective date of reauthorization certificate will be the date immediately following the expiration date of the current authorization certificate and will expire two years from the day prior to the effective date. If the reauthorization requirements are met greater than six months prior to the current authorization certificate expiration date, the effective date of reauthorization certificate will be the date the individual applied for reauthorization, and the authorization certificate expiration date will be the last day of the month two years from the effective date.

MICN Reauthorization After Lapse:

A. In addition to the reauthorization requirements specified in this policy, an individual with a lapsed MICN authorization shall also meet the following requirements to be eligible for reauthorization:

1. If the authorization has lapsed for less than 12 months, the MICN shall attend the S-SV EMS Paramedic Accreditation course within the previous 90 days.

2. If the authorization has been lapsed between 12 – 24 months, the MICN shall:

   - Attend the S-SV EMS Paramedic Accreditation course within the previous 90 days.
   - Complete a base hospital MICN re-orientation with the S-SV EMS base hospital within the previous 90 days.
   - Complete an additional four-hour ride-along with a S-SV EMS approved ALS 911 ground ambulance provider, which includes two additional ALS contacts, or two additional ALS patient scenarios conducted by the paramedic (total of eight hours of ambulance ride-along). At least four hours of ambulance ride along shall be completed within the previous 90 days.

3. If the authorization has lapsed for greater than 24 months, all initial authorization requirements must be met.

B. S-SV EMS will issue a MICN authorization certificate within ten business days, to eligible individuals who apply for MICN reauthorization and successfully complete the requirements listed in this policy. The effective date of the MICN reauthorization certificate will be the day the certificate is issued, and the certificate expiration date will be the last day of the month two years from the effective date of the reauthorization certificate.

APPLICATION PROCESSING:

A completed MICN authorization/reauthorization application and all required supporting documentation must be submitted to S-SV EMS prior to processing.

S-SV EMS Agency

Policy/Protocol Manual Update #77

Markup ALS/BLS Protocols

Effective October 1, 2024

Note: Final versions of approved protocols will be published at www.ssvems.com and on the S-SV EMS mobile applications prior to October 1, 2024

Sierra – Sacramento Valley EMS Agency Treatment Protocol

Non-Traumatic Pulseless Arrest

C-1

Approval: Troy M. Falck, MD – Medical Director | Effective: 10/01/2025

Approval: John Poland – Executive Director | Next Review: 04/2028

MANUAL CHEST COMPRESSIONS

- Rate: 100-120/min
- Depth: 2 inches - allow full chest recoil
- Minimize interruptions (≤10 secs)
- Rotate compressors every 2 mins
- Perform CPR during AED/defibrillator charging
- Resume CPR immediately after shock

MECHANICAL CHEST COMPRESSION DEVICES

Indications

- Adult pt (≥15 yo)

Contraindications

- Pt does not fit the device
- 3rd trimester pregnancy

ⓘ Apply following completion of at least one manual CPR cycle, or at the end of a subsequent cycle

ⓘ Use in accordance with manufacturer guidelines

DEFIBRILLATION & GENERAL PT MANAGEMENT

- Analyze rhythm & check pulse after every 2 min CPR cycle
- Biphasic manual defibrillation detail:
  - Follow manufacturer recommendations
  - If unknown, start at 200 J (subsequent doses should be equivalent or higher)
- Movement of pt may interrupt CPR or prevent adequate depth and rate of compressions
- Consider resuscitation on scene up to 20 mins
- Go to ROSC protocol (C-2) if ROSC is obtained

ADVANCED AIRWAY MANAGEMENT

- Consider/establish advanced airway at appropriate time during resuscitation
- Do not interrupt chest compressions to establish an advanced airway
- Waveform capnography (if available) shall be used on all pts with an advanced airway in place
  - An abrupt increase in $PETCO_2$ is indicative of ROSC
  - Persistently low $PETCO_2$ levels (<10 mmHG) suggest ROSC is unlikely

TREAT REVERSIBLE CAUSES

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen Ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**amponade, cardiac
- **T**ension pneumothorax
- **T**hrombosis, pulmonary
- **T**hrombosis, cardiac
- **T**oxins

ⓘ Consider early transport of pts who have reversible causes that cannot be adequately treated in the prehospital setting

ⓘ Contact the base/modified base hospital for consultation & orders as appropriate

ⓘ Refer to Hypothermia & Avalanche/Snow Immersion Suffocation Resuscitation Protocol (E-2) or Traumatic Pulseless Arrest Protocol (T-6) as appropriate

Note: There was insufficient space to show all markup on this page - yellow highlighted sections to the right is new/ revised language only

BLS TERMINATION OF RESUSCITATION (TOR)

Base/Mod. Base Hosp. Physician Order Required

- BLS providers may use the following TOR criteria when ALS is not available (**all 3 must apply**):

1. Arrest not witnessed by EMS
2. No AED shocks delivered
3. No ROSC after 3 rounds of CPR/AED analysis

ALS TERMINATION OF RESUSCITATION (TOR)

- ALS providers may use the following TOR criteria:

1. Arrest not witnessed by EMS
2. No AED shocks or defibrillations delivered
3. No ROSC after full ALS care

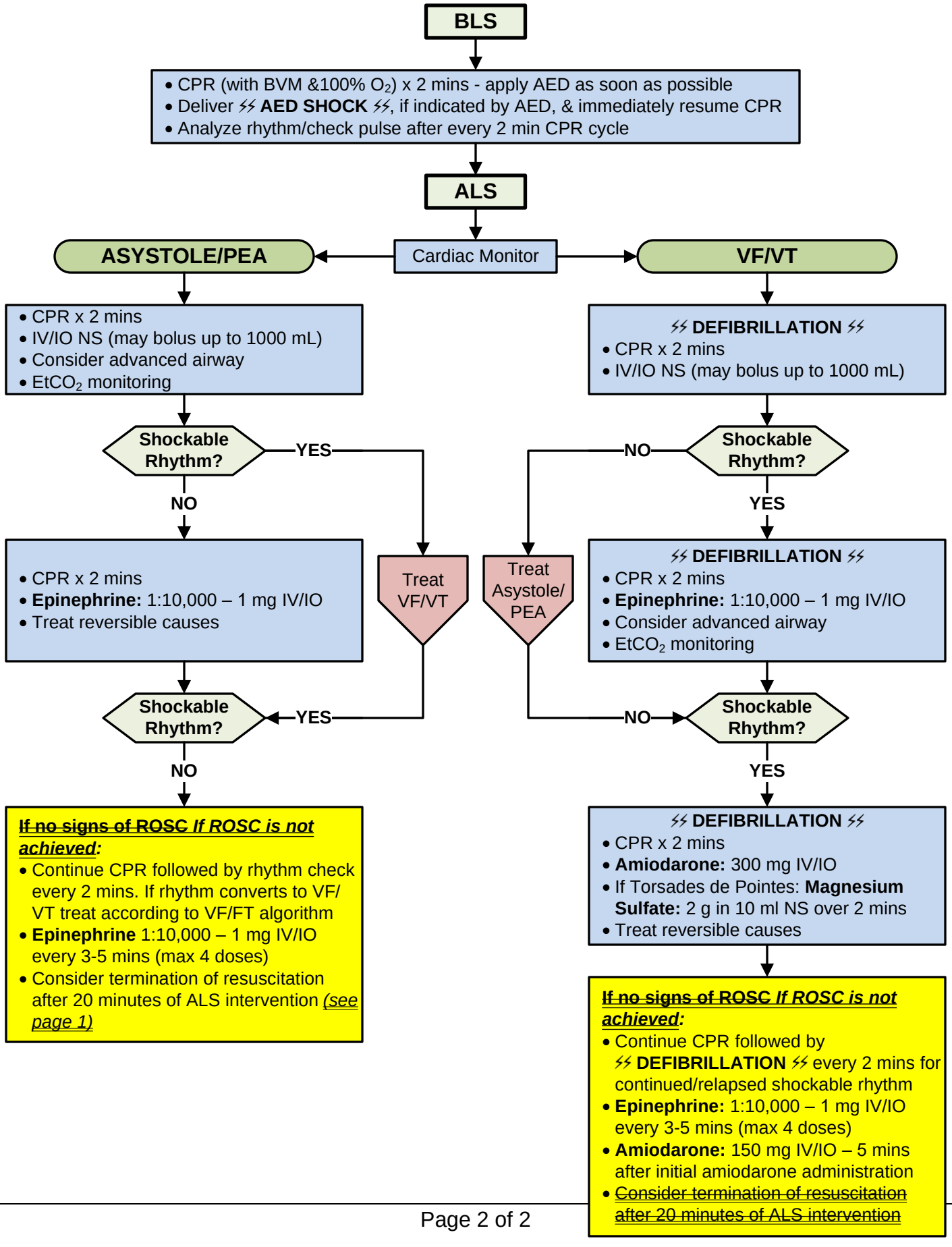
Base/Mod. Base Hosp. Physician Order only required for pt's not meeting all 3 ALS criteria

SPECIAL TOR CIRCUMSTANCES

- In the event of communication failure, BLS/ALS providers may terminate resuscitation on pts requiring base/modified base hospital physician order when rescuers are exhausted or physically unable to continue resuscitation

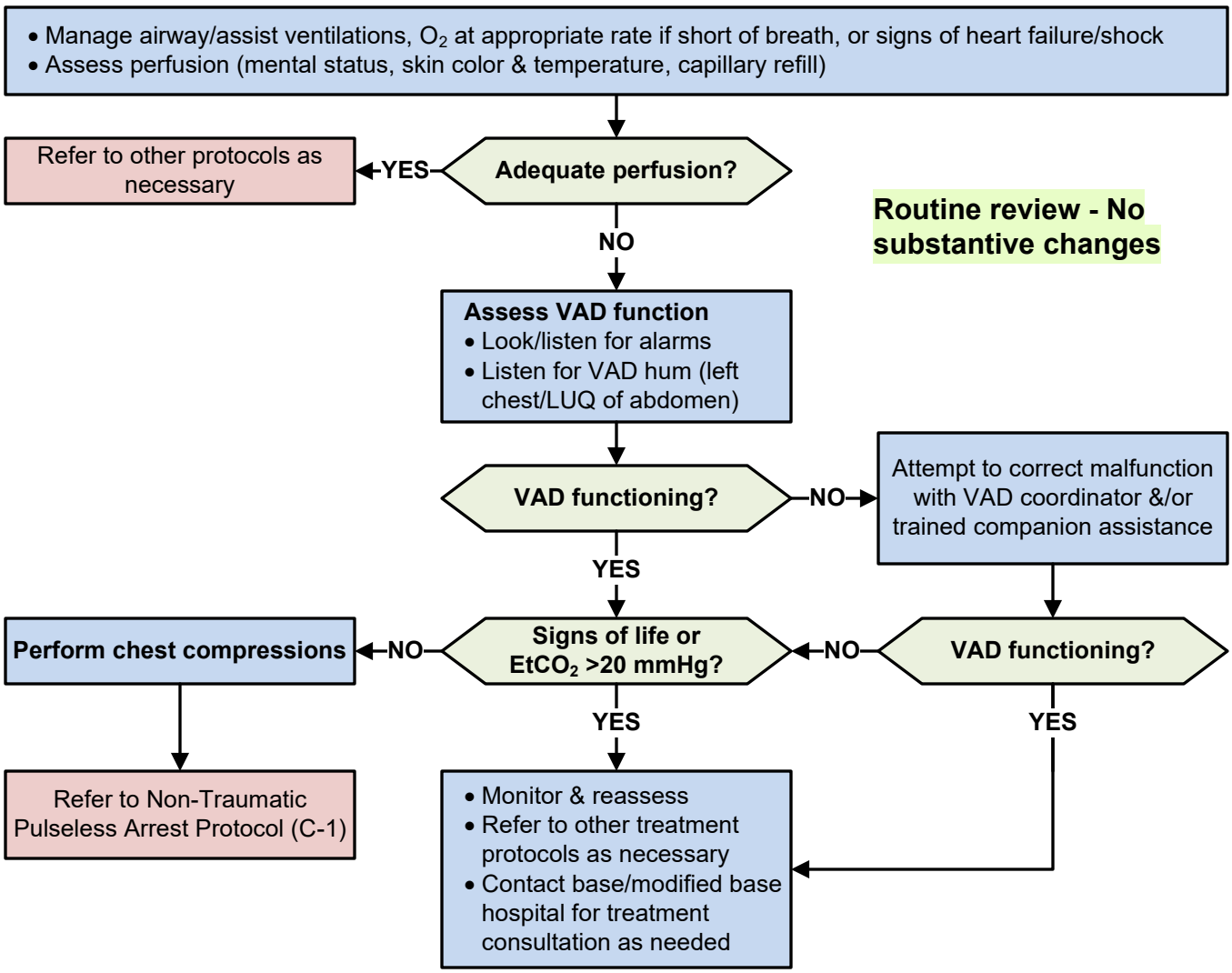
SEE PAGE 2 FOR TREATMENT ALGORITHM

Non-Traumatic Pulseless Arrest



Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-5
Ventricular Assist Device (VAD)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

- VAD pts may also have an Implanted Cardioverter-Defibrillator (ICD) or a Pacemaker/ICD.
- VAD pts may not have a palpable pulse as these are continuous flow devices. Utilize a cardiac monitor to accurately establish the pt's heart rate/rhythm. Arrhythmias with signs of inadequate perfusion should be treated according to applicable S-SV EMS protocols. If defibrillation or cardioversion is indicated, follow the applicable treatment protocol (the pump is insulated so that electrical therapy should not be an issue).
- VAD pts may not have a blood pressure obtainable by standard EMS measurement methods. An accurate blood pressure is typically obtained via doppler, however, auscultation or NIBP readings may be possible.
- SpO_2 may not be measurable or accurate. $EtCO_2$ monitoring should be utilized.
- VAD pts/companions are taught to call 911 and page the on-call VAD coordinator in an emergency. The VAD coordinator will typically be on the telephone to provide additional assistance to EMS personnel. Contact information for the VAD coordinator is usually attached to or located inside the pt's VAD equipment bag.
- VAD pts should be transported to the nearest appropriate VAD center. If the pt's condition does not warrant transportation to the VAD center, the base/modified base hospital shall be consulted for pt destination. The VAD equipment bag, power source, battery & charger shall be brought with any transported VAD pt.



Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-6
Chest Discomfort/Suspected Acute Coronary Syndrome (ACS)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- **Common symptoms associated with ACS include, but are not limited to:**
  - **Dyspnea/SOB**
  - **Palpitations**
  - **Diaphoresis**
  - **Nausea/vomiting**
  - **Lightheadedness/near-syncope/syncope**
  - **Upper abdominal pain or heartburn unrelated to meals**
  - **Discomfort in the throat or abdomen may occur in pts with diabetes, women & elderly pts**
- **Fleeting or sharp chest pain that increases with inspiration & lying supine is unlikely to be ACS related.**
- **Pt assessment, treatment & transport destination determination should occur concurrently.**

BLS

- Assess V/S, including SpO_2
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%), short of breath, or signs of heart failure or shock
- P-Q-R-S-T

Aspirin
- 160 - 325 mg chewable PO (anticoagulant use is not a contraindication to administration)

ALS

- Cardiac monitor
- 12-lead EKG as soon as possible (prior to nitroglycerin administration)
  - Criteria for ST Elevation Myocardial Infarction (STEMI):
    1. Machine readout: 'Meets ST Elevation MI Criteria', 'Acute MI', 'STEMI' (or equivalent)
    2. ST elevation in 2 or more contiguous leads
  - For pts with suspected ACS, serial 12-lead EKGs should be obtained if the pt's clinical status changes or if EKG changes are noted on the monitor, and every 15 mins if transport times are long
  - *A posterior 12-lead EKG should be performed for pts with ACS symptoms when a standard 12-lead EKG demonstrates ST depression in leads V1 – V3 but does not meet STEMI criteria*

- IV/IO at appropriate time during treatment
  - Administer 250 mL NS fluid boluses to maintain SBP >90
  - Do not administer fluid if signs of heart failure

If discomfort persists following initial 12-lead acquisition:

Nitroglycerin
- 0.4 mg SL (tablet or spray), repeat every 5 mins if discomfort persists
- Do not administer if SBP <100,
- Use with caution for pts with suspected inferior MI (establish vascular access prior to administration)
- Consult with base/modified base hospital prior to administration if pt takes erectile dysfunction or pulmonary hypertension medication

SEE PAGE 2 FOR ADDITIONAL ALS TREATMENT & PT DESTINATION

Chest Discomfort/Suspected Acute Coronary Syndrome (ACS)

ADDITIONAL ALS TREATMENT & PT DESTINATION

If discomfort persists following one or more EMS administered nitroglycerine doses:

Fentanyl
- 25 mcg slow IV/IO
- May repeat every 5 mins if discomfort persists (maximum cumulative dose: 200 mcg)

ⓘ Do not administer fentanyl to pts with any of the following contraindications:
- Systolic BP <100 - Hypoxia or RR <12 - ALOC or evidence of head injury

