AGENDA

ICEMA
MEDICAL ADVISORY COMMITTEE

April 24, 2025

1300

Purpose: Information Sharing

Meeting Facilitator: Stephen Patterson

Timekeeper: Michelle Hatfield

Record Keeper: Michelle Hatfield

	AGENDA ITEM	PERSON(S)	DISCUSSION/ACTION
I.	Welcome/Introductions	Stephen Patterson	
II.	Approval of Minutes	All	Discussion
III.	Discussion/Action Items		
	A. Standing EMS System Updates		
	1. Pediatric Advisory Committee	1. Gigi Rodriguez	Discussion
	B. MBA CCP program	Craig Bell	Discussion
	C. Mono/Inyo County Updates	Lisa Davis/Jessica Wagner	Discussion
	D. Prehospital Ultrasound	Jeff Copeland	Discussion
	E. EMSBUP	Jeff Copeland	Discussion
	F. Blood Products -Postpartum Hemorrhage	Reza Vaezazizi	Discussion
	G. HSI CPR Training	Michelle Hatfield	Discussion
	H. Protocol Review 10040 Paramedic Prehospital Utilization of Ultrasound 11010 Medication-Standard Orders 14090 Trauma-Adult (15 years of age and older)	Michelle Hatfield	Discussion/Action
IV.	Public Comment Period	All	Discussion

V.	Future Agenda Items	All	Discussion
VI.	Next Meeting Date: June 26, 2025		Discussion
VII.	Adjournment		Action
VIII.	Closed Session Case Review -N/A	MAC Committee	Discussion/Action
	A. Loop Closure Cases		
	B. Case Reviews		

MINUTES

ICEMA
MEDICAL ADVISORY COMMITTEE

February 27, 2025

1300

AGENDA ITEM		DISCUSSION/FOLLOW UP	RESPONSIBLE PERSON(S)
I.	Welcome/Introductions	Meeting was called to order at 1302	Stephen Patterson
II.	Approval of Minutes	The minutes were approved. Motion to approve. MSC: Seth Dukes/Ken Fox APPROVED AYES: Leslie Parham, Susie Moss, Amanda Ward, Craig Bell, Lisa Davis, Steven Patterson, Tonya Henkes, Shawn Reynolds, Debbie Bervel, Kevin Parkes, Seth Dukes, Jessica Wagner, Troy Pennington, Ken Fox, Brian Savino	
III.	Discussion/Action Items		
	A. Standing EMS System Updates		
	1. Pediatric AC	The policy subcommittee meeting was cancelled this month. Will continue to look at age related policies.	Gigi Rodriguez
	B. MBA CCP Program	MBA had 96 successful CCP transports. Discussion on expanding the CCP program to include additional IV drips and develop system level CCP policies. Victor Valley College is looking to add a CCP training program in fall 2026.	Craig Bell
	C. Inyo/ Mono County Updates	Inyo is working to overcome challenges with providing consistent EMS service in the South region. The snow season is ending and will focus on education for providers.	Lisa Davis/Jessica Wagner
	D. POCUS	7 agencies are participating. Two agencies will complete training in March.	Jeff Copeland

	E. EMS BUP	No administrations. Working on making changes to the ePCR to increase COWS scores.	Jeff Copeland
	F. Blood Products	PHBT project has been implemented at Corona Fire Department and will expand to include agencies in San Bernardino. Packed red blood cells will most likely be used due to the challenges with carrying whole blood.	Reza Vaezazizi
	G. MAC Hybrid	Removing the hybrid option for future MAC meetings for all participants except Inyo/Mono was discussed. Committee was in agreement to return to in person only meetings going forward. TEAMS invite will only go to participants in Inyo and Mono.	Reza Vaezazizi
	H. AED Project	Information on locations of AED's is being collected to expand public awareness of AED locations.	Demis Cano
	I. Protocol Review	Edits to policies 6070- Care of Minors in the Field and 8130- Assess and Refer were presented as recommendations by PAC. No additional input by committee was noted. Policies will be reviewed by PAC for final draft.	Michelle Hatfield
	J. Public Comment Period	Request for a review of the preceptor policy regarding out of county paramedic interns-Amanda Ward. More conversations with stakeholders is needed.	All
	K. Future Agenda Items	IM option for Zofran- Craig Bell	All
IV	Next Meeting Date April 24, 2025		All
V	Adjournment	Meeting was adjourned at 1401	All
VI.	Closed Session A. Case Reviews B. Loop Closure Cases	N/A	

Attendees:

NAME	MAC POSITION	EMS AGENCY STAFF	POSITION
☒ P. Brian Savino - LLUMC ☐ Brandon Woodward - ARMC	Trauma Hospital Physicians (2)	☒ Reza Vaezazizi, MD	Medical Director
☐ Melanie Randall - LLUMC	Pediatric Critical Care Physician	☒ Demis Cano	EMS Specialist
☐ Phong Nguyen - RDCH ☐ VACANT	Non-Trauma Base Physicians (2)	☒	Specialty Care Coordinator
☐ VACANT	Non-Base Hospital Physician	☒ Jeff Copeland	Sr. EMS Specialist
☐ Michael Neeki - Rialto FD	Public Transport Medical Director	☒ Michelle Hatfield	Sr. EMS Specialist
		☒ Paul Lopez	EMS Specialist
☒ Andrew Pachon - AMR	Private Transport Medical Director		
☒ Kevin Parkes - Ontario FD	Fire Department Medical Director		
☒ Shawn Reynolds	EMS Nurses Representative		
☒ Leslie Parham - Chino Valley FD	EMS Officers Representative		
☐ Kevin Dearden - Rialto FD	Public Transport Medical Representative (Paramedic/RN)		
☒ Susie Moss - AMR	Private Transport Medical Representative (Paramedic/RN)		
☐ Lance Brown - LLUMC	Specialty Center Medical Director		
☒ Sharon Brown - ARMC	Specialty Center Coordinator		
☒ Troy Pennington - Mercy Air	Private Air Transport Medical Director		
☒ Stephen Patterson - Sheriff's Air Rescue	Public Air Transport Medical Director		
☐ Debbie Bervel	PSAP Medical Director		
☒ Lisa Davis - Sierra Lifeflight	Inyo County Representative		
☒ Jessica Wagner	Mono County Representative		
☒ Tonya Henkes	Trauma Program Manager Representative		
☒ Amanda Ward - Crafton Hills	EMT-P Training Program Representative		
☒ Kenneth Fox	Public Safety Field Paramedic		
☒ Craig Bell	Private Transport Field Paramedic		
☒ Seth Dukes	ICEMA Medical Director Appointee		

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Serving San Bernardino, Inyo, and Mono Counties
Daniel Muñoz, Interim EMS Administrator
Reza Vaezazizi, MD, Medical Director

DATE: March 25, 2025 **PHONE:** 909-388-5823

FROM: **DANIEL MUNOZ,** Interim EMS Administrator **REZA VAEZAZIZI**, Medical Director

TO: EMS Providers - ALS, LALS, BLS, EMS Aircraft
Hospital CEOs, ED Directors, Nurse Managers and PLNs
EMS Training Institutions and Continuing Education Providers
Inyo, Mono and San Bernardino County EMCC Members
Medical Advisory Committee (MAC) Members

SUBJECT: **30-DAY NOTIFICATION FOR PUBLIC COMMENT**

Public comment for the policies and protocols listed below will occur at the next Medical Advisory Committee meeting on April 24, 2025, 1:00 pm, at the ICEMA office. Please review and bring suggestions for modification to the meeting.

