Inland Counties Emergency Medical Agency

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Serving San Bernardino, Inyo, and Mono Counties
Tom Lynch, EMS Administrator
Reza Vaezazizi, MD, Medical Director

DATE: June 20, 2019

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
Systems Advisory Committee (SAC) Members

FROM: Tom Lynch, EMS Administrator; Reza Vaezazizi, MD, Medical Director

SUBJECT: IMPLEMENTATION OF POLICIES/PROTOCOLS EFFECTIVE JULY 15, 2019

The revised policies/protocols listed below will be effective July 15, 2019.

ICEMA Reference Number and Name

7040 (Revised)	Medication - Standard Orders
10190 (Revised)	Procedure - Standard Orders
15010 (Revised)	Trauma - Adult (15 years of age and older)
15020 (Revised)	Trauma - Pediatric (Less than 15 years of age)

The attached policies/protocols include changes in ICEMA's standardized drug and equipment list that will be implemented on July 15, 2019. These changes include the deletion of Epinephrine every two (2) minutes and Lidocaine for ICP.

Please insert and replace the attached policies/protocols and the Table of Contents in the EMS Policy, Procedure and Protocol Manual with the updated documents and ensure every station or facility has a reference copy. The ICEMA policies and protocols can also be found on ICEMA's website at www.ICEMA.net under the EMS Policy, Procedure and Protocol Manual section.

If you have any questions, please contact Suzee Kolodzik, EMS Specialist, at (909) 388-5820 or via e-mail at susan.kolodzik@cao.sbcounty.gov.

TL/RV/SK/jlm

Attachments

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BOARD OF DIRECTORS

Robert A. Lovingood	Janice Rutherford	James Ramos	Curt Hagman	Josie Gonzales	Gary McBride
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POLICIES/PROTOCOLS CHANGES EFFECTIVE JULY 15, 2019

Reference #	Name	Changes
DELETIONS		
None		
NEW		
None		
1000 ACCREDITATION AND CERTIFICATION		
None		
2000 DATA COLLECTION		
None		
3000 EDUCATION		
None		
4000 QUALITY IMPROVEMENT		
None		
5000 MISCELLANEOUS SYSTEM POLICIES		
None		
6000 SPECIALTY PROGRAM/ PROVIDER POLICIES		
None		
7000 STANDARD DRUG & EQUIPMENT LISTS		
7040 (Revised)	Medication - Standard Orders	Clarification on Push Dose Epinephrine for pediatrics. Removal of Lidocaine use for King airway and NG/OG insertion with suspected ICP for adults and NG/OG insertion for pediatrics for suspected ICP. Deleted reference to Epinephrine every 2 minutes. Deleted Lidocaine for ICP.
8000 TRANSPORT/TRANSFERS AND DESTINATION POLICIES		
None		
9000 GENERAL PATIENT CARE POLICIES		
None		
10000 SKILLS		
10190 (Revised)	Procedure - Standard Orders	Deleted Lidocaine for ICP.
11000 ADULT EMERGENCIES		
None		
12000 END OF LIFE CARE		
None		

POLICIES/PROTOCOLS CHANGES EFFECTIVE JULY 15, 2019

Reference #	Name	Changes
13000 ENVIRONMENTAL EMERGENCIES		
None		
14000 PEDIATRIC EMERGENCIES		
None		
15000 TRAUMA		
15010 (Revised)	Trauma - Adult (15 years of age and older)	Delete Lidocaine for ICP.
15020 (Revised)	Trauma - Pediatric (Less than 15 years of age)	Delete Lidocaine for ICP.

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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).

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, 11050

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

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

Reference #s 6090, 7010, 7020, 11010, 11100

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Adult (LALS, ALS - Specialty Programs Only)

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

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) - Pediatric (LALS, ALS)

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

Reference #s 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Pediatric (LALS, ALS - Specialty Programs Only)

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

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Aspirin, chewable (LALS, ALS)

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

Reference #s 2020, 6090, 6110, 7010, 7020, 11060

Atropine (ALS)

Atropine, 0.5 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 6090, 6110, 7010, 7020, 11040, 12020, 13010

Calcium Chloride (ALS)

Calcium Channel Blocker Poisonings:
Calcium Chloride, 1 gm (10 cc of a 10% solution) IV/IO, base hospital order only.

Reference #s 2020, 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 2020, 6090, 6110, 7010, 7020, 8010, 11050, 11080, 13020, 13030

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 2020, 7010, 7020, 13020, 13030, 14040, 14050, 14060

Diphenhydramine - Adult (ALS)

Diphenhydramine, 25 mg IV/IO

Diphenhydramine, 50 mg IM

Reference #s 6090, 6110, 7010, 7020, 11010, 13010

Diphenhydramine - Pediatric (ALS)

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, 14030

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 fifteen (15) minutes one (1) time if symptoms do not improve.

Reference # 11010

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 # 11010

Cardiac Arrest, Asystole, PEA:
Epinephrine (0.1 mg/ml), 1 mg IV/IO.
Reference #s 2020, 6090, 6110, 7010, 7020, 11010, 11070, 12020

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

Post resuscitation, persistent profound shock and hypotension (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 2020, 6090, 6110, 7010, 7020, 7040, 11090

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.

Reference #s 2020, 6090, 7010, 7020, 14010, 14030

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 (0.1mg/ml), 1.0 mg IV/IO

Newborn Care:

Epinephrine (0.1 mg/ml), 0.01mg/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 ten (10) minutes for persistent hypotension as a base hospital order or in radio communication failure.

