Sierra – Sacramento Valley EMS Agency
Regional Emergency Medical Advisory Committee
(REMAC)

MEETING AGENDA

MEETING DATE & TIME INFORMATION

- **Tuesday, July 22, 2025, 9:00 am – 12:00 pm**

MEETING LOCATION & ALTERNATE ATTENDANCE INFORMATION

- **Primary Meeting Location:** 535 Menlo Drive, Suite A, Rocklin, CA 95675
- **Alternate Meeting Location:** 1255 East Street, 2nd Floor, Redding, CA 96001
- **Zoom:** https://us02web.zoom.us/j/86194610282?pwd=y33pauaobbXL9IcbPqHOj9knP2YUhH.1
- **Telephone:** (669) 900-9128 **Meeting ID:** 861 9461 0282 **Passcode:** 1702

IMPORTANT NOTIFICATONS

- Public comments on proposed policy/protocol actions listed on this agenda will be taken during the review/discussion of the applicable item. Individuals unable to attend the meeting may provide written public comment on any item listed on this agenda, no later than seven (7) calendar days prior to the scheduled meeting date, by using the following comment form link: https://www.ssvems.com/s-sv-ems-remac-public-comment/.
- Policy/protocol actions listed on this agenda may be approved by a majority vote of the REMAC members present at the meeting. If necessary, proposed policy/protocol actions may be continued to subsequent REMAC meetings until consensus is reached by the committee.
- All REMAC approved policy/protocol actions shall also be approved by the S-SV EMS Medical Director and Regional Executive Director prior to implementation. S-SV EMS may make non-substantive corrections to approved policy/protocol actions to address any technical defect, error, irregularity, or omission prior to final publication.
- EMS system participants will be notified of approved policy/protocol actions a minimum of 30 calendar days prior to the effective implementation date. Policy/protocol action updates are routinely published on a bi-annual basis as follows:
  - October & January meeting approved policy actions: April 1st implementation date.
  - March & July meeting approved policy actions: October 1st implementation date.
- Some policy/protocol actions may require immediate action to maintain compliance with statutes/ regulations, or to preserve medical control/integrity of the EMS system. Policy/protocol actions of this type may be implemented by S-SV EMS as urgency measures and scheduled for discussion at the next regularly scheduled REMAC meeting, if necessary.

MEETING AGENDA		
ITEM	**TITLE**	**LEADER**
A	**Call to Order/Introductions**	**Chairperson**
B	**Approval of Previous Meeting Minutes**	**Chairperson**
C	**Approval of Meeting Agenda**	**Chairperson**
D	**Public Comment**	**Attendees**
E	**S-SV EMS Policy/Protocol Actions**	**S-SV EMS Staff**
	509: Trauma Center Designation Criteria, Requirements & Responsibilities	Michelle Moss
	854: Unsafe Scene (NEW)	Patrick Comstock
	1106: Mechanical Chest Compression Devices (REMOVE)	John Poland
	C-6: Chest Discomfort/Suspected Acute Coronary Syndrome (ACS)	Michelle Moss
	M-5: Ingestions & Overdoses	Michelle Moss
	M-8: Pain Management	Michelle Moss
	M-8P: Pediatric Pain Management	Michelle Moss
	M-9: CO Exposure/Poisoning	Michelle Moss
	N-1: Altered Level of Consciousness	Michelle Moss
	N-2: Seizure	Michelle Moss
	PR-1: 12-Lead EKG	Michelle Moss
	PR-2: Airway & Ventilation Management	Michelle Moss
	R-2: Respiratory Arrest	Michelle Moss
	T-2: Crush Injuries (NEW)	Michelle Moss
	T-3: Suspected Moderate/Severe Traumatic Brain Injury (TBI)	Michelle Moss
	T-4: Hemorrhage	Michelle Moss
	NEW: Advanced Airway Utilization Form	Brittany Pohley

Sierra – Sacramento EMS Agency – REMAC Meeting Agenda

ITEM	TITLE	LEADER
F	**EMS Aircraft Provider Reports**	**Attendees**
G	**EMS Ground Provider Reports**	**Attendees**
H	**Hospital Provider Reports**	**Attendees**
I	**Quality Improvement (QI) Case Review**	**Brittany Pohley**
J	**S-SV EMS Agency Reports**	**S-SV EMS Staff**
	- EMS Data System	Jeff McManus
	- Clinical Quality Dashboards	Jared Gunter
	- Regional Specialty Committees	Michelle Moss
	- Operations	Patrick Comstock
	- Regional Executive Director	John Poland
	- Medical Director	Troy Falck, MD
K	**Next Meeting/Adjournment: October 28, 2025**	**Chairperson**

Sierra – Sacramento Valley EMS Agency
Regional Emergency Medical Advisory Committee
(REMAC)

MEETING MINUTES

Meeting Date
Tuesday, April 22, 2025

A. Call to Order/Introductions

- Dr. Royer called the meeting to order at 9:00 am, and all attendees introduced themselves.

B. Approval of Previous Minutes: January 28, 2025

- The minutes were unanimously approved by the committee with no changes.

C. Approval of Agenda

- The committee approved the agenda with no changes.

D. Public Comment

- Sutter Roseville will have a June Run Review at S-SV EMS.
- Mercy Medical Center Mt. Shasta will have a Run Review on 4/29, at 7pm.

E. REMAC & Policy/Protocol Actions

- Jared Gunter reviewed the results of a survey sent out to the providers regarding frequency of the REMAC meetings, as well as feedback.
    - The majority of responders felt the current frequency of meetings was fine with no changes.
    - S-SV is trying not to push out too many updates/changes at the same time, to make it easier for the providers.
    - Dr. Royer mentioned that medicine constantly is changing.