ICEMA Reference Number and Name

10040	Paramedic Prehospital Utilization of Ultrasound
11010	Medication-Standard Orders
14090	Trauma-Adult (15 years of age and older)

Enclosure
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POLICIES/PROTOCOLS CHANGES 30 DAY COMMENT

Reference #	Name	Changes
DELETIONS		
NEW		
		.
CHANGES		
10040	Paramedic Prehospital Utilization of Ultrasound	Edited for consistency with EMSA LOSOP approval
11010	Medication-Standard Orders	Blood Products added for agencies participating in the paramedic blood transfusion program.
14090	Trauma-Adult (15 years of age and older)	Blood transfusion added for participating agencies.

PARAMEDIC PREHOSPITAL UTILIZATION OF ULTRASOUND ~~–~~ (ADMINISTRATIVE)~~TRIAL STUDY~~

I. PURPOSE

~~To establish authority and parameters for the prehospital use of Prehospital Point of Care Ultrasound (POCUS) as part of a trial study.~~
Paramedics approved by ICEMA may, while on duty with a participating agency, use agency provided portable ultrasound devices as an additional means of patient assessment. Ultrasound exams will be focused on and limited to identification of findings of concern as specified.

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II. INCLUSION CRITERIA

Paramedic (EMT-P) application of POCUS should be considered to help guide treatment during any of the following conditions:

- Suspected Tension Pneumothorax as a result of blunt or penetrating traumatic injury.
  - Absent or decreased breath sounds, and
  - Signs of hemodynamic compromise (shock).
- ~~Detection of intra-abdominal bleeding as a result of blunt or penetrating traumatic injury.~~
- Right upper abdominal quadrant for detection of intra-abdominal bleeding as a result of blunt or penetrating trauma to the chest and/or abdomen
- Persistent cardiac arrest with fine ventricular fibrillation, asystole, or PEA.

III. CONTRAINDICATIONS

Any circumstance where application of POCUS, or interpretation of the ~~trial study~~ findings may delay patient care or transportation to the emergency department.

IV. PROCEDURE

~~EMT-Ps participating in the trial study must evaluate each patient to determine whether they meet criteria and indications for performing POCUS. This assessment is not intended to replace clinical judgement or currently employed techniques for treatment. It is intended to augment the paramedic's diagnostic tools and verify or eliminate differential diagnoses considered.~~
~~-~~EMT-Ps must evaluate each patient to determine whether they meet criteria and indications for performing POCUS. This assessment is not intended to replace clinical judgement or currently employed techniques for treatment. It is intended to augment the paramedic's diagnostic tools and verify or eliminate differential diagnoses considered.

Only EMT-Ps meeting the following criteria may utilize the POCUS:

- May only use the Butterfly IQ handheld ultrasound device approved for use ~~in the trial study~~.
- Be authorized by an EMS provider who ~~is participating in the trial study and~~ has purchased the ~~trial study~~ equipment and supplies.

- Has Rreceived training in use of the Butterfly IQ handheld ultrasound device and meets all ~~trial study~~ requirements for use.

V. DOCUMENTATION REQUIREMENTS

- ICEMA requirements for documentation and collection and submission of EMS data must be followed.
- Utilization of prehospital ultrasound will be documented in the procedures section of the patient care record.
- EMS crews shall document the patient complaint, exam type and findings for QI review.
- All images captured by POCUS must be archived in the "cloud" for review.
- ~~Users will complete the user implementation survey provided to them by the investigators of this trial study through their EMS provider.~~
- ~~The Institutional Review Board (IRB) Trauma Center involved in the care of the transported patient, ICEMA, and Medical Director for the EMS provider involved in the patient care must be advised, and the Principal Investigator (PI) must be informed within 24 hours if either of the following occur:~~
  - ~~Needle decompression in setting of normal lung sliding.~~
  - ~~Termination of resuscitation efforts in the setting of fine v fib mistaken for asystole.~~

VI. QUALITY ASSURANCE

- ~~EMS providers, participating in the trial study, must review 100% of the uses for quality of imaging and proper application of the device and by verifying use it is within the approved IRB guidelines and ICEMA policy.~~
- ~~The investigation team will review a sample of each provider's studies obtained and verify the quality is adequate for the purposes of the trial study~~.

The EMS Coordinator for participating agencies shall utilize ICEMA Image Trend and review 100% of calls and participate with quarterly scheduled case review sessions.

- Participating agencies will maintain internal records for individual performing paramedics along with the type of exam, exam findings of concern and whether or not these were validated on physician review.
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MEDICATION - STANDARD ORDERS

Medications listed in this protocol may be used only for the purposes referenced by the associated ICEMA Treatment Protocol.

For Nerve Agent Antidote Kit (NAAK) or medications deployed with the ChemPack see Appendix I (Page 12).

Acetaminophen (Tylenol) - Adult (ALS)

For mild to moderate pain scales of 1-5 or in moderate to severe pain where other medications are contraindicated or deferred.

Tylenol, 1 gm IV/IO infusion over fifteen (15) minutes. Single dose only

Acetaminophen (Tylenol) – Pediatric (ALS)

For mild to moderate pain scales of 1-5 or in moderate to severe pain where other medications are contraindicated or deferred.

2 years to 14 years:

Tylenol, 15mg/kg to max of 1000mg or 1 gm IV/IO infusion over fifteen (15) minutes. Single dose only

Reference #s 7010, 7020, 14100

Adenosine (Adenocard) - Adult (ALS)

Stable narrow-complex SVT or Wide complex tachycardia:
Adenosine, 6 mg rapid IVP followed immediately by 20 cc NS bolus, and Adenosine, 12 mg rapid IVP followed immediately by 20 cc NS bolus if patient does not convert. May repeat one (1) time.