Reference # 14090

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

Post resuscitation, profound shock and hypotension (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 0.1ml/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 2020, 7010, 7020, 7040, 11090, 14040

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 ten (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 ten (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 ten (10) minutes titrated to pain, not to exceed 200 mcg.

Reference #s 2020, 6090, 6110, 7010, 7020, 7030, 10190, 11060, 11100, 11140, 13030, 15010

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 100 mcg.

Fentanyl, 1 mcg/kg IM/IN, may repeat every ten (10) minutes titrated to pain not to exceed 200 mcg.

Reference #s 2020, 6110, 7010, 7020, 7030, 11060, 13030, 14070, 15020

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, 11080, 11090, 11110, 13020

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, 14050, 14060

Glucagon - Adult (LALS, ALS)

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

Beta blocker Poisoning:

Glucagon, 1 mg IV/IO (base hospital order only)

Reference #s 6090, 6110, 7010, 7020, 11080, 13010, 13030

Glucagon - Pediatric (LALS, ALS)

Glucagon, 0.025 mg/kg IM/IN, if unable to start an IV. May be repeated one (1) time after twenty (20) minutes for a combined maximum dose of 1 mg.

Reference #s 7010, 7020, 13030, 14050, 14060

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

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

Reference #s 7010, 7020, 11010, 11100

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

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

Reference #s 6090, 6110, 7010, 7020, 11010, 11100

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, 14010, 14030, 14070

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

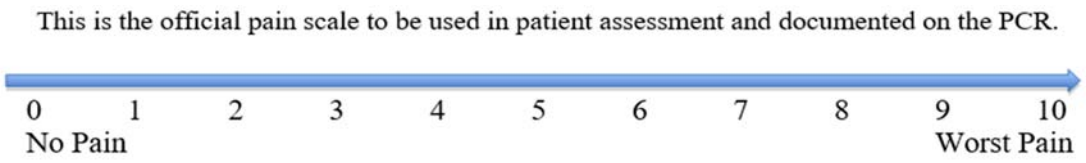
When used in combination with Albuterol MDI use Albuterol MDI dosing.

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

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.



Reference #s 7010, 7020, 11140

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 ten (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; maximum total dose of 3 mg/kg.
Reference #s 2020, 6090, 7010, 7020, 8010, 10190, 11050, 11070, 15010

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 repeat Lidocaine at 0.5 mg/kg after five (5) minutes; maximum total dose of 3 mg/kg.

Reference #s 2020, 7010, 7020, 14040

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 2020, 7010, 7020, 10140, 10190

Lidocaine 2% Gel (Viscous) - Pediatric and Adult (ALS)

Pain associated with Nasogastric/Orogastric Tube insertion.

Reference # 10190

Magnesium Sulfate (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 2020, 7010, 7020, 8010, 14080

Midazolam (Versed) - Adult (ALS)

Behavioral Emergencies, with suspected excited delirium:

Midazolam, 5 mg IM/IN or IV/IO push. May repeat once for a total dosage of 10 mg.

Reference # 11130

Seizure:

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

Midazolam, 5 mg IM. May repeat in ten (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 mg slow IV/IO push or IN

Reference #s 6090, 6110, 7010, 7020, 10190, 11080, 13020, 14080

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 ten (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.

Reference #s 7010, 7020, 14060

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.

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

Reference #s 7010, 7020, 8050 11080

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.

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

Reference #s 6110, 7010, 7020, 11080

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, 8050, 14040, 14050

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, 14040, 14050

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

Reference #s 6090, 6110, 7010, 7020, 11010, 11060

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 ten (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 6110, 7010, 7020, 9120, 10100, 15010, 15020

Oxygen (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 9010, 9120, 11010, 11020, 11040, 11050, 11060, 11080, 11090, 11100, 11150, 13010, 13020, 13030, 14010, 14020, 14030, 14050, 14060, 14070, 14080, 14090, 15010, 15020

Sodium Bicarbonate (ALS) (base hospital order only)

Tricyclic Poisoning:

Sodium Bicarbonate, 1 mEq/kg IV/IO

Reference #s 2020, 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 ten (10) minutes. Do not administer IVP as this will cause hypotension.

Reference #s 7010, 7020, 15010

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 ten (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 7040, 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 ten (10) to fifteen (15) minutes if symptoms persist.

Reference #s 7010, 7020, 13010, 13040

PROCEDURE - STANDARD ORDERS

12-lead Electrocardiography (EMT-P)

- ECG should be performed prior to medication administration.
- ECG should be performed on any patient whose medical history and/or presenting symptoms are consistent with acute coronary syndrome including typical or atypical chest pain, syncopal episode, prior AMI, heart disease, or other associated risk factors.

Axial Spinal Immobilization (EMT, AEMT and EMT-P)

- Should be placed if patient meets the indicators, per ICEMA Reference #15010 - Trauma - Adult (Neuro Deficits present, Spinal Tenderness present, Altered Mental status, Intoxication, or Distracting Injury).
- An AEMT and/or EMT-P may remove if placed by BLS crew and it does not meet indicators.

Capnography (EMT-P)

- Utilize capnography in patients with respiratory distress, respiratory failure, cardiac arrest, and critically ill patients
- Perform capnography prior to pain medication administration.
- Perform capnography after administration of Midazolam for behavioral emergencies.
- Monitor waveform, numerical value and document in ePCR.

