



2023 Trauma System Plan Update

Sierra-Sacramento Valley
EMS Agency

Updated: January 2024

S-SV EMS Agency Background

The Sierra-Sacramento Valley Emergency Medical Services (S-SV EMS) Agency was founded in 1975 and is a regional multi-county Joint Powers Agency that serves as the local EMS Agency for the counties of Placer, Nevada, Sutter, Glenn, Yuba, Colusa, Butte, Shasta, Siskiyou, and Tehama. S-SV EMS has been delegated planning, development and implementation authority for all EMS components including regional trauma system planning. The S-SV EMS region covers approximately 21,000 square miles, and has an approximate population of 1.3 million residents.

The service area is diverse, and includes both remote rural areas, and large population centers. Within the S-SV EMS region, EMS services are provided by public and private providers. Hospitals providing trauma services within the S-SV EMS region are well distributed into both rural and urban areas, and serve well the needs of injured adult and pediatric patients. The S-SV EMS region is currently served by the following EMS system resources:

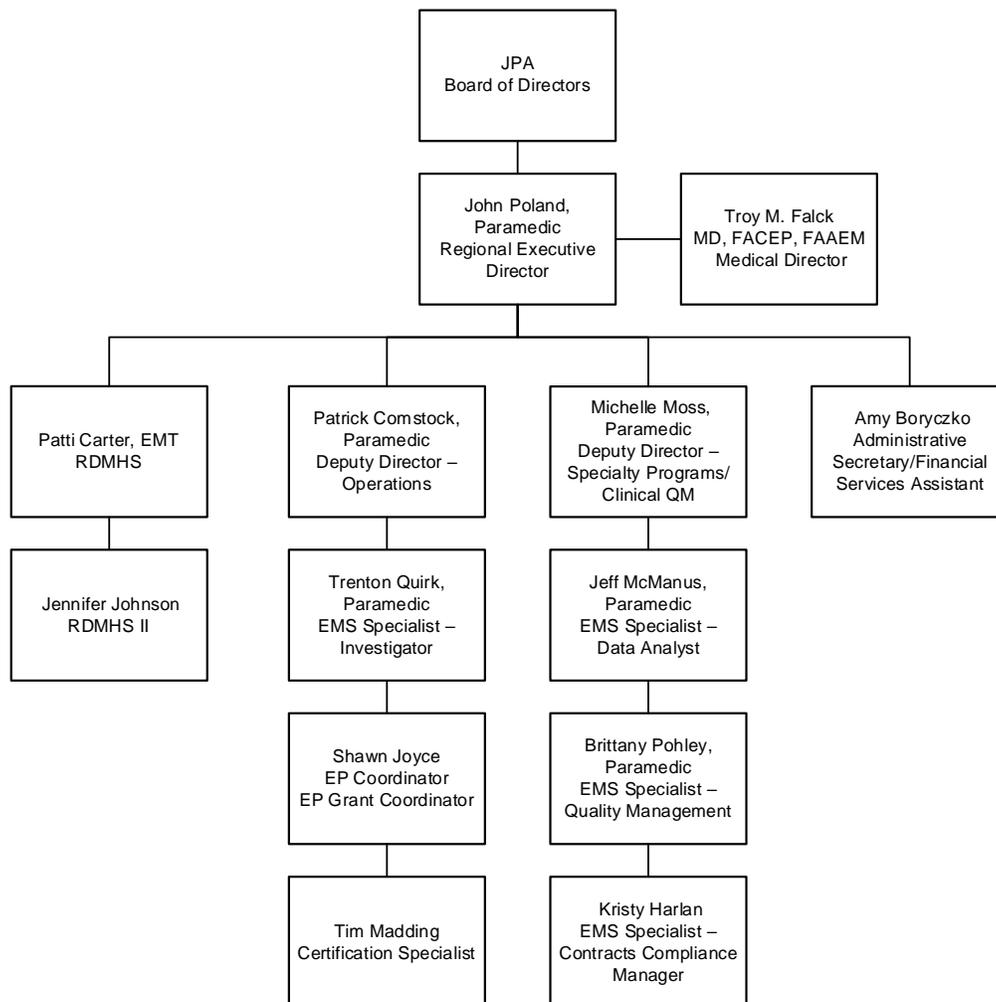
- 96 BLS first responder agencies
- 9 ALS first responder agencies
- 30 BLS/ALS ground ambulance providers
- 8 EMS aircraft providers (6 air ambulance and 2 ALS rescue aircraft providers)
- 17 acute care hospitals, 8 of which are S-SV EMS designated trauma centers

The S-SV EMS trauma system is continually reviewed/evaluated for quality performance through the following S-SV EMS committees:

- S-SV EMS Regional Trauma Quality Improvement Committee
- S-SV EMS Regional EMS Aircraft Advisory Committee
- S-SV EMS Regional Emergency Medical Advisory Committee
- California North Regional Trauma Coordinating Committee

S-SV EMS Agency Personnel and Organizational Chart

Michelle Moss, Deputy Director – Specialty Programs/Clinical Quality Management, is primarily responsible for managing/monitoring the S-SV EMS Trauma System. Troy Falck, MD, Medical Director, and John Poland, Regional Executive Director, assist in providing clinical and administrative oversight of the S-SV EMS Trauma System and Jeff McManus, EMS Specialist - Data Analyst and other S-SV EMS staff assist with various S-SV EMS Trauma System related duties as necessary/appropriate. In addition, Jon Perlstein, MD, Sutter Roseville Medical Center Trauma Medical Director serves as the S-SV EMS Trauma QI Committee Chairperson, and Ellen Cooper, MD, Tahoe Forest Hospital District Trauma Medical Director serves as the committee’s co-chair.



S-SV EMS Trauma System Changes

In 2023, one (1) ACS re-verification visit was completed. Sutter Roseville Medical Center was successfully re-verified for three years on 05/16/2023.

Tahoe Forest Hospital District successfully completed an initial verification as a Level III trauma center on 05/09/2023 and is verified through 05/2026.

Number and Designation Level of S-SV EMS Designated Trauma Centers

As of January 2024, all S-SV EMS designated Level II and Level III trauma centers are ACS verified. Fairchild Medical Center continues to function as an S-SV EMS designated Level IV trauma center. A site review is tentatively schedule for the second half of 2024.

Facility	Level	S-SV EMS Designation Expiration	ACS Consult Completed	ACS Verification Completed	Next ACS Verification Due
Enloe Med. Center	II	2024	2012	2021	2024
Mercy Med. Center Redding	II	2025	2021	2021	2024
Sutter Roseville Med. Center	II	2026	1994	2019	2026
Adventist Health +Rideout	III	2027	2014	2020	2024
Mercy Med. Center Mt. Shasta	III	2027	2010	2022	2025
St. Elizabeth Hospital	III	2025	2014	2021	2024
Fairchild Med. Center	IV	2026	N/A	N/A	N/A
Tahoe Forest Hospital District	IV	2026	N/A	N/A	2026

S-SV EMS Trauma System Performance Improvement

The trauma system performance improvement is ongoing, and continuous in the S-SV EMS region. The S-SV EMS Regional Trauma QI Committee met twice in 2023 and continued its focus on trauma transfer times as well as other trauma system related matters.

S-SV EMS Trauma System Policies/Protocols

The following S-SV EMS policies/protocols direct the prehospital care and management of trauma patients in the S-SV EMS Region:

- General Trauma Management (T-1)
- Tension Pneumothorax (T-2)
- Suspected Moderate/Severe Traumatic Brain Injury (TBI) (T-3)
- Pediatric Suspected Moderate/Severe Traumatic Brain Injury (TBI) (P-28)
- Hemorrhage (T-4)
- Burns (T-5)
- Trauma Center Designation Criteria, Requirements & Responsibilities (509)
- Rapid Re-Triage & Interfacility Transport of STEMI, Stroke & Trauma Patients (510)

All the above referenced S-SV EMS policies/protocols are attached to the end of this document.



General Trauma Management

Approval: Troy M. Falck, MD – Medical Director

Effective: 06/01/2023

Approval: John Poland – Executive Director

Next Review: 01/2026

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

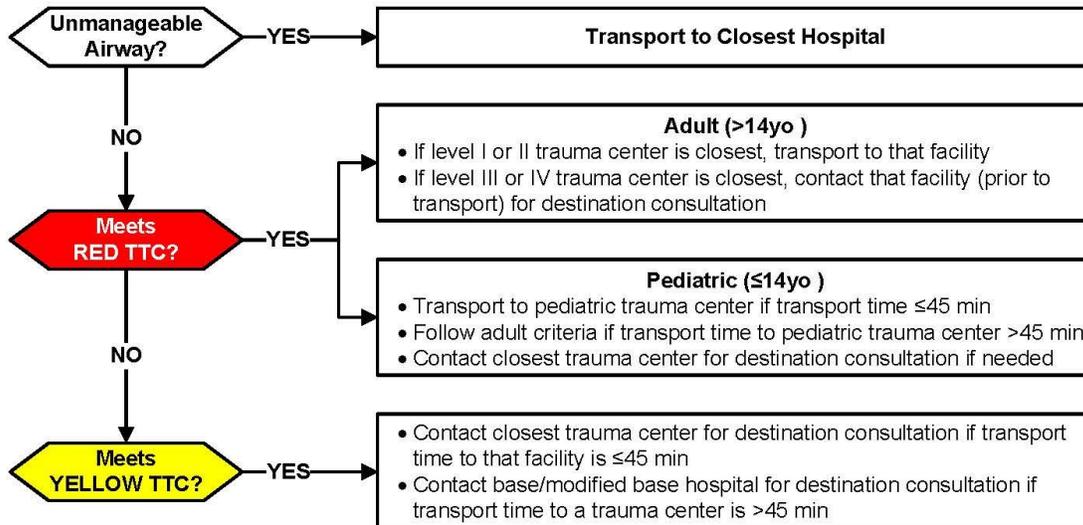
BLS

- Assess & support ABCs
- Assess V/S, including SpO₂
- O₂ at appropriate rate if hypoxemic (SpO₂ <94%) or short of breath
- Control hemorrhage & immobilize/splint injuries as needed
- Initiate spinal motion restriction (SMR) if indicated (see page 3)
- Maintain body temperature, keep warm

ALS

- Consider advanced airway if indicated
- Consider EtCO₂ monitoring if indicated (see protocol T-3 or P-28)
- Consider application of a pelvic binder if indicated (see page 2)
- Cardiac monitor
- Establish vascular access if indicated (see page 2)
- Consider pain management if indicated (see protocol M-8 or P-34)

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





General Trauma Management

Vascular Access



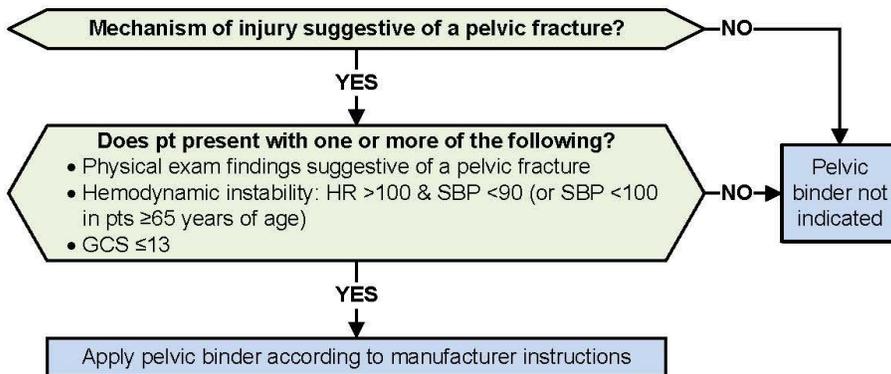
IV/IO – NS or LR

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

Commercial Pelvic Binder

Approved Commercial Pelvic Binders: 1) T-POD Pelvic Stabilization Device, 2) SAM Pelvic Sling 2

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

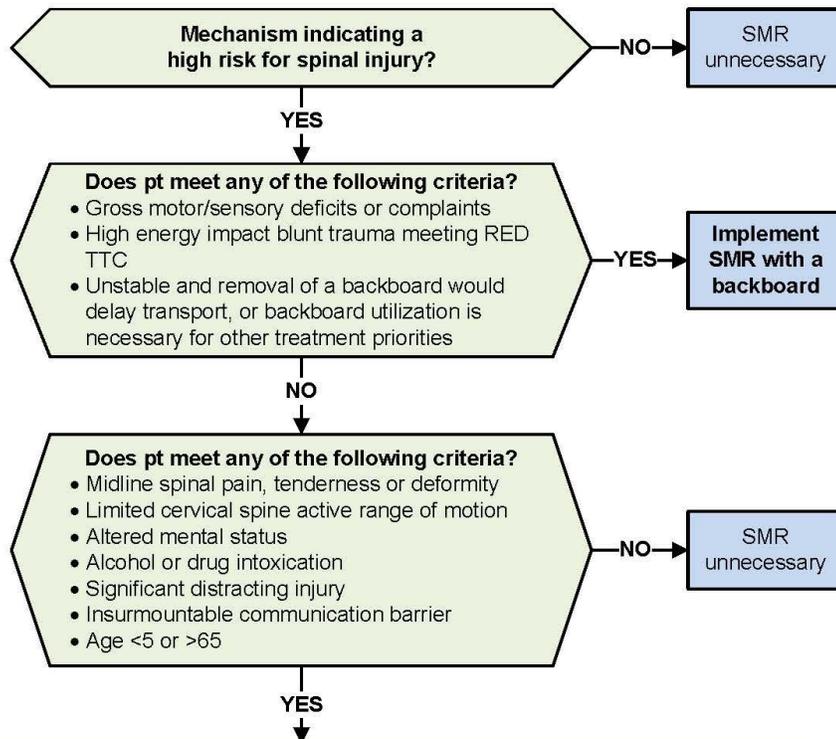




General Trauma Management

Spinal Motion Restriction (SMR)

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



- Implement SMR without a backboard as follows:**
- Apply a cervical collar
 - Allow ambulatory pts to sit on the stretcher and then lie flat (no 'standing take-down")
 - If necessary, move pt from the position found to the ambulance stretcher utilizing a device such as a KED, scoop stretcher, backboard, or if necessary, by having the pt stand and pivot to the stretcher – do not permit the pt to struggle to their feet from a seated or supine position
 - Once on the ambulance stretcher, remove any hard backboard device & instruct the pt to lie still
 - The head of the stretcher may be elevated 20-30° in a position of comfort
 - Secure cross stretcher straps and over-the-shoulder belts firmly
 - Pts with nausea &/or vomiting may be placed in the lateral recumbent position, maintaining the head in a neutral position using manual stabilization, padding, pillows, &/or the pt's arm