Reference #s 7010, 7020, 14040

Albuterol (Proventil) Aerosolized Solution - Adult (LALS, ALS)

Albuterol, 2.5 mg nebulized, may repeat two (2) times.

Reference #s 4060, 7010, 7020, 14010, 14070

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Adult (BLS, LALS, ALS)

Albuterol MDI, four (4) puffs every 10 minutes for continued shortness of breath and wheezing.

Reference #s 4060, 4080, 7010, 7020, 14120, 14140, 14190

Albuterol (Proventil) - Pediatric (LALS, ALS)

Albuterol, 2.5 mg nebulized, may repeat two (2) times.

Reference #s 7010, 7020, 14120, 14140, 14190

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Pediatric (BLS, LALS, ALS)

Albuterol MDI, four (4) puffs every 10 minutes for continued shortness of breath and wheezing.

Reference #s 4060, 4080, 7010, 7020, 14120, 14140, 14190

Aspirin, chewable -Adult (LALS, ALS)

Aspirin, 325 mg PO chewed (one (1) adult non-enteric coated aspirin) or four (4) chewable 81 mg aspirin.

Reference #s 4060, 4080, 5010, 7010, 7020

Atropine (ALS) - Adult

Atropine, 1 mg IV/IO. May repeat every five (5) minutes up to a maximum of 3 mg or 0.04 mg/kg.

Organophosphate poisoning:
Atropine, 2 mg IV/IO, repeat at 2 mg increments every five (5) minutes if patient remains symptomatic.

Reference #s 4060, 4080, 7010, 7020, 13010, 14030, 14260

Atropine - Pediatric (ALS)

Organophosphate poisoning - Pediatrics less than 14 years of age:
Atropine, 0.05 mg/kg IV/IO not to exceed adult dose of 2 mg, repeat at 0.1 mg/kg increments every five (5) minutes if patient remains symptomatic.

Reference #s 4060, 4080, 7010, 7020, 13010

Blood Products- Adult (ALS)

Hemorrhagic Shock Due to Severe Traumatic Injury

LTO+WB 1 Unit warmed and infused **or**

pRBCs 2 Units warmed and infused

If blood administration criteria persist, administer
an additional unit of LTO+WB or pRBCs

Reference # 14090

Buprenorphine-Naloxone (Suboxone ®)-Adult (ALS):

Opioid Withdrawal- Clinical Opioid Withdrawal Scale ≥ 8:
Buprenorphine-Naloxone, 16 mg/4mg sublingual, may repeat at 8 mg/2mg sublingual after ten (10) minutes if patient remains symptomatic, to a maximum total dose of 24 mg/6mg.

Reference #s 7010, 10050

Calcium Chloride - Adult (ALS) ***(base hospital order only)***:

Calcium Channel Blocker Poisonings

Calcium Chloride, 1 gm (10 ml of a 10% solution) IV/IO.

Reference #s 5010, 7010, 7020, 13010

For cardiac arrest with suspected hypocalcemia, hyperkalemia, hypermagnesemia or calcium channel blocker poisoning
Calcium Chloride, 1 gm (10 ml of a 10% solution) IV/IO.

Reference #s 7010, 7020, 14050

*For End Stage Renal Disease (ESRD) patients on dialysis with suspected hyperkalemia and hemodynamic instability with documented sinus bradycardia, 3rd degree AV Block, 2nd degree Type II AV Block, slow junctional and ventricular escape rhythms, or slow atrial fibrillation. (**Base hospital order only).***
Calcium Chloride, 1 gm (10 ml of a 10% solution) IV/IO

Reference #s 5010, 7010, 7020, 14030

Calcium Chloride - Pediatric (ALS) *(base hospital order only)*:

Calcium Channel Blocker Poisonings
Calcium Chloride, 20 mg/kg IV/IO over five (5) minutes.

Reference #s 7010, 7020, 13010

Dextrose - Adult (LALS, ALS)

Hypoglycemia - Adult with blood glucose less than 80 mg/dL:
Dextrose 10% /250 ml (D10W 25 gm) IV/IO Bolus

Reference #s 4060, 4080, 5010, 7010, 7020, 8010, 13020, 13030, 14040, 14060

Dextrose - Pediatric (LALS, ALS)

Hypoglycemia - Neonates (0 - 4 weeks) with blood glucose less than 35 mg/dL or pediatric patients (more than 4 weeks) with glucose less than 60 mg/dL:
Dextrose 10%/250 ml (D10W 25 gm) 0.5 gm/kg (5 ml/kg) IV/IO

Reference #s 5010, 7010, 7020, 13020, 13030, 14150, 14160, 14170

Diazepam – Adult (ALS) *only when midazolam is not commercially available.*

Seizures:
Diazepam , 5 mg IV/IO, single dose only
Diazepam 10mg IM, single dose only

Diazepam- Pediatric *(ALS) only when midazolam is not commercially available.*

Seizures:

Diazepam 0.1mg/kg IV/IO, single dose only, not to exceed adult dose of ***5mg***
Diazepam 0.2mg/kg IM, single dose only, not to exceed adult dose of ***10mg***

Reference #s 7010, 7020, 14170

Diphenhydramine - Adult (ALS)

Diphenhydramine, 25 mg IV/IO

Diphenhydramine, 50 mg IM

Reference #s 4060, 4080, 7010, 7020, 13010, 14010

Diphenhydramine - Pediatric (ALS)

Allergic reaction:

2 years to 14 years — Diphenhydramine, 1 mg/kg slow IV/IO, not to exceed adult dose of 25 mg, **or**

Diphenhydramine, 2 mg/kg IM not to exceed adult dose of 50 mg IM.

Reference #s 7010, 7020, 14140

Epinephrine (1 mg/ml) - Adult (LALS, ALS)

Severe Bronchospasm, Asthma Attack, Pending Respiratory Failure, Severe Allergic Reactions:
Epinephrine, 0.3 mg IM. May repeat after 15 minutes one (1) time if symptoms do not improve.

Reference # 14010

Epinephrine (0.1 mg/ml) - Adult (ALS)

For persistent severe anaphylactic reaction:
Epinephrine (0.1 mg/ml), 0.1 mg slow IVP/IO. May repeat every five (5) minutes as needed to total dosage of 0.5 mg.

Reference # 14010

Cardiac Arrest, Asystole, PEA:
Epinephrine (0.1 mg/ml), 1 mg IV/IO.