Continuous Positive Airway Pressure Device (CPAP) - Adult (EMT, AEMT and EMT-P)

- Start at lowest setting and increase slowly until patient experiences relief or until a maximum of 15 cm H_2O is reached.

External Jugular Vein Access (AEMT and EMT-P)

- Not indicated for patients eight (8) years of age and younger.
- Patient condition requires IV access and other peripheral venous access attempts are unsuccessful.

Blood Glucose Check (EMT, AEMT, and EMT-P)

- Should be assessed if the patient meets key indicators consistent with high or low blood sugar.

Intraosseous Insertion (AEMT pediatric patients only and EMT-P)

- EMT-Ps may administer Lidocaine slowly per ICEMA Reference #7040 - Medication - Standard Orders, to control infusion pain.
- Approved insertion sites:
  - Eight (8) years of age or younger (LALS and ALS):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
  - Nine (9) years of age and older (ALS only):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
    - Distal Tibia - Lower end of tibia, 2 cm above the medial malleolus.
    - Humeral Head (EZ IO only).
    - Anterior distal femur, 2 cm above the patella - Base hospital contact only.
- Leave site visible and monitor for extravasation.

King Airway Device (Perilaryngeal) - Adult (EMT Specialty Program, AEMT, and EMT-P)

- Use of King Airway device may be performed only on those patients who meet **all** of the following criteria:
  - Unresponsive, agonal respirations (less than six (6) breaths per minute) or apneic.
  - Patients 15 years or older.
  - Patients over four (4) feet in height.
- Additional considerations:
  - Medications may **not** be given via the King Airway device.
  - King Airway device should not be removed unless it becomes ineffective.

Nasogastric/Orogastric Tube (EMT-P)

- Use viscous Lidocaine gel per ICEMA Reference #7040 - Medication - Standard Orders, for conscious patients.
- Required for all full arrest patients.

Needle Cricothyrotomy (EMT-P)

- Absolute contraindication: Transection of the distal trachea.
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- Contact base hospital if unable to ventilate adequately and transport immediately to the closest hospital for airway management.

Needle Thoracostomy (EMT-P)

- In blunt chest trauma consider bilateral tension pneumothorax if pulse oximetry (SpO_2) reading remains low with a patent airway or with poor respiratory compliance.

Oral Endotracheal Intubation - Adult (EMT-P)

- Oral endotracheal intubation is permitted only in patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- If unable to place ET after a maximum of three (3) intubation attempts (defined as placement of the laryngoscope in the mouth), then consider placing a King Airway device. If unsuccessful, continue with BLS airway management and transport to the nearest receiving hospital.
- Document verification of tube placement (auscultation, visualization, capnography).

Synchronized Cardioversion (EMT-P)

- For anxiety prior to cardioversion, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- If rhythm deteriorates to v-fib, turn off the sync button and defibrillate.
- Select initial energy level setting at 100 joules or a clinically equivalent biphasic energy level per manufacture guidelines. Procedure may be repeated at 200, 300 and 360 joules or a clinically equivalent biphasic energy level per manufacture guidelines.
- In radio communication failure or with base hospital order, repeated cardioversion attempts at 360 joules or clinically equivalent biphasic energy level per manufacturer's guidelines may be attempted.

Transcutaneous Cardiac Pacing (EMT-P)

- Start at a rate of 60 and adjust output to the lowest setting to maintain capture. Assess peripheral pulses and confirm correlation with paced rhythm.
- Reassess peripheral pulses. Adjust output to compensate for loss of capture.
- Increase rate **(not to exceed 100)** to maintain adequate tissue perfusion.
- For anxiety, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- Contact the base hospital if rhythm persists or for continued signs of inadequate tissue perfusion.

Vagal Maneuvers (EMT-P)

- Relative contraindications for patients with hypertension, suspected STEMI, or suspected head/brain injury.
- Reassess cardiac and hemodynamic status. Document rhythm before, during and after procedure.
- If rhythm does not covert within ten (10) seconds, follow ICEMA Reference #11050 - Tachycardias - Adult.

TRAUMA - ADULT
(15 years of age and older)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

In Inyo and Mono Counties, the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patent airway, protecting cervical spine.
- Obtain O_2 saturation (if BLS equipped).
- Administer oxygen and/or ventilate as needed.
- Keep patient warm.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: 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 axial spinal immobilization 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 axial spinal immobilization.

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 stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers 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.

  - To control life-threatening bleeding of a severely injured extremity, consider application of tourniquet when direct pressure or pressure dressing fails.

- **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.

- **Pregnancy**: Where axial spinal stabilization precaution is indicated, the board should be elevated at least 4 inches on the right side for those patients who have a large pregnant uterus, usually applies to pregnant females greater than or equal to 24 weeks of gestation.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (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.
- Apply AED.
- Establish IV access (administer warm IV fluids when available).
  - *Unstable*: If BP is less than 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: Maintain IV if BP is more than 90 mm Hg and/or signs of adequate tissue perfusion.

  Blunt Trauma:
  - *Unstable*: Establish IV NS open until stable or 2000 ml maximum is infused.
  - *Stable*: Maintain IV NS, TKO.

  Penetrating Trauma:
  - *Unstable*: Establish IV NS, administer 500 ml bolus one (1) time.
  - *Stable*: Maintain IV NS, TKO.