F. S-SV EMS Policy Actions

1 **Policy Actions for Final Review & Approval:**

Policy	Name	Motion	Second	Committee Vote
412	**Ground Ambulance Provider Rate Approval Process** • The EMS Authority has not issued regulations to go along with the statute that was put into place 1/1/24. This has left many LEMSAs in a bit of a lurch to make sure they're consistent with the statute and protecting the providers. • This has been taken to the JPA Board twice in the last year and a half, to have them approve the rates of the ground ambulance providers. The challenge has been that rates are being submitted at different times, and rate changes after being approved. • S-SV wanted to make sure there was a policy outlining the process for providers. • The Policy language is directly from the statute. • Mr. Poland plans to have a resolution on the June JPA Board agenda that would have the JPA Board set the rates and give Mr. Poland the authority to increase the rates at a standard cost of living increase. Providers also have the option to raise rates but would need to justify those increases to the JPA Board. • This will not apply to any of the EOA providers that have contracted with S-SV, or with any public agencies.	Debbie Madding	Dr. Morris	Passed Unanimously
461	**Automatic Aid/Mutual Aid/Disaster Assistance (Including FEMP, AST & MTF Resource Requests)** • This is due for routine review, with no recommended changes.	Rich Lemon	Dr. Morris	Passed Unanimously
462	**Temporary Recognition of EMS Personnel (Note: urgency policy, previously released to preserve medical control of the EMS system)** • This is a new policy based on an urgency matter. S-SV wanted to make sure this was in place before 'wildfire season'.	Rich Lemon	Dr. Morris	Passed Unanimously

	• A couple of years ago, the US Forest service changed their process of requesting and securing EMS resources on US Forest responsibility wildfire incidents. The change was a lot of resources coming into California from outside of California. The statutes and regulations do not allow for that to happen cleanly and consistently. The EMS Authority will not give a written legal opinion on questions S-SV has regarding this. • Due to some challenges on both the operational and clinical side, S-SV wanted some oversight. • Prior to publishing this policy, it was sent to several subject matter experts in S-SV EMS, the State and the US Forest service staff including their Medical Director – all agreed with the policy.			
710	**Management of Controlled Substances (Note: will include discussion on ketamine availability & required stocking quantities)** • On page 1, line 24, 'Morphine sulfate' was removed. It is no longer a requirement for the inventory. • Several providers have talked about the shortage of ketamine recently. S-SV EMS will be getting rid of the maximum dosage carried to help the providers.	Rich Lemon	Dr. Morris	Passed Unanimously
806	**Unified Paramedic Optional Scope of Practice for Qualified Transport Programs** • This is due for routine review, with no recommended changes. • By 5/15, S-SV EMS must submit the renewal application to the State Authority Optional Scope of Practice EMDAC panel. The approval is good 3 years.	Dr. Morris	Rich Lemon	Passed Unanimously
915	**MICN Authorization/Reauthorization** • On page 3, specificity on CEs has been added to Item 3. • If hospitals have budget concerns with this, effect date 1/1/2026. • Attendance of the REMAC counts as CE hours for MICN renewals.	Josh Sher	Dr. Morris	Passed Unanimously

C-1	**Non-Traumatic Pulseless Arrest** • On page 1, If resuscitation attempts do not obtain ROSC...' was removed, and added 'If ROSC is not achieved,'. • On page 2, any occurrence of 'If no signs of ROSC' have been replaced with 'If ROSC is not achieved:'. • It was suggested to separate ALS from BLS, on page one, on the 'Termination of Resuscitation' box. • On page 1, in the 'Termination of Resuscitation' box, it was suggested to remove 'AED' from the ALS number (2). • On page 2, it was suggested to remove 'see page 1' from the non-shockable rhythm box and just move that last bullet point to the first page. • On page 2, in the very center of the page under the inverted pentagons, it was suggested that the arrows should be pointing in the opposite direction.	Debbie Madding	Rich Lemon	Passed Unanimously
C-5	**Ventricular Assist Device (VAD)** • This is due for routine review, with no recommended changes.	Rich Lemon	Dr. Morris	Passed Unanimously
E-1	**Hyperthermia** • This is due for routine review, with no recommended changes.	Debbie Madding	Dr. Goldsmith	Passed Unanimously
R-3	**Acute Respiratory Distress** • On page 2, under asthma, the addition of Magnesium Sulfate for the treatment of asthma.	Rich Lemmon	Dr. Morris	Passed Unanimously
PR-3P	**Pediatric Pleural Decompression** • This is a new protocol. • This includes a weight chart using regular catheter needles and shouldn't require any additional purchases. • This was vetted with Pediatric Surgeons as well.	Debbie Madding	Dr. Morris	Passed Unanimously

G. Law Enforcement Response to Behavioral Crisis Incidents

- Recently, the courts ruled that law enforcement is not given immunity if they go into a house where no crime is being committed and put hands on someone and cause any type of bodily injury.
- Now, if someone calls 911 and says their loved one is having a behavioral emergency, many law enforcement agencies will not go into the house unless a crime is being committed.
- S-SV has not yet made a policy for this. Refusal of care will be used currently.
- If a scene is unsafe, crews should not be going in.
- There was some discussion by the committee.
- Any ideas/suggestions should be sent to Patrick.

H. EMS Aircraft Provider Updates

- Calstar 3 in Auburn – is moving forward with a blood agreement with Roseville. Once that gets going, they hope to expand that. This will be the first REACH helicopter in Sacramento Valley area with blood. They have on-going conversations with UC Davis for the REACH 17 micro base. REACH 7 & 80 will be next.

I. Ground EMS Provider Updates

- Dignity Healthcare:
  - They have put video-laryngoscope on the trucks.
  - They're working on airway improvement.
  - The standby season has started with the Red Bluff roundup.
- BiCounty:
  - They just completed a demo of the air-track video laryngoscope. They will possibly be purchasing these.