Reference #s 4060, 4080, 5010, 7010, 7020, 14010, 14050, 14260

Epinephrine (0.3 Auto injector) - Adult (BLS, LALS, ALS)

For severe asthma and/or anaphylaxis only

Epinephrine 0.3 mg auto-injector, may repeat once after 15 minutes

Epinephrine (0.15 Auto injector Jr.) - Pediatric (BLS,LALS, ALS)

For anaphylaxis only

Epinephrine 0.15 mg auto-injector

Epinephrine (0.01 mg/ml) - Adult (ALS)

Post resuscitation, persistent profound nontraumatic shock and hypotension, and for persistent shock due to trauma where cardiac arrest is imminent:(Push Dose Epinephrine).

Prepare Epinephrine 0.01 mg/ml solution by mixing 9 ml of normal saline with 1 ml of Epinephrine 0.1 mg/ml in a 10 ml syringe. Administer 1 ml every one (1) to five (5) minutes titrated to maintain SBP more than 90 mm Hg.

Reference #s 4060, 4080, 5010, 7010, 7020, 11010, 14050, 14090,14230

Epinephrine (1 mg/ml) - Pediatric (LALS, ALS)

Severe Bronchospasm, Asthma Attack, Pending Respiratory Failure, Severe Allergic Reactions:
Epinephrine, 0.01 mg/kg IM not to exceed adult dosage of 0.3 mg. May repeat after 15 minutes one (1) time if symptoms do not improve.

Reference #s 4060, 5010, 7010, 7020, 14120, 14140

Epinephrine (0.1 mg/ml) - Pediatric (ALS)

Anaphylactic reaction (no palpable radial pulse and depressed level of consciousness):
Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO, no more than 0.1 mg per dose. May repeat to a maximum of 0.5 mg.

Cardiac Arrest:

1 day to 8 years	Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO (do not exceed adult dosage)
9 to 14 years	Epinephrine (0.1 mg/ml), 1.0 mg IV/IO

Newborn Care:
Epinephrine (0.1 mg/ml), 0.01 mg/kg IV/IO if heart rate is less than 60 after one (1) minute after evaluating airway for hypoxia and assessing body temperature for hypothermia.

Epinephrine (0.1 mg/ml), 0.005 mg/kg IV/IO every 10 minutes for persistent hypotension as a base hospital order or in radio communication failure.

Reference # 14200

Epinephrine (0.01 mg/ml) - Pediatric (ALS)

Post resuscitation, profound shock and hypotension, for persistent shock due to trauma where cardiac arrest is imminent (Push Dose Epinephrine):
Prepare Epinephrine 0.01 mg/ml solution by mixing 9 ml of normal saline with 1 ml of Epinephrine 0.1 mg/ml in a 10 ml syringe. Administer 0.1 ml/kg (do not exceed adult dosage), every one (1) to five (5) minutes. Titrate to maintain a SBP more than 70 mm Hg.

Reference #s 5010, 7010, 7020, 11010, 14150, 14180, 14230

Fentanyl - Adult (ALS)

Chest Pain (Presumed Ischemic Origin):
Fentanyl, 50 mcg slow IV/IO over one (1) minute. May repeat every five (5) minutes titrated to pain, not to exceed 200 mcg.

Fentanyl, 100 mcg IM/IN. May repeat 50 mcg every 10 minutes titrated to pain, not to exceed 200 mcg.

Acute traumatic injuries, acute abdominal/flank pain, burn injuries, Cancer pain, Sickle Cell Crisis:
Fentanyl, 50 mcg slow IV/IO push over one (1) minute. May repeat every five (5) minutes titrated to pain, not to exceed 200 mcg IV/IO, **or**

Fentanyl, 100 mcg IM/IN. May repeat 50 mcg every 10 minutes titrated to pain, not to exceed 200 mcg.

Pacing, synchronized cardioversion:
Fentanyl, 50 mcg slow IV/IO over one (1) minute. May repeat in five (5) minutes titrated to pain, not to exceed 200 mcg.

Fentanyl, 100 mcg IN. May repeat 50 mcg every 10 minutes titrated to pain, not to exceed 200 mcg.

Any combination of IV/IO/IM/IN may be administered, not to exceed 200 mcg. Contact base hospital for additional orders and to discuss further treatment options.

Reference #s 3050, 4060, 4080, 5010, 7010, 7020, 11020, 13030, 14070, 14090, 14100, 14240

Fentanyl - Pediatric (ALS)

Fentanyl, 0.5 mcg/kg slow IV/IO over one (1) minute. May repeat in five (5) minutes titrated to pain, not to exceed 50 mcg for a single dose.

Fentanyl, 1 mcg/kg IM/IN, may repeat every 10 minutes titrated to pain not to exceed 100 mcg for a single dose.

Any combination of IV/IO/IM/IN may be administered, not to exceed four (4) doses or cumulative maximum of 200 mcg. Contact base hospital for additional orders and to discuss further treatment options.

Reference #s 3050, 4080, 5010, 7010, 7020, 13030, 14180, 14190, 14240

Glucose - Oral - Adult (BLS, LALS, ALS)

Adult with blood glucose less than 80 mg/dL:
Glucose - Oral, one (1) tube for patients with an intact gag reflex and hypoglycemia.

Reference #s 7010, 7020, 13020, 14060, 14080, 14230

Glucose - Oral - Pediatric (BLS, LALS, ALS)

Hypoglycemia - Neonates (0 - 4 weeks) with blood glucose less than 35 mg/dL or pediatric patients (more than 4 weeks) with glucose less than 60 mg/dL:
Glucose - Oral, one (1) tube for patients with an intact gag reflex and hypoglycemia.

Reference #s 7010, 7020, 14170, 14160

Glucagon - Adult (LALS, ALS)

Glucagon, 1 mg IM/SC/IN, if unable to establish IV. May administer one (1) time only.

Beta blocker Poisoning (***base hospital order only***):
Glucagon, 1 mg IV/IO

Reference #s 4060, 4080, 7010, 7020, 13010, 13030, 14060

Glucagon - Pediatric (LALS, ALS)

Hypoglycemia, if unable to establish IV:
Glucagon, 0.03 mg/kg IM/IN, if unable to start an IV. May be repeated one (1) time after 20 minutes for a combined maximum dose of 1 mg.

Reference #s 7010, 7020, 13030, 14160, 14170

*Beta blocker poisoning **(base hospital order only)**:*
Glucagon, 0.03 mg/kg IV/IO

Reference #'s 4060, 4080, 7010, 7020, 13010

Ipratropium Bromide (Atrovent) Inhalation Solution use with Albuterol Adult (ALS)

Atrovent, 0.5 mg nebulized. Administer one (1) dose only.