  Isolated Closed Head Injury:
  - *Unstable:* Establish IV NS, administer 250 ml bolus. May repeat to a maximum of 500 ml.
  - *Stable*: Maintain IV NS, TKO.
- Transport to appropriate hospital.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization 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?

- Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization 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 immobilization.

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 stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers 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.

- **Fractures**:

  - **Isolated Extremity Trauma**: Trauma <u>without multisystem mechanism</u>. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Establish IV NS, administer 250 ml bolus one (1) time.

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

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the voice prompts.

B. **<u>Determination of Death on Scene</u>**: Refer to ICEMA Reference #12010 - 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" in ICEMA Reference #12010 - 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.**

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. 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 perform a successful needle cricothyrotomy (if indicated), **then** transport to the closest receiving hospital and follow ICEMA Reference #8120 - Continuation of Care.

- Monitor ECG.

- Establish IV/IO access (administer warm IV fluids when available).

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

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

- For Tranexamic Acid (TXA) administration for blunt or penetrating traumas meeting inclusion and exclusion criteria below:

Inclusion Criteria	**Exclusion Criteria**
Within three (3) hours of injury, the prehospital use of TXA should be considered for all blunt or penetrating trauma patients with signs and symptoms of hemorrhagic shock that meet **any** one (1) of the following inclusion criteria: • Systolic blood pressure of less than 90 mm Hg at any time during patient encounter. • Significant blood loss and a heart rate more than 120. • Bleeding not controlled by direct pressure or tourniquet.	• Any patient less than 15 years of age. • Any patient more than three (3) hours post-injury. • Penetrating cranial injury. • Traumatic brain injury with brain matter exposed. • Documented cervical cord injury with motor deficits.

Blunt Trauma:

- *Unstable*: Administer IV NS until stable or 2000 ml maximum is infused.

- For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

- *Stable*: Maintain IV NS, TKO.

Penetrating Trauma:

- *Unstable*: Administer IV NS 500 ml bolus one (1) time.

- For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

- *Stable*: Maintain IV NS, TKO.

Isolated Closed Head Injury:

- *Unstable*: Administer IV NS 250 ml bolus, may repeat to a maximum of 500 ml
- *Stable*: Maintain IV NS, TKO.

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

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization 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?
  Distracting Injury?

  - Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization 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 immobilization.

  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 stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers 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.

- **Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Pain Relief for Acute Traumatic Injuries**:
  - Administer an appropriate analgesic per ICEMA Reference #11140 - Pain Management - Adult. Document vital signs and pain scales every five (5) minutes until arrival at destination.
  - Consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
  - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer IV NS 250 ml bolus one (1) time.

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

- **Traumatic Arrest**: Continue CPR as appropriate.
  - Treat per ICEMA Reference #11070 - Cardiac Arrest - Adult.

B. **<u>Determination of Death on Scene</u>**: Refer to ICEMA Reference #12010 - 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 #12010 - 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.

- 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.

- **Unsafe scene may warrant transport despite low potential for survival.**

- Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
8120	Continuation of Care
11070	Cardiac Arrest - Adult
11140	Pain Management - Adult
12010	Determination of Death on Scene

TRAUMA - PEDIATRIC
(Less than 15 years of age)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

Inyo and Mono Counties do not have trauma center designations and the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patient airway, protecting cervical spine.
- Oxygen and/or ventilate as needed, O_2 saturation (if BLS equipped).
- Keep patient warm and reassure.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: Using age appropriate assessments, 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 axial immobilization 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 immobilization using spine board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **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.

- **Blunt 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 re-evaluate 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.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

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

- Apply AED.

- IV Access (warm IV fluids when available).

  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV. May repeat once.

  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.

- Transport to appropriate hospital. Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closes trauma hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when 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 axial immobilization 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 immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma <u>without multisystem mechanism</u>. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Administer IV NS 250 ml bolus one (1) time.

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

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the instructions.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - 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" in ICEMA Reference #12010 - 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.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. ALS INTERVENTIONS

- Establish advanced airway as indicated per ICEMA Reference #10190 - Procedure - Standard Orders.

  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then**

transport to the closest receiving hospital and follow ICEMA Reference #8100 - Continuation of Trauma Care.

- Monitor ECG.

- IV/IO Access (Warm IV fluids when available).

  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV/IO, may repeat once.

  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.

- Transport to Trauma Center: Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closest trauma hospital.

- Insert nasogastric/orogastric tube as indicated

A. Manage Special Considerations

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when 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 axial immobilization 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 immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Blunt Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured - e.g. dislocated shoulder, hip fracture or dislocation.

  - **Pain Relief**:

    - Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
    - For patients four (4) years old and older, consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
    - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer 20 ml/kg NS bolus IV/IO one (1) time.

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

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Treat per ICEMA Reference #14040 - Cardiac Arrest - Pediatric.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - 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" in ICEMA Reference #12010 - 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.

- 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.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders
12010	Determination of Death on Scene
14040	Cardiac Arrest - Pediatric
15030	Trauma Triage Criteria and Destination Policy

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).

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, 11050

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

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

Reference #s 6090, 7010, 7020, 11010, 11100

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Adult (LALS, ALS - Specialty Programs Only)

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

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) - Pediatric (LALS, ALS)

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

Reference #s 7010, 7020, 14010, 14030, 14070

Albuterol (Proventil) Metered-Dose Inhaler (MDI) - Pediatric (LALS, ALS - Specialty Programs Only)

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

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

Aspirin, chewable (LALS, ALS)

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

Reference #s 2020, 6090, 6110, 7010, 7020, 11060

Atropine (ALS)

Atropine, 0.5 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 6090, 6110, 7010, 7020, 11040, 12020, 13010

Calcium Chloride (ALS)

Calcium Channel Blocker Poisonings:
Calcium Chloride, 1 gm (10 cc of a 10% solution) IV/IO, base hospital order only.