J. Hospital Provider Reports

- Mercy Medical Center Redding - they're preparing for Memorial Day weekend. They have an MICN class on 5/1. They have a STEMI Run Review in March and will have a Stroke Run Review in October. They continue to train their new crews on triage tags.
- UC Davis – they have a couple of construction cranes going up before Memorial Day, there will be official communication regarding the flight path.
- Mercy Medical Center Mt. Shasta - Trauma Run Review on 4/29, at 7pm with a zoom option.
- Rideout – having their annual Trauma Symposium on 5/6 in Roseville.

K. Quality Improvement (QI) Case Review

- Brittany Pohley presented an MICN case review.

L. S-SV EMS Agency Reports

- **EMS Data System**
  - The 3.5.1 update is still coming.
  - The State released a preliminary look at the limited list. They are coming out with a medication and procedure list.
  - 7/1 calls are going to start to fail from the update that occurred on 1/1/25 on the schematron.
  - Jeff is working on a list for E-protocols 01, to be added to your current data set.

- **EMS Quality Management/QI Matters (including the new S-SV EMS Performance Measures Process)**
  - Still working on the Regional Training Module – which will hopefully be ready in mid-May.
  - The PAC committee is in charge of the airway module which should be ready on 6/1.
  - QI Indicators – previously, S-SV EMS was tracking about 25 CPIs, this year it has been expanded to about 45 indicators. These are things hospitals can't control to where we're at. These will be distributed to the committee members. There are also EMS indicators.

- **Regional Specialty Committees**
  - The STEMI committee met in March.
  - The next Trauma QI Committee meeting will be in May. EMS and HEMS are welcome to attend.
  - Trauma hospitals are changing Trauma registries again.

- **Operations**
  - Non-EOA provider renewals will be sent out in June. Renewals will not be approved until they have been paid.
  - Ambulance Inspections are now following the calendar year, and not the fiscal year.
  - Fire season is coming up.
  - There are currently some Tylenol shortages.

- **Regional Executive Director's Report**
  - Continue to work towards a 24 month contract with AMR in Placer County. S-SV EMS is going to sign a contract with Health Strategists based on an RFP to do a system assessment of Western Placer County EMS System. This should be done by the end of this calendar year.
  - EMS Authority Chapter 1 - Still in progress. EMSA has completed the large stakeholder group meetings, but may have individual stakeholder meetings.
  - Chapter 1.2 is the new Ambulance Patient Offload Time (APOT) regulations – EMSA published a proposed emergency regulation public comment period and then quickly rescinded it. They plan on republishing it for a public comment period soon.
  - Chapter 3 is the professional standards. EMSA is beginning to review these and should have the rule making process/public comment period mid-2025.
  - Chapter 6 is the STEMI/Stroke/Trauma/EMS for Children. The initial comment period has concluded. There should be another public comment period.
  - Chapter 5 is the Community Paramedicine Triage Alternate Destination which is being worked on by the EMSA to include the new post-hospital discharge follow-up section.
  - AB645 – would require all dispatchers for public agencies to have emergency medical dispatch training. Initially it would have applied to all dispatchers but has been amended to exclude law enforcement only dispatchers.
  - SB582 – would require long term health facilities to submit their disaster and evacuation plans to the county/Medical Health Operation Area Coordinator (MHOAC) program for review. There won't be an approval process. The MHOAC will have an opportunity to provide feedback.
  - SB796 - would require the EMSA to be the optional skills approval entity for State agencies. The intent is for this to apply to public safety/first-aid personnel.

- There's a bill for epinephrine for schools that changes auto injectors to an FDA approved administration device -which is cost related.
- There's a bill to allow rescue dogs/canines to be transported by ambulance to the vet if there are no patients that need to be transported.
- The 2024 S-SV EMS Plan was approved by the State. It's posted on the website.

M. Medical Director's Report

- Looking forward to recognizing/celebrating the providers during EMS Week (May 18-24).

K. Next Meeting Date & Adjournment

- The next meeting will be on July 22, 2025, at 9:00 am.
- The meeting was adjourned at 10:49 am.

Sierra – Sacramento Valley EMS Agency Program Policy			
Trauma Center Designation Criteria, Requirements & Responsibilities			
	Effective:	Next Review: DRAFT	**509**
	Approval: Troy M. Falck, MD – Medical Director		DRAFT
	Approval: John Poland – Executive Director		DRAFT

PURPOSE:

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

AUTHORITY:

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

B. CCR, Title 22, Division 9, Chapter 7.

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:*
    1. *Transferring hospitals who transfer patients for trauma services.*
    2. *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:*
    1. *Deficiencies/Opportunities for Improvement (OFI) identified by the ACS-COT during routine site reviews.*
    2. *S-SV EMS QI process.*
    3. *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 S-SV EMS Trauma Center designation 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 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 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 S-SV EMS Trauma Center designation based on the results of the consultative review.

4. The hospital 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			
Unsafe Scene			
	Effective: DRAFT	Next Review: DRAFT	**854**
	Approval: Troy M. Falck, MD – Medical Director		DRAFT
	Approval: John Poland – Executive Director		DRAFT

PURPOSE:

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, and 1798.