Reference #s 7010, 7020, 14010, 14070

Ipratropium Bromide (Atrovent) Metered-Dose Inhaler (MDI) use with Albuterol Adult (ALS)

When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 4060, 4080, 7010, 7020, 14010, 14070

Ipratropium Bromide (Atrovent) Inhalation Solution use with Albuterol - Pediatric (ALS)

1 day to 12 months	Atrovent, 0.25 mg nebulized. Administer one (1) dose only.
1 year to 14 years	Atrovent, 0.5 mg nebulized. Administer one (1) dose only.

Reference #s 7010, 7020, 14120, 14140, 14190

Ipratropium Bromide (Atrovent) Metered-Dose Inhaler (MDI) use with Albuterol - Pediatric (ALS)

When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 4060, 4080, 7010, 7020, 14120, 14140, 14190

Ketamine - Adult (ALS)

Acute traumatic injury, acute abdominal/flank pain, burn injuries, cancer related pain and sickle cell crisis:
Ketamine, 0.3 mg/kg to a max of 30 mg in a 50 - 100 ml of NS via IV over five (5) minutes. May repeat one (1) time, after 15 minutes, if pain score remains at five (5) or higher. Do not administer IVP, IO, IM, or IN.

This is the official pain scale to be used in patient assessment and documented on the PCR.

Reference #s 7010, 7020, 14100

Lidocaine - Adult (ALS)

VT (pulseless)/VF:

Initial Dose: Lidocaine, 1.5 mg/kg IV/IO

For refractory *VT (pulseless)/VF*, may administer an additional 0.75 mg/kg IV/IO, repeat one (1) time in five (5) to 10 minutes; maximum total dose of 3 mg/kg.

V-Tach, Wide Complex Tachycardia - with Pulses:
Lidocaine, 1.5 mg/kg slow IV/IO

May administer an additional 0.75 mg/kg slow IV/IO, repeat one (1) time in five (5) to 10 minutes; maximum total dose of 3 mg/kg.

Reference #s 4060, 5010, 7010, 7020, 8010, 11020, 14040, 14050, 14090

Lidocaine - Pediatric (ALS)

Cardiac Arrest:

1 day to 8 years	Lidocaine, 1.0 mg/kg IV/IO
9 to 14 years	Lidocaine, 1.0 mg/kg IV/IO

May administer an additional ~~repeat Lidocaine at~~ 0.5 mg/kg after five (5) to 10 minutes, repeat one (1) time, maximum total dose of 3 mg/kg.

Reference #s 5010, 7010, 7020, 14150

Lidocaine 2% (Intravenous Solution) - Pediatric and Adult (ALS)

Pain associated with IO infusion:
Lidocaine, 0.5 mg/kg slow IO push over two (2) minutes, not to exceed 40 mg total.

Reference #s 5010, 7010, 7020, 11020

Magnesium Sulfate-Adult (ALS)

Polymorphic Ventricular Tachycardia:
Magnesium Sulfate, 2 gm IV/IO bolus over five (5) minutes for polymorphic VT if prolonged QT is observed during sinus rhythm post-cardioversion.

Eclampsia (Seizure/Tonic/Clonic Activity):
Magnesium Sulfate, 4 gm IV/IO slow IV push over three (3) to four (4) minutes.

Magnesium Sulfate, 10 mg/min IV/IO drip to prevent continued seizures.

Reference #s 5010, 7010, 7020, 8010, 14210

Severe Asthma/Respiratory Distress (ALS) ***(base hospital order only)****:*
Magnesium Sulfate, 2 gm slow IV drip over 20 minutes. Do not repeat.
Reference# 14010

Magnesium Sulfate - Pediatric (ALS)

Severe Asthma/Respiratory Distress ***(base hospital order only)****:*
Magnesium Sulfate, 50 mg/kg slow IV drip over 20 minutes. Do not exceed the adult dosage of 2 gm total. Do not repeat.

Reference # 14120

Midazolam (Versed) - Adult (ALS)

Behavioral Emergencies, if patient meets criteria for potentially fatal and dangerous agitation:
Midazolam, 2.5 mg IV/IO. May repeat in five (5) minutes, **or**

Midazolam, 5 mg IM/IN. May repeat in 10 minutes.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered. Contact base hospital for additional orders and to discuss further treatment options.

Reference # 14110

*Post ROSC Agitation **(base hospital order only)**: Agitation following ROSC that hinders patient's care, i.e. biting or attempting to remove ET tube/lines,* **Not to be used for sedation during intubation of any patients**.
Midazolam, 2.5 mg IV/IO **or**

Midazolam 5 mg IM/IN

Patient must have advanced airway (endotracheal tube or i-gel.)

Repeat dose requires base hospital contact.

Reference # 14050

Seizure:
Midazolam, 2.5 mg IV/IO. May repeat in five (5) minutes for continued seizure activity, **or**

Midazolam, 5 mg IM/IN. May repeat in 10 minutes for continued seizure activity.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity. Contact base hospital for additional orders and to discuss further treatment options.

Pacing, synchronized cardioversion:
Midazolam, 2.5 mg slow IV/IO. May repeat in five (5) minutes.

Midazolam, 5 mg IM/IN. May repeat in ten (10) minutes.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered. Contact base hospital for additional orders and to discuss further treatment options.

CPAP:
Midazolam, 1 mg IV/IO/IM/IN may be administered one (1) time for anxiety related to application of CPAP. Contact base hospital for additional orders.

Reference #s 4060, 4080, 7010, 7020, 11020, 13020, 14060, 14210

Midazolam (Versed) - Pediatric (ALS)

Seizures:
Midazolam, 0.1 mg/kg IV/IO with maximum dose 2.5 mg. May repeat Midazolam in five (5) minutes, **or**

Midazolam, 0.2 mg/kg IM/IN with maximum dose of 5 mg. May repeat Midazolam in 10 minutes for continued seizure.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity. Contact base hospital for additional orders and to discuss further treatment options.

Behavioral Emergencies, if patient meets criteria for potentially fatal and dangerous agitation ***(base hospital order):***

Midazolam, 0.1 mg/kg IV/IO. May repeat in five (5) minutes, **or**

Midazolam, 0.2 mg/kg IM/IN. May repeat in 10 minutes.

Assess patient for medication related reduced respiratory rate or hypotension.

Maximum of three (3) doses using any combination of IV/IO/IM/IN may be administered. Not to exceed adult dose. Contact base hospital for additional orders and to discuss further treatment options.

Reference #s 7010, 7020, 14170, 14110

Naloxone (Narcan) - Adult (BLS)

For resolution of respiratory depression related to suspected opiate overdose:

Naloxone, 0.5 mg IM/IN, may repeat Naloxone 0.5 mg IM/IN every two (2) to three (3) minutes if needed to improve respiratory effort.