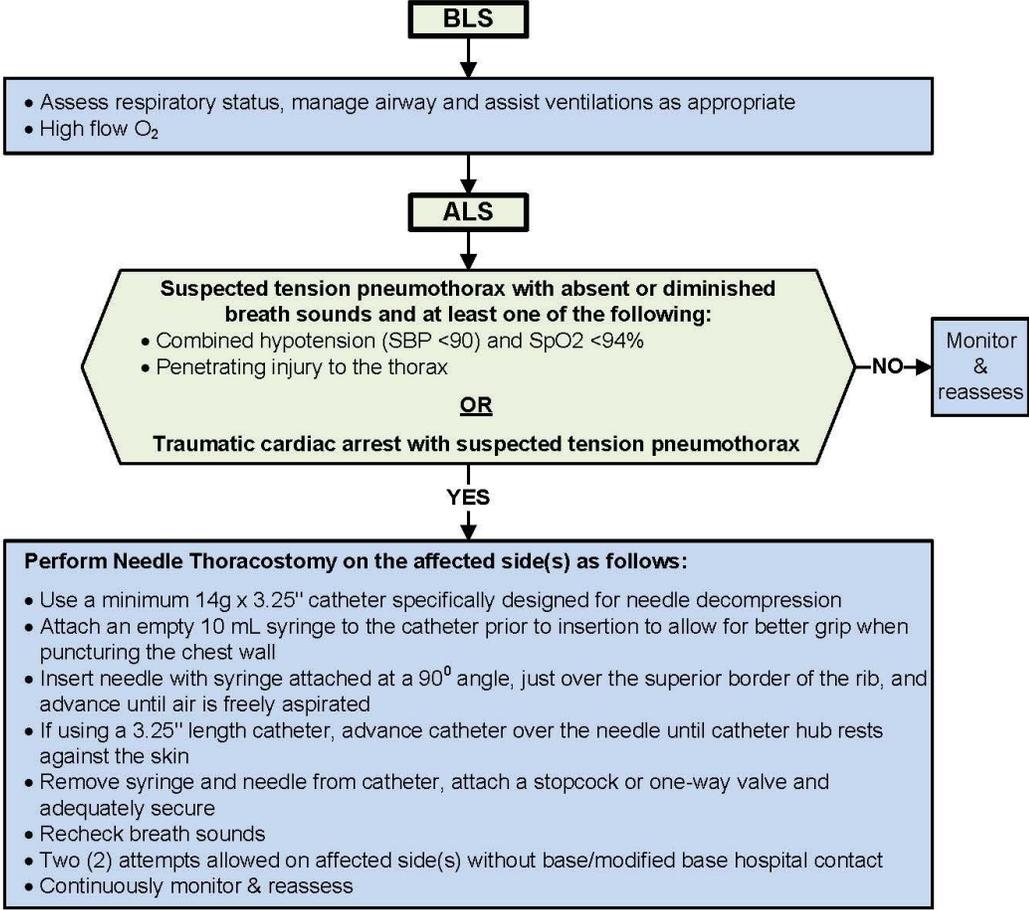
General Trauma Management

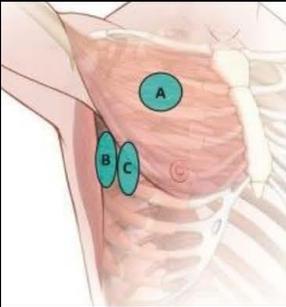
Field Trauma Triage Criteria (TTC)

RED TTC (High Risk for Serious Injury)	
Injury Patterns	Mental Status/Vital Signs
<ul style="list-style-type: none"> • Penetrating injuries to head, neck, torso, &/or proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor/sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones in a pt of any age, or one or more proximal long bone fracture in a pt ≤14 or ≥65 years of age • Suspected open proximal long bone fracture • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Continued, uncontrolled bleeding despite EMS hemorrhage control measures 	<p><u>MENTAL STATUS</u></p> <ul style="list-style-type: none"> • <65 years of age: <ul style="list-style-type: none"> ○ GCS ≤13 • ≥65 years of age: <ul style="list-style-type: none"> ○ GCS <15 (or decreased from baseline) with evidence/suspicion of a head strike <p><u>RESPIRATORY STATUS</u></p> <ul style="list-style-type: none"> • All pt ages: <ul style="list-style-type: none"> ○ RR <10 or >29 breaths/min ○ Resp. distress or need for resp. support ○ Room-air SpO₂ <90% <p><u>CIRCULATORY STATUS</u></p> <ul style="list-style-type: none"> • 0-9 years of age: <ul style="list-style-type: none"> • SBP <70mm Hg + (2 x age years) • 10-64 years of age: <ul style="list-style-type: none"> • SBP <90 mmHg OR HR>SBP • ≥65 years of age: <ul style="list-style-type: none"> • SBP <100 mmHG OR HR>SBP

YELLOW TTC (Moderate Risk for Serious Injury)	
Mechanism of Injury	EMS Judgement
<ul style="list-style-type: none"> • High-Risk Auto Crash <ul style="list-style-type: none"> ○ Partial or complete ejection ○ Significant intrusion (including roof) <ul style="list-style-type: none"> - >12 inches occupant site; or - >18 inches any site; or - Need for extrication for entrapped pt ○ Death in passenger compartment ○ Child (0-9 years of age) unrestrained or in unsecured child safety seat ○ Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height >10 feet (all ages) 	<p>EMS personnel should consider the following risk factors, and contact the closest trauma center or base/modified base hospital for destination consultation (see page 1), if transport to a trauma center is believed to be in the pt's best interest:</p> <ul style="list-style-type: none"> • Low-level falls in young children (≤5 years of age) or older adults (≥65 years of age) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy >20 weeks • Burns in conjunction with trauma

Approval: Troy M. Falck, MD – Medical Director	Effective: 12/01/2021
Approval: Victoria Pinette – Executive Director	Next Review: 09/2024



<p style="text-align: center;">Approved Needle Thoracostomy Sites</p> <p>A Mid-clavicular line in the 2nd intercostal space B Mid-axillary line in the 4th or 5th intercostal space* C Anterior axillary line in the 5th intercostal space*</p> <p>*Above the anatomic nipple line</p> <p>Note: If an initial attempt at one approved site is unsuccessful, consider utilizing an alternate approved site</p>	
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Suspected Moderate/Severe Traumatic Brain Injury (TBI)

Approval: Troy M. Falck, MD – Medical Director

Effective: 06/01/2021

Approval: Victoria Pinette – Executive Director

Next Review: 01/2024

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 \leq 13, or \geq 65 years 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) Hyperventilation, 2) Hypoxia, 3) Hypotension

BLS

- Assess V/S, including continuous SpO₂ monitoring: Reassess V/S every 3-5 min if possible
- High-flow O₂ (regardless of SpO₂ reading): If continued hypoxia (SpO₂ <94%) or inadequate ventilatory effort, reposition airway &/or initiate BVM ventilations with appropriate airway adjunct if necessary (use of a pressure-controlled BVM &/or ventilation rate timer is recommended if available)
- Maintain normothermia
- Consider the concurrent need for appropriate immobilization/spinal motion restriction

ALS

- Continuous cardiac & EtCO₂ monitoring
- IV/IO NS TKO: For SBP <90 (or SBP <100 in pts \geq 65 years of age), bolus 1000 mL N/S, then titrate additional fluids to maintain SBP \geq 90 (or SBP \geq 100 in pts \geq 65 years of age)
- Check blood glucose

Blood glucose \leq 60 mg/dl?

YES

- Dextrose 50%**
- 25 gm (50 mL) IV/IO
- OR**
- Glucagon**
- 1 mg (1 unit) IM/IN

NO

For persistent hypoxia &/or inadequate ventilatory effort:

- Consider advanced airway
- Avoid hyperventilation - target EtCO₂: 40 mmHg
- Ventilate at a rate of 10 breaths/min

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



Pediatric Suspected Moderate/Severe Traumatic Brain Injury (TBI)

Approval: Troy M. Falck, MD – Medical Director

Effective: 06/02/2021

Approval: Victoria Pinette – Executive Director

Next Review: 01/2024

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:
 - GCS <13 (in infants: any decreased responsiveness, deterioration of mental status, irritation or agitation)
 - Post-trauma seizures, whether continuing or not
 - Multi-system trauma requiring advanced airway placement

For any patient with a suspected moderate/severe TBI, avoid/treat the three TBI “H-Bombs”:

- 1) Hyperventilation, 2) Hypoxia, 3) Hypotension

BLS

- Assess V/S, including continuous SpO₂ monitoring: Reassess V/S every 3-5 min if possible
- High-flow O₂ (regardless of SpO₂ reading): If continued hypoxia (SpO₂ <94%) or inadequate ventilatory effort, reposition airway &/or initiate BVM ventilations with appropriate airway adjunct if necessary (use of a pressure-controlled BVM &/or ventilation rate timer is recommended if available)
- Maintain normothermia
- Consider the concurrent need for appropriate immobilization/spinal motion restriction

ALS

- Continuous cardiac & EtCO₂ monitoring
- IV/IO NS TKO: For hypotension, bolus 20 mL/kg, repeat bolus until hypotension resolves
- Check blood glucose

Blood glucose ≤60 mg/dl?

YES

- Dextrose 10%**
- 5 ml/kg (0.5 gm/kg) IV/IO
 - Max: 100 mL (10 gm)
- OR**
- Glucagon**
- <24 kg: 0.5 mg IM
 - ≥24 kg: 1 mg IM

NO

For persistent hypoxia &/or inadequate ventilatory effort:

- Consider advanced airway
- Avoid hyperventilation - target EtCO₂: 40 mmHg
 - Infant (0-24 mo) ventilation rate: 25 breaths/min
 - Pediatric (2-14yo) ventilation rate: 20 breaths/min

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



Hemorrhage

Approval: Troy M. Falck, MD – Medical Director

Effective: 12/01/2020

Approval: Victoria Pinette – Executive Director

Next Review: 09/2023

Approved Commercial Tourniquet Devices:

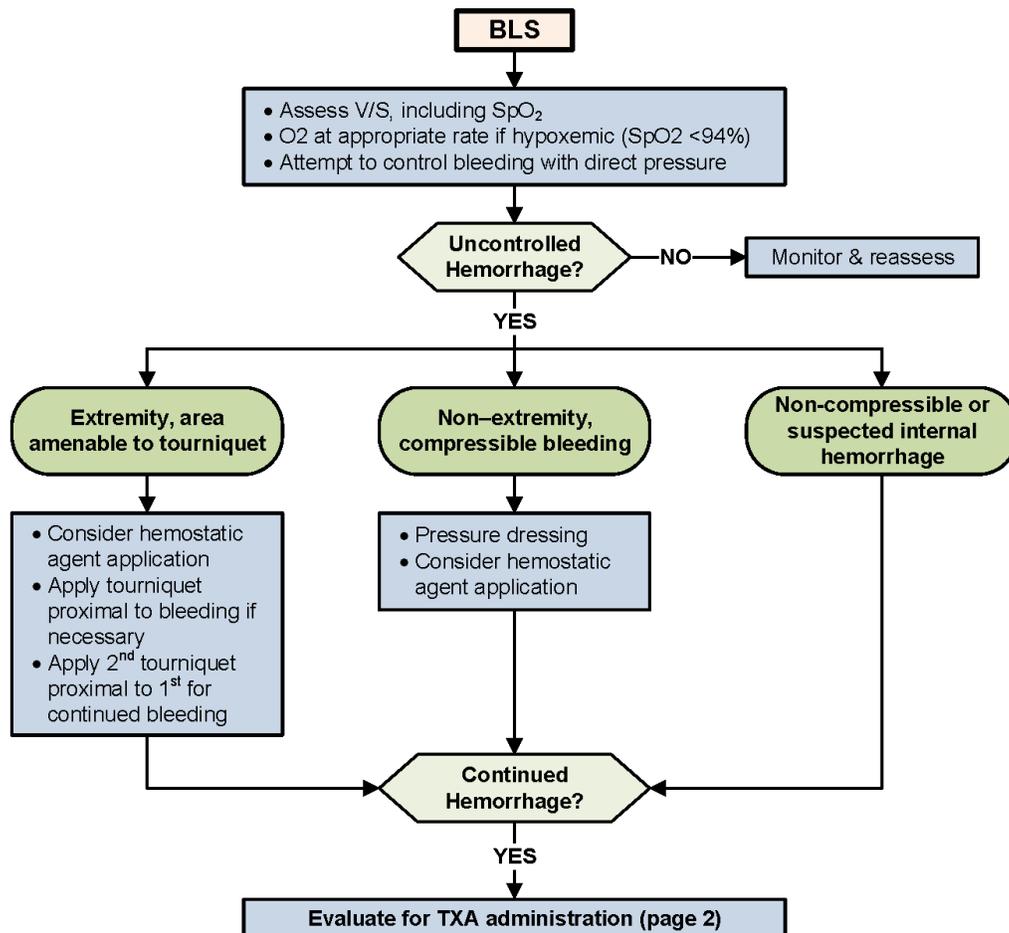
- Combat Application Tourniquet
- Emergency and Military Tourniquet
- Mechanical Advantage Tourniquet
- SAM XT Extremity Tourniquet
- Special Ops. Tactical Tourniquet
- RECON Medical Tourniquet

Tourniquet Utilization Notes:

- 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).

Approved Hemostatic Agents:

- QuikClot Emergency 4x4 and/or Combat Gauze Z-Fold
- HemCon ChitoGauze Pro Z-Fold





Hemorrhage

Tranexamic Acid (TXA) Administration

ALS

TXA INCLUSION CRITERIA

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

OR

- 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

TXA EXCLUSION CRITERIA

Does pt. meet any of the following exclusion criteria?

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

YES

NO

BASE/MODIFIED BASE HOSPITAL ORDER ONLY

Tranexamic Acid (TXA) IV/IO

- Mix 1gm TXA in 100mL D₅W or NS and infuse over 10 mins

	Sierra – Sacramento Valley EMS Agency Treatment Protocol	T-5
	Burns	

Approval: Troy M. Falck, MD – Medical Director	Effective: 06/01/2023
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Approval: John Poland – Executive Director	Next Review: 01/2026
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Information Needed

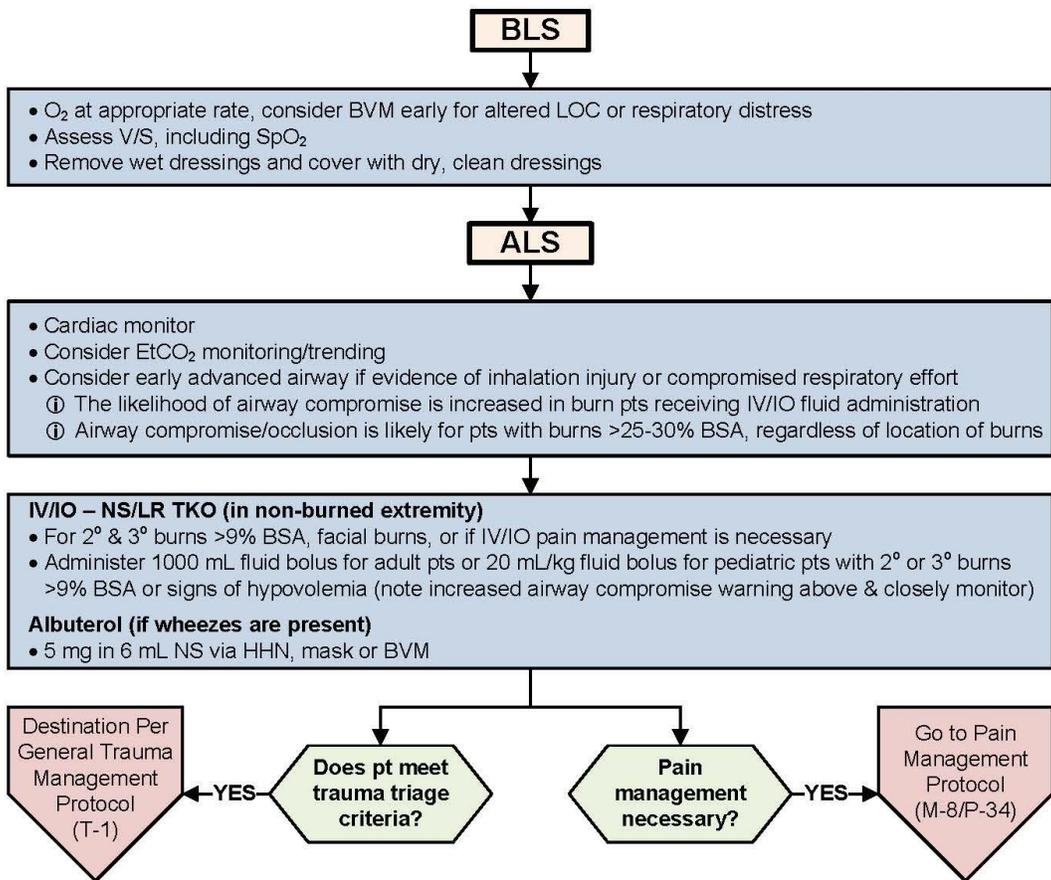
- Type/source of burn: chemical, electrical, thermal, steam
- Complicating factors: concomitant trauma, exposure in enclosed space, total time of exposure, drug or alcohol use, smoke or toxic fumes, delayed resuscitation, compartment syndrome of extremities, chest, or abdomen.

Objective Findings

- Evidence of inhalation injury or toxic exposure (i.e., carbonaceous sputum, hoarseness/stridor, or singed nasal hairs).
- Extent of burn: full or partial thickness and body surface area (BSA) affected.
- Entrance or exit wounds for electrical or lightning strike or trauma from an explosion, electrical shock or fall.

Transport Notes

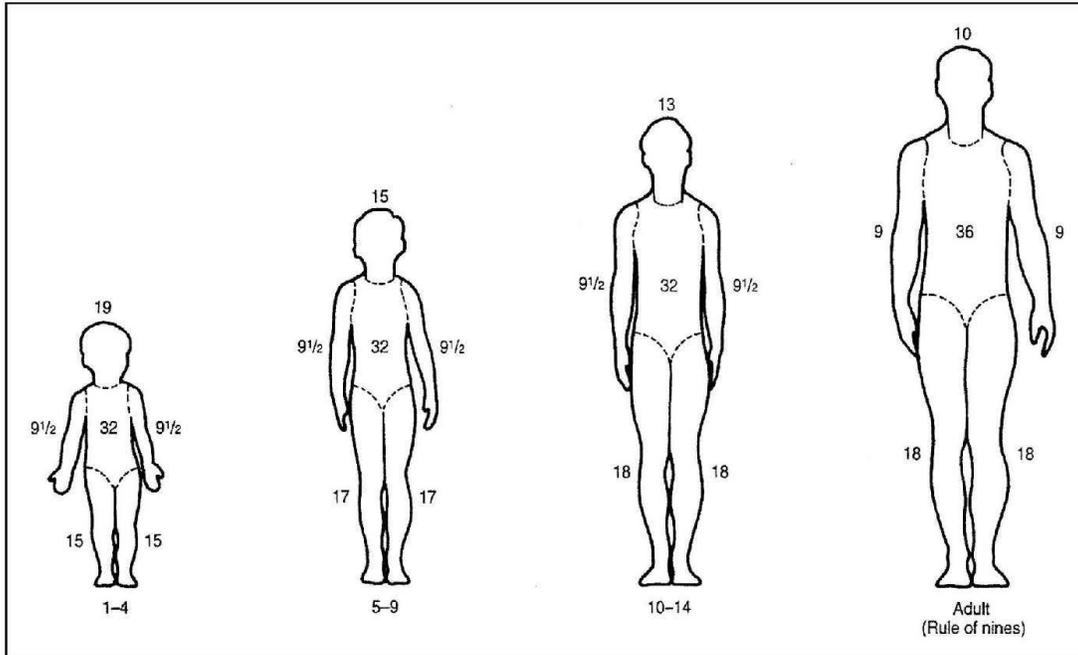
- All pts suffering from an electrical burn shall be transported for evaluation.
- Contact the closest base/modified base hospital for destination consultation on pts with any of the following:
 - Full thickness (3°) burns of the hands, feet, face, perineum, or >2% of any BSA
 - Partial thickness (2°) burns >9% of BSA
 - Significant electrical or chemical burns





Burns

Burn Chart



Sierra – Sacramento Valley EMS Agency Program Policy			
Trauma Center Designation Criteria, Requirements & Responsibilities			
	Effective: 12/1/2022	Next Review: 11/1/2025	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, 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. 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. 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 provide ongoing feedback to:
- Transferring hospitals on patients transferred for trauma services.
 - EMS provider agencies on prehospital patients who meet trauma triage criteria.
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.

Trauma Center Designation Criteria, Requirements & Responsibilities	509
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- 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		
Rapid Re-Triage & Interfacility Transport Of STEMI, Stroke & Trauma Patients		
	Effective: 12/1/2023	Next Review: 7/2026
	Approval: Troy M. Falck, MD – Medical Director	510
	Approval: John Poland – Executive Director	SIGNATURE ON FILE

PURPOSE:

To establish the procedures for rapid re-triage and interfacility transport (IFT) of acute STEMI, stroke, and trauma patients whose clinical condition requires a higher level of care than can be provided at the sending facility. This process involves direct ED to ED transfer of patients that have not been admitted to the hospital.

AUTHORITY:

- A. HSC, Division 2.5, Chapter 2, § 1797.67 and 1797.88, Chapter 6 § 1798.102, 1798.150, 1798.170, and 1798.172.
- B. CCR, Title 22, Division 9, Chapter 7, 7.1 & 7.2

DEFINITIONS:

- A. **STEMI Patient Rapid Re-Triage** – The rapid evaluation, resuscitation, and transfer of a STEMI patient from a STEMI Referral Hospital (SRH) to a STEMI Receiving Center (SRC).
- B. **Stroke Patient Rapid Re-Triage** – The rapid evaluation, resuscitation, and transfer of an acute stroke patient from a non-stroke facility to a stroke receiving center.
- C. **Trauma Patient Rapid Re-Triage** – The rapid evaluation, resuscitation, and transfer of a seriously injured patient from a non-trauma facility, or a lower-level Trauma Center, to a Trauma Center that can provide a higher level of trauma care.

POLICY:

- A. STEMI patients from a hospital within the S-SV EMS region shall be accepted for transfer by a SRC unless the SRC is on STEMI diversion or internal disaster.
- B. Acute stroke patients requiring a higher level of care than can be provided at the sending facility, should be accepted for transfer by a stroke receiving center unless the stroke receiving center is on stroke diversion or internal disaster.

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

RAPID RE-TRIAGE AND IFT PROCEDURES:

A. STEMI Patients:

1. A 12-lead EKG should be obtained within ten minutes of patient arrival at a SRH.
2. Immediately after a STEMI is identified, contact the SRC to arrange transfer. Contact the SRC interventional cardiologist as needed.
3. If SRH arrival to PCI at the SRC is anticipated to be >90 minutes, administration of lytic agents should be considered in patients that meet thrombolytic eligibility criteria. Contact the SRC early to discuss coordination of care. The goal for door to thrombolytics is <30 minutes.
4. Patients with an SRH identified STEMI should be transferred within 45 minutes utilizing the most appropriate transport resources based on patient condition and needs.

B. Acute Stroke Patients:

1. Evaluate patients with signs/symptoms of an acute stroke as soon as possible.
2. Acute stroke patients requiring a higher level of clinical care than can be provided at the sending facility should be transferred as soon as possible.
3. Contact the closest most appropriate stroke receiving center to discuss patient status and request transfer. If transfer is accepted, arrange for appropriate transport resources based on patient condition and needs.

C. Trauma Patients:

1. Rapid re-triage and transfer of trauma patients shall be based on the North Regional Trauma Coordinating Committee Guidelines for Transfer to a Trauma Center Criteria (incorporated into this policy for reference).
2. Emergency Transfer ("Red Box") Trauma Patients:
 - The goal is to transfer patients meeting any 'Emergency Transfer' ("Red Box") Trauma Re-Triage Criteria within one (1) hour of arrival at the sending facility.

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- Contact the closest appropriate Trauma Center as soon as possible and identify the patient as meeting “Red Box” criteria.

3. Urgent Transfer Trauma Patients:

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

D. IFT Procedures:

1. Unless medically necessary, avoid using medication drips that are not in the paramedic scope of practice to avoid transfer delays.
2. If patient care has been initiated that exceeds the paramedic scope of practice, the sending hospital may consider sending a nurse or other qualified medical staff with the ground ambulance. Air ambulances or nurse staffed ground critical care transport (CCT) units may also be utilized if necessary and their response time is appropriate.
3. The patient should be ready for transport and records/staff should be prepared and available for EMS transport personnel upon arrival at the sending facility. Availability of records should not delay the transport of patients in need of emergency transfer. If complete documentation is not sent with the ambulance, it should be faxed/electronically transmitted to the receiving hospital in sufficient time that it will arrive prior to the patient if possible.
4. For patients requiring emergency transfer, contracted advanced life support (ALS) transport providers should be utilized when agreements are in place and the transport unit is available within ten (10) minutes of the initial request. The jurisdictional ALS transport provider may be requested via 9-1-1 when the contracted ALS provider is not readily available.

Guidelines for Transfer to a Trauma Center
North Regional Trauma Coordinating Committee

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

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

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

Physiologic	Extremity Injuries
<ul style="list-style-type: none"> • For a child, labile blood pressure despite 20 ml/kg of fluid resuscitation • Patients requiring blood products to maintain their blood pressure <p>Note:</p> <ol style="list-style-type: none"> 1. For pediatric patients, systolic blood pressure <70 plus 2 times the age should suggest hypotension 2. Systolic blood pressure <110 may represent shock in patients >65 years of age 	<ul style="list-style-type: none"> • Amputation of extremity proximal to wrist or ankle • Open long-bone fractures • Two or more long-bone fracture sites* • Crush injury/mangled extremity <p>*A radius/ulna fracture or tibia/fibula fracture are considered one site</p>
Neck & Thoracic Injuries	Neurological Injuries
<ul style="list-style-type: none"> • Tracheobronchial injury • Esophageal trauma • Great vessel injury • Major chest wall injury with ≥3 rib fractures &/or pulmonary contusion • Pneumothorax or hemothorax with respiratory failure • Radiographic evidence of aortic injury • Known or suspected cardiac injury 	<ul style="list-style-type: none"> • GCS deteriorating by 2 points during observation • Open or depressed skull fracture • Acute spinal cord injury • Spinal fractures, unstable or potentially unstable • Neurologic deficit
Abdominal Injuries	Pelvic/Urogenital
<ul style="list-style-type: none"> • Evisceration • Free air, fluid or solid organ injury on diagnostic testing 	<ul style="list-style-type: none"> • Bladder rupture
Burn Injuries	Co-Morbid Factors
<ul style="list-style-type: none"> • Second or third-degree thermal or chemical burns involving >10% of total body surface area in patients <15 years or >55 years of age • Second or third-degree thermal or chemical burns involving the face, eyes, ears, hands, feet, genitalia, perineum, and major joints • Third-degree burns >5% of the body surface area in any age group • Electrical burns, including lightning injury • Burn injury with inhalation injury 	<ul style="list-style-type: none"> • Adults >55 years of age with significant trauma • Significant torso injury with advanced co-morbid disease (cardiac or respiratory disease, insulin-dependent diabetes, morbid obesity, immunosuppression or End Stage Renal Disease requiring dialysis) • Patients taking anti-coagulant medication or platelet inhibitors • Children <14 years of age with significant trauma • Traumatic injury and pregnancy >20 weeks gestation

Note: All transfers must be in accordance with both state and federal EMTALA laws
Reference: American College of Surgeons, Committee on Trauma, Interfacility Transfer of Injured Patients: Guidelines for Rural Communities, 2002