B. CCR, Title 22, Division 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 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 Treatment Protocol	C-6
Chest Discomfort/Suspected Acute Coronary Syndrome (ACS)	
Approval: Troy M. Falck, MD – Medical Director	Effective: 06/01/2024
Approval: John Poland – Executive Director	Next Review: 01/2027

- **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 should be performed for patients meeting the following criteria:*
  - *Signs/symptoms of acute coronary syndrome*
  - *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 to closest ~~facility if able~~ *SRC*

YES

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

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 arrival at SRC.***
- 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	M-5
Ingestions & Overdoses	
Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2022
Approval: John Poland – Executive Director	Next Review: 09/2025

Treatment Notes

- ***When possible, contact*** Poison Control telephone number: (800) 876-4766 or (800) 222-1222.
- Refer to S-SV EMS Hazardous Materials Exposure Protocol (E-7) if pt exposed externally 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

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

- **BG ≤60 mg/dl or hx & clinical picture fits hypoglycemia?**

YES

~~Oral glucose (BLS)~~
- ~~15 - 25 gm~~

~~OR~~

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

~~OR~~

~~Glucagon (ALS)~~
- ~~1 mg (1 unit) IM/ IN~~

Refer to M-6

NO

ALS

- Cardiac monitor
- Establish vascular access at appropriate time (may bolus up to 1000 mL NS)
- Refer to page 2 for ingestion/overdose agent specific therapy

Consider activated charcoal – BASE/MODIFIED BASE HOSPITAL PHYSICIAN ORDER ONLY
- 50 gm PO routine dose

- **See Page 2 for agent specific therapy**

Agent Specific Therapy

Activated Charcoal

BASE/MODIFIED BASE HOSPITAL PHYSICIAN ORDER ONLY

Activated charcoal is an agent used for gastric decontamination following overdose ingestion. 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 - usually within 1 hour of ingestion (agent still in stomach)
- Potentially deadly agent
- No effective antidote
- No contraindications
- 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

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: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

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

BLS

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

Pain not effectively managed with non-pharmaceutical pain management techniques

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

Medication Contraindications & Administration Notes

ⓘ 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 ketamine 15 – 30 mg slow IV/IO x 1

AND/OR
Midazolam: 1 mg slow IV/IO

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

Sierra – Sacramento Valley EMS Agency Treatment Protocol	M-8P
Pediatric Pain Management	
Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2024
Approval: John Poland – Executive Director	Next Review: 07/2027

- 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 patient becomes hypotensive (see table on page 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

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: 12/01/2022
Approval: John Poland – Executive Director	Next Review: 09/2025

- **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. Use clinical findings and history as indicators of hypoxia***
- ***CO poisoning may result in cardiac rhythm disturbances and/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 is available***