For suspected Fentanyl overdose with respiratory depression:

Consider a loading dose of 4 mg IN Naloxone. If no signs of respiratory improvement, consider Naloxone 0.5 mg IM/IN every two (2) to three (3) minutes if needed.

Do not exceed 10 mg of Naloxone total regardless of route administered.

Reference #s 7010, 7020, 8030, 14060

Naloxone (Narcan) - Adult (LALS, ALS)

For resolution of respiratory depression related to suspected opiate overdose:

Naloxone, 0.5 mg IV/IO/IM/IN, may repeat Naloxone 0.5 mg IV/IO/IM/IN every two (2) to three (3) minutes if needed to improve respiratory effort.

For suspected Fentanyl overdose with respiratory depression:

Consider a loading dose of 4 mg IN Naloxone, may repeat one (1) time. If no signs of respiratory improvement, consider Naloxone 0.5 mg IV/IO/IM/IN every two (2) to three (3) minutes if needed.

Do not exceed 10 mg of Naloxone total regardless of route administered.

Reference #s 4080, 7010, 7020, 14060

Naloxone (Narcan) - Pediatric (BLS)

For resolution of respiratory depression related to suspected opiate overdose:

1 day to 8 years	Naloxone, 0.1 mg/kg IM/IN (do not exceed the adult dose of 0.5 mg per administration)

9 to 14 years Naloxone, 0.5 mg IM/IN

May repeat every two (2) to three (3) minutes if needed. Do not exceed the adult dosage of 10 mg total IM/IN.

Reference #s 7010, 7020, 8030, 14150, 14160

Naloxone (Narcan) - Pediatric (LALS, ALS)

For resolution of respiratory depression related to suspected opiate overdose:

1 day to 8 years Naloxone, 0.1 mg/kg IV/IO/IM/IN (do not exceed the adult dose of 0.5 mg per administration)
9 to 14 years Naloxone, 0.5 mg IV/IO/IM/IN

May repeat every two (2) to three (3) minutes if needed. Do not exceed the adult dosage of 10 mg total IV/IO/IM/IN.

Reference #s 7010, 7020, 14150, 14160

Nitroglycerin (NTG) -Adult (LALS, ALS)

Nitroglycerin, 0.4 mg sublingual/transmucosal.

One (1) every three (3) minutes as needed. May be repeated as long as patient continues to have signs of adequate tissue perfusion. **If a Right Ventricular Infarction is suspected, the use of nitrates requires base hospital contact.**

Nitroglycerin Paste, 1 inch (1 gm) transdermal, may not repeat.

Nitroglycerin sublingual is the preferred route of administration for ACS. Nitro Paste is a one (1) time dose and intended for when sublingual cannot be easily administered (i.e., CPAP).

Nitroglycerin is contraindicated if there are signs of inadequate tissue perfusion or if sexual enhancement medications have been utilized within the past 48 hours.

Reference #s 4060, 4080, 7010, 7020, 14010, 14240

Ondansetron (Zofran) - Patients four (4) years old to Adult (ALS)

Nausea/Vomiting:

Ondansetron, 4 mg slow IV/IO/ODT

All patients four (4) to eight (8) years old: May administer a total of 4 mgs of Ondansetron prior to base hospital contact.

All patients nine (9) and older: May administer Ondansetron 4 mg; may repeat two (2) times, at 10 minute intervals, for a total of 12 mgs prior to base hospital contact.

May be used as prophylactic treatment of nausea and vomiting associated with narcotic administration.

Reference #s 4080, 7010, 7020, 14090, 14180, 14220

Oxygen - Pediatric and Adult (BLS, LALS. ALS) (non-intubated patient per appropriate delivery device)

General Administration (Hypoxia):
Titrate Oxygen at lowest rate required to maintain SPO_2 at 94%. Do not administer supplemental oxygen for SPO_2 more than 95%.

Chronic Obstructive Pulmonary Disease (COPD):
Titrate Oxygen at lowest rate required to maintain SPO_2 at 90%. Do not administer supplemental oxygen for SPO_2 more than 91%.

Reference #s 12010, 13010, 13020, 13030, 13050, 14010, 14020, 14030, 14040, 14060, 14070, 14090, 14120, 14130, 14140, 14160, 14170, 14180, 14190, 14200, 14210, 14220, 14230, 14240

Sodium Bicarbonate - Adult (ALS)

*Tricyclic Poisoning **(base hospital order only)**:*
Sodium Bicarbonate, 1 mEq/kg IV/IO

Reference #s 5010, 7010, 7020, 13010

*For cardiac arrest with suspected metabolic acidosis, hyperkalemia or tricyclic poisoning **(base hospital order only)**:*
Sodium Bicarbonate, 50 mEq IV/IO/ 50cc preload or 50cc single-dose vial

Reference #'s 7010, 7020, 14050

Sodium Bicarbonate - Pediatric (ALS)

*Tricyclic Poisoning **(base hospital order only)**:*
Sodium Bicarbonate, 1 mEq/kg IV/IO

Reference #'s 7010, 7020, 13010

Tranexamic Acid (TXA) - Patients 15 years of age and older (ALS)

Signs of hemorrhagic shock meeting inclusion criteria:
Administer TXA 1 gm in 50 - 100 ml of NS via IV/IO over 10 minutes. Do not administer IVP as this will cause hypotension.

Signs of postpartum hemorrhagic shock (base hospital order only)
Administer TXA 1 gm in 50 - 100 ml of NS via IV/IO over 10 minutes. Do not administer IVP as this will cause hypotension.

Reference #s 7010, 7020, 14090, 14210, 14230,

APPENDIX I

Medications for self-administration or with deployment of the ChemPack.

Medications listed below may be used only for the purposes referenced by the associated ICEMA Treatment Protocol. Any other use, route or dose other than those listed, must be ordered in consultation with the Base Hospital physician.

Atropine - Pediatric (BLS, AEMT-Auto-injector only with training, ALS)

Known nerve agent/organophosphate poisoning with deployment of the ChemPack using:

Two (2) or more mild symptoms: Administer the weight-based dose listed below as soon as an exposure is known or strongly suspected. If severe symptoms develop after the first dose, two (2) additional doses should be repeated in rapid succession 10 minutes after the first dose; do not administer more than three (3) doses. If profound anticholinergic effects occur in the absence of excessive bronchial secretions, further doses of atropine should be withheld.

One (1) or more severe symptoms: Immediately administer (3) three weight-based doses listed below in rapid succession.

Weight-based dosing:

Less than 6.8 kg (less than 15 lbs):	0.25 mg, IM using multi-dose vial
6.8 to 18 kg (15 to 40 lbs):	0.5 mg, IM using AtroPen auto-injector
18 to 41 kg (40 to 90 lbs):	1 mg, IM using AtroPen auto-injector
More than 41 kg (more than 90 lbs):	2 mg, IM using multi-dose vial

Symptoms of insecticide or nerve agent poisoning, as provided by manufacturer in the AtroPen product labeling, to guide therapy:

Mild symptoms: Blurred vision, bradycardia, breathing difficulties, chest tightness, coughing, drooling, miosis, muscular twitching, nausea, runny nose, salivation increased, stomach cramps, tachycardia, teary eyes, tremor, vomiting, or wheezing.

Severe symptoms: Breathing difficulties (severe), confused/strange behavior, defecation (involuntary), muscular twitching/generalized weakness (severe), respiratory secretions (severe), seizure, unconsciousness, urination (involuntary).

NOTE: Infants may become drowsy or unconscious with muscle floppiness as opposed to muscle twitching.

Reference #s 11010, 13010, 13040

Diazepam (Valium) - Adult (ALS)

For seizures associated with nerve agent/organophosphate exposure ONLY with the deployment of the ChemPack:

Diazepam 10 mg (5 mg/ml) auto-injector IM (if IV is unavailable), **or**
Diazepam 2.5 mg IV

Reference # 13040

Diazepam (Valium) - Pediatric (ALS)

For seizures associated with nerve agent/organophosphate exposure ONLY with the deployment of the ChemPack:

Diazepam 0.05 mg/kg IV

Reference # 13040

Nerve Agent Antidote Kit (NAAK)/Mark I or DuoDote (containing Atropine/Pralidoxime Chloride for self-administration or with deployment of the ChemPack) - Adult

Nerve agent exposure with associated symptoms:

One (1) NAAK auto-injector IM into outer thigh. May repeat up to two (2) times every 10 to 15 minutes if symptoms persist.

Reference #s 7010, 7020, 13010, 13040

TRAUMA - ADULT (15 years of age and older)

I. FIELD ASSESSMENT/TREATMENT INDICATORS

- Any trauma patient meeting Trauma Triage Criteria requiring rapid transportation to the closest Trauma Center.
- Refer to ICEMA Reference #9040 - Trauma Triage Criteria and ICEMA Reference #9030 - Destination.
- Contact the Trauma Center as soon as possible in order to activate the trauma team.
  - ➢ If the closest Trauma Center is outside ICEMA region, and no base orders or consult is needed, EMS field personnel may contact the hospital they will be transporting the patient to.
  - ➢ In Inyo and Mono Counties, the assigned base hospital shall be contacted for determination of appropriate destination.

NOTE: EMS field personnel are not authorized to evaluate patients with suspected concussion for purpose of return to play clearance.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patent airway, protecting cervical spine.
- Obtain oxygen saturation (if BLS equipped).
- Administer oxygen and/or ventilate as needed.
- Keep patient warm.
- For a traumatic full arrest, provide CPR, utilize the AED if indicated and transport to the closest most appropriate hospital.
- Mechanical cardiopulmonary resuscitation (mCPR) devices are contraindicated for trauma patients
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Spinal Motion Restriction**: If the patient meet(s) any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

- Consider maintaining spinal alignment on the gurney, or using spinal motion restriction on an awake, alert and cooperative patient, without the use of a rigid spine board.

- Penetrating trauma without any NSAID indicators are not candidates for spinal motion restriction.

NOTE: The long backboard (LBB) is an extrication tool, whose purpose is to facilitate the transfer of a patient to a transport stretcher and is not intended, or appropriate for achieving spinal motion restriction. Judicious application of the LBB for purposes other than extrication necessitates that EMS field personnel ensure the benefits outweigh the risks. If a LBB is applied for any reason, patients should be removed as soon as it is safe and practical. LBB does not need to be reapplied on interfacility transfer (IFT) patients.

- **Abdominal Trauma**: Cover eviscerated organs with saline dampened gauze. Do not attempt to replace organs into the abdominal cavity.

- **Amputations**: Control bleeding. Rinse amputated part gently with sterile irrigation saline to remove loose debris/gross contamination. Place amputated part in dry, sterile gauze and in a plastic bag surrounded by ice (if available). Prevent direct contact with ice. Document in the narrative who the amputated part was given to.

  Partial Amputation: Splint in anatomic position and elevate the extremity.

- **Bleeding**:

  - Apply direct pressure and/or pressure dressing.

  - When direct pressure or pressure dressing fails, control life threatening bleeding of a severely injured extremity with the application of a tourniquet.

- **Chest Trauma**: If a wound is present, cover it with an occlusive dressing. If the patient's ventilations are being assisted, dress wound loosely, (do not seal). Continuously reevaluate patient for the development of tension pneumothorax.

- **Flail Chest**: Stabilize chest, observe for tension pneumothorax. Consider assisted ventilations.

- **Fractures**: Immobilize above and below the injury. Apply splint to injury in position found except:

  - **Femur**: Apply traction splint if indicated.

  - **Grossly angulated long bone with distal neurovascular compromise**: Apply gentle unidirectional traction to improve circulation.

  - **Check and document distal pulse before and after positioning**.

- **Genital Injuries**: Cover genitalia with saline soaked gauze. If necessary, apply direct pressure to control bleeding. Treat amputations the same as extremity amputations.

- **Head and Neck Trauma**: Place brain injured patients in reverse Trendelenburg (elevate the head of the backboard 15 - 20 degrees), if the patient exhibits no signs of shock.

  - **Eye**: Whenever possible protect an injured eye with a rigid dressing, cup or eye shield. Do not attempt to replace a partially torn globe, stabilize it in place with sterile saline soaked gauze. Cover uninjured eye.

  - **Avulsed Tooth**: Collect teeth, place in moist, sterile saline gauze and place in a plastic bag.

- **Impaled Object**: Immobilize and leave in place. Remove object if it interferes with CPR, or if the object is impaled in the face, cheek or neck and is compromising ventilations.

- **Determination of Death on Scene**: Refer to ICEMA Reference #14250 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

- Perform identified BLS interventions and additional LALS interventions.

- Advanced airway (as indicated).

  - Unmanageable Airway: Transport to the closest most appropriate receiving hospital when the patient requires advanced airway and an adequate airway cannot be maintained with a BVM device.

- Establish IV access.

  - *Unstable*: If BP less than 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.

  - *Stable*: Maintain IV if BP more than 90 mm Hg and/or signs of adequate tissue perfusion.