For current or potential nausea/vomiting:

Zofran (Ondansetron)
- 4 - 8 mg slow IV/IO, IM or ODT
- May be administered concurrently with fentanyl to reduce potential nausea/vomiting

STEMI Criteria Met?
- NO → **Transport to Closest Facility**
- YES ↓

Both STEMI Criteria Met?
- NO → **Contact closest *SRC* ~~facility~~ for destination consultation** (Transmit 12-lead EKG to closest SRC, if able)
- YES ↓

≤45 min to STEMI Receiving Center (SRC)
- NO → **Contact closest *SRC* ~~facility~~ for destination consultation** (Transmit 12-lead EKG to closest SRC, if able)
- YES ↓

Any of the following criteria met?
- CPR in progress
- Unmanageable airway
- Unstable v-tach

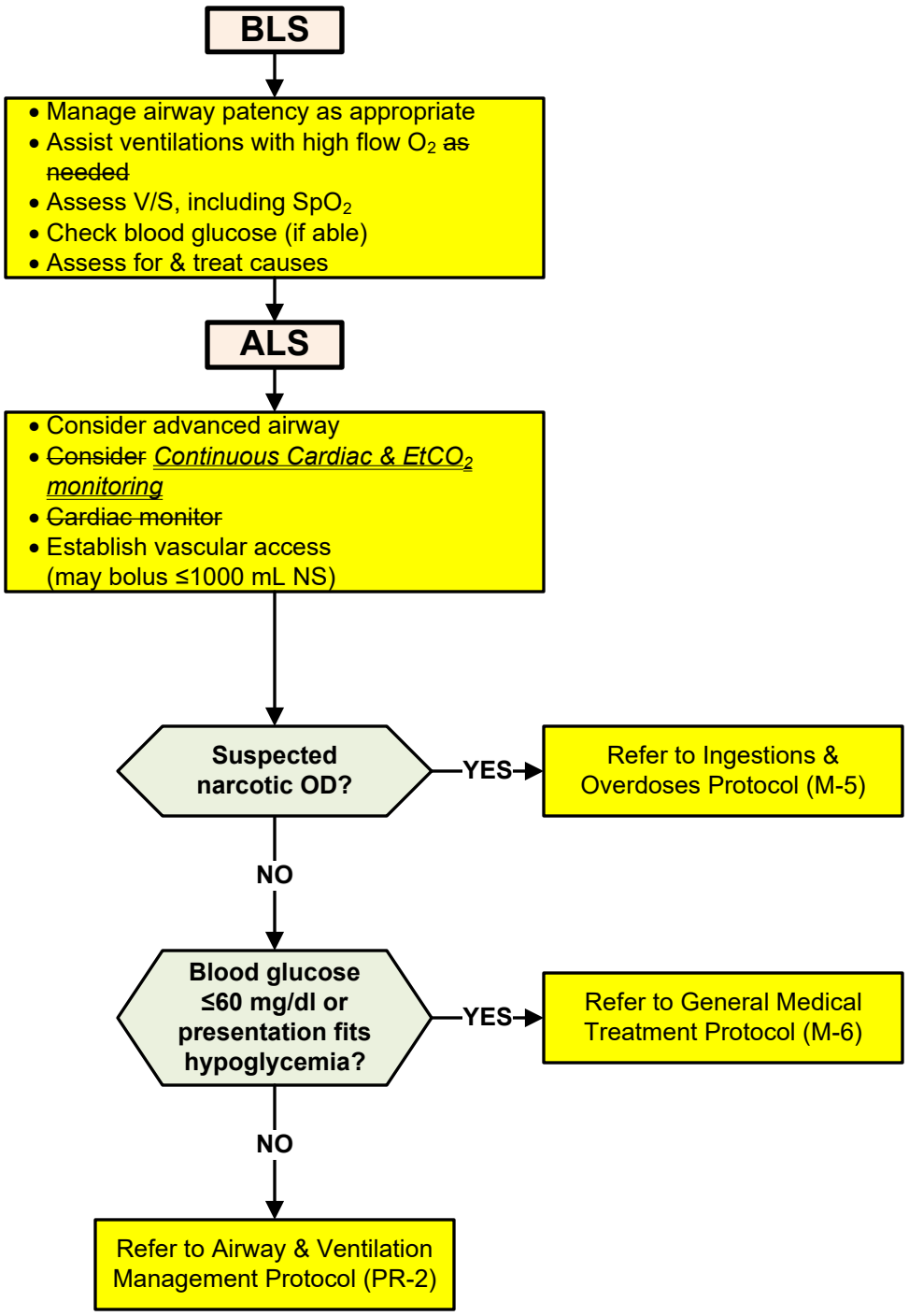
- YES → **Transport to Closest Facility**
- NO ↓

Transport Directly to SRC
- Transmit 12-lead to SRC if able
- Advise SRC of "STEMI ALERT"

STEMI Pt Notes

- When possible, any 12-lead meeting STEMI criteria shall be transmitted ~~within 10 mins of first STEMI positive 12-lead~~. ***at least 10 mins prior to SRC arrival***
- Scene time for STEMI pts should be ≤10 mins
- When possible, obtain & relay to the receiving hospital the name/contact information of an individual who can make decisions on behalf of the pt
- Always relay pertinent medical directives (DNR, POLST, etc.) to the receiving hospital

Sierra – Sacramento Valley EMS Agency Treatment Protocol	R-2
Respiratory Arrest	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028



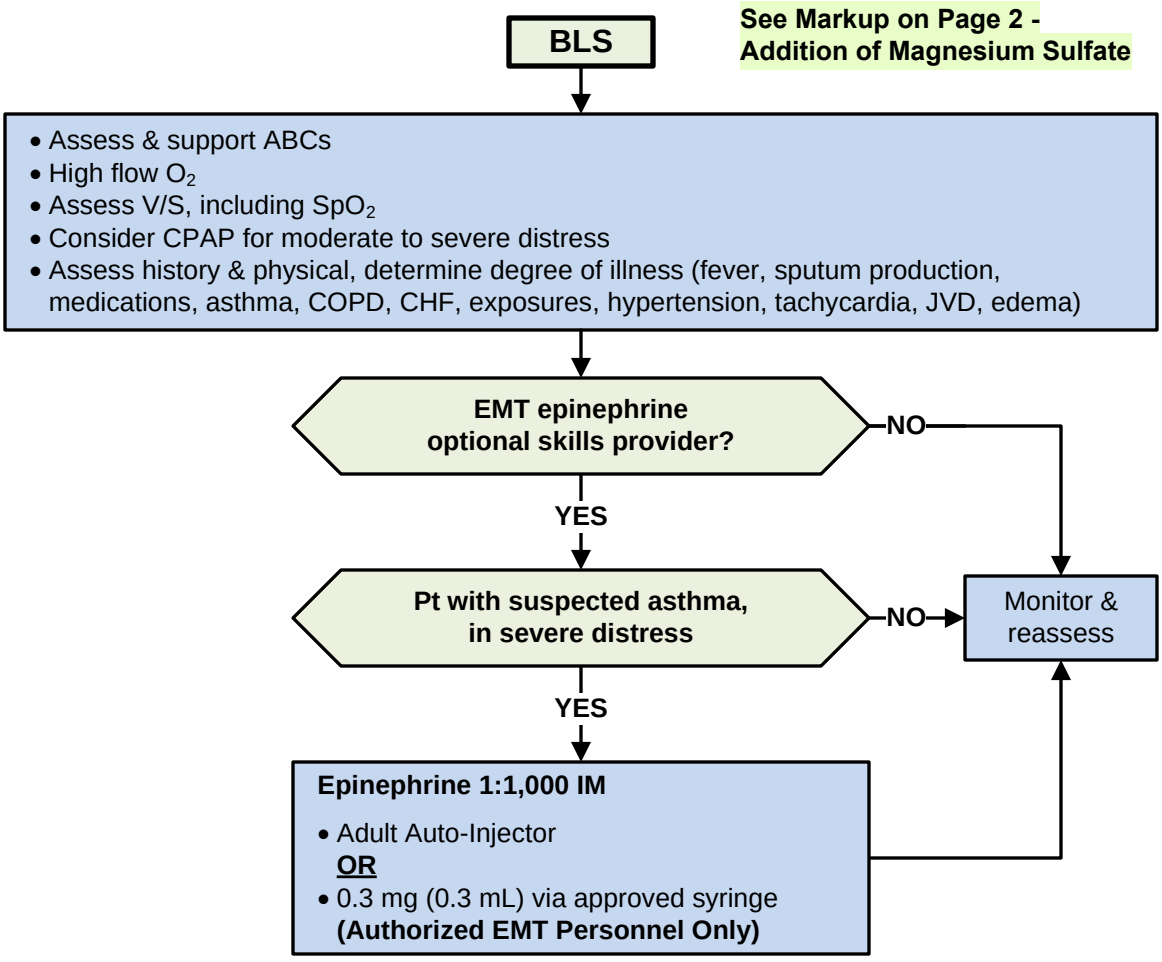
Sierra – Sacramento Valley EMS Agency Treatment Protocol	R-3
Acute Respiratory Distress	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

Continuous Positive Airway Pressure (CPAP) Utilization

- **Indications:**
  - CHF with pulmonary edema
  - Moderate to severe respiratory distress
  - Near drowning
- **Contraindications:**
  - <8 years of age
  - Respiratory or cardiac arrest
  - Severe decreased LOC
  - Agonal respirations
  - Inability to maintain airway
  - Suspected pneumothorax
  - SBP <90
  - Major trauma, especially head injury or significant chest trauma
- **Complications:**
  - Hypotension
  - Pneumothorax
  - Corneal drying

Epinephrine Administration

- Epinephrine is only indicated for pts with suspected asthma who are in severe distress.
- **Use epinephrine cautiously in pts >35yo, or with a history of coronary artery disease or hypertension.**
- Administer Auto-Injector/IM epinephrine into the lateral thigh, midway between waist & knee.



SEE PAGE 2 FOR ALS TREATMENT

Acute Respiratory Distress

ALS TREATMENT

Asthma/COPD

Mild Distress
- Mild wheezing
- Mild shortness of breath
- Cough

- Cardiac monitor
- Consider IV NS (may bolus up to 1000 mL)

Albuterol 5 mg & Ipratropium 500 mcg
- Nebulizer
- May repeat **(albuterol 2.5-5 mg only)** for continued respiratory distress

Moderate to Severe Distress
- Cyanosis
- Accessory muscle use
- Inability to speak >3 words
- Severe wheezing/shortness of breath
- Decreased or absent air movement

- Cardiac monitor
- IV/IO NS (may bolus up to 1000 mL)

Albuterol 5 mg & Ipratropium 500 mcg
- Nebulizer/CPAP/BVM
- May repeat **(albuterol 2.5-5 mg only)** for continued respiratory distress

History of asthma with severe distress only
Epinephrine 1:1,000
- 0.01 mg/kg IM (max: 0.5 mg)

Base/Modified Base Hospital Order Only
Magnesium Sulfate
- *2 g in 100ml NS IV infused over 20 mins*

CHF/Pulmonary Edema

Mild Signs & Symptoms

- Cardiac monitor
- IV NS TKO

***Nitroglycerin**
- 0.4 mg SL
- May repeat every 5 mins

***Nitroglycerin Notes/Precautions**
- Do not administer if SBP <100
- Do not delay due to difficult vascular access
- Consult with base/modified base hospital prior to administration to pts taking erectile dysfunction or pulmonary HTN medication

Moderate to Severe Signs & Symptoms

- Cardiac monitor
- Assess BP x 2 to confirm accuracy
- IV/IO NS TKO

***Nitroglycerin: titrate dose based on SBP**
- SBP 100-150: 0.4 mg SL
- SBP 150-200: 0.8 mg SL
- SBP >200: 1.2 mg SL
- May repeat doses every 5 mins based on repeat SBP

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-5
Ingestions & Overdoses	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

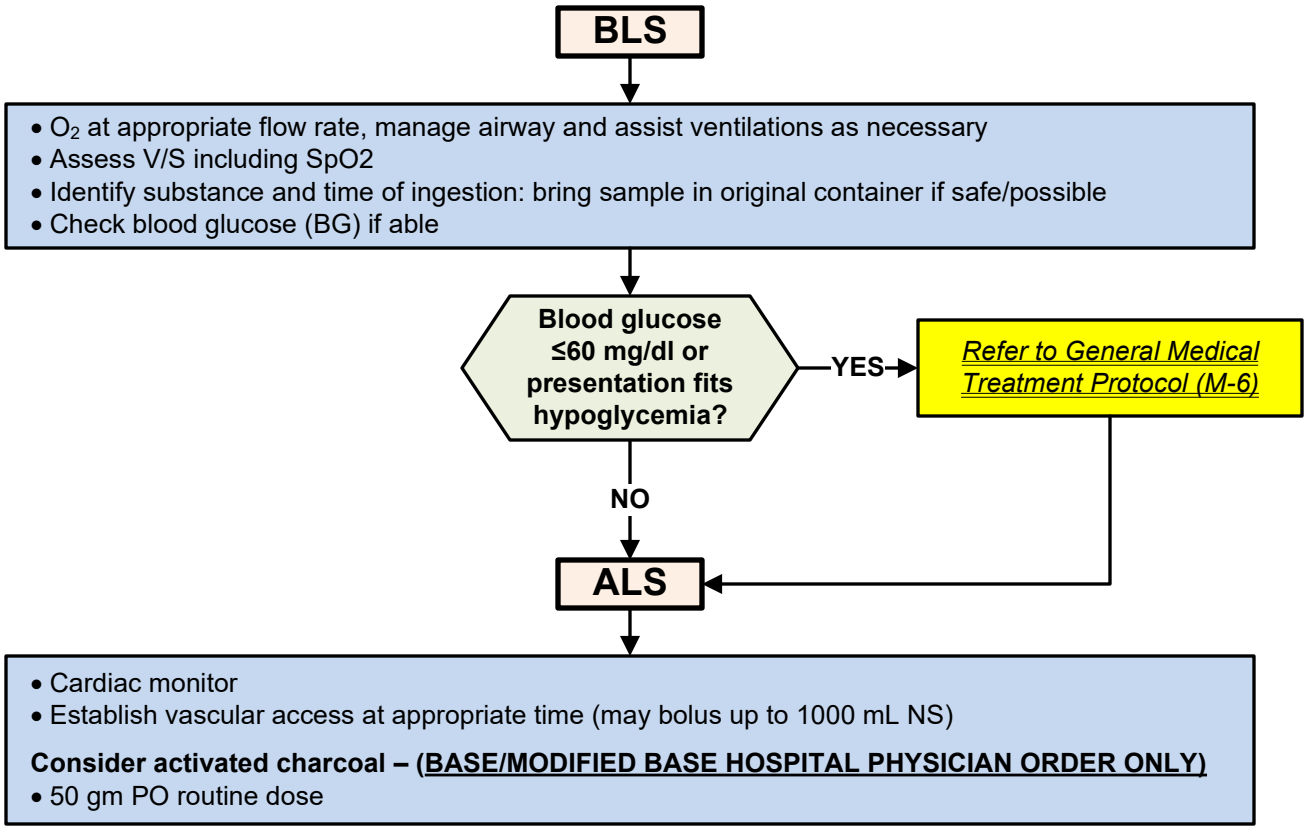
- When possible, contact Poison Control for consultation: (800) 876-4766 or (800) 222-1222.
- Refer to Hazardous Material Exposure Protocol (E-7) if pt externally exposed to organophosphate, carbamate or hydrofluoric acid.
- Oral ingestions of hydrofluoric acid require immediate treatment as it can cause fatal hypocalcemia – early signs of hypocalcemia include:
  - Tingling sensation around mouth, lips, hands or feet - Hand or foot spasms - QT interval prolongation
- Activated charcoal is an agent used for gastric decontamination following ingestion overdose. Clinical research only supports its use when given early after ingestion. While activated charcoal may be helpful when given rapidly after an overdose, it is very important to avoid administration in cases where potential contraindications exist.

Activated Charcoal Indications

- Early administration (within 1 hr of ingestion)
- Potentially deadly agent
- No effective antidote
- Suggested agents where EMS administration of activated charcoal is appropriate:
  - Antidepressants - Anticonvulsants - Digoxin
  - Calcium channel blockers - Beta blockers

Activated Charcoal Contraindications

- Obtunded/altered level of consciousness
- Known caustic ingestion (acid or alkali)
- Known hydrocarbon ingestion
- Suspected GI obstruction (vomiting)
- Agents not well absorbed by activated charcoal (relative contraindication), examples include:
  - Lithium - Iron - Toxic alcohol



SEE PAGE 2 FOR AGENT SPECIFIC TREATMENT

AGENT SPECIFIC TREATMENT

Beta Blockers

May admin. up to 1000 mL NS bolus if SBP <90

Atropine 1 mg IV/IO
- Only if HR <50 and SBP <90 after NS bolus
- May repeat every 5 mins (max total: 3 mg)

Glucagon 1 mg (1 unit) IV/IO
- Only if HR <50 and SBP <90
- If no IV/IO, may admin. 1 mg IM/IN

Push-Dose Epinephrine
- Only if HR <50 and SBP <90
- Eject 1 mL NS from a 10 mL pre-load syringe
- Draw up 1 mL epinephrine 1:10,000 concentration and gently mix
- Admin. 1 mL IV/IO push every 1 - 5 mins
- Titrate to maintain SBP >90

Calcium Channel Blockers

May admin. up to 1000 mL NS bolus if SBP <90

Calcium Chloride 10% 10 mL slow IV/IO
- Only if SBP <90
- Admin. no faster than 1 mL/min
- May repeat every 5 mins (maximum: 4 total doses)

Hydrofluoric Acid

Calcium Chloride 10% 10 mL slow IV/IO
- Only if signs of hypocalcemia
- Admin. no faster than 1 mL/min

Narcotics

Naloxone
- Only if RR <12 or respiratory efforts inadequate
- *Provide BVM ventilation at appropriate rate*
- 1-2 mg IV/IO/IM/IN
- May repeat every 2 - 3 mins if improvement inadequate
- Do not admin. if advanced airway in place & pt is being adequately ventilated

Organophosphate or Carbamate

Atropine 2 mg IV/IO
- Only if HR <60
- May repeat every 3 mins – no max dose

Tricyclic Antidepressants

Sodium Bicarbonate 1 mEq/kg IV/IO - if any of the following are present:
- SBP <90
- QRS >0.12 seconds (3 small boxes)
- Seizures

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-8
Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- 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 for ALS treatment options

Medication Contraindications & Administration Notes

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

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

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

ⓘ Consider reduced fentanyl doses 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 (x1) ketamine 15-30 mg slow IV/IO

AND/OR

Midazolam: 1 mg slow IV/IO
- May repeat (x1) 1 mg slow IV/IO
- Wait 5 mins after fentanyl/ketamine administration before administering midazolam

Significant algorithm revisions - no ability to adequately illustrate markup changes

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-8P
Pediatric Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- 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 hypoxemic (SpO_2 <94%) or short of breath
- Utilize non-pharmacological pain management techniques as appropriate, including:
  - Place in position of comfort and provide distraction/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

ⓘ **For pts <4 yo, consult with base/modified base hospital prior to medication administration**
ⓘ **All slow IVP medications contained in this protocol shall be administered over 60 seconds**

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

ⓘ Discontinue infusion if pt becomes hypotensive (pg. 2)

Ketamine
ⓘ Do not administer to pts with any of the following:
- Pregnancy
- ~~Multi-system trauma~~
- ~~Suspected internal bleeding~~
- ~~Active external bleeding~~

Ketorolac
ⓘ Do not administer to pts with any of the following:
- 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:
- Hypotension (Pediatric Hypotension Table – page 2)
- SpO2 <94% or RR <12
- ALOC or suspected moderate/severe TBI

ⓘ 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 20 mL/kg if indicated by pt's clinical condition
- Administer analgesic intervention as indicated below when appropriate

Non-Trauma Related/Chronic Pain

Acetaminophen: 15 mg/kg IV/IO infusion over 15 mins (max: 1000mg) – single dose only; **OR**
Ketorolac: 0.5 mg/kg IV/IO or IM (max: 15mg) – single dose only

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: 15 mg/kg IV/IO infusion over 15 mins (max: 1000mg) – single dose only; **OR**
Ketorolac: 0.5 mg/kg IV/IO or IM (max: 15mg) – single dose only

If pain not effectively managed:

- Continuous $EtCO_2$ monitoring

Fentanyl: 1 mcg/kg slow IV/IO or IM/IN (max single dose: 50 mcg) – may repeat every 5 mins to max 4 doses

Severe Pain

- Continuous $EtCO_2$ monitoring

Fentanyl: 1 mcg/kg slow IV/IO or IM/IN (max single dose: 50 mcg)
OR
Ketamine: 0.3 mg/kg slow IV/IO (max single dose: 30 mg)

Acetaminophen: 15 mg/kg IV/IO infusion over 15 mins (max: 1000 mg) – single dose

If pain not effectively managed:

- If fentanyl previously administered, may repeat every 5 mins to max 4 doses
- If ketamine previously administered, may repeat once after 10 – 15 mins to max 2 doses

&/OR
Midazolam: 0.05 mg/kg slow IV/IO (max single dose: 1 mg)

- May repeat once after 5 mins to max 2 doses
- Wait 5 mins after fentanyl/ketamine administration before administering midazolam

Significant algorithm revisions - no way to adequate illustrate markup changes

Pediatric Normal SBP & Hypotension Table

Age	Normal SBP	Hypotension
1-12 mos	70-100	SBP <70
1-2 yrs	80-110	SBP <70 + age (yrs) x 2
3-5 yrs	90-110	
6-9 yrs	100-120	
10-14 yrs	100-120	SBP <90

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-9
CO Exposure/Poisoning	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- Initial symptoms of CO exposure are insidious, similar to the flu and thus seemingly benign. These symptoms increase in severity as the SpCO level rises & may include one or more of the following:
  - Confusion
  - Dizziness/vertigo
  - Headache
  - Shortness of breath
  - Nausea/vomiting
  - Fatigue
  - Syncope
  - Confusion
  - Tachycardia
  - Cardiac arrhythmias
  - Seizures
  - Shock
  - Coma
  - Apnea
- *SpO2 readings may appear normal or falsely elevated in the presence of CO. Utilize clinical findings & history as indicators of hypoxia.*
- *CO poisoning may result in cardiac rhythm disturbances &/or myocardial ischemia.*

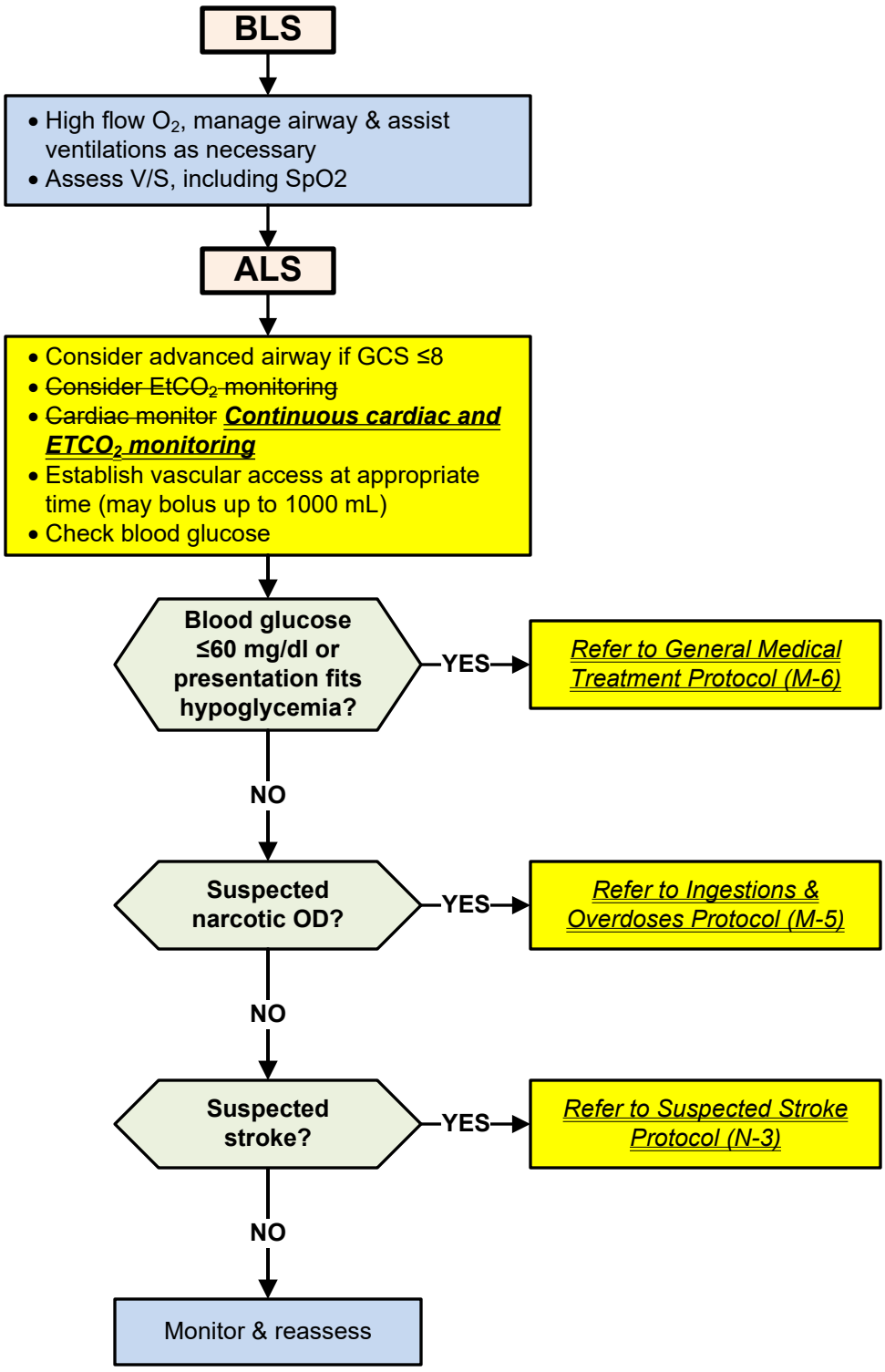
BLS

- Remove pt from CO exposure source
- Assess V/S, ~~including SpO2~~
- ~~O_2 at appropriate rate - h~~*H*igh flow O_2 ~~if CO poisoning suspected~~
- *Measure SpCO if CO-Oximeter available*
  - SpCO 0 to 3% – Normal
  - SpCO 3 to 12% – Abnormal
  - SpCO >12% – Significantly abnormal

ALS

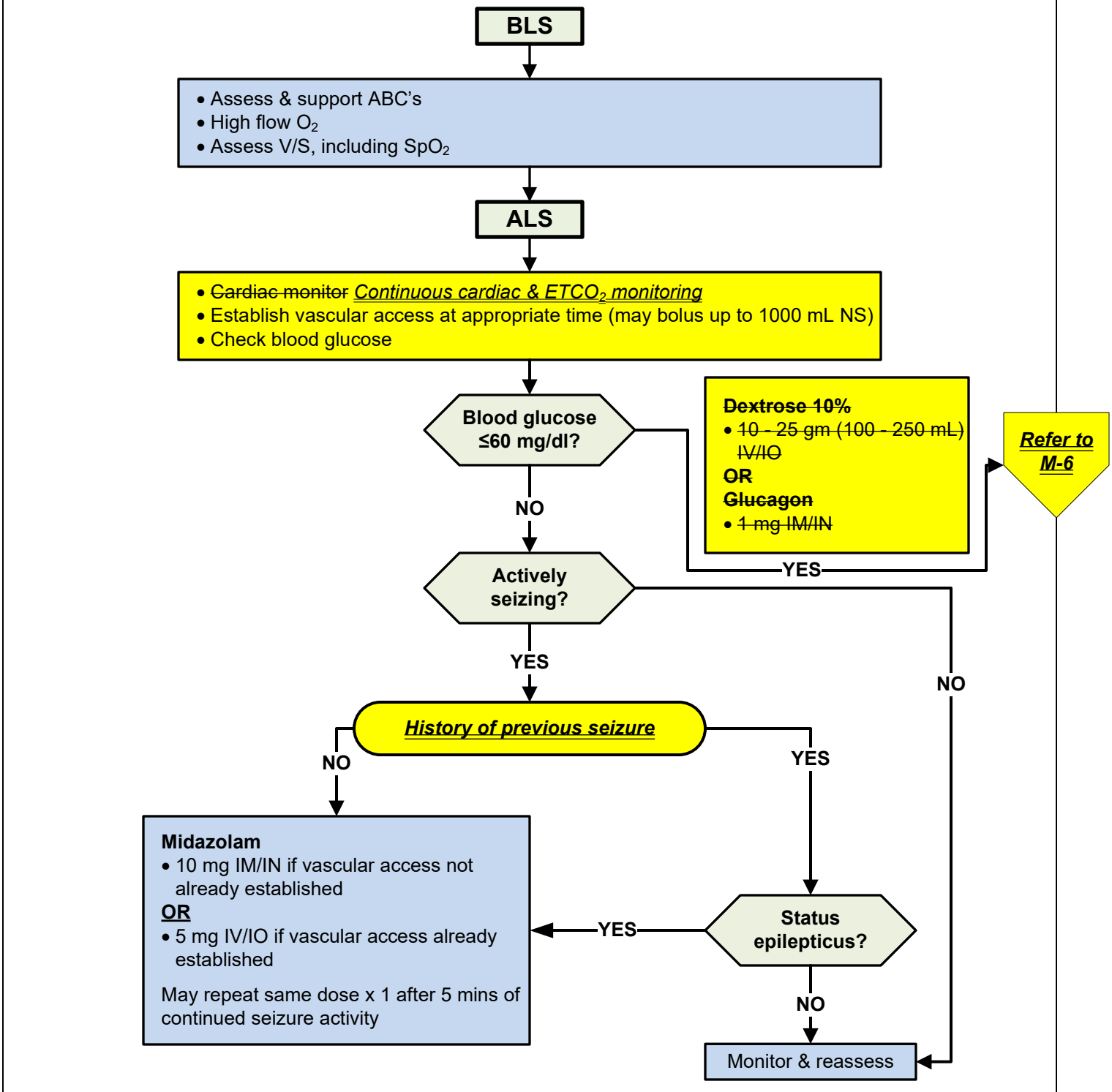
- ~~Cardiac Monitor~~ *Continuous cardiac and $ETCO_2$ monitoring*
- *Perform 12-lead*
  - refer to appropriate cardiac protocol for management of cardiac related issues)

Sierra – Sacramento Valley EMS Agency Treatment Protocol	N-1
Altered Level Of Consciousness	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028



Sierra – Sacramento Valley EMS Agency Treatment Protocol	N-2
Seizure	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- Status Epilepticus: 2 or more seizures without periods of consciousness, or a single seizure lasting >5 mins.
- Transport patients >20 weeks pregnant in left-lateral position *(if 3rd trimester, or within 6 weeks post-partum, refer to OB-G2 ptotocol for treatment)*



Sierra – Sacramento Valley EMS Agency Treatment Protocol	E-1
Hyperthermia	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/1/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

Routine Review - No substantive changes

BLS

- Move pt to a cool environment, remove excess clothing & begin cooling measures as soon as possible
- Assess V/S, including temperature if thermometer available
- O_2 at appropriate rate if hypoxemic (SpO2 <94%)

HEAT CRAMPS

- Neuro: Normal, may have muscle cramps (usually in the legs)
- Skin: Sweaty, may be warm to the touch
- Temp: Usually normal

- Give cool/cold fluids slowly by mouth
- Rest cramping muscles

HEAT EXHAUSTION

- Neuro: Feels weak with otherwise normal function
- Skin: Sweaty, usually hot to the touch
- Temp: Usually normal to slightly elevated
- Typically feels sick with flu like symptoms

ALS

- Cardiac monitor
- Give cool/cold fluids slowly by mouth as tolerated
- IV/IO NS: 1000 mL bolus

HEAT STROKE

- Neuro: Altered mental status, may have persistent seizures
- Skin: Usually flushed, hot; may or may not be moist
- Temp: Usually ≥104

ALS

- Aggressive cooling - cold packs on neck, axilla & inguinal areas; fanning & misting if possible, undress pt, cover with sheet & wet thoroughly
- Cardiac monitor
- IV/IO NS: 1000 mL bolus, reassess & repeat if necessary for SBP <90, or signs of poor perfusion

Monitor & reassess

Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-2
Crush Injury/Crush Syndrome	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

Crush syndrome occurs after a crushing injury that leads to a release of muscle breakdown products into the bloodstream. This can lead to acute kidney injury, rhabdomyolysis and life-threatening complications such as renal failure and metabolic acidosis. Inclusion criteria may include the following:

- Prolonged entrapment of an extremity or body region (>1 hr since time of entrapment).
- Evidence of compartment syndrome (pain, pallor, paresthesia, paralysis, pulselessness).
- EKG changes consistent with hyperkalemia (peaked T-waves, widened QRS, prolonged QT or absent P-waves).

New Protocol - markup not applicable

BLS

- Assess V/S, including SpO2
- O_2 at appropriate rate if hypoxemic (SpO2 <94%)

Signs/symptoms of hemorrhage? — YES → Refer to Hemorrhage Protocol (T-4)

NO

ALS

- Continuous cardiac & $ETCO_2$ monitoring
- Obtain 12-lead EKG if possible
- IV/IO NS 1000 ml bolus, then titrate to 500-1000 ml/hr

Prior to Extrication

For significant crush injuries or prolonged entrapment of an extremity, consider:

Sodium Bicarbonate
- 1mEq/kg (max. dose of 50 mEq), IV/IO over 5 mins

Post Extrication

If EKG is suggestive of hyperkalemia:

Calcium Chloride
- 1 gm IV/IO over 5 mins (do not exceed 1ml/min)

Albuterol
- 5 mg nebulizer (may repeat x1)

If not already administered:

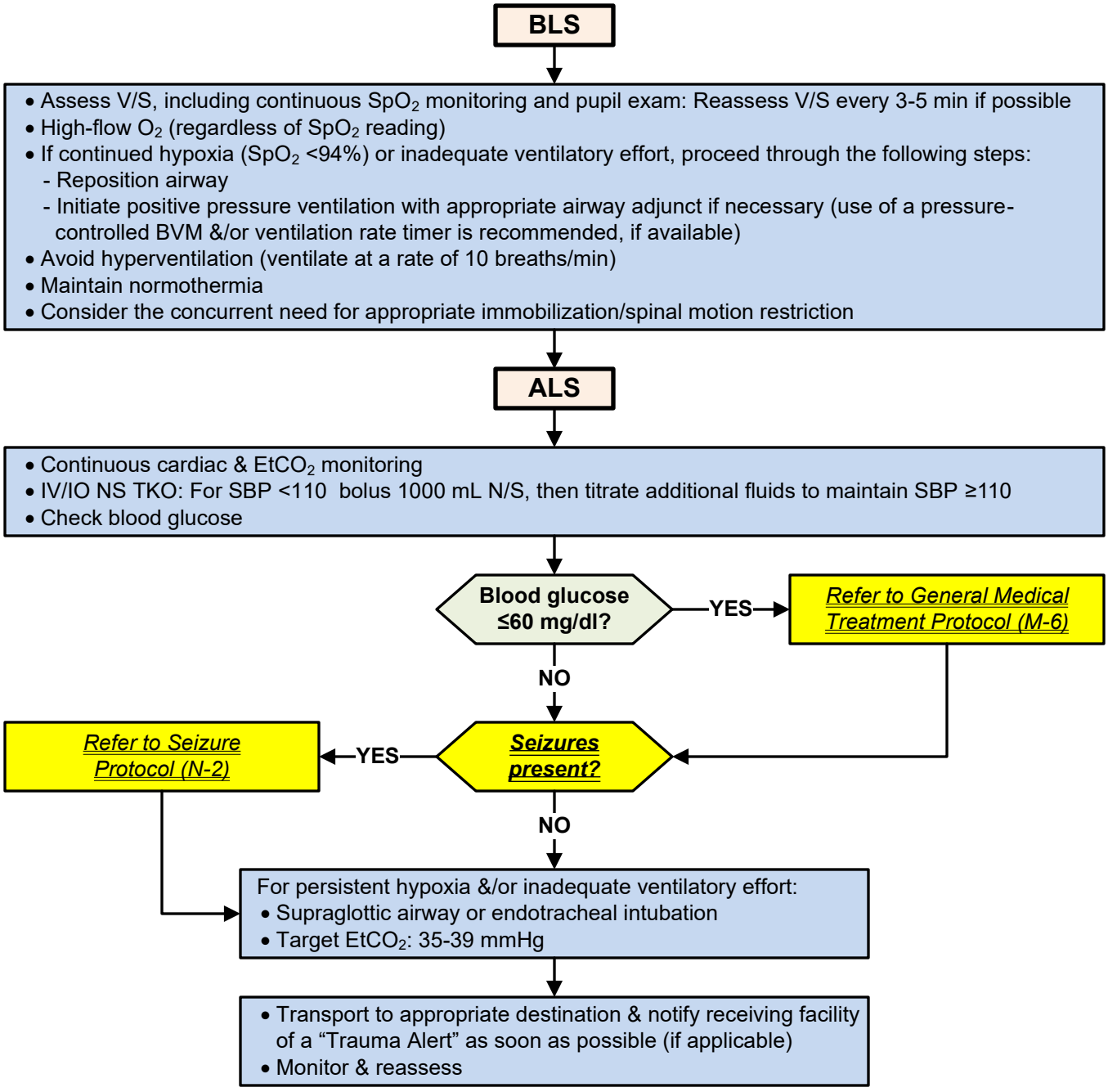
Sodium Bicarbonate
- 1mEq/kg (max. dose of 50 mEq), IV/IO over 5 mins

Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-3
Suspected Moderate/Severe Traumatic Brain Injury (TBI)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

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



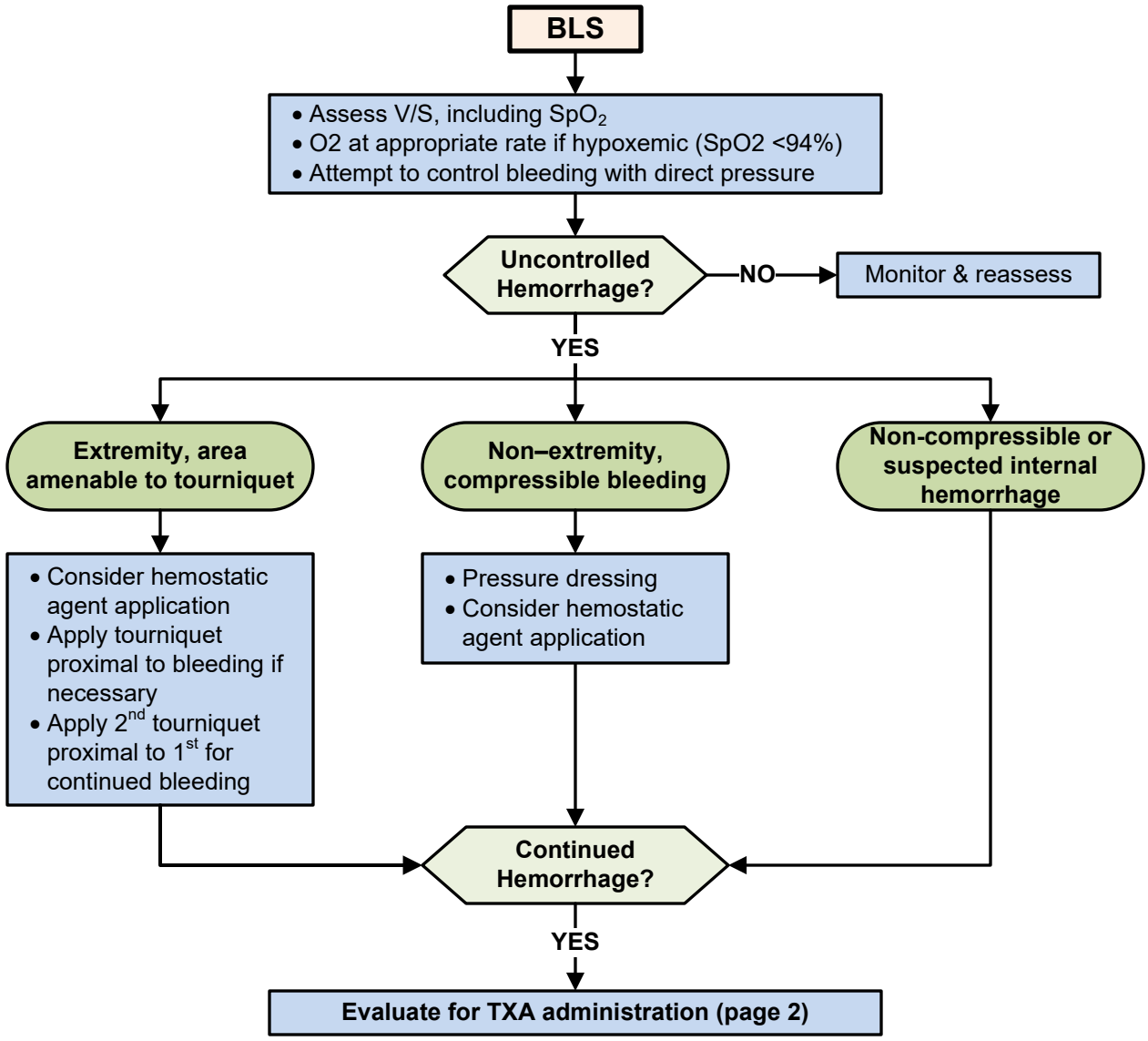
Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-4
Hemorrhage	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

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:

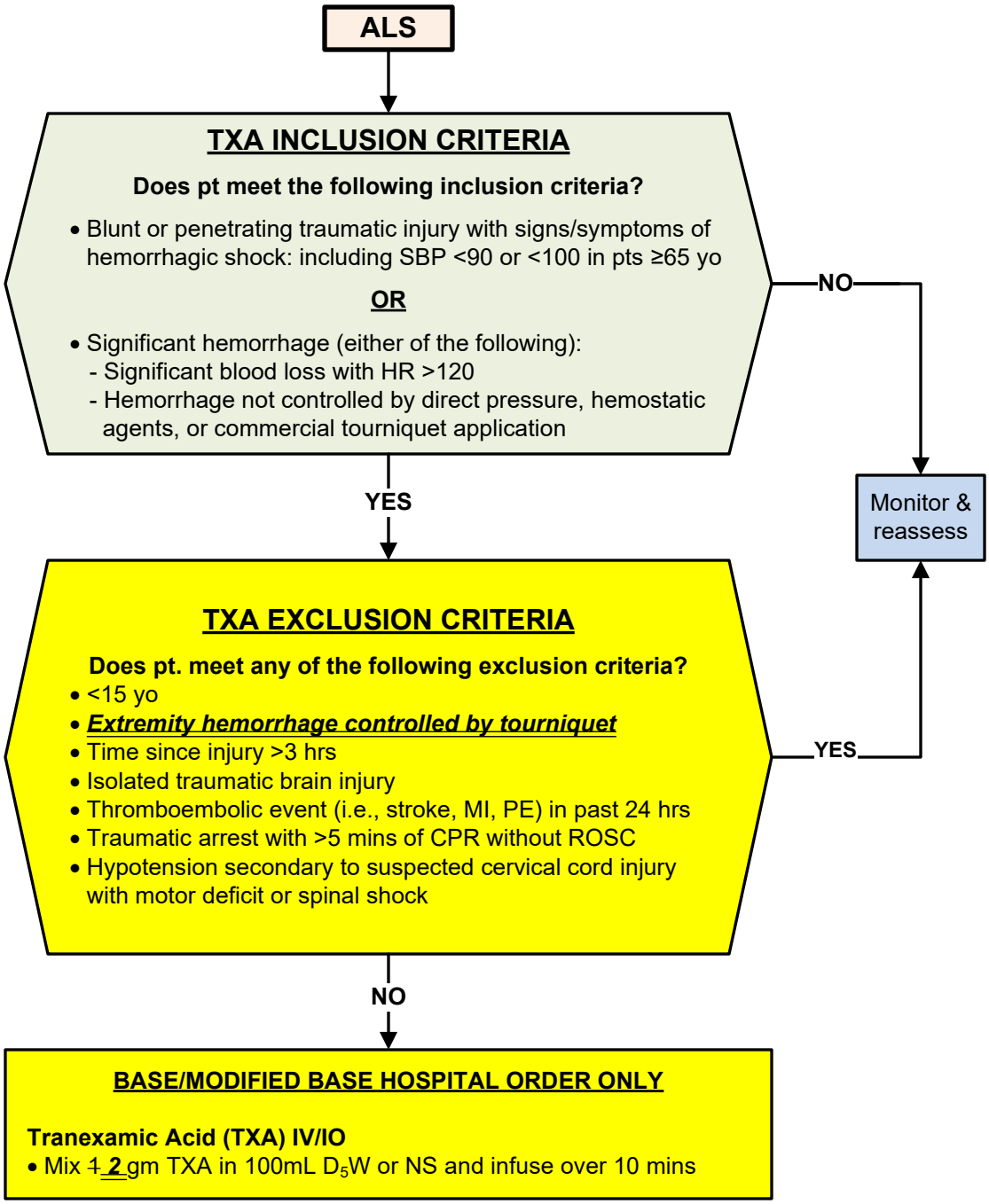
- Any hemostatic agent that is incorporated into gauze (no loose granules/particles) included on the current Committee on Tactical Combat Casualty Care (CoTCCC) recommended Hemostatic Dressings list may be utilized by EMS personnel.



Tranexamic Acid (TXA) Administration

TXA Administration Notes:

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



Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-1
12-Lead EKG	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

INDICATIONS

12-lead EKG procedures shall be performed on pts who present with one or more of the following:

- Sign/symptoms suggestive of acute coronary syndrome (ACS) such as:
  - Non-traumatic chest or upper abdominal discomfort
  - Syncope/near-syncope
  - Acute generalized weakness
  - Dyspnea
- Cardiac dysrhythmias on 4-lead EKG
- ROSC following cardiac arrest

PRE-PROCEDURE

- Assess vital signs including SpO_2
- Administer O_2 as indicated by clinical condition

PROCEDURE

- Prepare EKG monitor and connect 12-lead cables
- Utilize packaged electrodes designed for single pt use (not bulk)
- Prep skin as necessary (e.g. wiping with 4x4 gauze, shaving)
- Enter, at a minimum, pt's age, gender, and last name/first initial into the cardiac monitor
- Apply chest leads using the landmarks indicated on **Diagram A**
- While acquiring the 12-lead EKG:
  - Position pt away from 60hz RF noise (light switches, smartphones, LED lights, etc.)
  - Position pt supine, or semi-fowler with their arms at their side and legs uncrossed
  - Instruct pt to breath normally and remain still
  - Don't converse with or touch pt during acquisition
- Interpret the EKG findings
- If isoelectric line has significant artifact or machine reads "poor data quality" (or equivalent), attempt to reacquire a clean 12-lead EKG if pt condition allows
- *If a posterior 12-lead EKG is indicated, move leads V4 – V6 from the chest and apply posteriorly as indicated in **Diagram B**. Print the 12-lead and manually label leads V4 – V6 as V7 – V9*

Diagram A

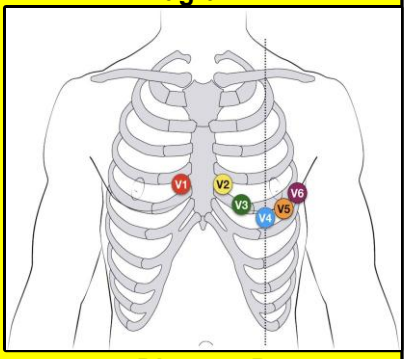
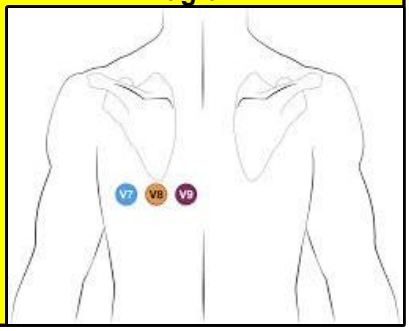


Diagram B



POST-PROCEDURE

- 12-lead EKG's meeting STEMI criteria shall be transmitted to the appropriate facility (closest hospital or STEMI Receiving Center depending on incident specific circumstances) as soon as possible if transmission capabilities are available
- For pts with suspected ACS, serial 12-lead EKGs should be obtained if the pt's clinical status changes or if EKG changes are noted on the cardiac monitor, and every 15 minutes if transport times are long
- Copies of 12-lead EKGs shall be provided to the receiving hospital physician upon EMS arrival, left at the receiving hospital at time of pt delivery, and attached to the EMS pt care report (PCR)

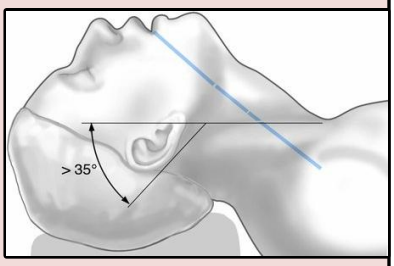
	Sierra – Sacramento Valley EMS Agency Treatment Protocol	**PR-2**
	Airway & Ventilation Managment	
Approval: Troy M. Falck, MD – Medical Director		Effective: 10/01/2025
Approval: John Poland – Executive Director		Next Review: 01/2028

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
- *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*

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

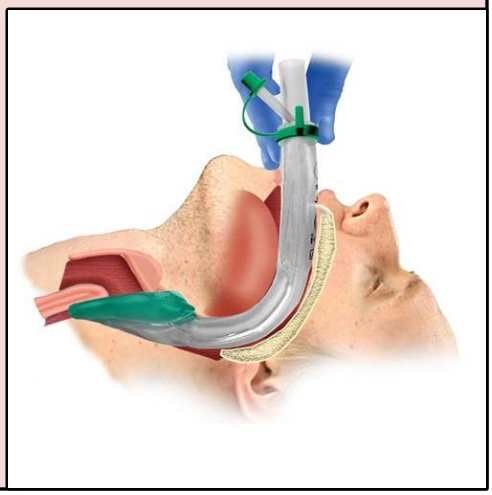
- Attach oxygen to BVM at a minimum flowrate of 10-15 L/min
- For one rescuer ventilation, position the mask over the nose & mouth & ensure a tight seal with an E-C clamp technique
- Squeeze the bag slowly, delivering breath over 1-2 secs
- Deliver only enough volume to achieve normal chest rise & fall **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-3P
Pediatric Pleural Decompression	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

INDICATIONS

- Suspected tension pneumothorax with a history of chest trauma, unilateral absent or diminished breath sounds, & at least one of the following:
  - Severe respiratory distress with an SpO_2 <94%
  - Loss of pulse due to shock **OR** hypotension as follows:
    - 0 - <1 yo: SBP <70
    - 1 - <10 yo: SBP <70 + age (yrs) x2
    - 10 - 14 yo: SBP <90
  - Traumatic cardiac arrest

New Protocol - markup not applicable

PRECAUTIONS

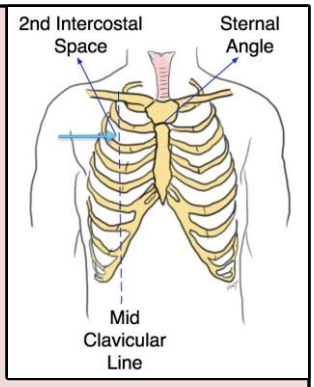
- Pleural decompression is a high-risk procedure in pediatric pts, requiring careful consideration due to the anatomical and physiological differences in this population, which increases the risk of complications such as lung laceration, misplacement and vascular injury. Proper needle selection based on weight and age is critical to avoid inadequate decompression or unintended trauma.