SpCO 0 to 3% - Normal

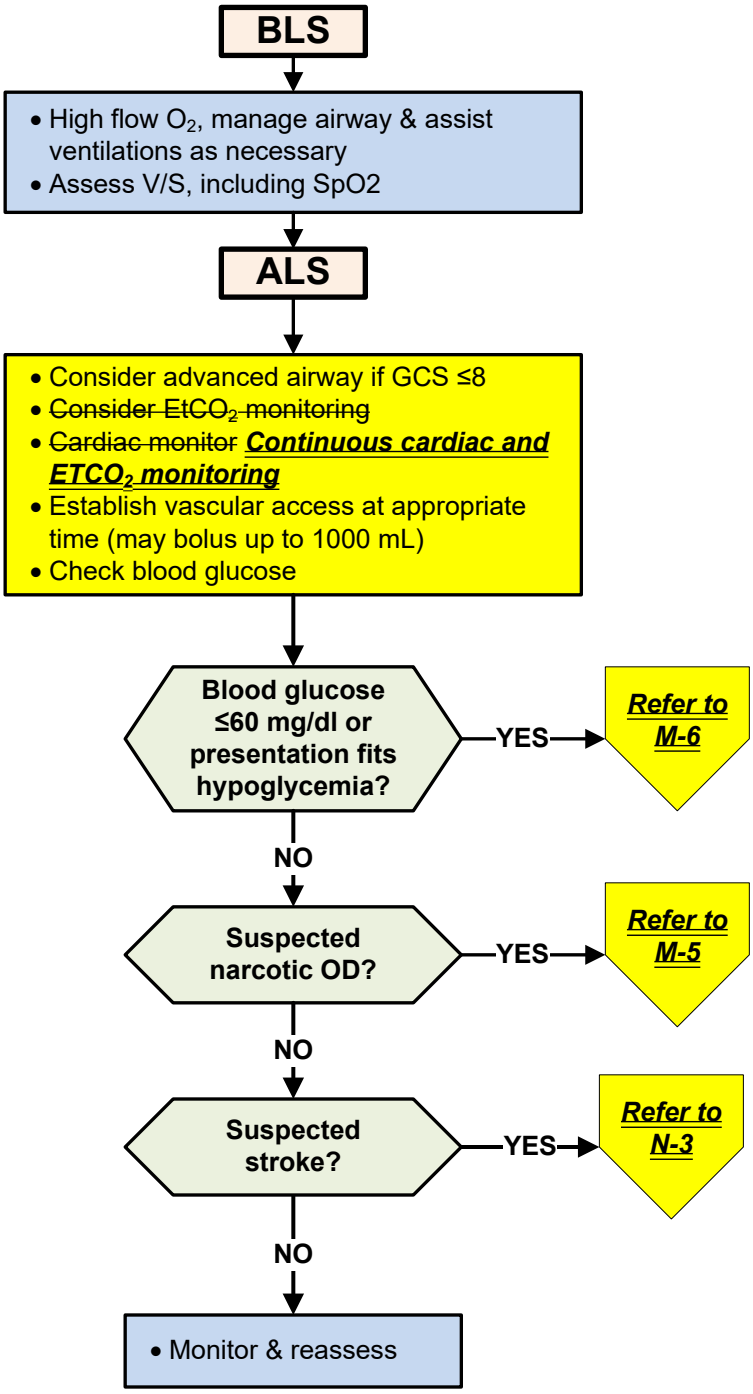
SpCO 3 to 12% - Abnormal

SpCO >12% - Significantly abnormal

ALS

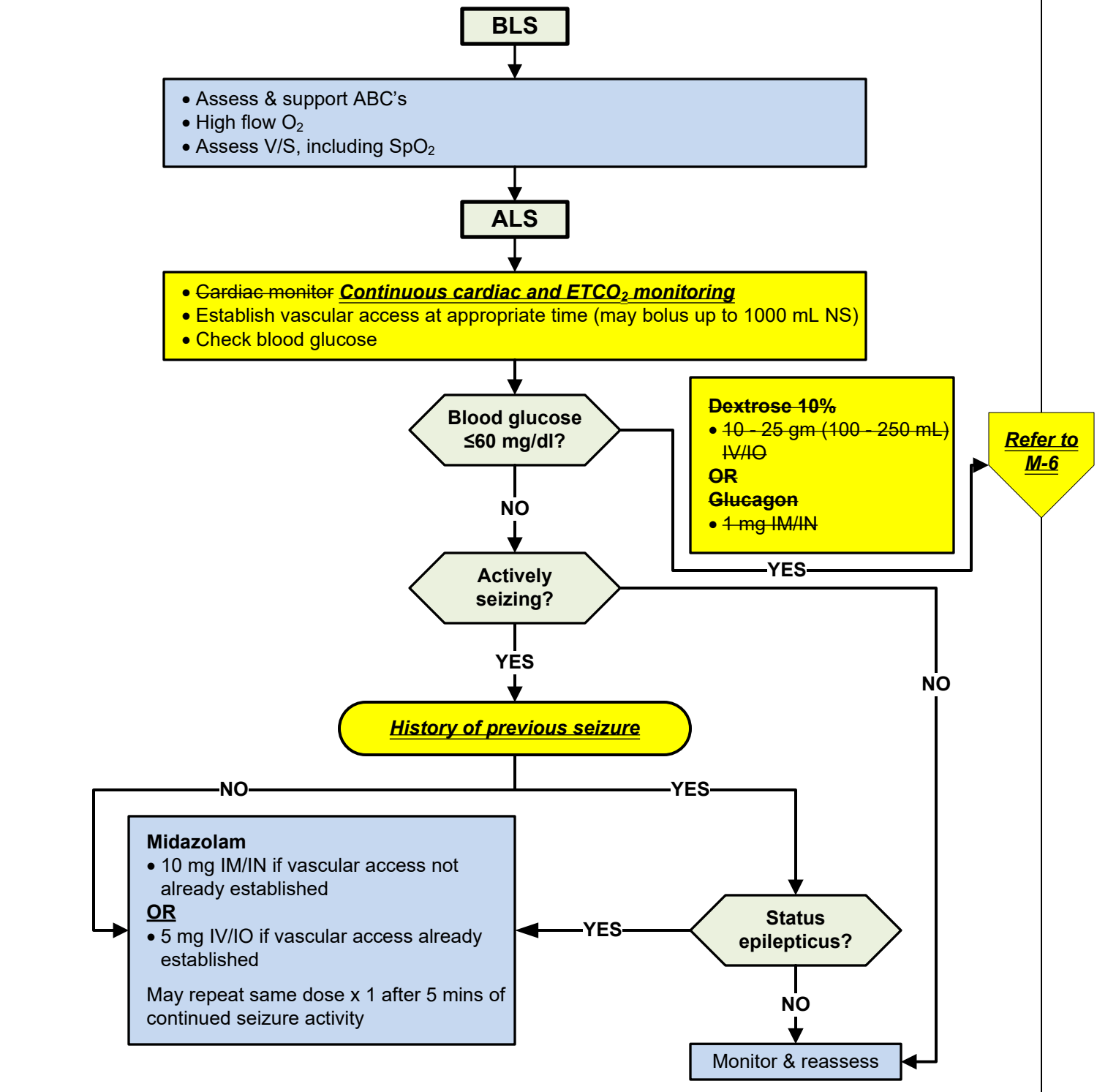
- ~~Cardiac Monitor~~ ***Continuous cardiac and $ETCO_2$ monitoring***
- ***Perform 12-lead (refer to appropriate cardiac protocol for management of cardiac related issues)***

Sierra – Sacramento Valley EMS Agency Treatment Protocol	N-1
Altered Level Of Consciousness	
Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2022
Approval: John Poland – Executive Director	Next Review: 09/2025



Sierra – Sacramento Valley EMS Agency Treatment Protocol	N-2
Seizure	
Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2022
Approval: John Poland – Executive Director	Next Review: 09/2025

- **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 patient is in the 3rd trimester, or is within six weeks post-partum, refer to OB-G2 for treatment***



Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-1
12-Lead EKG	
Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2024
Approval: John Poland – Executive Director	Next Review: 07/2027

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

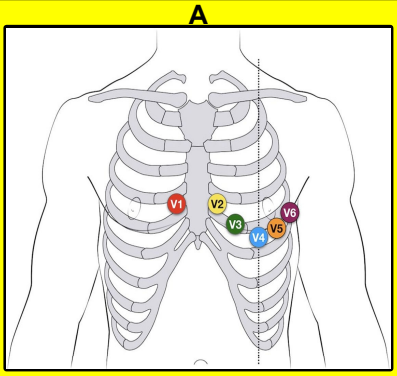
PRE-PROCEDURE

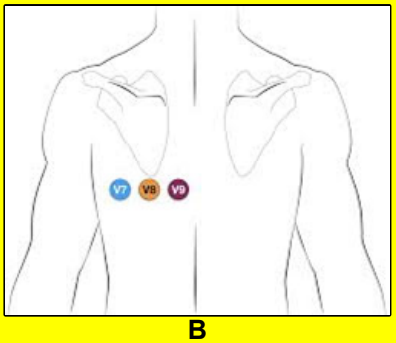
- Assess vital signs including SpO_2
- Administer O_2 as indicated by clinical condition