Reference #s 2020, 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 2020, 6090, 6110, 7010, 7020, 8010, 11050, 11080, 13020, 13030

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 2020, 7010, 7020, 13020, 13030, 14040, 14050, 14060

Diphenhydramine - Adult (ALS)

Diphenhydramine, 25 mg IV/IO

Diphenhydramine, 50 mg IM

Reference #s 6090, 6110, 7010, 7020, 11010, 13010

Diphenhydramine - Pediatric (ALS)

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, 14030

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 fifteen (15) minutes one (1) time if symptoms do not improve.

Reference # 11010

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 # 11010

Cardiac Arrest, Asystole, PEA:
Epinephrine (0.1 mg/ml), 1 mg IV/IO. ~~Repeat after every two (2) minute cycle of CPR.~~

Reference #s 2020, 6090, 6110, 7010, 7020, 11010, 11070, 12020

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

Post resuscitation, ~~For~~ persistent profound shock and hypotension (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 2020, 6090, 6110, 7010, 7020, 7040, 11090

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.

Reference #s 2020, 6090, 7010, 7020, 14010, 14030

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 (0.1mg/ml), 1.0 mg IV/IO

Newborn Care:

Epinephrine (0.1 mg/ml), 0.01mg/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 ten (10) minutes for persistent hypotension as a base hospital order or in radio communication failure.

Reference # 14090

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

Post resuscitation, ~~with continued signs of~~ profound shock and hypotension (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 0.1ml/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 2020, 7010, 7020, 7040, 11090, 14040

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 ten (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 ten (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 ten (10) minutes titrated to pain, not to exceed 200 mcg.

Reference #s 2020, 6090, 6110, 7010, 7020, 7030, 10190, 11060, 11100, 11140, 13030, 15010

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 100 mcg.

Fentanyl, 1 mcg/kg IM/IN, may repeat every ten (10) minutes titrated to pain not to exceed 200 mcg.

Reference #s 2020, 6110, 7010, 7020, 7030, 11060, 13030, 14070, 15020

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, 11080, 11090, 11110, 13020

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, 14050, 14060

Glucagon - Adult (LALS, ALS)

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

Beta blocker Poisoning:

Glucagon, 1 mg IV/IO (base hospital order only)

Reference #s 6090, 6110, 7010, 7020, 11080, 13010, 13030

Glucagon - Pediatric (LALS, ALS)

Glucagon, 0.025 mg/kg IM/IN, if unable to start an IV. May be repeated one (1) time after twenty (20) minutes for a combined maximum dose of 1 mg.

Reference #s 7010, 7020, 13030, 14050, 14060

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

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

Reference #s 7010, 7020, 11010, 11100

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

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

Reference #s 6090, 6110, 7010, 7020, 11010, 11100

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, 14010, 14030, 14070

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

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

Reference #s 6090, 6110, 7010, 7020, 14010, 14030, 14070

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, 11140

Lidocaine - Adult (ALS)

~~*Endotracheal Intubation, King Airway, NG/OG, for suspected increased intracranial pressure (ICP):*~~
~~Lidocaine, 1.5 mg/kg IV/IO~~

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 ten (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; maximum total dose of 3 mg/kg.
Reference #s 2020, 6090, 7010, 7020, 8010, 10190, 11050, 11070, 15010

Lidocaine - Pediatric (ALS)

~~*NG/OG, for suspected increased intracranial pressure (ICP):*~~
~~Lidocaine, 1.5 mg/kg IV/IO~~

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 repeat Lidocaine at 0.5 mg/kg after five (5) minutes; maximum total dose of 3 mg/kg.

Reference #s 2020, 7010, 7020, 14040

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 2020, 7010, 7020, 10140, 10190

Lidocaine 2% Gel (Viscous) - Pediatric and Adult (ALS)

Pain associated with Nasogastric/Orogastric Tube insertion.

Reference # 10190

Magnesium Sulfate (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 2020, 7010, 7020, 8010, 14080

Midazolam (Versed) - Adult (ALS)

Behavioral Emergencies, with suspected excited delirium:

Midazolam, 5 mg IM/IN or IV/IO push. May repeat once for a total dosage of 10 mg.

Reference # 11130

Seizure:

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

Midazolam, 5 mg IM. May repeat in ten (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 mg slow IV/IO push or IN

Reference #s 6090, 6110, 7010, 7020, 10190, 11080, 13020, 14080

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 ten (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.

Reference #s 7010, 7020, 14060

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.

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

Reference #s 7010, 7020, 8050 11080

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.

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

Reference #s 6110, 7010, 7020, 11080

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, 8050, 14040, 14050

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, 14040, 14050

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

Reference #s 6090, 6110, 7010, 7020, 11010, 11060

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 ten (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 6110, 7010, 7020, 9120, 10100, 15010, 15020

Oxygen (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 9010, 9120, 11010, 11020, 11040, 11050, 11060, 11080, 11090, 11100, 11150, 13010, 13020, 13030, 14010, 14020, 14030, 14050, 14060, 14070, 14080, 14090, 15010, 15020

Sodium Bicarbonate (ALS) (base hospital order only)

Tricyclic Poisoning:

Sodium Bicarbonate, 1 mEq/kg IV/IO

Reference #s 2020, 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 ten (10) minutes. Do not administer IVP as this will cause hypotension.

Reference #s 7010, 7020, 15010

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 ten (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 7040, 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 ten (10) to fifteen (15) minutes if symptoms persist.

Reference #s 7010, 7020, 13010, 13040

PROCEDURE - STANDARD ORDERS

12-lead Electrocardiography (EMT-P)

- ECG should be performed prior to medication administration.
- ECG should be performed on any patient whose medical history and/or presenting symptoms are consistent with acute coronary syndrome including typical or atypical chest pain, syncopal episode, prior AMI, heart disease, or other associated risk factors.

Axial Spinal Immobilization (EMT, AEMT and EMT-P)

- Should be placed if patient meets the indicators, per ICEMA Reference #15010 - Trauma - Adult (Neuro Deficits present, Spinal Tenderness present, Altered Mental status, Intoxication, or Distracting Injury).
- An AEMT and/or EMT-P may remove if placed by BLS crew and it does not meet indicators.

Capnography (EMT-P)

- Utilize capnography in patients with respiratory distress, respiratory failure, cardiac arrest, and critically ill patients
- Perform capnography prior to pain medication administration.
- Perform capnography after administration of Midazolam for behavioral emergencies.
- Monitor waveform, numerical value and document in ePCR.

Continuous Positive Airway Pressure Device (CPAP) - Adult (EMT, AEMT and EMT-P)

- Start at lowest setting and increase slowly until patient experiences relief or until a maximum of 15 cm H_2O is reached.

External Jugular Vein Access (AEMT and EMT-P)

- Not indicated for patients eight (8) years of age and younger.
- Patient condition requires IV access and other peripheral venous access attempts are unsuccessful.

Blood Glucose Check (EMT, AEMT, and EMT-P)

- Should be assessed if the patient meets key indicators consistent with high or low blood sugar.

Intraosseous Insertion (AEMT pediatric patients only and EMT-P)

- EMT-Ps may administer Lidocaine slowly per ICEMA Reference #7040 - Medication - Standard Orders, to control infusion pain.
- Approved insertion sites:
  - Eight (8) years of age or younger (LALS and ALS):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
  - Nine (9) years of age and older (ALS only):
    - Proximal Tibia - Anterior medial surface of tibia, 2 cm below tibial tuberosity.
    - Distal Tibia - Lower end of tibia, 2 cm above the medial malleolus.
    - Humeral Head (EZ IO only).
    - Anterior distal femur, 2 cm above the patella - Base hospital contact only.
- Leave site visible and monitor for extravasation.

King Airway Device (Perilaryngeal) - Adult (EMT Specialty Program, AEMT, and EMT-P)

- Use of King Airway device may be performed only on those patients who meet **all** of the following criteria:
  - Unresponsive, agonal respirations (less than six (6) breaths per minute) or apneic.
  - Patients 15 years or older.
  - Patients over four (4) feet in height.
- Additional considerations:
  - Medications may **not** be given via the King Airway device.
  - King Airway device should not be removed unless it becomes ineffective.

Nasogastric/Orogastric Tube (EMT-P)

- Use viscous Lidocaine gel per ICEMA Reference #7040 - Medication - Standard Orders, for conscious patients.
- Required for all full arrest patients.

Needle Cricothyrotomy (EMT-P)

- Absolute contraindication: Transection of the distal trachea.
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- Contact base hospital if unable to ventilate adequately and transport immediately to the closest hospital for airway management.

Needle Thoracostomy (EMT-P)

- In blunt chest trauma consider bilateral tension pneumothorax if pulse oximetry (SpO_2) reading remains low with a patent airway or with poor respiratory compliance.

Oral Endotracheal Intubation - Adult (EMT-P)

- Oral endotracheal intubation is permitted only in patients who are taller than the maximum length of a pediatric emergency measuring tape (Broselow, etc.) or equivalent measuring from the top of the head to the heal of the foot.
- ~~For suspected head/brain injury immediately prior to intubation, consider Lidocaine prophylactically per ICEMA Reference #7040 - Medication - Standard Orders.~~
- Monitor end-tidal CO_2 and wave form capnography.
- Monitor pulse oximetry.
- If unable to place ET after a maximum of three (3) intubation attempts (defined as placement of the laryngoscope in the mouth), then consider placing a King Airway device. If unsuccessful, continue with BLS airway management and transport to the nearest receiving hospital.
- Document verification of tube placement (auscultation, visualization, capnography).

Synchronized Cardioversion (EMT-P)

- For anxiety prior to cardioversion, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- If rhythm deteriorates to v-fib, turn off the sync button and defibrillate.
- Select initial energy level setting at 100 joules or a clinically equivalent biphasic energy level per manufacture guidelines. Procedure may be repeated at 200, 300 and 360 joules or a clinically equivalent biphasic energy level per manufacture guidelines.
- In radio communication failure or with base hospital order, repeated cardioversion attempts at 360 joules or clinically equivalent biphasic energy level per manufacturer's guidelines may be attempted.

Transcutaneous Cardiac Pacing (EMT-P)

- Start at a rate of 60 and adjust output to the lowest setting to maintain capture. Assess peripheral pulses and confirm correlation with paced rhythm.
- Reassess peripheral pulses. Adjust output to compensate for loss of capture.
- Increase rate **(not to exceed 100)** to maintain adequate tissue perfusion.
- For anxiety, consider Midazolam per ICEMA Reference #7040 - Medication - Standard Orders.
- For pain, consider Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
- Contact the base hospital if rhythm persists or for continued signs of inadequate tissue perfusion.

Vagal Maneuvers (EMT-P)

- Relative contraindications for patients with hypertension, suspected STEMI, or suspected head/brain injury.
- Reassess cardiac and hemodynamic status. Document rhythm before, during and after procedure.
- If rhythm does not covert within ten (10) seconds, follow ICEMA Reference #11050 - Tachycardias - Adult.

TRAUMA - ADULT
(15 years of age and older)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

In Inyo and Mono Counties, the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patent airway, protecting cervical spine.
- Obtain O_2 saturation (if BLS equipped).
- Administer oxygen and/or ventilate as needed.
- Keep patient warm.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: 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 axial spinal immobilization 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 axial spinal immobilization.

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 stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers 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.

  - To control life-threatening bleeding of a severely injured extremity, consider application of tourniquet when direct pressure or pressure dressing fails.

- **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.

- **Pregnancy**: Where axial spinal stabilization precaution is indicated, the board should be elevated at least 4 inches on the right side for those patients who have a large pregnant uterus, usually applies to pregnant females greater than or equal to 24 weeks of gestation.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (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.
- Apply AED.
- Establish IV access (administer warm IV fluids when available).
  - *Unstable*: If BP is less than 90 mm Hg and/or signs of inadequate perfusion, start 2nd IV access.
  - *Stable*: Maintain IV if BP is more than 90 mm Hg and/or signs of adequate tissue perfusion.

Blunt Trauma:

- *Unstable*: Establish IV NS open until stable or 2000 ml maximum is infused.
- *Stable*: Maintain IV NS, TKO.

Penetrating Trauma:

- *Unstable*: Establish IV NS, administer 500 ml bolus one (1) time.
- *Stable*: Maintain IV NS, TKO.

Isolated Closed Head Injury:

- *Unstable:* Establish IV NS, administer 250 ml bolus. May repeat to a maximum of 500 ml.
- *Stable*: Maintain IV NS, TKO.

- Transport to appropriate hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization 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?

- Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization 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 immobilization.

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 stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers 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.

- **Fractures**:

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Establish IV NS, administer 250 ml bolus one (1) time.

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

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the voice prompts.

B. **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - 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" in ICEMA Reference #12010 - 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.**

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. 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 perform a successful needle cricothyrotomy (if indicated), **then** transport to the closest receiving hospital and follow ICEMA Reference #8120 - Continuation of Care.

- Monitor ECG.

- Establish IV/IO access (administer warm IV fluids when available).

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

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

- For Tranexamic Acid (TXA) administration for blunt or penetrating traumas meeting inclusion and exclusion criteria below:

Inclusion Criteria	**Exclusion Criteria**
Within three (3) hours of injury, the prehospital use of TXA should be considered for all blunt or penetrating trauma patients with signs and symptoms of hemorrhagic shock that meet **any** one (1) of the following inclusion criteria: • Systolic blood pressure of less than 90 mm Hg at any time during patient encounter. • Significant blood loss and a heart rate more than 120. • Bleeding not controlled by direct pressure or tourniquet.	• Any patient less than 15 years of age. • Any patient more than three (3) hours post-injury. • Penetrating cranial injury. • Traumatic brain injury with brain matter exposed. • Documented cervical cord injury with motor deficits.

Blunt Trauma:

- *Unstable*: Administer IV NS until stable or 2000 ml maximum is infused.

- For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

- *Stable*: Maintain IV NS, TKO.

Penetrating Trauma:

- *Unstable*: Administer IV NS 500 ml bolus one (1) time.

- For signs of hemorrhagic shock meeting inclusion criteria above, administer TXA per ICEMA Reference #7040 - Medication - Standard Orders.

- *Stable*: Maintain IV NS, TKO.

Isolated Closed Head Injury:

- ➢ *Unstable*: Administer IV NS 250 ml bolus, may repeat to a maximum of 500 ml
- ➢ *Stable*: Maintain IV NS, TKO.

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

A. <u>Manage Special Considerations</u>

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization 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?
  Distracting Injury?

  - ➢ Consider maintaining spinal alignment on the gurney, or using axial spinal immobilization 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 immobilization.

  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 stabilization. Judicious application of the LBB for purposes other than extrication necessitates that healthcare providers 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.

- **Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Pain Relief for Acute Traumatic Injuries**:
  - Administer an appropriate analgesic per ICEMA Reference #11140 - Pain Management - Adult. Document vital signs and pain scales every five (5) minutes until arrival at destination.
  - Consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
  - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer IV NS 250 ml bolus one (1) time.

- ~~**Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders.~~

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

- **Traumatic Arrest**: Continue CPR as appropriate.
  - Treat per ICEMA Reference #11070 - Cardiac Arrest - Adult.

B. **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - 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 #12010 - 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.

- 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.
  - **Unsafe scene may warrant transport despite low potential for survival.**
  - Whenever possible, consider minimal disturbance of a potential crime scene.
- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
8120	Continuation of Care
11070	Cardiac Arrest - Adult
11140	Pain Management - Adult
12010	Determination of Death on Scene

TRAUMA - PEDIATRIC
(Less than 15 years of age)

Any critical trauma patient (CTP) requires effective communication and rapid transportation to the closest trauma center. If not contacted at scene, the receiving trauma center must be notified as soon as possible in order to activate the trauma team.

Inyo and Mono Counties do not have trauma center designations and the assigned base hospital should be contacted for determination of appropriate destination.

I. FIELD ASSESSMENT/TREATMENT INDICATORS

Refer to ICEMA Reference #15030 - Trauma Triage Criteria and Destination Policy.

II. BLS INTERVENTIONS

- Ensure thorough initial assessment.
- Ensure patient airway, protecting cervical spine.
- Oxygen and/or ventilate as needed, O_2 saturation (if BLS equipped).
- Keep patient warm and reassure.
- For a traumatic full arrest, an AED may be utilized, if indicated.
- Transport to ALS intercept or to the closest receiving hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: Using age appropriate assessments, 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 axial immobilization 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 immobilization using spine board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **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.

- **Blunt 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 re-evaluate 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.

- **Traumatic Arrest**: CPR if indicated. May utilize an AED if indicated.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - Determination of Death on Scene.

III. LIMITED ALS (LALS) INTERVENTIONS

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

- Apply AED.

- IV Access (warm IV fluids when available).

  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV. May repeat once.

  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.

- Transport to appropriate hospital. Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closes trauma hospital.

A. Manage Special Considerations

- **Axial Spinal Immobilization**: LALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when 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 axial immobilization 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 immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured, e.g., dislocated shoulder, hip fracture or dislocation.

  - Administer IV NS 250 ml bolus one (1) time.

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

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Apply AED and follow the instructions.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - 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" in ICEMA Reference #12010 - 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.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional fluid boluses.

IV. ALS INTERVENTIONS

- Establish advanced airway as indicated per ICEMA Reference #10190 - Procedure - Standard Orders.

  - Unmanageable Airway: If an adequate airway cannot be maintained with a BVM device; **and** the paramedic is unable to intubate or perform a successful needle cricothyrotomy (if indicated), **then**

transport to the closest receiving hospital and follow ICEMA Reference #8100 - Continuation of Trauma Care.

- Monitor ECG.
- IV/IO Access (Warm IV fluids when available).
  - *Unstable:* Vital signs (age appropriate) and/or signs of inadequate tissue perfusion, start 2nd IV access.

    Administer 20 ml/kg NS bolus IV/IO, may repeat once.
  - *Stable*: Vital signs (age appropriate) and/or signs of adequate tissue perfusion.

    Maintain IV NS rate at TKO.
- Transport to Trauma Center: Pediatric patients identified as CTP will be transported to a pediatric trauma hospital when there is less than a 20 minute difference in transport time to the pediatric trauma hospital versus the closest trauma hospital.
- Insert nasogastric/orogastric tube as indicated

A. Manage Special Considerations

- **Axial Spinal Immobilization**: ALS personnel should remove axial spinal immobilization devices from patients placed in full axial spinal immobilization precautions by first responders and BLS personnel if the patient does not meet any of the following indicators while considering age-appropriate assessments when 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 axial immobilization 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 immobilization using long board.

- **Axial Spinal Immobilization with use of a Rigid Spine Board**: If the use of a rigid, spine board is indicated, and the level of the patient's head is greater than that of the torso, use approved pediatric spine board with a head drop or arrange padding on the board so that the ears line up with the shoulders and keep the entire lower spine and pelvis in line with the cervical spine and parallel to the board.

- **Blunt Chest Trauma**: Perform needle thoracostomy for chest trauma with symptomatic respiratory distress.

- **Fractures**

  - **Isolated Extremity Trauma**: Trauma without multisystem mechanism. Extremity trauma is defined as those cases of injury where the limb itself and/or the appendicular skeleton (shoulder or pelvic girdle) may be injured - e.g. dislocated shoulder, hip fracture or dislocation.

  - **Pain Relief**:

    - Fentanyl per ICEMA Reference #7040 - Medication - Standard Orders.
    - For patients four (4) years old and older, consider Ondansetron per ICEMA Reference #7040 - Medication - Standard Orders.
    - Patients in high altitudes should be hydrated with IV NS prior to IV pain relief to reduce the incidents of nausea, vomiting, and transient hypotension, which are side effects associated with administering IV Fentanyl. Administer 20 ml/kg NS bolus IV/IO one (1) time.

- ~~**Head and Neck Trauma**: Immediately prior to intubation, consider prophylactic Lidocaine per ICEMA Reference #7040 - Medication - Standard Orders for suspected head/brain injury.~~

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

- **Traumatic Arrest**: Continue CPR as appropriate.

  - Treat per ICEMA Reference #14040 - Cardiac Arrest - Pediatric.

- **Determination of Death on Scene**: Refer to ICEMA Reference #12010 - 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" in ICEMA Reference #12010 - 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.

- 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.

  - Confirm low blood sugar in children and treat as indicated with altered level of consciousness.

  - Suspect child maltreatment when physical findings are inconsistent with the history. Remember reporting requirements for suspected child maltreatment.

  - **Unsafe scene may warrant transport despite low potential for survival**.

  - Whenever possible, consider minimal disturbance of a potential crime scene.

- **Base Hospital Orders**: May order additional medications and/or fluid boluses.

V. REFERENCES

Number	Name
7040	Medication - Standard Orders
10190	Procedure - Standard Orders
12010	Determination of Death on Scene
14040	Cardiac Arrest - Pediatric
15030	Trauma Triage Criteria and Destination Policy