Blunt Trauma:

- *Unstable*: Establish IV NS administer 250 ml bolus. May repeat one (1) time to a maximum of 500 ml.

- *Stable*: Saline lock only, do not administer IV fluids.

Penetrating Trauma:

- Saline lock only, do not administer IV fluids.

Isolated Closed Head Injury:

- *Unstable:* Establish IV NS, administer 250 ml bolus. May repeat one (1) time to a maximum of 500 ml.

- *Stable*: Saline lock only, do not administer IV fluids.

Isolated Extremity Trauma:

- *Unstable:* Establish IV NS, administer 250 ml bolus. May repeat one (1) time to a maximum of 500 ml.

- *Stable*: Saline lock only, do not administer IV fluids.

- Transport to appropriate hospital.

A. Manage Special Considerations

- Consider Push Dose Epi for persistent shock due to trauma where cardiac arrest is imminent, per ICEMA Reference #11010 - Medication - Standard Orders.

- **Spinal Motion Restriction**: LALS personnel should remove LBB devices from patients placed in full spinal motion restriction precautions by first responders and BLS personnel if the patient does not meet any of the following indicators using the acronym (NSAID):

  N-euro Deficit(s) present?
  S-pinal Tenderness present?
  A-ltered Mental Status?
  I-ntoxication?
  D-istracting Injury?

- **Impaled Object**: Remove object upon Trauma base hospital physician order, if indicated.

B. Determination of Death on Scene: Refer to ICEMA Reference #14250 - Determination of Death on Scene.

- *Severe Blunt Force Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" per ICEMA Reference #14250 - Determination of Death on Scene, contact the Trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

- Resuscitation efforts on a penetrating traumatic arrest victim are not to be terminated without Trauma base hospital contact.

- **Precautions and Comments**:

  - Electrical injuries that result in cardiac arrest shall be treated as medical arrests.

  - Consider cardiac etiology in older patients in cardiac arrest with low probability of mechanism of injury.

- If the patient is not responsive to trauma-oriented resuscitation, consider medical etiology and treat accordingly.
- Unsafe scene may warrant transport despite low potential for survival.

IV. ALS INTERVENTIONS

- Perform identified BLS and LALS intervention and the additional ALS interventions.
- Advanced Airway (as indicated):
  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or insert SGA or perform a successful needle cricothyrotomy (if indicated), **then** transport to the closest receiving hospital and follow ICEMA Reference #9010 - Continuation of Care (San Bernardino County Only).
- Monitor ECG.
- Establish IV/IO access.
  - *Unstable*: If BP less than 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: Maintain IV/IO if BP more than 90 mm Hg and/or signs of adequate tissue perfusion.

Blunt Trauma:

- *Unstable*: Establish IV/IO NS administer 250 ml bolus. May repeat one (1) time to a maximum of 500 ml.
- *Stable*: Saline lock only, do not administer IV fluids.

Penetrating Trauma:

- Saline lock only, do not administer IV fluids.

Isolated Closed Head Injury:

- *Unstable:* Establish IV/IO NS, administer 250 ml bolus. May repeat one (1) time to a maximum of 500 ml.
- *Stable*: Saline lock only, do not administer IV fluids.

Isolated Extremity Trauma:

- *Unstable:* Establish IV/IO NS, administer 250 ml bolus. May repeat one (1) time to a maximum of 500 ml (avoid placement on injured extremity).
- *Stable*: Saline lock only, do not administer IV fluids.

- Tranexamic Acid (TXA) administration for blunt or penetrating traumas:

- Must be within three (3) hours of injury and must have either:
  - Signs and symptoms of hemorrhagic shock with SBP less than 90 mm Hg.
  - Significant hemorrhage with heart rate greater than or equal to 120.
  - Bleeding not controlled by direct pressure or tourniquet.
  - Pediatric administration is not indicated.
- **Blunt Trauma**:
  - For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #11010 - Medication - Standard Orders.
- **Penetrating Trauma**:
  - For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #11010 - Medication - Standard Orders.

- Blood transfusion for hemorrhagic shock due to severe traumatic injury:
  - SBP <70 or unable to obtain **or**
  - SBP < 90 AND HR ≥ 110 (SI >1.2) **or**
  - Traumatic arrest witnessed by EMS

- **Blunt Trauma:**
  - Administer LTO+WB or pRBCs IV/IO per ICEMA Reference #11010 - Medication - Standard Orders.
- **Penetrating Trauma:**
  - Administer LTO+WB or pRBCs IV/IO per ICEMA Reference #11010 - Medication - Standard Orders.

- Transport to appropriate Trauma Center.
- Insert nasogastric/orogastric tube as indicated.

A. ~~A.~~ Manage Special Considerations

- When field blood transfusion is available prioritize blood products prior to IV fluids if criteria is met.

- As a temporary method for chest decompression, in the management of suspected tension pneumothorax, perform needle thoracostomy.

  - ***Clinical Indications:***

    - *Patients with hypotension (SBP less than 90), clinical signs of shock, and at least one of the following signs:*

    - *Jugular vein distention.*
    - *Tracheal deviation away from the side of the injury (often a late sign).*
    - *Absent or decreased breath sounds on the affected side.*
    - *Increased resistance when ventilating a patient*

- The midaxillary line at the 5th intercostal space is the preferred site.

- Consider bilateral needle thoracostomy if no improvement or in traumatic cardiac arrest.

- **Pain Relief for Acute Traumatic Injuries**:

  - Administer an appropriate analgesic per ICEMA Reference #14100 - Pain Management. Document vital signs and pain scales every five (5) minutes until arrival at destination
  - Consider Ondansetron per ICEMA Reference #11010 - Medication - Standard Orders.

B. **Determination of Death on Scene**: Refer to ICEMA Reference #14250 - Determination of Death on Scene.

- *Severe Blunt Force Trauma Arrest*: If indicated, pronounce on scene.

- *Penetrating Trauma Arrest*: If indicated, transport to the closest receiving hospital.

- If the patient does not meet the "Obvious Death Criteria" per ICEMA Reference #14250 - Determination of Death on Scene, contact the Trauma base hospital for determination of death on scene for those patients who suffer a traumatic cardiac arrest in the setting of penetrating trauma with documented asystole in at least two (2) leads, and no reported vital signs (palpable pulse and/or spontaneous respirations) during the EMS encounter with the patient.

V. REFERENCES

Number	Name
9010	Continuation of Care
9030	Destination
9040	Trauma Triage Criteria
11010	Medication - Standard Orders
14050	Cardiac Arrest - Adult
14100	Pain Management
14250	Determination of Death on Scene