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*

A





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)

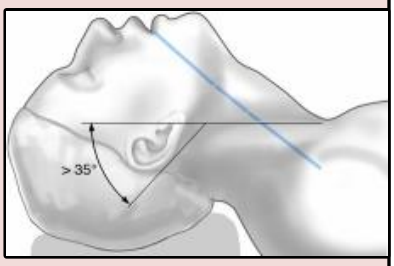
Sierra – Sacramento Valley EMS Agency Treatment Protocol	PR-2
Airway & Ventilation Managment	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

INDICATIONS

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

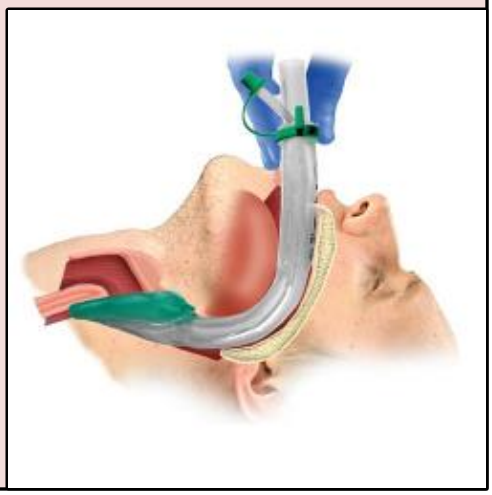
- Attach oxygen to BVM at a minimum flowrate of 10-15 L/min
- For one rescuer ventilation, position the mask over the nose & mouth & ensure a tight seal with an E-C clamp technique
- Squeeze the bag slowly, delivering breath over 1-2 secs
- Deliver only enough volume to achieve normal chest rise & fall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

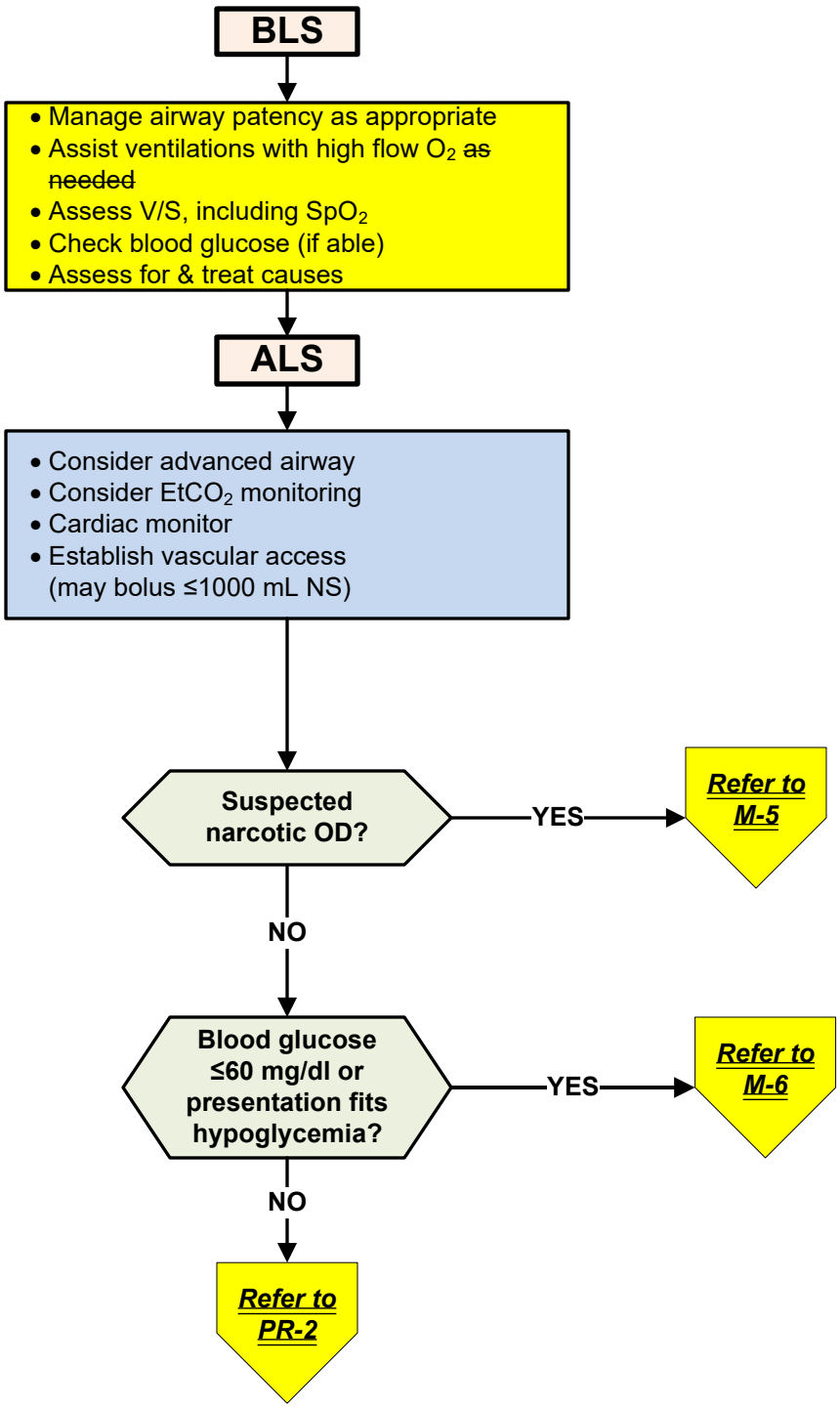
ADVANCED AIRWAY DEVICE PLACEMENT CONFIRMATION