PRE-PROCEDURE

- Assess respiratory status, manage airway & assist ventilations as appropriate
- Administer high flow O_2 & monitor SpO_2
- Assess & continually monitor vital signs

PROCEDURE

- Identify & prep site:
  - **Preferred**: Mid-clavicular line in the 2nd intercostal space (just above the 3rd rib)
  - **Cardiac arrest only**: Mid-axillary line in the 4th (just above the 5th rib) or 5th (just above the 6th rib) intercostal space
- Determine appropriate needle size based on pt age/wt (see table)
- Attach 10 ml syringe to catheter hub
- Insert needle into the chest at a 90° angle to the chest wall
- Observe for rush of air or bubbles in the syringe
- Remove needle leaving catheter in place
- Stabilize catheter hub to the chest wall
- Auscultate bilateral breath sounds & observe For change in clinical condition (improvement in SpO_2, SBP, etc.) &/or positive color change if using a Capnospot®



Age	Weight	Needle Size
0 - <1 yo	<10 kg	22 ga x 1.00"
1 - < 5 yo	10 - <15 kg	20 ga x 1.25"
5 - <10 yo	15 - <25 kg	16 ga x 1.25"
10 - 14 yo	≥ 25 kg	14 ga x 2.00"

POST-PROCEDURE

- Reassess breath sounds & monitor for signs of development of a tension pneumothorax
- Administer O_2 at appropriate rate & monitor SpO_2
- Continuous cardiac & $EtCO_2$ monitoring
- Assess & document vital signs every 3-5 mins (if possible)

S-SV EMS Agency

Policy/Protocol Manual Update #77

Markup LALS (AEMT) Protocols

Effective October 1, 2024

Note: Final versions of approved protocols will be published at www.ssvems.com and on the S-SV EMS mobile applications prior to October 1, 2024

Sierra – Sacramento Valley EMS Agency Treatment Protocol

Non-Traumatic Pulseless Arrest

C-1 (LALS)

Approval: Troy M. Falck, MD – Medical Director | Effective: 10/01/2025

Approval: John Poland – Executive Director | Next Review: 04/2028

MANUAL CHEST COMPRESSIONS

- Rate: 100-120/min
- Depth: 2 inches – allow full chest recoil
- Minimize interruptions (≤10 secs)
- Rotate compressors every 2 mins
- Perform CPR during AED/defibrillator charging
- Resume CPR immediately after shock

MECHANICAL CHEST COMPRESSION DEVICES

Indications

- Adult pt (≥15 yo)

Contraindications

- Pt does not fit in the device
- 3rd trimester pregnancy

ⓘ Apply following completion of at least one manual CPR cycle, or at the end of a subsequent cycle

ⓘ Use in accordance with manufacturer guidelines

DEFIBRILLATION & GENERAL PT MANAGEMENT

- Analyze rhythm/check pulse after every 2 min CPR cycle
- Biphasic manual defibrillation detail **(AEMT II)**:
  - Follow manufacturer recommendations
  - If unknown, start at 200 J (subsequent doses should be equivalent or higher)
- Movement of pt may interrupt CPR or prevent adequate depth and rate of compressions
- Consider resuscitation on scene up to 20 mins
- Go to ROSC protocol (C-2) if ROSC is obtained

ADVANCED AIRWAY MANAGEMENT

- Consider/establish advanced airway at appropriate time during resuscitation
- Do not interrupt chest compressions to establish an advanced airway
- Waveform capnography (if available) shall be used on all pts with an advanced airway in place
  - An abrupt increase in $PETCO_2$ is indicative of ROSC
  - Persistently low $PETCO_2$ levels (<10 mmHG) suggest ROSC is unlikely

TREAT REVERSIBLE CAUSES

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen Ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**amponade, cardiac
- **T**ension pneumothorax
- **T**hrombosis, pulmonary
- **T**hrombosis, cardiac
- **T**oxins

ⓘ Consider early transport of pts who have reversible causes that cannot be adequately treated in the prehospital setting

ⓘ Contact the base/modified base hospital for consultation & orders as appropriate

ⓘ Refer to Hypothermia & Avalanche/Snow Immersion Suffocation Resuscitation Protocol (E-2 - LALS) or Traumatic Pulseless Arrest Protocol (T-6 - LALS) as appropriate

Note: no way to adequately illustrate markup in the available space - only updated sections/language is highlighted

BLS TERMINATION OF RESUSCITATION (TOR)

Base/Mod. Base Hosp. Physician Order Required

- BLS providers may use the following TOR criteria when ALS is not available (**all 3 must apply**):

1. Arrest not witnessed by EMS
2. No AED shocks delivered
3. No ROSC after 3 rounds of CPR/AED analysis

LALS TERMINATION OF RESUSCITATION (TOR)

- LALS providers may use the following TOR criteria:

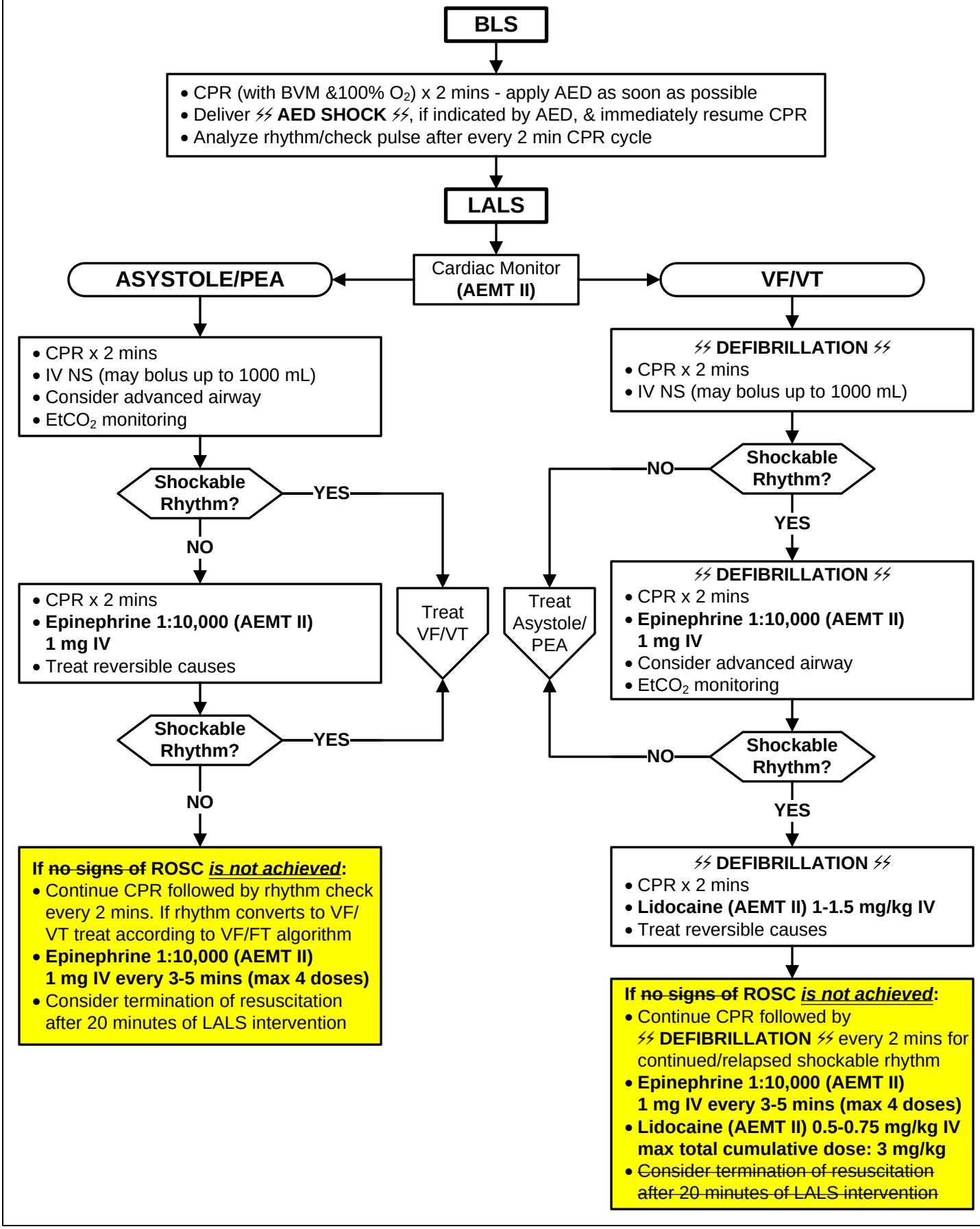
1. Arrest not witnessed by EMS
2. No AED shocks or defibrillations delivered
3. No ROSC after full LALS care

Base/Mod. Base Hosp. Physician Order only required for pt's not meeting all 3 LALS criteria

SPECIAL TOR CIRCUMSTANCES

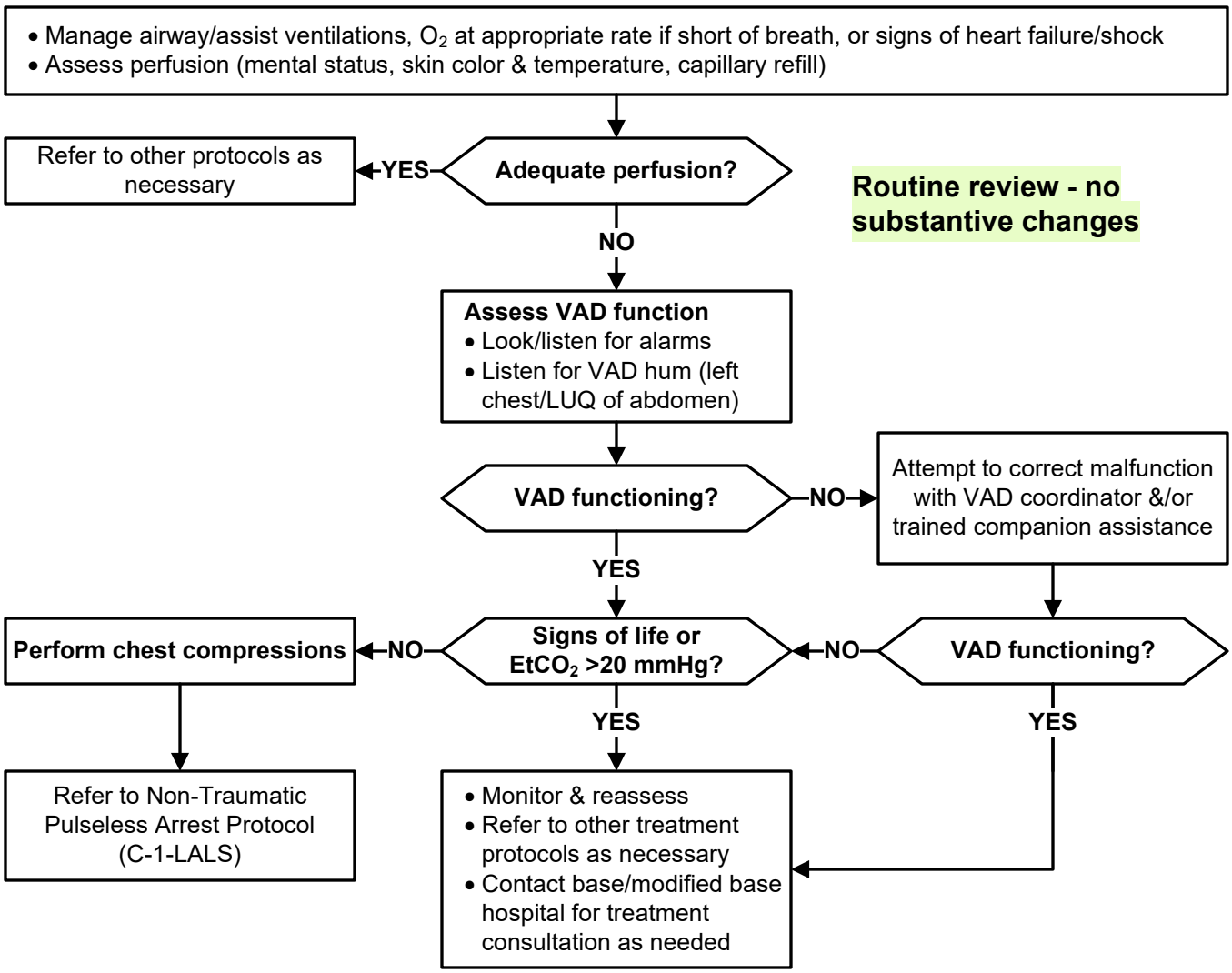
- In the event of communication failure, BLS/ALS providers may terminate resuscitation on pts requiring base/modified base hospital physician order when rescuers are exhausted or physically unable to continue resuscitation

SEE PAGE 2 FOR TREATMENT ALGORITHM


BLS
• CPR (with BVM &100% O_2) x 2 mins - apply AED as soon as possible
• Deliver ⚡⚡ AED SHOCK ⚡⚡, if indicated by AED, & immediately resume CPR
• Analyze rhythm/check pulse after every 2 min CPR cycle
LALS
Cardiac Monitor (AEMT II)
ASYSTOLE/PEA
VF/VT
• CPR x 2 mins
• IV NS (may bolus up to 1000 mL)
• Consider advanced airway
• $EtCO_2$ monitoring
Shockable Rhythm?
YES
NO
• CPR x 2 mins
• Epinephrine 1:10,000 (AEMT II) 1 mg IV
• Treat reversible causes
Shockable Rhythm?
YES
NO
If no signs of ROSC is not achieved:
• Continue CPR followed by rhythm check every 2 mins. If rhythm converts to VF/VT treat according to VF/FT algorithm
• Epinephrine 1:10,000 (AEMT II) 1 mg IV every 3-5 mins (max 4 doses)
• Consider termination of resuscitation after 20 minutes of LALS intervention
Treat VF/VT
Treat Asystole/ PEA
⚡⚡ DEFIBRILLATION ⚡⚡
• CPR x 2 mins
• IV NS (may bolus up to 1000 mL)
Shockable Rhythm?
NO
YES
⚡⚡ DEFIBRILLATION ⚡⚡
• CPR x 2 mins
• Epinephrine 1:10,000 (AEMT II) 1 mg IV
• Consider advanced airway
• $EtCO_2$ monitoring
Shockable Rhythm?
NO
YES
⚡⚡ DEFIBRILLATION ⚡⚡
• CPR x 2 mins
• Lidocaine (AEMT II) 1-1.5 mg/kg IV
• Treat reversible causes
If no signs of ROSC is not achieved:
• Continue CPR followed by ⚡⚡ DEFIBRILLATION ⚡⚡ every 2 mins for continued/relapsed shockable rhythm
• Epinephrine 1:10,000 (AEMT II) 1 mg IV every 3-5 mins (max 4 doses)
• Lidocaine (AEMT II) 0.5-0.75 mg/kg IV max total cumulative dose: 3 mg/kg
• Consider termination of resuscitation after 20 minutes of LALS intervention

Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-5 (LALS)
Ventricular Assist Device (VAD)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

- VAD pts may also have an Implanted Cardioverter-Defibrillator (ICD) or a Pacemaker/ICD.
- VAD pts may not have a palpable pulse as these are continuous flow devices. Utilize a cardiac monitor to accurately establish the pt's heart rate/rhythm. Arrhythmias with signs of inadequate perfusion should be treated according to applicable S-SV EMS protocols. If defibrillation or cardioversion is indicated, follow the applicable treatment protocol (the pump is insulated so that electrical therapy should not be an issue).
- VAD pts may not have a blood pressure obtainable by standard EMS measurement methods. An accurate blood pressure is typically obtained via doppler, however, auscultation or NIBP readings may be possible.
- SpO_2 may not be measurable or accurate. $EtCO_2$ monitoring should be utilized if available.
- VAD pts/companions are taught to call 911 and page the on-call VAD coordinator in an emergency. The VAD coordinator will typically be on the telephone to provide additional assistance to EMS personnel. Contact information for the VAD coordinator is usually attached to or located inside the pt's VAD equipment bag.
- VAD pts should be transported to the nearest appropriate VAD center. If the pt's condition does not warrant transportation to the VAD center, the base/modified base hospital shall be consulted for pt destination. The VAD equipment bag, power source, battery & charger shall be brought with any transported VAD pt.



Sierra – Sacramento Valley EMS Agency Treatment Protocol	C-6 (LALS)
Chest Discomfort/Suspected Acute Coronary Syndrome (ACS)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- **Common symptoms associated with ACS include, but are not limited to:**
  - **Dyspnea/SOB**
  - **Palpitations**
  - **Diaphoresis**
  - **Nausea/vomiting**
  - **Lightheadedness/near-syncope/syncope**
  - **Upper abdominal pain or heartburn unrelated to meals**
  - **Discomfort in the throat or abdomen may occur in pts with diabetes, women and elderly pts**
- **Fleeting or sharp chest pain that increases with inspiration & lying supine is unlikely to be ACS related.**
- **Pt assessment, treatment & transport destination determination should occur concurrently.**

BLS

- Assess V/S, including SpO_2
- O_2 at appropriate rate if hypoxemic (SpO_2 <94%), short of breath, or signs of heart failure or shock
- P-Q-R-S-T

Aspirin
- 160 - 325 mg chewable PO (anticoagulant use is not a contraindication to administration)

LALS

- Cardiac monitor **(AEMT II)**
- 12-lead EKG as soon as possible **(AEMT II)** - prior to nitroglycerin administration
  - Criteria for ST Elevation Myocardial Infarction (STEMI):
    1. Machine readout: 'Meets ST Elevation MI Criteria', 'Acute MI', 'STEMI' (or equivalent)
    2. ST elevation in 2 or more contiguous leads
  - For pts with suspected ACS, serial 12-lead EKGs should be obtained if the pt's clinical status changes or if EKG changes are noted on the monitor, and every 15 mins if transport times are long
  - *A posterior 12-lead EKG should be performed for pts with ACS symptoms when a standard 12-lead EKG demonstrates ST depression in leads V1 – V3 but does not meet STEMI criteria*

- IV at appropriate time during treatment
  - Administer 250 mL NS fluid boluses to maintain SBP >90
  - Do not administer fluid if signs of heart failure

If discomfort persists following initial 12-lead acquisition:

Nitroglycerin
- 0.4 mg SL (tablet or spray), repeat every 5 mins if discomfort persists
- Do not administer if SBP <100,
- Use with caution for pts with suspected inferior MI (establish vascular access prior to administration)
- Consult with base/modified base hospital prior to administration if pt takes erectile dysfunction or pulmonary hypertension medication

SEE PAGE 2 FOR ADDITIONAL LALS TREATMENT & PT DESTINATION

ADDITIONAL LALS TREATMENT & PT DESTINATION

If discomfort persists following one or more EMS administered nitroglycerine doses:

Fentanyl (AEMT II)
- 25 mcg slow IV
- May repeat every 5 mins if discomfort persists (maximum cumulative dose: 200 mcg)

ⓘ Do not administer fentanyl to pts with any of the following contraindications:
- Systolic BP <100 - Hypoxia or RR <12 - ALOC or evidence of head injury

STEMI Criteria Met?
- NO → **Transport to Closest Facility**
- YES ↓

Both STEMI Criteria Met?
- NO → **Contact closest ~~facility~~ *SRC* for destination consultation**
  - Transmit 12-lead to closest *SRC* ~~facility~~ if able
- YES ↓

≤45 min to STEMI Receiving Center (SRC)
- NO → **Contact closest ~~facility~~ *SRC* for destination consultation**
  - Transmit 12-lead to closest *SRC* ~~facility~~ if able
- YES ↓

Any of the following criteria met?
- CPR in progress
- Unmanageable airway
- Unstable v-tach

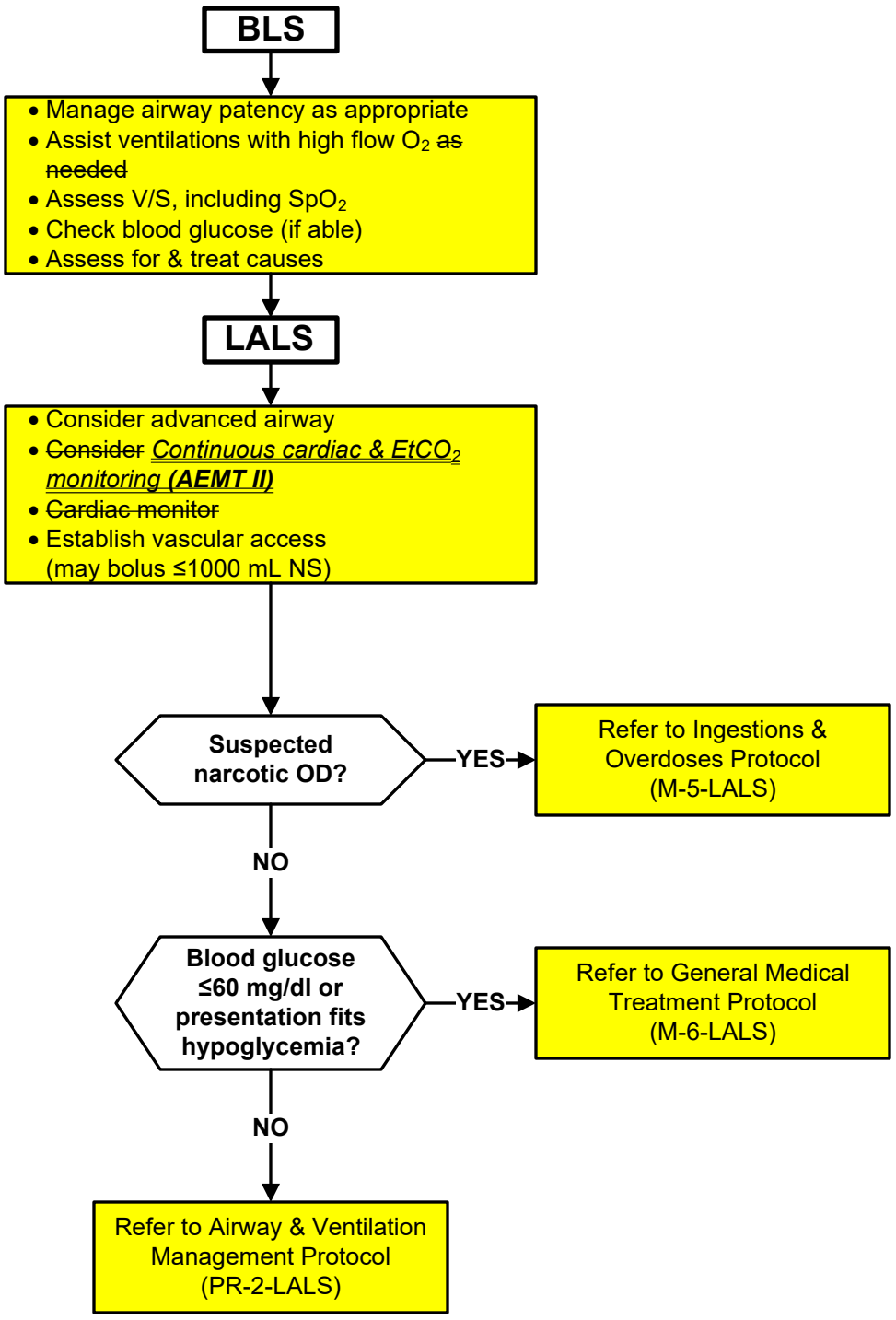
- YES → **Contact closest ~~facility~~ *SRC* for destination consultation**
  - Transmit 12-lead to closest *SRC* ~~facility~~ if able
- NO ↓

Transport Directly to SRC
- Transmit 12-lead to SRC if able
- Advise SRC of "STEMI ALERT"

STEMI Pt Notes

- When possible, any 12-lead EKG meeting STEMI criteria shall be transmitted ~~within 10 mins of first STEMI positive 12-lead~~ *at least 10 mins prior to SRC arrival*
- Scene time for STEMI pts should be ≤10 mins
- When possible, obtain & relay to the receiving hospital the name/contact information of an individual who can make decisions on behalf of the pt
- Always relay pertinent medical directives (DNR, POLST, etc.) to the receiving hospital

Sierra – Sacramento Valley EMS Agency Treatment Protocol	R-2 (LALS)
Respiratory Arrest	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028



Sierra – Sacramento Valley EMS Agency Treatment Protocol	R-3 (LALS)
Acute Respiratory Distress	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

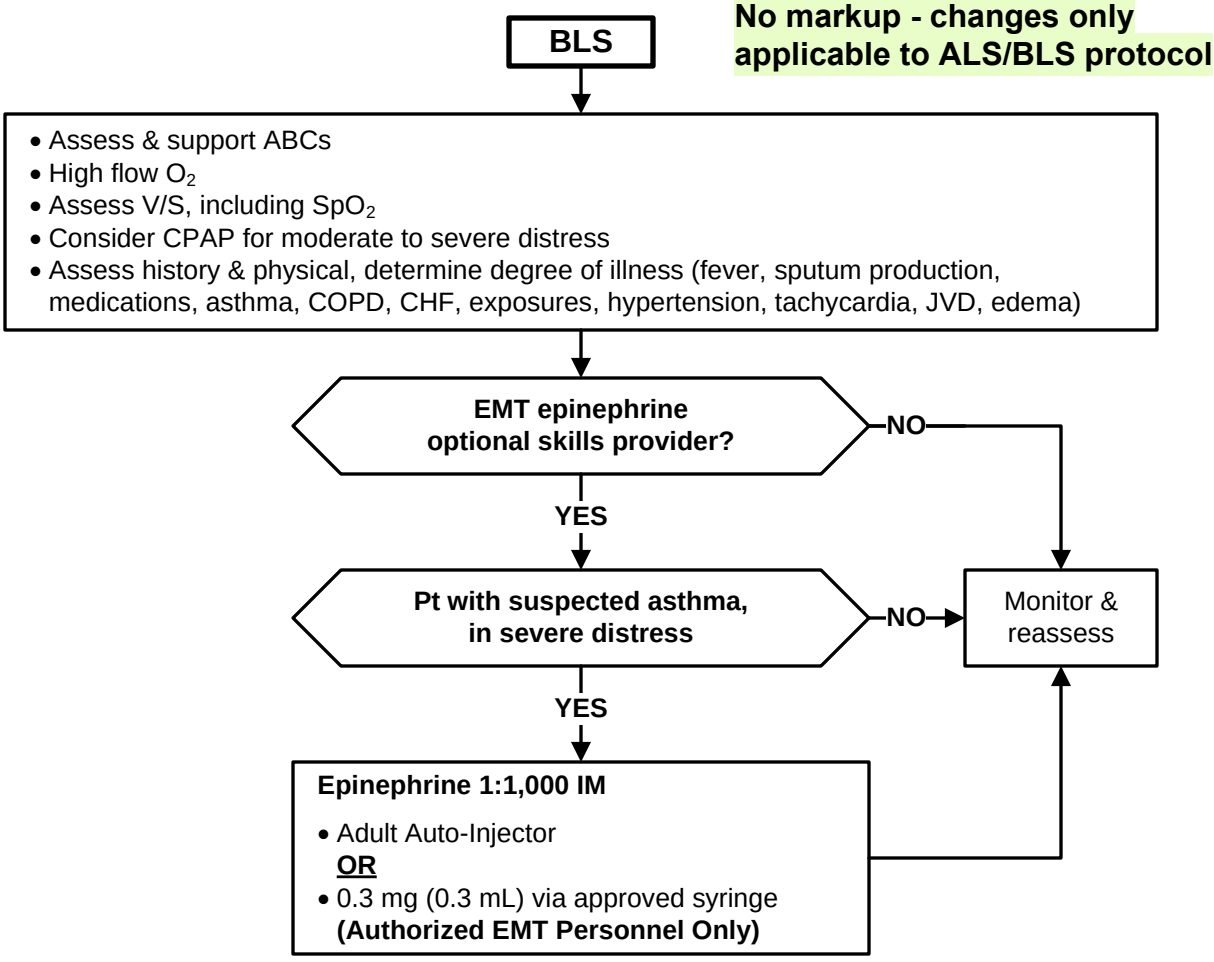
Continuous Positive Airway Pressure (CPAP) Utilization

- **Indications:**
  - CHF with pulmonary edema
  - Moderate to severe respiratory distress
  - Near drowning
- **Contraindications:**
  - <8 years of age
  - Respiratory or cardiac arrest
  - Severe decreased LOC
  - Agonal respirations
  - Inability to maintain airway
  - Suspected pneumothorax
  - SBP <90
  - Major trauma, especially head injury or significant chest trauma
- **Complications:**
  - Hypotension
  - Pneumothorax
  - Corneal drying

Epinephrine Administration

- Epinephrine is only indicated for pts with suspected asthma who are in severe distress.
- **Use epinephrine cautiously in pts >35yo, or with a history of coronary artery disease or hypertension.**
- Administer Auto-Injector/IM epinephrine into the lateral thigh, midway between waist & knee.

No markup - changes only applicable to ALS/BLS protocol



SEE PAGE 2 FOR LALS TREATMENT

Acute Respiratory Distress

Asthma/COPD

LALS

Mild Distress
- Mild wheezing
- Mild shortness of breath
- Cough

- Cardiac monitor **(AEMT II)**
- Consider IV NS (may bolus up to 1000 mL)

Albuterol 5 mg
- Nebulizer
- May repeat 2.5-5 mg for continued respiratory distress

Moderate to Severe Distress
- Cyanosis
- Accessory muscle use
- Inability to speak >3 words
- Severe wheezing/shortness of breath
- Decreased or absent air movement

- Cardiac monitor **(AEMT II)**
- IV NS (may bolus up to 1000 mL)

Albuterol 5 mg
- Nebulizer/CPAP/BVM
- May repeat 2.5-5 mg for continued respiratory distress

History of asthma with severe distress only

Epinephrine 1:1,000
- 0.01 mg/kg IM (max: 0.5 mg)

CHF/Pulmonary Edema

LALS

Mild Signs & Symptoms

- Cardiac monitor **(AEMT II)**
- IV NS TKO

***Nitroglycerin**
- 0.4 mg SL
- May repeat every 5 mins

***Nitroglycerin Notes/Precautions**
- Do not administer if SBP <100
- Do not delay due to difficult vascular access
- Consult with base/modified base hospital prior to administration to pts taking erectile dysfunction or pulmonary HTN medication

Moderate to Severe Signs & Symptoms

- Cardiac monitor **(AEMT II)**
- Assess BP x 2 to confirm accuracy
- IV NS TKO

***Nitroglycerin: titrate dose based on SBP**
- SBP 100-150: 0.4 mg SL
- SBP 150-200: 0.8 mg SL
- SBP >200: 1.2 mg SL
- May repeat titrated doses every 5 mins based on repeat SBP

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-5 (LALS)
Ingestions & Overdoses	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- When possible, contact Poison Control for consultation: (800) 876-4766 or (800) 222-1222.
- Refer to Hazardous Material Exposure Protocol (E-7 - LALS) if pt externally exposed to organophosphate, carbamate or hydrofluoric acid.
- Oral ingestions of hydrofluoric acid require immediate treatment as it can cause fatal hypocalcemia – early signs of hypocalcemia include:
  - Tingling sensation around mouth, lips, hands or feet - Hand or foot spasms - QT interval prolongation
- Activated charcoal is an agent used for gastric decontamination following ingestion overdose. Clinical research only supports its use when given early after ingestion. While activated charcoal may be helpful when given rapidly after an overdose, it is very important to avoid administration in cases where potential contraindications exist.

Activated Charcoal Indications

- Early administration (within 1 hr of ingestion)
- Potentially deadly agent
- No effective antidote
- Suggested agents where EMS administration of activated charcoal is appropriate:
  - Antidepressants - Anticonvulsants - Digoxin
  - Calcium channel blockers - Beta blockers

Activated Charcoal Contraindications

- Obtunded/altered level of consciousness
- Known caustic ingestion (acid or alkali)
- Known hydrocarbon ingestion
- Suspected GI obstruction (vomiting)
- Agents not well absorbed by activated charcoal (relative contraindication), examples include:
  - Lithium - Iron - Toxic alcohol

BLS

- O_2 at appropriate flow rate, manage airway and assist ventilations as necessary
- Assess V/S including SpO2
- Identify substance and time of ingestion: bring sample in original container if safe/possible
- Check blood glucose (BG) if able

Blood glucose ≤60 mg/dl or presentation fits hypoglycemia?

YES → *Refer to General Medical Treatment Protocol (M-6 - LALS)*

NO

ALS

- Cardiac monitor **(AEMT II)**
- Establish vascular access at appropriate time (may bolus up to 1000 mL NS)

Consider activated charcoal – (BASE/MODIFIED BASE HOSPITAL PHYSICIAN ORDER ONLY)

- 50 gm PO routine dose

SEE PAGE 2 FOR AGENT SPECIFIC TREATMENT

AGENT SPECIFIC TREATMENT

Beta Blockers

May admin. up to 1000 mL NS bolus if SBP <90

↓

Atropine 1 mg IV (AEMT II)
- Only if HR <50 and SBP <90 after NS bolus
- May repeat every 5 mins (max total: 3 mg)

↓

Glucagon 1 mg (1 unit) IM/IN
- Only if HR <50 and SBP <90
- If no IV/IO, may admin. 1 mg IM/IN

↓

Push-Dose Epinephrine (AEMT II)
- Only if HR <50 and SBP <90
- Eject 1 mL NS from a 10 mL pre-load syringe
- Draw up 1 mL epinephrine 1:10,000 concentration and gently mix
- Admin. 1 mL IV push every 1 - 5 mins
- Titrate to maintain SBP >90

Narcotics

Naloxone
- Only if RR <12 or respiratory efforts inadequate
- *Provide BVM ventilation at appropriate rate*
- 1-2 mg IV/IM/IN
- May repeat every 2 - 3 mins if improvement inadequate
- Do not admin. if advanced airway in place & pt is being adequately ventilated

Organophosphate or Carbamate

Atropine 2 mg IV (AEMT II)
- Only if HR <60
- May repeat every 3 mins – no max dose

Tricyclic Antidepressants

Sodium Bicarbonate 1 mEq/kg IV (AEMT II) - if any of the following are present:
- SBP <90
- QRS >0.12 seconds (3 small boxes)
- Seizures

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-8 (LALS)
Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- 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

No markup - changes only applicable to ALS/BLS protocol

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 (x1) in 5 mins

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	M-8P (LALS)
Pediatric Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- All pts with a report of pain shall be appropriately assessed & 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

No markup - changes only applicable to ALS/BLS protocol

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 & EtCO2 monitoring **(AEMT II)** 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 20 mL/kg if indicated by pt's clinical condition

Fentanyl (AEMT II): 1 mcg/kg slow IV/IO or IM/IN (max: 50 mcg) – may repeat every 5 mins (max 4 doses)
If pain not effectively managed:
Midazolam (AEMT II): 0.05 mg/kg slow IV/IO (max single dose: 1 mg) – may repeat after 5 min (max: 2 doses)

Fentanyl/Midazolam Contraindications & Administration Notes

- ⓘ For pts <4 yo, consult with base/modified base hospital prior to fentanyl &/or midazolam administration
- ⓘ Administer fentanyl/midazolam IV/IO doses over 60 seconds
- ⓘ Do not administer fentanyl/midazolam to pts with the following:
  - Hypotension (see Pediatric Hypotension Table), **OR**
  - SpO2 <94% or RR <12, **OR**
  - ALOC or suspected moderate/severe TBI
- ⓘ There is an increased risk of sedation & airway/respiratory compromise when admin. midazolam & fentanyl to the same pt

Pediatric Normal SBP & Hypotension Table

Age	Normal SBP	Hypotension
1-12 mos	70-100	SBP <70
1-2 yrs	80-110	SBP <70 + age (yrs) x 2
3-5 yrs	90-110	
6-9 yrs	100-120	
10-14 yrs	100-120	SBP <90

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-9 (LALS)
CO Exposure/Poisoning	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- Initial symptoms of CO exposure are insidious, similar to the flu and thus seemingly benign. These symptoms increase in severity as the SpCO level rises & may include one or more of the following:
  - Confusion
  - Dizziness/vertigo
  - Headache
  - Shortness of breath
  - Nausea/vomiting
  - Fatigue
  - Syncope
  - Confusion
  - Tachycardia
  - Cardiac arrhythmias
  - Seizures
  - Shock
  - Coma
  - Apnea
- SpO2 readings may appear normal or falsely elevated in the presence of CO. Utilize clinical findings & history as indicators of hypoxia.
- CO poisoning may result in cardiac rhythm disturbances &/or myocardial ischemia.

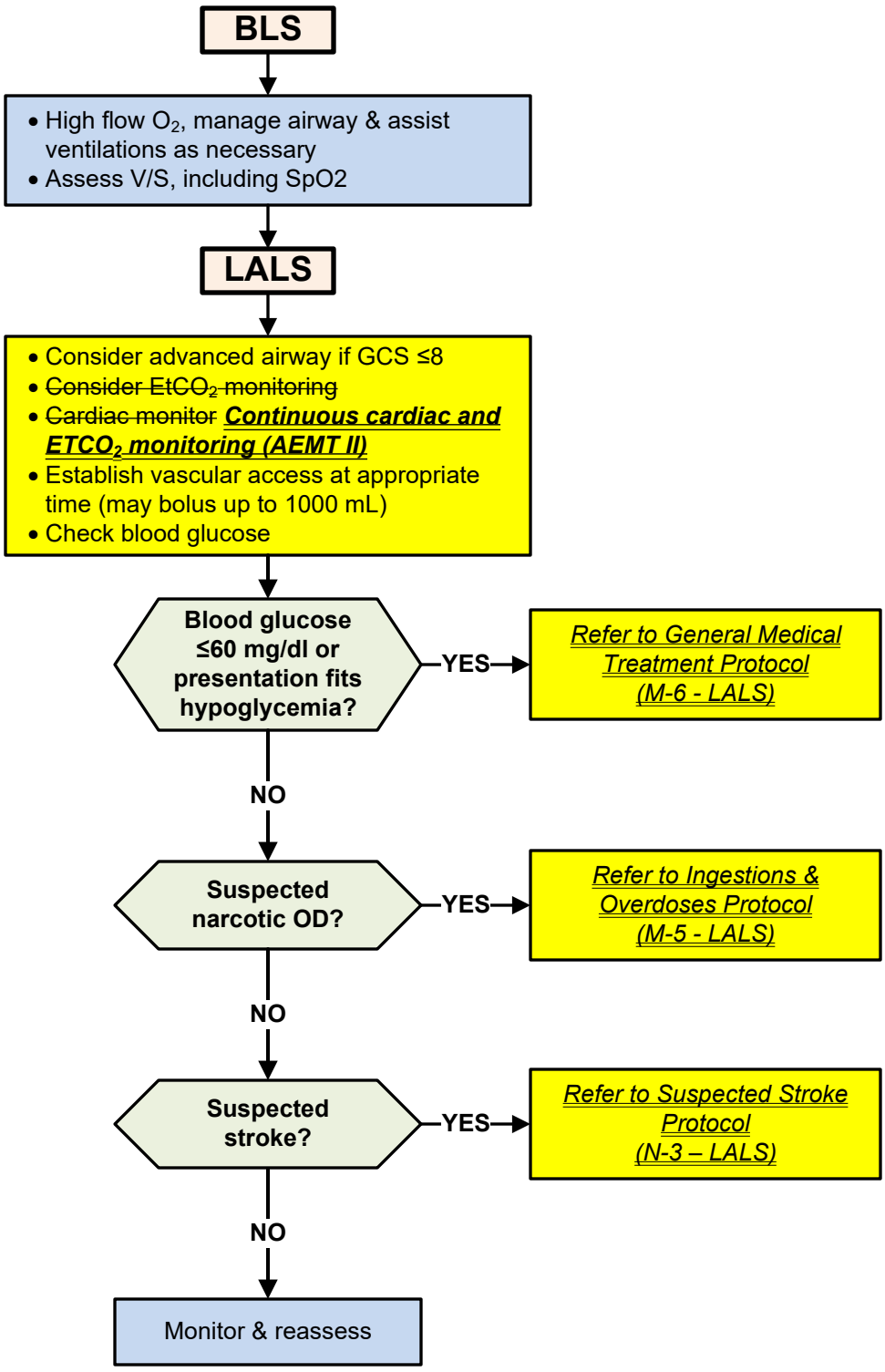
BLS

- Remove pt from CO exposure source
- Assess V/S
- High flow O_2
- Measure SpCO if CO-Oximeter available
  - SpCO 0 to 3% – Normal
  - SpCO 3 to 12% – Abnormal
  - SpCO >12% – Significantly abnormal

LALS

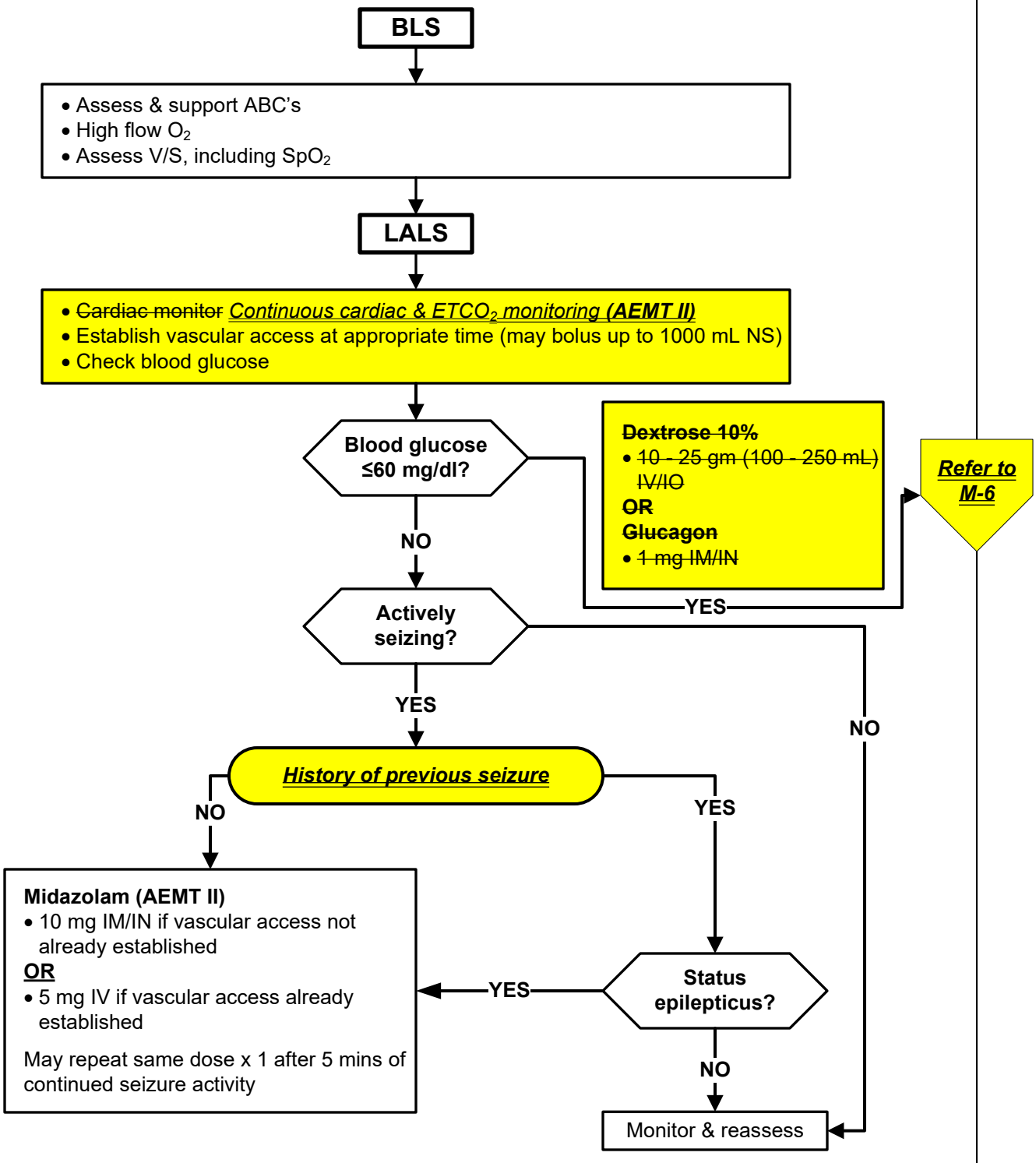
- Continuous cardiac & $ETCO_2$ monitoring **(AEMT II)**
- Perform 12-lead EKG **(AEMT II)**
  - Refer to appropriate cardiac protocol for management of cardiac related issues

Sierra – Sacramento Valley EMS Agency Treatment Protocol	N-1 (LALS)
Altered Level Of Consciousness	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028



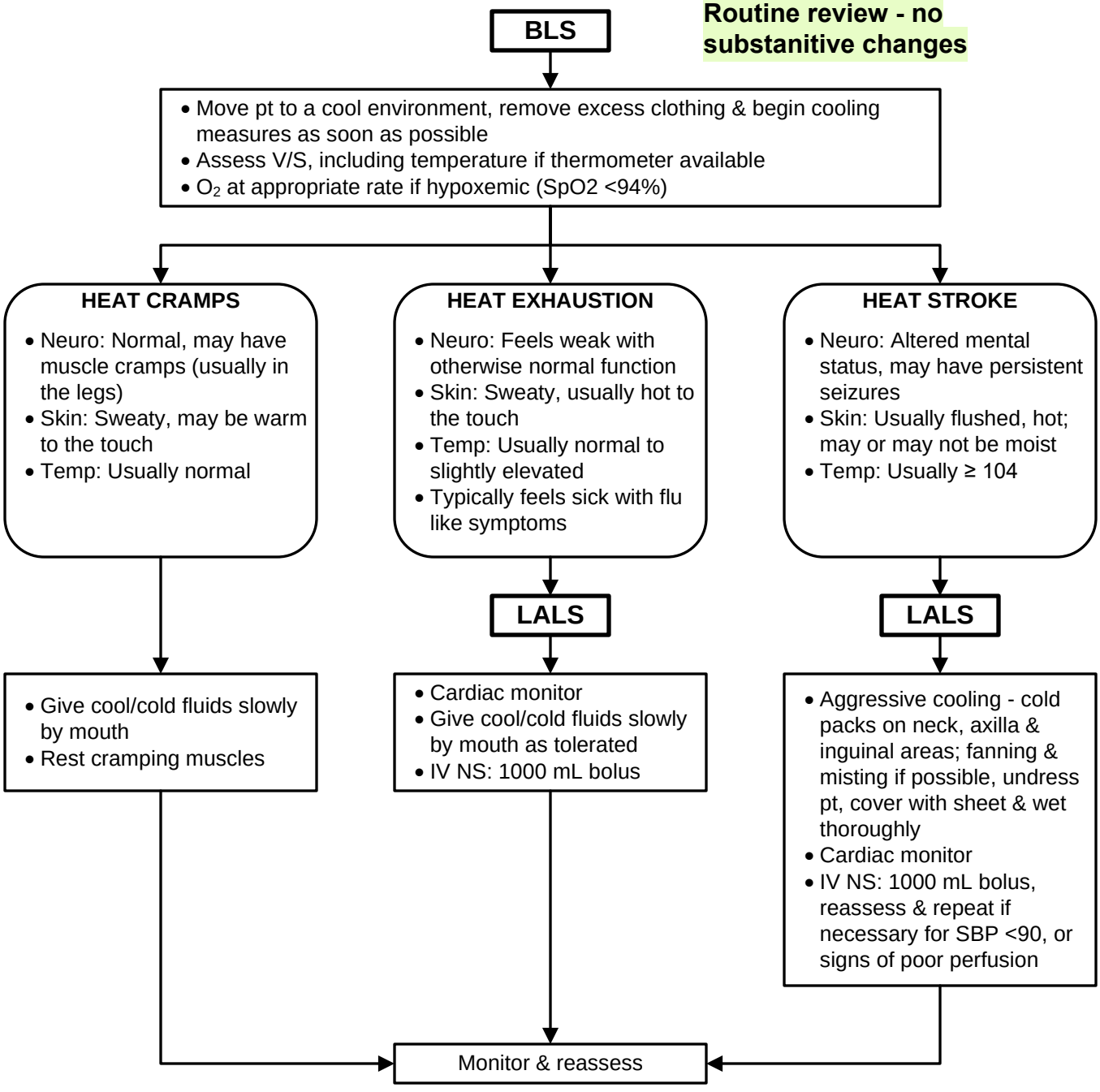
Sierra – Sacramento Valley EMS Agency Treatment Protocol	N-2 (LALS)
Seizure	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

- Status Epilepticus: 2 or more seizures without periods of consciousness, or a single seizure lasting >5 mins.
- Transport patients >20 weeks pregnant in left-lateral position *(if 3rd trimester, or within 6 weeks post-partum, refer to OB-G2 ptotocol for treatment)*



Sierra – Sacramento Valley EMS Agency Treatment Protocol	E-1 (LALS)
Hyperthermia	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 04/2028

Routine review - no substanitive changes

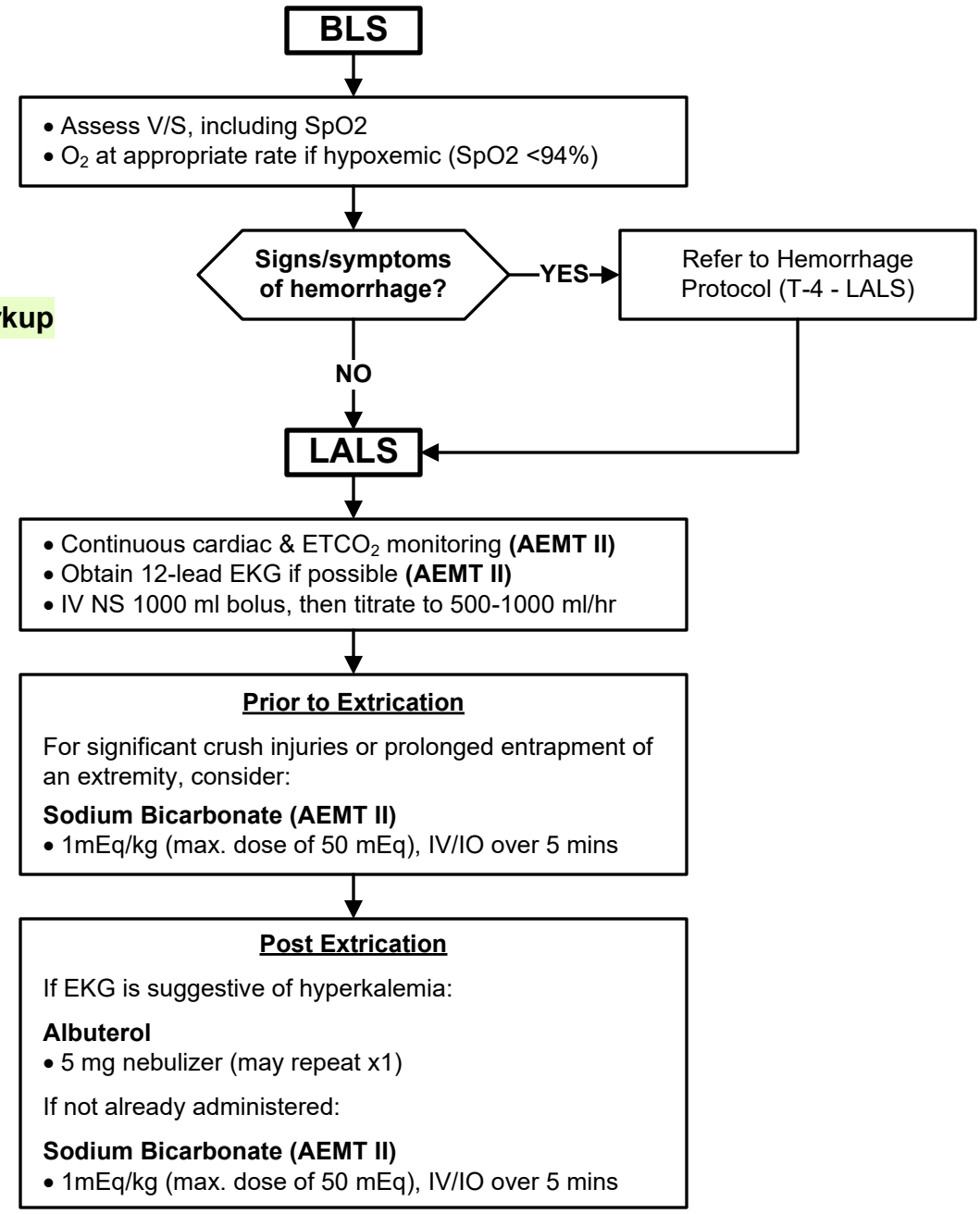


Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-2 (LALS)
Crush Injury/Crush Syndrome	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

Crush syndrome occurs after a crushing injury that leads to a release of muscle breakdown products into the bloodstream. This can lead to acute kidney injury, rhabdomyolysis and life-threatening complications such as renal failure and metabolic acidosis. Inclusion criteria may include the following:

- Prolonged entrapment of an extremity or body region (>1 hr since time of entrapment).
- Evidence of compartment syndrome (pain, pallor, paresthesia, paralysis, pulselessness).
- EKG changes consistent with hyperkalemia (peaked T-waves, widened QRS, prolonged QT or absent P-waves).

New Protocol - markup not applicable

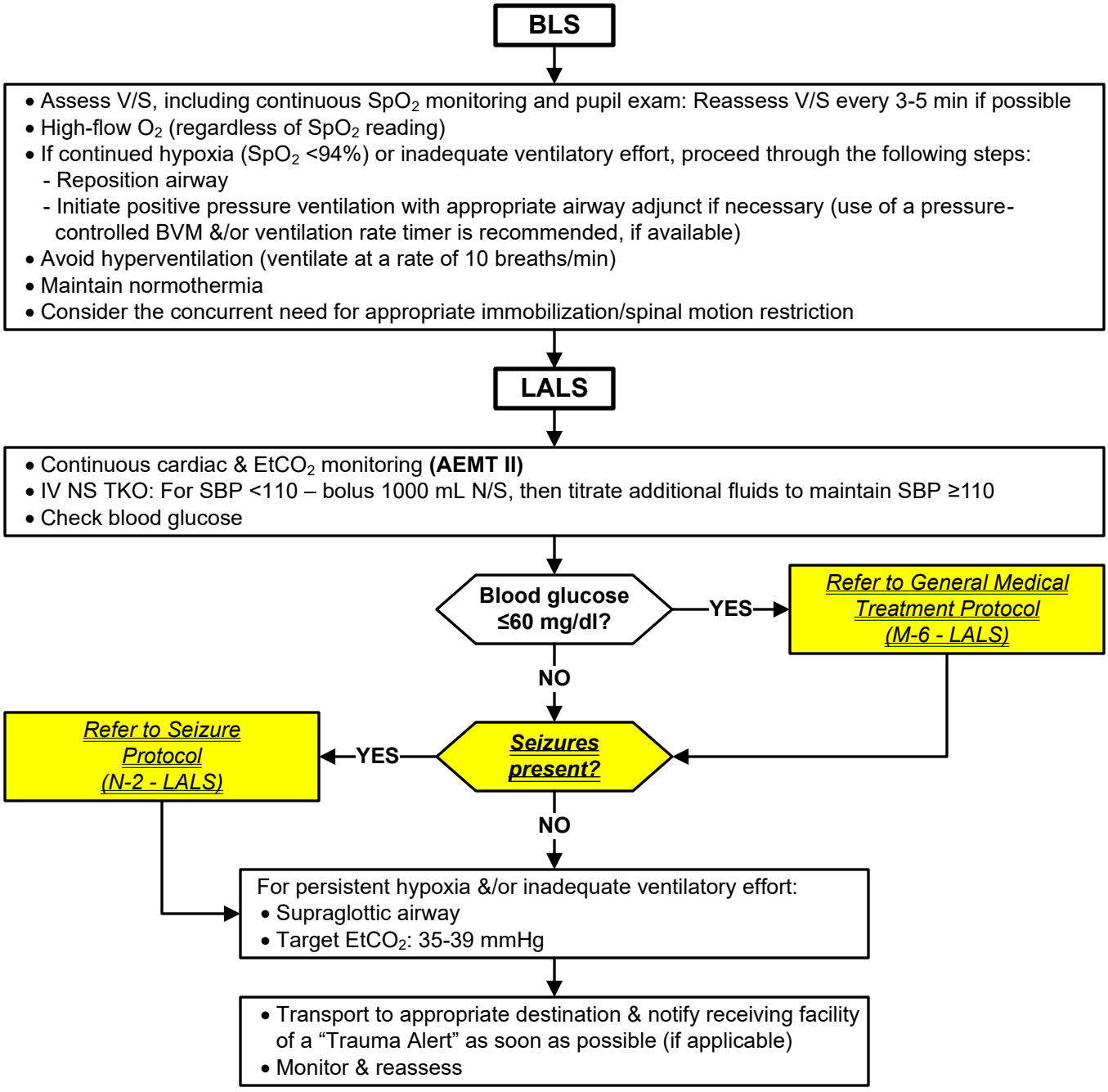


Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-3 (LALS)
Suspected Moderate/Severe Traumatic Brain Injury (TBI)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

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



Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-4 (LALS)
Hemorrhage	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

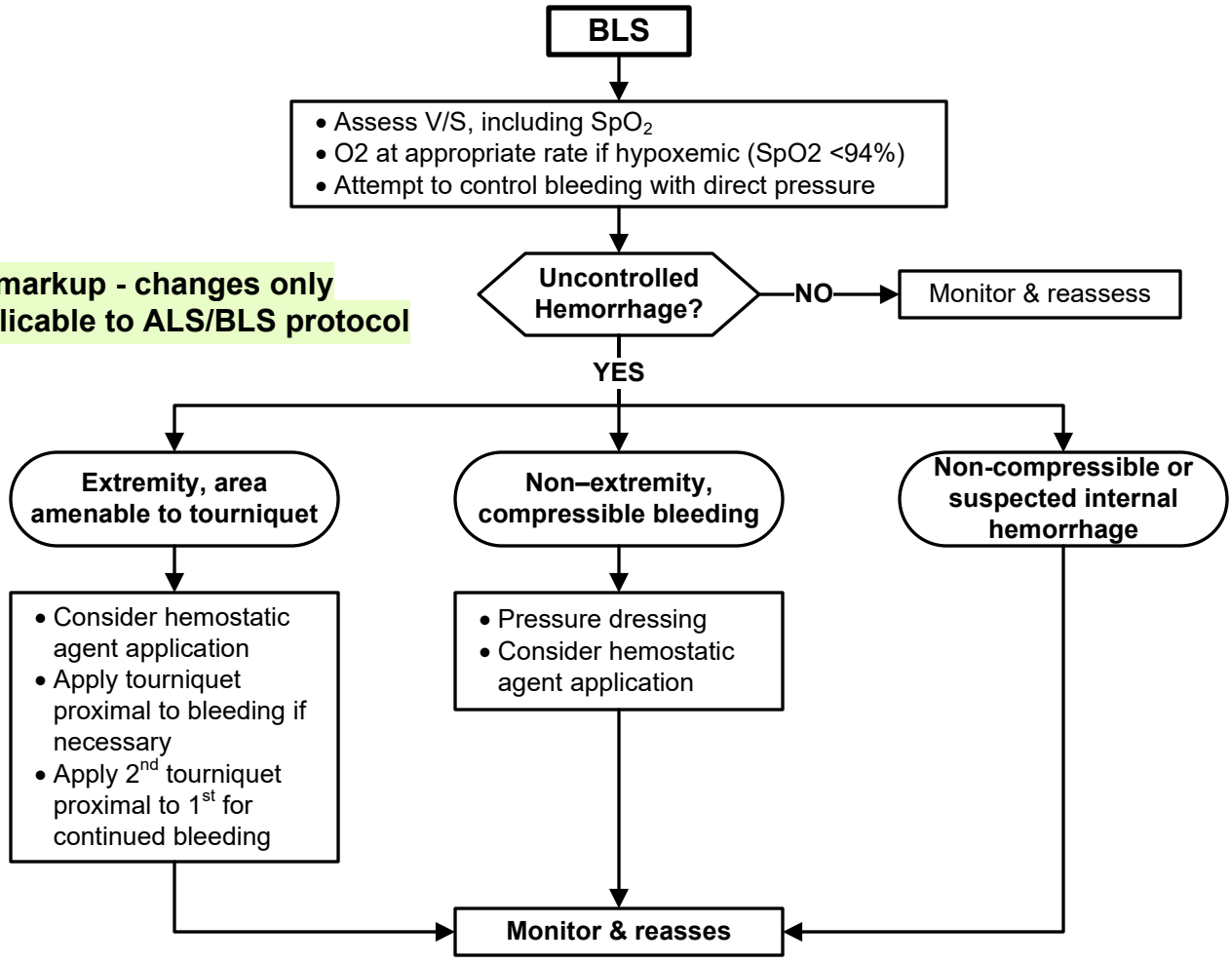
Tourniquet Devices:

- 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.

No markup - changes only applicable to ALS/BLS protocol



Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-1 (LALS)
12-Lead EKG	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

INDICATIONS

12-lead EKG procedures shall be performed on pts who present with one or more of the following:

- Sign/symptoms suggestive of acute coronary syndrome (ACS) such as:
  - Non-traumatic chest or upper abdominal discomfort
  - Syncope/near-syncope
  - Acute generalized weakness
  - Dyspnea
- Cardiac dysrhythmias on 4-lead EKG
- ROSC following cardiac arrest

PRE-PROCEDURE

- Assess vital signs including SpO_2
- Administer O_2 as indicated by clinical condition

PROCEDURE

- Prepare EKG monitor and connect 12-lead cables
- Utilize packaged electrodes designed for single pt use (not bulk)
- Prep skin as necessary (e.g. wiping with 4x4 gauze, shaving)
- Enter, at a minimum, pt's age, gender, and last name/first initial into the cardiac monitor
- Apply chest leads using the landmarks indicated on **Diagram A**
- While acquiring the 12-lead EKG:
  - Position pt away from 60hz RF noise (light switches, smartphones, LED lights, etc.)
  - Position pt supine, or semi-fowler with their arms at their side and legs uncrossed
  - Instruct pt to breath normally and remain still
  - Don't converse with or touch pt during acquisition
- Interpret the EKG findings
- If isoelectric line has significant artifact or machine reads "poor data quality" (or equivalent), attempt to reacquire a clean 12-lead EKG if pt condition allows
- *If a posterior 12-lead EKG is indicated, move leads V4 – V6 from the chest and apply posteriorly as indicated in **Diagram B**. Print the 12-lead and manually label leads V4 – V6 as V7 – V9*

Diagram A

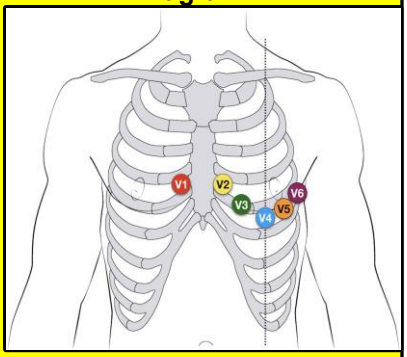
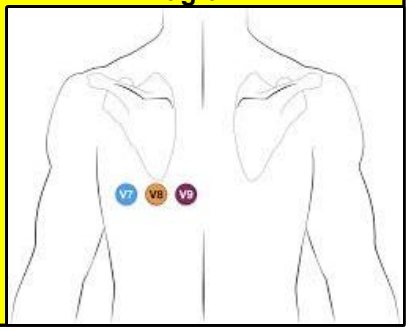


Diagram B



POST-PROCEDURE

- 12-lead EKG's meeting STEMI criteria shall be transmitted to the appropriate facility (closest hospital or STEMI Receiving Center depending on incident specific circumstances) as soon as possible if transmission capabilities are available
- For pts with suspected ACS, serial 12-lead EKGs should be obtained if the pt's clinical status changes or if EKG changes are noted on the cardiac monitor, and every 15 minutes if transport times are long
- Copies of 12-lead EKGs shall be provided to the receiving hospital physician upon EMS arrival, left at the receiving hospital at time of pt delivery, and attached to the EMS pt care report (PCR)

Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-2 (LALS)
Airway & Ventilation Managment	
Approval: Troy M. Falck, MD – Medical Director	Effective: 10/01/2025
Approval: John Poland – Executive Director	Next Review: 07/2028

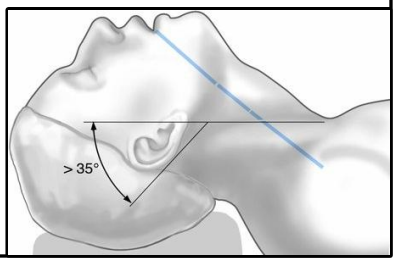
INDICATIONS

- 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

No markup - changes only applicable to ALS/BLS protocol

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

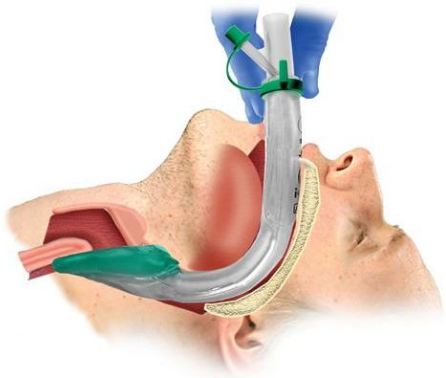
- Attach oxygen to BVM at a minimum flowrate of 10-15 L/min
- For one rescuer ventilation, position the mask over the nose & mouth & ensure a tight seal with an E-C clamp technique
- Squeeze the bag slowly, delivering breath over 1-2 secs
- Deliver only enough volume to achieve normal chest rise & fall **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