- 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

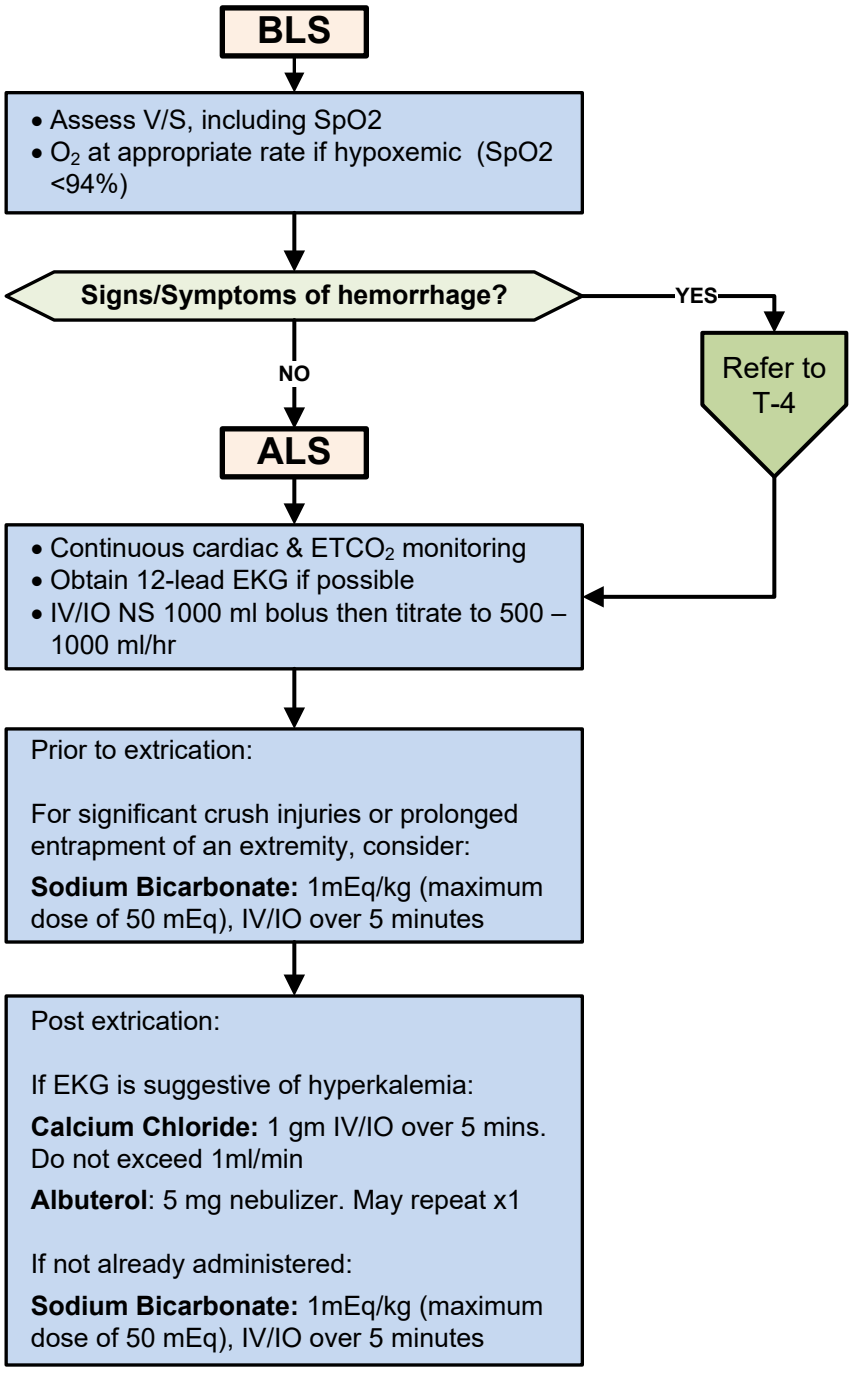
Sierra – Sacramento Valley EMS Agency Treatment Protocol	R-2
Respiratory Arrest	
Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2022
Approval: John Poland – Executive Director	Next Review: 09/2025



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

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)



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

Prehospital Identification of Moderate/Severe TBI

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

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

BLS

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

ALS

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

Blood glucose ≤60 mg/dl?

YES → *Refer to M-6*

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

~~OR~~

~~Glucagon~~
- ~~1 mg (1 unit) IM/IN~~

NO

Seizures present?

YES → *Refer to N-2*

NO

For persistent hypoxia &/or inadequate ventilatory effort:
- Supraglottic airway or endotracheal intubation
- Target $EtCO_2$: 35-39 mmHg

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

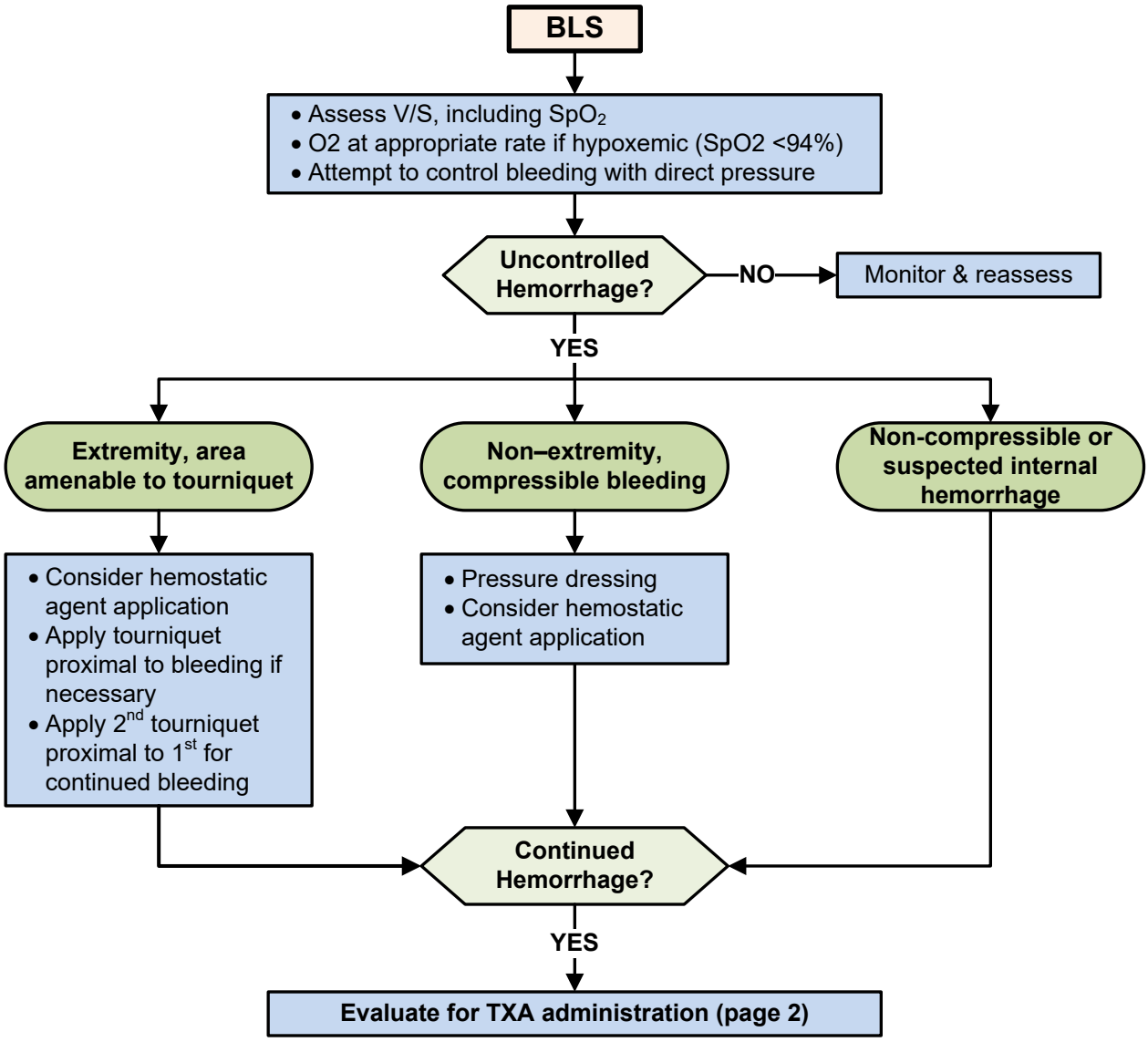
Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-4
Hemorrhage	
Approval: Troy M. Falck, MD – Medical Director	Effective: 04/01/2025
Approval: John Poland – Executive Director	Next Review: 01/2028

Tourniquet Devices:

- Any windlass style device included on the current Committee on Tactical Combat Casualty Care (CoTCCC) recommended Limb Tourniquets (non-pneumatic) list may be utilized by EMS personnel.
- 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 **(<u>with base/modified base hospital order only</u>)** for bleeding from epistaxis, lacerations, or oral trauma.
- For post-partum hemorrhage, refer to Childbirth Protocol (OB-G1).

ALS

<u>TXA INCLUSION CRITERIA</u>

Does pt meet the following inclusion criteria?

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

<u>OR</u>

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

NO → Monitor & reassess

YES

<u>TXA EXCLUSION CRITERIA</u>

Does pt. meet any of the following exclusion criteria?

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

YES → Monitor & reassess

NO

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

Tranexamic Acid (TXA) IV/IO

- Mix ~~1~~ **<u>2</u>** gm TXA in 100mL D_5W or NS and infuse over 10 mins

ADVANCED AIRWAY MANAGEMENT CHECK LIST

TYPE OF INTUBATION ○ Video Laryngoscopy ○ Direct Laryngoscopy	**EQUIPMENT PREPARATION** ○ Proper ET Size selected ○ ET Cuff tested ○ Test VL camera (if applicable) ○ Tested DL blade (if applicable) ○ Bougie available ○ Suction tested and prepared ○ Secondary airway device prepped (Igel) ○ ETC02 applied to BVM ○ ET tube tamer prepared Assigned assistant for procedure/Communicated plan
PRIMARY IMPRESSION ○ Cardiac Arrest ○ Respiratory Arrest/Distress ○ Trauma ○ Other	**INTUBATION** ○ Tip of blade midline in the vallecula ○ Rigid stylet or Bougie utilized ○ Suction utilized ○ Visualization of tube passing through cords ○ Tube advanced 2-3cm passed cords ○ Cuff inflated properly ○ Attempt <30 seconds ○ Attempt 30-60 seconds ○ Attempt >60 seconds ○ Tube Secured ○ Chest compressions continuous
	POST INTUBATION ○ ETC02, BP, and Sp02 assessed/documented within 5' of placement ○ Tube Placement Verified: ○ Bilateral lung sounds ○ ETC02 (waveform and Quantitative) ○ Absent Epigastric sounds ○ Fogging of the tube ○ By ED Physician/RT upon transfer

ADVANCED AIRWAY MANAGEMENT CHECK LIST

NUMBER OF ATTEMPTS	INDICATE WHICH ATTEMPT
○ 1 ○ 2 ○ >2 N/A (Unsuccessful)	○ 1 ○ 2 ○ 3
PATIENT PREPARATION ○ Optimal Patient Positioning ○ Preoxygenation for 3' ○ Passive oxygenation with NC ○ Initial ETC02 applied/documented ○ Cardiac Monitoring with Sp02 and BP documented within 3' prior to procedure ○ 1st Defibrillation administered (if appl.) ○ 1st Epinephrine administered (if app)	INCIDENT #: COMMENTS: