



Yolo County Health and Human Services



Kristin Weivoda
EMS Administrator

John S. Rose, MD, FACEP
Medical Director

DATE: December 20, 2017

TO: Yolo County Providers and Agencies

FROM: Yolo County EMS Agency

SUBJECT: January 1, 2018 EMS Protocol & Policy Revisions

MEMORANDUM

Effective January 1, 2018 the listed Protocols and Policies will go into effect for all Yolo County Providers. The protocol App and website will be updated.

It is the responsibility of each agency to ensure that their personnel receive this information.

As a reminder, policies and protocols are updated two (2) times a year; January 1st and July 1st.

Please review the additions and changes thoroughly. If you have any questions, please contact Kristin Weivoda at (530) 666-8671 or kristin.weivoda@yolocounty.org

Highlights

A Message from Dr. Rose:

Happy New Year.

2018 bodes to be an exciting year for Yolo County Emergency Medical Services Agency. We have several new initiatives to be implemented as well as several on the horizon. First off, I wish to thank all of you for your hard work and professional dedication to the patients we serve in Yolo County. I've worked with many paramedic groups in my career and, without a doubt, those working in Yolo County are some of the best I have encountered in my practice emergency medicine. I personally want to thank each and every one of you for the hard work and dedication you put forth in providing state-of-the-art emergency care to the citizens of Yolo County.

We begin this year with our participation in the statewide TXA trial. I'm very pleased with the positive feedback and willingness of each paramedic to undertake take this important initiative. I truly believe that administering TXA in the field will benefit our critically injured trauma patients. I was fortunate enough to meet many of you at the trainings. Please be sure to let us know if you find any challenges in following the policy and study protocol.

Mountain Valley EMS is finalizing its ketamine protocol for acute pain management. We will be asking to participate in this study. I believe that ketamine is a very useful prehospital agent and adopting it in

California is an important step forward. YEMSA will keep you abreast as we move forward with this protocol.

I am very excited about our new initiatives this year. The great staff at YEMSA have been working very hard to ensure that we are one of the premier LEMSAs in California.

Best of Practice Reminder:

We all make mistakes; even the most clinically competent and fully engaged providers can make errors in the field. The key to minimizing the risk of medication errors is to develop a multi-faceted approach. Below are steps you can take to minimize the risk of medication errors:

- Review common medications used in the field.
- Utilize reference charts and apps.
- Be willing to question yourself and others.
- Contact base or the receiving hospital physician if you are unsure of a medication or dose.
- Utilize the five (5) rights of safe medication administration:
 1. **Right Patient**
 2. **Right Medication**
 3. **Right Dose**
 4. **Right Time**
 5. **Right Route**
- Report and document any adverse events, near misses, or unsafe conditions to identify system improvement opportunities and allow for learning.

Trial Scope of Practice:

We are excited that YEMSA will be live with the TXA trial on January 1, 2018. TXA kits will be distributed to your agency.

Protocol Updates

YEMSA is in the process of re-formatting and organizing all protocols. The goal is to make them more user friendly and incorporate all scope levels into each protocol. Over the next year you will see a complete transition into the new format. In January we are releasing four (4) protocols with the new format. The format combines multiple protocols into a single inclusive protocol. You will notice duplicate protocols in multiple sections during our transition to the new format. For example, adult and pediatric protocols have been combined into shared protocols. Once all of the protocols have been re-formatted, we will organize, rename and renumber all of the protocols at one time.

Adult Medical:

2002.3 Allergic Reaction & Anaphylaxis

UPDATED/REPLACED: **2002.4** - Added Local BLS Scope of Practice: Epinephrine Auto Injectors – added BLS, ALS, Adult and Pediatric (New Format)

2003.4 Altered Level of Consciousness

UPDATED/REPLACED: **2003.5** - Added BLS Local Scope of Practice: Finger-stick Glucose and Narcan - added BLS, ALS, Adult and Pediatric (New Format)

2011.4 Ingestion, Overdose and Poisoning

UPDATED/REPLACED: **2011.5** - Added BLS Local Scope of Practice: Finger-stick Glucose and Narcan - added BLS, ALS, Adult and Pediatric (New Format)

Adult Cardiac Arrest:

4001.2, 4002.2, 4006.2 Asystole, Pulseless Electrical Activity, Medical Cardiac Arrest, VF/VT

UPDATED/REPLACED: **4007.1** - One single Protocol "Medical Cardiac Arrest" - added BLS, ALS, Adult and Pediatric (New Format)

BLS:

1002.1 & 1003.2 BLS AED, Pulseless Patient & Cardiac Arrest Recitation

REPLACED: **1009.1** - Medical Cardiac Arrest - added BLS, ALS, Adult and Pediatric (New Format)

Pediatric:

8006.3, 8008, 8021.5 Asystole, Pulseless Electrical Activity, Medical Cardiac Arrest, VF/VT

UPDATED/REPLACED: **8022.1** - One single Protocol "Medical Cardiac Arrest" - added BLS, ALS, Adult and Pediatric (New Format)

8004.3 Allergic Reaction & Anaphylaxis

UPDATED/REPLACED: **8004.4** - Added Local BLS Scope of Practice: Epinephrine Auto Injectors – added BLS, ALS, Adult and Pediatric (New Format)

8005.4 Altered Level of Consciousness

UPDATED/REPLACED: **8005.5** - Added BLS Local Scope of Practice: Finger-stick Glucose and Narcan - added BLS, ALS, Adult and Pediatric (New Format)

8009.4 Ingestion, Overdose and Poisoning

UPDATED/REPLACED: **8009.5** - Added BLS Local Scope of Practice: Finger-stick Glucose and Narcan - added BLS, ALS, Adult and Pediatric (New Format)

Trial:

9001.1 Tranexamic Acid (TXA) Trial Study

NEW: TXA Trial Protocol

9002.1 TXA Trial Study Tracking Form

NEW: Data collection form for the trial study

9003.1 Tranexamic Acid (TXA) Trial Study Reference Card

NEW: Reference Card for the TXA kits

Policy Revisions

Service Provider:

643.1 Basic Life Support (BLS) Local Scope

NEW: Defines requirements for BLS Local Scope Providers

644.1 Epinephrine Auto-Injector and Narcan Administration Form

NEW: Data collection form for BLS Local Scope Providers

Skill Sheets:

907.1 BLS Local Scope Narcan

NEW

903.1 BLS Local Scope Epinephrine Auto-Injector

NEW



2002.4

Yolo Emergency Medical Services Agency Adult Medical

Revised Date: December 11, 2017

ALLERGIC REACTION & ANAPHYLAXIS	
<p>Allergic Reaction: Acute onset cutaneous reactions, for example hives, pruritus, flushing, rash, or angioedema not involving the airway.</p> <p>Anaphylaxis: Systemic reaction with one (1) or more of the following symptoms: stridor, wheezing, hoarseness, edema involving the airway, hypotension, airway compromise, decreased level of consciousness.</p>	
Adult	Pediatric
BLS	
ABC's Assess VS O ₂ , titrate SpO ₂ to ≥ 94% Assist ventilations as appropriate	
BLS Local Scope	
<p style="text-align: center;"><u>Anaphylaxis (> 30 kg)</u></p> <p>Epinephrine Auto Injector 0.3 mg IM</p> <ul style="list-style-type: none"> Inject deep IM into the lateral thigh, midway between waist and knee No repeat Record time of injection Reassess as needed 	<p style="text-align: center;"><u>Anaphylaxis (15-30 kg)</u></p> <p>Epinephrine Pediatric Auto Injector 0.15 mg IM</p> <ul style="list-style-type: none"> Inject deep IM into the lateral thigh, midway between waist and knee No repeat Record time of injection Reassess as needed
ALS	
Cardiac Monitor, EtCO ₂ , IV/IO	
<u>Allergic Reaction</u>	
<p>Diphenhydramine 1 mg/kg IV/IM/PO</p> <ul style="list-style-type: none"> Max 50 mg 	
<p style="text-align: center;"><u>Anaphylaxis</u></p> <p>Epinephrine(1:1,000) 0.3 mg IM</p> <ul style="list-style-type: none"> Deltoid May repeat x 2 in 10 minutes <p style="text-align: center;"><u>If no signs of improvement</u></p> <p>Epinephrine (1:10,000) 0.1 mg (1 mL) IV/IO</p> <ul style="list-style-type: none"> May Repeat every 10 minutes if SBP < 90 mmHg or stridor 	<p style="text-align: center;"><u>Anaphylaxis</u></p> <p>Epinephrine (1:1,000) 0.01 mg/kg IM</p> <ul style="list-style-type: none"> Deltoid or thigh Max 0.3 mg <p style="text-align: center;"><u>If no signs of improvement</u></p> <p>Epinephrine (1:10,000) 0.01 mg/kg IV/IO</p> <ul style="list-style-type: none"> Max single dose 0.1 mg



2002.4

Yolo Emergency Medical Services Agency Adult Medical

Revised Date: December 11, 2017

Adult	Pediatric
ALS <i>cont</i>	
Consider	
<p><u>Inadequate response to EPI and patient is on Beta Blockers</u></p> <p>Glucagon 1 mg IV/IO</p> <ul style="list-style-type: none"> Give over 1 minute <p style="text-align: center;"><u>If no IV/IO</u></p> <p>Glucagon 1 mg IM/IN</p> <p style="text-align: center;"><u>For Wheezing/Bronchospasm</u></p> <p>Albuterol 5 mg Nebulizer</p> <p style="text-align: center;"><u>If BP < 90 mmHg</u></p> <p>NS Bolus 250 mL IV/IO</p>	<p style="text-align: center;"><u>For Wheezing/Bronchospasm</u></p> <p>Albuterol 5 mg Nebulizer</p> <p style="text-align: center;"><u>If BP < normal range for age (see reference sheet)</u></p> <p>NS Bolus 20 mL/kg IV/IO</p>
Direction	
Contact Receiving ED Physician for additional treatment	



2003.5

Yolo Emergency Medical Services Agency Adult Medical

Revised Date: December 11, 2017

ALTERED LEVEL OF CONSCIOUSNESS (ALOC)	
Glasgow Coma Scale (GCS) is < 15 and etiology unclear.	
Adult	Pediatric
BLS	
ABC's Assess VS Consider SMR for suspected trauma O ₂ , titrate SpO ₂ to ≥ 94% Temperature Assist ventilations as appropriate Suction as needed Place patient in recovery position	
<u>If known diabetic with suspected decreased blood sugar, abnormal behavior and pale/moist skin</u>	
Glucose paste one (1) tube by mouth (PO) or Commercially prepared glucose solution, one (1) bottle by mouth (PO) <ul style="list-style-type: none"> • Do not administer if patient is unconscious, lethargic, or unable to drink fluids. 	
BLS Local Scope	
<u>Blood Sugar (BS) < 60 mg/dL</u>	
Refer to BLS treatment	
<u>If mental status and respiratory effort are depressed and suspected opioid over dose</u>	
Naloxone (Narcan) 2 mg IN <ul style="list-style-type: none"> • May repeat x 1 • Max dose 4 mg • ½ dose per nare 	
ALS	
Cardiac Monitor, EtCO ₂ , IV/IO	
<u>BS < 60 mg/dL</u>	<u>BS < 60 mg/dL</u>
Dextrose 10% 25 gm in 250 mL NS IV/IO <ul style="list-style-type: none"> • Infuse wide open <p style="text-align: center;"><u>If no IV/IO</u></p> Glucagon 1 mg IM/IN <ul style="list-style-type: none"> • No repeat 	Dextrose 10% in 250 mL NS IV (See chart below) <p style="text-align: center;"><u>If no IV/IO</u></p> Glucagon 0.5 mg IM/IN <ul style="list-style-type: none"> • No repeat



2003.5

Yolo Emergency Medical Services Agency Adult Medical

Revised Date: December 11, 2017

Adult	Pediatric																																	
ALS cont.																																		
<p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 2 mg IV/IO/IM Naloxone (Narcan) 2 mg IN</p> <ul style="list-style-type: none"> • ½ dose per nare 	<p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 0.1 mg/kg IV/IO/IM</p> <ul style="list-style-type: none"> • Max single dose 2 mg • May repeat x 2 every 2-3 minutes <p>Naloxone (Narcan) 0.1 mg/kg IN</p> <ul style="list-style-type: none"> • Max single dose 2 mg • ½ dose per nare • May repeat x 1 <p style="text-align: center;">Pediatric Dextrose 10% in 250 mL Infusion Chart</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 33%;">AGE</th> <th style="width: 33%;">WEIGHT</th> <th style="width: 33%;">VOLUME D 10% 25 gm</th> </tr> </thead> <tbody> <tr><td>Preemie</td><td>2 kg</td><td>10 mL</td></tr> <tr><td>Newborn</td><td>3 kg</td><td>15 mL</td></tr> <tr><td>3 months</td><td>5 kg</td><td>25 mL</td></tr> <tr><td>6 months</td><td>7 kg</td><td>35 mL</td></tr> <tr><td>1-2 years</td><td>11 kg</td><td>55 mL</td></tr> <tr><td>3-4 years</td><td>15 kg</td><td>75 mL</td></tr> <tr><td>5-6 years</td><td>19 kg</td><td>95 mL</td></tr> <tr><td>7-8 years</td><td>24 kg</td><td>120 mL</td></tr> <tr><td>9-10 years</td><td>31 kg</td><td>155 mL</td></tr> <tr><td>11-15 years</td><td>40 kg</td><td>200 mL</td></tr> </tbody> </table>	AGE	WEIGHT	VOLUME D 10% 25 gm	Preemie	2 kg	10 mL	Newborn	3 kg	15 mL	3 months	5 kg	25 mL	6 months	7 kg	35 mL	1-2 years	11 kg	55 mL	3-4 years	15 kg	75 mL	5-6 years	19 kg	95 mL	7-8 years	24 kg	120 mL	9-10 years	31 kg	155 mL	11-15 years	40 kg	200 mL
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2003.5

Yolo Emergency Medical Services Agency Adult Medical

Revised Date: December 11, 2017

Adult	Pediatric
ALS cont.	
Consider	
<p style="text-align: center;">Consider diabetic related complications (hypoglycemia/Diabetic Ketoacidosis [DKA]) Consider Carbon Monoxide (CO) toxicity Consider 12-Lead Electrocardiogram (EKG)</p> <p>AEIOU-TIPS</p> <ul style="list-style-type: none">• Alcohol• Epilepsy/Endocrine/Electrolytes/Exocrine• Insulin/Infection• Overdose/Oxygen deprivation• Uremia• Trauma/Temperature• Psychosis/Porphyria/Poison• Stroke/Shock/Sepsis/Space occupying lesion/Subarachnoid hemorrhage <p>Refer to appropriate treatment protocol</p>	
Direction	
Contact Receiving ED Physician for additional treatment	



2011.5

Yolo Emergency Medical Services Agency Adult Medical

Revised Date: December 11, 2017

INGESTION, OVERDOSE AND POISONING	
Adult	Pediatric
BLS	
Consider calling Poison Control ABC's Assess Vital Signs (VS) O ₂ , titrate SpO ₂ ≥ 94% Assist respirations as needed	
BLS Local Scope	
<u>Blood Sugar (BS) < 60 mg/dL or un-measurable</u>	
Glucose paste one (1) tube by mouth (PO) or Commercially prepared glucose solution, one (1) bottle by mouth (PO) <ul style="list-style-type: none"> Do not administer if patient is unconscious, lethargic, or unable to drink fluids. 	
<u>If mental status and respiratory effort are depressed and suspected opioid over dose</u>	
Naloxone (Narcan) 2 mg IN <ul style="list-style-type: none"> May repeat x 1 ½ dose per nare 	
ALS	
Cardiac Monitor, SpO ₂ , EtCO ₂ IV/IO	
<p style="text-align: center;"><u>Suspected Opiates</u></p> <p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 2 mg IV/IO/IM Naloxone (Narcan) 2 mg IN</p> <ul style="list-style-type: none"> ½ dose per nare <p style="text-align: center;"><u>Beta Blockers</u></p> <p>Glucagon 1 mg IV/IO</p> <p style="text-align: center;"><u>If no IV/IO</u></p> <p>Glucagon 1 mg IM/IN Atropine 0.5 mg IV/IO</p> <ul style="list-style-type: none"> May repeat every 5 minutes up to 3 mg max <p style="text-align: center;"><u>SBP < 70 mmHg</u></p> <p>Epinephrine (1:10,000) 0.1 mg (1 mL) IV/IO</p> <ul style="list-style-type: none"> Repeat until SBP > 90 mmHg 	<p style="text-align: center;"><u>Suspected Opiates</u></p> <p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 0.1 mg/kg IV/IO/IM</p> <ul style="list-style-type: none"> Max single dose 2 mg May repeat x 2 every 2-3 minutes <p>Naloxone (Narcan) 0.1 mg/kg IN</p> <ul style="list-style-type: none"> ½ dose per nare May repeat x 1 <p style="text-align: center;"><u>BS < 60 mg/dL or un-measurable</u></p> <p>Dextrose 10% in 250 mL NS IV (See chart below)</p> <ul style="list-style-type: none"> Infuse wide open <p style="text-align: center;"><u>If no IV/IO</u></p> <p>Glucagon 0.5 mg IM/IN</p> <ul style="list-style-type: none"> No repeat



2011.5

Yolo Emergency Medical Services Agency Adult Medical

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Adult	Pediatric																																	
ALS cont.																																		
<p style="text-align: center;"><u>Tricyclic Antidepressants</u></p> <p><u>If any other following are present: SBP < 90 mmHg, QRS > 0.12 seconds and/or seizures</u></p> <p>Sodium Bicarbonate 1 mEq/kg IV/IO</p> <p style="text-align: center;"><u>Calcium Channel Blockers</u></p> <p style="text-align: center;"><u>SBP < 90 mmHg</u></p> <p>Calcium Chloride 10% 10 mL IV/IO</p> <ul style="list-style-type: none"> • 1 mL per minute • May repeat every 5 minutes, total 4 doses <p><u>Organophosphate or Carbamate Pesticides</u></p> <p style="text-align: center;"><u>HR < 50 BPM</u></p> <p>Atropine 2 mg IV/IO</p> <ul style="list-style-type: none"> • May repeat every 3 minutes <p style="text-align: center;"><u>Hydrofluoric Acid</u></p> <p>Calcium Chloride 10% 10 mL IV/IO</p>	<p style="text-align: center;">Pediatric Dextrose 10% in 250 mL Infusion Chart</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 33%;">AGE</th> <th style="width: 33%;">WEIGHT</th> <th style="width: 33%;">VOLUME D 10% 25 gm</th> </tr> </thead> <tbody> <tr><td>Preemie</td><td>2 kg</td><td>10 mL</td></tr> <tr><td>Newborn</td><td>3 kg</td><td>15 mL</td></tr> <tr><td>3 months</td><td>5 kg</td><td>25 mL</td></tr> <tr><td>6 months</td><td>7 kg</td><td>35 mL</td></tr> <tr><td>1-2 years</td><td>11 kg</td><td>55 mL</td></tr> <tr><td>3-4 years</td><td>15 kg</td><td>75 mL</td></tr> <tr><td>5-6 years</td><td>19 kg</td><td>95 mL</td></tr> <tr><td>7-8 years</td><td>24 kg</td><td>120 mL</td></tr> <tr><td>9-10 years</td><td>31 kg</td><td>155 mL</td></tr> <tr><td>11-15 years</td><td>40 kg</td><td>200 mL</td></tr> </tbody> </table>	AGE	WEIGHT	VOLUME D 10% 25 gm	Preemie	2 kg	10 mL	Newborn	3 kg	15 mL	3 months	5 kg	25 mL	6 months	7 kg	35 mL	1-2 years	11 kg	55 mL	3-4 years	15 kg	75 mL	5-6 years	19 kg	95 mL	7-8 years	24 kg	120 mL	9-10 years	31 kg	155 mL	11-15 years	40 kg	200 mL
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Direction																																		
<p>Contact Receiving ED Physician for additional treatment.</p>	<p>Overdose/poisoning in the pediatric population is dynamic and requires rapid transport. Contact Receiving ED Physician for additional treatment.</p>																																	



4007.1

Yolo Emergency Medical Services Agency Adult Cardiac Arrest

Revised Date: December 12, 2017

MEDICAL CARDIAC ARREST	
Adult	Pediatric
BLS	
<ul style="list-style-type: none"> Follow the 2015 American Heart Guidelines for CPR, C-A-B Continuous chest compressions at a rate of one hundred (100) to one hundred and twenty (120) per minute with a depth of two to two point four (2"-2.4") inches Place one (1) oropharyngeal airway (OPA) Bag-Valve Mask (BVM) one (1) breath every six (6) to eight (8) seconds (10 breaths per minute) Apply Automated External Defibrillator (AED) Follow command prompts, shock if indicated by AED Continue CPR for two (2) minutes or five (5) cycles Avoid Interruptions, do not interrupt CPR to administer medications or perform any procedures 	
ALS	
<ul style="list-style-type: none"> Place on the Cardiac Monitor & Defib Pads Place an NG/OG Tube 	
Ventricular Fibrillation (VF) Pulseless Ventricular Tachycardia (VT)	
Shockable Rhythm: - Shock with a Defibrillator per manufacturers energy dose	Shockable Rhythm – Shock with a Defibrillator at 2 J/kg , subsequent shocks at 4 J/kg
Epinephrine (1:10,000) 1mg IV/IO repeat q 3-5 minutes	Epinephrine (1:10,000) 0.01 mg/kg, IV/IO repeat q 3-5 minutes
Resume BLS CPR for two (2) minutes Re-assess rhythm	
Amiodarone 300 mg SIVP/IO (flush tubing with 20 mL NS) Amiodarone 150 mg SIVP/IO Repeat 3-5 minutes after 1 st dose (flush tubing with 20 mL NS)	Amiodarone 5 mg/kg SIVP/IO Max single dose 300 mg May repeat x 1 q 5 minutes
Asystole Pulseless Electrical Activity (PEA)	
Address Reversible Causes	
Hypoglycemia Hypoxia Hypo/Hyperkalemia Hypovolemia Hydrogen Ion (acidosis) Hypothermia	Tension Tamponade cardiac Trauma Toxins Thrombosis
Epinephrine (1:10,000) 1mg IV/IO repeat q 3-5 minutes	Epinephrine (1:10,000) 0.01 mg/kg, IV/IO repeat q 3-5 minutes



4007.1

Yolo Emergency Medical Services Agency Adult Cardiac Arrest

Revised Date: December 12, 2017

Adult	Pediatric
ALS <i>cont</i>	
Direction	
Termination of Resuscitation (TOR) if there is no response to the resuscitation efforts after twenty (20) minutes) – See Termination of Resuscitation (TOR) protocol	
If ROSC is achieved – See ROSC Protocol	
Transmit Code Report via Physio Control Monitor	



1009.1

Yolo Emergency Medical Services Agency Basic Life Support

Revised Date: December 12, 2017

MEDICAL CARDIAC ARREST	
Adult	Pediatric
BLS	
<ul style="list-style-type: none"> Follow the 2015 American Heart Guidelines for CPR, C-A-B Continuous chest compressions at a rate of one hundred (100) to one hundred and twenty (120) per minute with a depth of two to two point four (2"-2.4") inches Place one (1) oropharyngeal airway (OPA) Bag-Valve Mask (BVM) one (1) breath every six (6) to eight (8) seconds (10 breaths per minute) Apply Automated External Defibrillator (AED) Follow command prompts, shock if indicated by AED Continue CPR for two (2) minutes or five (5) cycles Avoid Interruptions, do not interrupt CPR to administer medications or perform any procedures 	
ALS	
<ul style="list-style-type: none"> Place on the Cardiac Monitor & Defib Pads Place an NG/OG Tube 	
Ventricular Fibrillation (VF) Pulseless Ventricular Tachycardia (VT)	
Shockable Rhythm: - Shock with a Defibrillator per manufacturers energy dose	Shockable Rhythm – Shock with a Defibrillator at 2 J/kg , subsequent shocks at 4 J/kg
Epinephrine (1:10,000) 1mg IV/IO repeat q 3-5 minutes	Epinephrine (1:10,000) 0.01 mg/kg, IV/IO repeat q 3-5 minutes
Resume BLS CPR for two (2) minutes Re-assess rhythm	
Amiodarone 300 mg SIVP/IO (flush tubing with 20 mL NS) Amiodarone 150 mg SIVP/IO Repeat 3-5 minutes after 1 st dose (flush tubing with 20 mL NS)	Amiodarone 5 mg/kg SIVP/IO Max single dose 300 mg May repeat x 1 q 5 minutes
Asystole Pulseless Electrical Activity (PEA)	
Address Reversible Causes	
Hypoglycemia Hypoxia Hypo/Hyperkalemia Hypovolemia Hydrogen Ion (acidosis) Hypothermia	Tension Tamponade cardiac Trauma Toxins Thrombosis
Epinephrine (1:10,000) 1mg IV/IO repeat q 3-5 minutes	Epinephrine (1:10,000) 0.01 mg/kg, IV/IO repeat q 3-5 minutes



1009.1

Yolo Emergency Medical Services Agency Basic Life Support

Revised Date: December 12, 2017

Adult	Pediatric
ALS <i>cont</i>	
Direction	
Termination of Resuscitation (TOR) if there is no response to the resuscitation efforts after twenty (20) minutes) – See Termination of Resuscitation (TOR) protocol	
If ROSC is achieved – See ROSC Protocol	
Transmit Code Report via Physio Control Monitor	



8022.1

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 12, 2017

MEDICAL CARDIAC ARREST	
Adult	Pediatric
BLS	
<ul style="list-style-type: none"> Follow the 2015 American Heart Guidelines for CPR, C-A-B Continuous chest compressions at a rate of one hundred (100) to one hundred and twenty (120) per minute with a depth of two to two point four (2"-2.4") inches Place one (1) oropharyngeal airway (OPA) Bag-Valve Mask (BVM) one (1) breath every six (6) to eight (8) seconds (10 breaths per minute) Apply Automated External Defibrillator (AED) Follow command prompts, shock if indicated by AED Continue CPR for two (2) minutes or five (5) cycles Avoid Interruptions, do not interrupt CPR to administer medications or perform any procedures 	
ALS	
<ul style="list-style-type: none"> Place on the Cardiac Monitor & Defib Pads Place an NG/OG Tube 	
Ventricular Fibrillation (VF) Pulseless Ventricular Tachycardia (VT)	
Shockable Rhythm: - Shock with a Defibrillator per manufacturers energy dose	Shockable Rhythm – Shock with a Defibrillator at 2 J/kg , subsequent shocks at 4 J/kg
Epinephrine (1:10,000) 1mg IV/IO repeat q 3-5 minutes	Epinephrine (1:10,000) 0.01 mg/kg, IV/IO repeat q 3-5 minutes
Resume BLS CPR for two (2) minutes Re-assess rhythm	
Amiodarone 300 mg SIVP/IO (flush tubing with 20 mL NS) Amiodarone 150 mg SIVP/IO Repeat 3-5 minutes after 1 st dose (flush tubing with 20 mL NS)	Amiodarone 5 mg/kg SIVP/IO Max single dose 300 mg May repeat x 1 q 5 minutes
Asystole Pulseless Electrical Activity (PEA)	
Address Reversible Causes	
Hypoglycemia Hypoxia Hypo/Hyperkalemia Hypovolemia Hydrogen Ion (acidosis) Hypothermia	Tension Tamponade cardiac Trauma Toxins Thrombosis
Epinephrine (1:10,000) 1mg IV/IO repeat q 3-5 minutes	Epinephrine (1:10,000) 0.01 mg/kg, IV/IO repeat q 3-5 minutes



8022.1

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 12, 2017

Adult	Pediatric
ALS <i>cont</i>	
Direction	
Termination of Resuscitation (TOR) if there is no response to the resuscitation efforts after twenty (20) minutes) – See Termination of Resuscitation (TOR) protocol	
If ROSC is achieved – See ROSC Protocol	
Transmit Code Report via Physio Control Monitor	



8004.4

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

ALLERGIC REACTION & ANAPHYLAXIS	
<p>Allergic Reaction: Acute onset cutaneous reactions, for example hives, pruritus, flushing, rash, or angioedema not involving the airway.</p> <p>Anaphylaxis: Systemic reaction with one (1) or more of the following symptoms: stridor, wheezing, hoarseness, edema involving the airway, hypotension, airway compromise, decreased level of consciousness.</p>	
Adult	Pediatric
BLS	
ABC's Assess VS O ₂ , titrate SpO ₂ to ≥ 94% Assist ventilations as appropriate	
BLS Local Scope	
<p style="text-align: center;"><u>Anaphylaxis (> 30 kg)</u></p> <p>Epinephrine Auto Injector 0.3 mg IM</p> <ul style="list-style-type: none"> Inject deep IM into the lateral thigh, midway between waist and knee No repeat Record time of injection Reassess as needed 	<p style="text-align: center;"><u>Anaphylaxis (15-30 kg)</u></p> <p>Epinephrine Pediatric Auto Injector 0.15 mg IM</p> <ul style="list-style-type: none"> Inject deep IM into the lateral thigh, midway between waist and knee No repeat Record time of injection Reassess as needed
ALS	
Cardiac Monitor, EtCO ₂ , IV/IO	
<u>Allergic Reaction</u>	
<p>Diphenhydramine 1 mg/kg IV/IM/PO</p> <ul style="list-style-type: none"> Max 50 mg 	
<p style="text-align: center;"><u>Anaphylaxis</u></p> <p>Epinephrine(1:1,000) 0.3 mg IM</p> <ul style="list-style-type: none"> Deltoid May repeat x 2 in 10 minutes <p style="text-align: center;"><u>If no signs of improvement</u></p> <p>Epinephrine (1:10,000) 0.1 mg (1 mL) IV/IO</p> <ul style="list-style-type: none"> May Repeat every 10 minutes if SBP < 90 mmHg or stridor 	<p style="text-align: center;"><u>Anaphylaxis</u></p> <p>Epinephrine (1:1,000) 0.01 mg/kg IM</p> <ul style="list-style-type: none"> Deltoid or thigh Max 0.3 mg <p style="text-align: center;"><u>If no signs of improvement</u></p> <p>Epinephrine (1:10,000) 0.01 mg/kg IV/IO</p> <ul style="list-style-type: none"> Max single dose 0.1 mg



8004.4

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

Adult	Pediatric
ALS <i>cont</i>	
Consider	
<p><u>Inadequate response to EPI and patient is on Beta Blockers</u></p> <p>Glucagon 1 mg IV/IO</p> <ul style="list-style-type: none"> Give over 1 minute <p style="text-align: center;"><u>If no IV/IO</u></p> <p>Glucagon 1 mg IM/IN</p> <p style="text-align: center;"><u>For Wheezing/Bronchospasm</u></p> <p>Albuterol 5 mg Nebulizer</p> <p style="text-align: center;"><u>If BP < 90 mmHg</u></p> <p>NS Bolus 250 mL IV/IO</p>	<p style="text-align: center;"><u>For Wheezing/Bronchospasm</u></p> <p>Albuterol 5 mg Nebulizer</p> <p style="text-align: center;"><u>If BP < normal range for age (see reference sheet)</u></p> <p>NS Bolus 20 mL/kg IV/IO</p>
Direction	
Contact Receiving ED Physician for additional treatment	



8005.5

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

ALTERED LEVEL OF CONSCIOUSNESS (ALOC)	
Glasgow Coma Scale (GCS) is < 15 and etiology unclear.	
Adult	Pediatric
BLS	
ABC's Assess VS Consider SMR for suspected trauma O ₂ , titrate SpO ₂ to ≥ 94% Temperature Assist ventilations as appropriate Suction as needed Place patient in recovery position	
<u>If known diabetic with suspected decreased blood sugar, abnormal behavior and pale/moist skin</u>	
Glucose paste one (1) tube by mouth (PO) or Commercially prepared glucose solution, one (1) bottle by mouth (PO) <ul style="list-style-type: none"> • Do not administer if patient is unconscious, lethargic, or unable to drink fluids. 	
BLS Local Scope	
<u>Blood Sugar (BS) < 60 mg/dL</u>	
Refer to BLS treatment	
<u>If mental status and respiratory effort are depressed and suspected opioid over dose</u>	
Naloxone (Narcan) 2 mg IN <ul style="list-style-type: none"> • May repeat x 1 • Max dose 4 mg • ½ dose per nare 	
ALS	
Cardiac Monitor, EtCO ₂ , IV/IO	
<u>BS < 60 mg/dL</u>	<u>BS < 60 mg/dL</u>
Dextrose 10% 25 gm in 250 mL NS IV/IO <ul style="list-style-type: none"> • Infuse wide open 	Dextrose 10% in 250 mL NS IV (See chart below)
<u>If no IV/IO</u>	<u>If no IV/IO</u>
Glucagon 1 mg IM/IN <ul style="list-style-type: none"> • No repeat 	Glucagon 0.5 mg IM/IN <ul style="list-style-type: none"> • No repeat



8005.5

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

Adult	Pediatric																																	
ALS cont.																																		
<p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 2 mg IV/IO/IM Naloxone (Narcan) 2 mg IN</p> <ul style="list-style-type: none"> • ½ dose per nare 	<p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 0.1 mg/kg IV/IO/IM</p> <ul style="list-style-type: none"> • Max single dose 2 mg • May repeat x 2 every 2-3 minutes <p>Naloxone (Narcan) 0.1 mg/kg IN</p> <ul style="list-style-type: none"> • Max single dose 2 mg • ½ dose per nare • May repeat x 1 <p style="text-align: center;">Pediatric Dextrose 10% in 250 mL Infusion Chart</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9ead3;">AGE</th> <th style="background-color: #d9ead3;">WEIGHT</th> <th style="background-color: #d9ead3;">VOLUME D 10% 25 gm</th> </tr> </thead> <tbody> <tr><td>Preemie</td><td>2 kg</td><td>10 mL</td></tr> <tr><td>Newborn</td><td>3 kg</td><td>15 mL</td></tr> <tr><td>3 months</td><td>5 kg</td><td>25 mL</td></tr> <tr><td>6 months</td><td>7 kg</td><td>35 mL</td></tr> <tr><td>1-2 years</td><td>11 kg</td><td>55 mL</td></tr> <tr><td>3-4 years</td><td>15 kg</td><td>75 mL</td></tr> <tr><td>5-6 years</td><td>19 kg</td><td>95 mL</td></tr> <tr><td>7-8 years</td><td>24 kg</td><td>120 mL</td></tr> <tr><td>9-10 years</td><td>31 kg</td><td>155 mL</td></tr> <tr><td>11-15 years</td><td>40 kg</td><td>200 mL</td></tr> </tbody> </table>	AGE	WEIGHT	VOLUME D 10% 25 gm	Preemie	2 kg	10 mL	Newborn	3 kg	15 mL	3 months	5 kg	25 mL	6 months	7 kg	35 mL	1-2 years	11 kg	55 mL	3-4 years	15 kg	75 mL	5-6 years	19 kg	95 mL	7-8 years	24 kg	120 mL	9-10 years	31 kg	155 mL	11-15 years	40 kg	200 mL
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8005.5

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

Adult	Pediatric
ALS cont.	
Consider	
<p style="text-align: center;">Consider diabetic related complications (hypoglycemia/Diabetic Ketoacidosis [DKA]) Consider Carbon Monoxide (CO) toxicity Consider 12-Lead Electrocardiogram (EKG)</p> <p>AEIOU-TIPS</p> <ul style="list-style-type: none"> • Alcohol • Epilepsy/Endocrine/Electrolytes/Exocrine • Insulin/Infection • Overdose/Oxygen deprivation • Uremia • Trauma/Temperature • Psychosis/Porphyrria/Poison • Stroke/Shock/Sepsis/Space occupying lesion/Subarachnoid hemorrhage <p>Refer to appropriate treatment protocol</p>	
Direction	
Contact Receiving ED Physician for additional treatment	



8009.5

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

INGESTION, OVERDOSE AND POISONING	
Adult	Pediatric
BLS	
Consider calling Poison Control ABC's Assess Vital Signs (VS) O ₂ , titrate SpO ₂ ≥ 94% Assist respirations as needed	
BLS Local Scope	
<u>Blood Sugar (BS) < 60 mg/dL or un-measurable</u>	
Glucose paste one (1) tube by mouth (PO) or Commercially prepared glucose solution, one (1) bottle by mouth (PO) <ul style="list-style-type: none"> Do not administer if patient is unconscious, lethargic, or unable to drink fluids. 	
<u>If mental status and respiratory effort are depressed and suspected opioid over dose</u>	
Naloxone (Narcan) 2 mg IN <ul style="list-style-type: none"> May repeat x 1 ½ dose per nare 	
ALS	
Cardiac Monitor, SpO ₂ , EtCO ₂ IV/IO	
<p style="text-align: center;"><u>Suspected Opiates</u></p> <p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 2 mg IV/IO/IM Naloxone (Narcan) 2 mg IN</p> <ul style="list-style-type: none"> ½ dose per nare <p style="text-align: center;"><u>Beta Blockers</u></p> <p>Glucagon 1 mg IV/IO</p> <p style="text-align: center;"><u>If no IV/IO</u></p> <p>Glucagon 1 mg IM/IN Atropine 0.5 mg IV/IO</p> <ul style="list-style-type: none"> May repeat every 5 minutes up to 3 mg max <p style="text-align: center;"><u>SBP < 70 mmHg</u></p> <p>Epinephrine (1:10,000) 0.1 mg (1 mL) IV/IO</p> <ul style="list-style-type: none"> Repeat until SBP > 90 mmHg 	<p style="text-align: center;"><u>Suspected Opiates</u></p> <p style="text-align: center;"><u>Mental status and respiratory effort is depressed</u></p> <p>Naloxone (Narcan) 0.1 mg/kg IV/IO/IM</p> <ul style="list-style-type: none"> Max single dose 2 mg May repeat x 2 every 2-3 minutes <p>Naloxone (Narcan) 0.1 mg/kg IN</p> <ul style="list-style-type: none"> ½ dose per nare May repeat x 1 <p style="text-align: center;"><u>BS < 60 mg/dL or un-measurable</u></p> <p>Dextrose 10% in 250 mL NS IV (See chart below)</p> <ul style="list-style-type: none"> Infuse wide open <p style="text-align: center;"><u>If no IV/IO</u></p> <p>Glucagon 0.5 mg IM/IN</p> <ul style="list-style-type: none"> No repeat



8009.5

Yolo Emergency Medical Services Agency Pediatric

Revised Date: December 11, 2017

Adult	Pediatric																																	
ALS cont.																																		
<p style="text-align: center;"><u>Tricyclic Antidepressants</u></p> <p><u>If any other following are present: SBP < 90 mmHg, QRS > 0.12 seconds and/or seizures</u></p> <p>Sodium Bicarbonate 1 mEq/kg IV/IO</p> <p style="text-align: center;"><u>Calcium Channel Blockers</u></p> <p style="text-align: center;"><u>SBP < 90 mmHg</u></p> <p>Calcium Chloride 10% 10 mL IV/IO</p> <ul style="list-style-type: none"> • 1 mL per minute • May repeat every 5 minutes, total 4 doses <p><u>Organophosphate or Carbamate Pesticides</u></p> <p style="text-align: center;"><u>HR < 50 BPM</u></p> <p>Atropine 2 mg IV/IO</p> <ul style="list-style-type: none"> • May repeat every 3 minutes <p style="text-align: center;"><u>Hydrofluoric Acid</u></p> <p>Calcium Chloride 10% 10 mL IV/IO</p>	<p style="text-align: center;">Pediatric Dextrose 10% in 250 mL Infusion Chart</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 33%;">AGE</th> <th style="width: 33%;">WEIGHT</th> <th style="width: 33%;">VOLUME D 10% 25 gm</th> </tr> </thead> <tbody> <tr><td>Preemie</td><td>2 kg</td><td>10 mL</td></tr> <tr><td>Newborn</td><td>3 kg</td><td>15 mL</td></tr> <tr><td>3 months</td><td>5 kg</td><td>25 mL</td></tr> <tr><td>6 months</td><td>7 kg</td><td>35 mL</td></tr> <tr><td>1-2 years</td><td>11 kg</td><td>55 mL</td></tr> <tr><td>3-4 years</td><td>15 kg</td><td>75 mL</td></tr> <tr><td>5-6 years</td><td>19 kg</td><td>95 mL</td></tr> <tr><td>7-8 years</td><td>24 kg</td><td>120 mL</td></tr> <tr><td>9-10 years</td><td>31 kg</td><td>155 mL</td></tr> <tr><td>11-15 years</td><td>40 kg</td><td>200 mL</td></tr> </tbody> </table>	AGE	WEIGHT	VOLUME D 10% 25 gm	Preemie	2 kg	10 mL	Newborn	3 kg	15 mL	3 months	5 kg	25 mL	6 months	7 kg	35 mL	1-2 years	11 kg	55 mL	3-4 years	15 kg	75 mL	5-6 years	19 kg	95 mL	7-8 years	24 kg	120 mL	9-10 years	31 kg	155 mL	11-15 years	40 kg	200 mL
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Direction																																		
<p>Contact Receiving ED Physician for additional treatment.</p>	<p>Overdose/poisoning in the pediatric population is dynamic and requires rapid transport. Contact Receiving ED Physician for additional treatment.</p>																																	



Yolo Emergency Medical Services Agency

Trial

Revised Date: December 12, 2017

TRANEXAMIC ACID (TXA) TRIAL STUDY

PURPOSE

To determine the role of prehospital Tranexamic Acid (TXA) to improve hemorrhagic shock outcomes, prevent massive internal bleeding by stabilizing clot formation, and decrease extravascular bleeding in trauma patients.

AUTHORITY

Health & Safety Code, Division 2.5, Emergency Medical Services
California Code of Regulations, Title 22, Division 9, Prehospital Emergency Medical Services

INCLUSION CRITERIA

Patients must meet anatomic, physiologic, and/or mechanism of injury trauma triage criteria as established by the Yolo County Emergency Medical Services Agency (YEMSA). Patients meeting the criteria for major trauma should be transported to the closest, most appropriate receiving center in the most expeditious manner.

The prehospital use of TXA should be considered for all trauma patients that meet any of the following inclusion criteria:

- I. Adults, age greater than or equal to (\geq) eighteen (18) years old and;
- II. Any sustained blunt or penetrating trauma within three (3) hours and;
- III. Patient meets one (1) or more of the following criteria:
 - A. Blunt or penetrating trauma with Signs and Symptoms (Si/Sx) of hemorrhagic shock
 - B. Systolic Blood Pressure (SBP) of less than ($<$) 90 mmHg at scene of injury, during ground medical transport, or on arrival to designated trauma centers
 - C. Patients who are considered to be high risk for significant hemorrhage:
 1. Estimated Blood Loss (EBL) of 500 mL in the field and accompanied by a Heart Rate (HR) greater than ($>$) 120 Beats Per Minute (BPM)
 2. Bleeding not controlled by direct pressure or tourniquet
 3. Major amputation of any extremity above the wrists or above the ankles

CONTRAINDICATIONS

- I. Any patient $<$ eighteen (18) years of age
- II. Any patient with an active thromboembolic event (within the last twenty-four [24] hours); i.e., active stroke, myocardial infarction or pulmonary embolism
- III. Any patient with a hypersensitivity or anaphylactic reaction to TXA
- IV. Any patient more than three (3) hours post injury
- V. Traumatic arrest with $>$ five (5) minutes of Cardiopulmonary Resuscitation (CPR) without return of Vital Signs (VS)
- VI. Penetrating cranial injury
- VII. Traumatic brain injury with brain matter exposed
- VIII. Isolated drowning or hanging victims
- IX. Documented cervical cord injury with motor deficit



GENERAL TREATMENT

- I. If patient meets anatomic and/or physiologic criterion of the inclusion criteria listed above:
 - A. Begin immediate transport – Code 3 if feasible.
 - B. Establish two (2) large bore Intravenous/Intraosseous (IV/IO) Normal Saline (NS)
 - C. Administer NS boluses two hundred-fifty to five hundred milliliters (250-500 mL)
 - D. If SBP < 90 mmHg, consider administering TXA, refer to Procedure below
 - E. After each two hundred-fifty (250) mL bolus, recheck VS
 - F. If Altered Level of Consciousness (ALOC), consider medical etiology.
 - G. Refer to YEMSA Protocol Altered Level of Consciousness (ALOC) Syncope
 - H. Refer to YEMSA Protocol General Medical Care
 - I. Refer to YEMSA Protocol Ingestion Overdoses & Poisoning
 - J. Consider tourniquet use if appropriate refer to YEMSA Protocol External Hemorrhage Control.
 - K. Splint fractures and dress wounds only if time permits
 - L. Notify Trauma Center ASAP!

- II. If patient meets mechanism criterion only:
 - A. May transport – Code 2 at the Paramedic's discretion
 - B. May establish one (1) large bore Interavenous/Interosseous (IV/IO) Normal Saline (NS) at Paramedic's discretion
 - C. Splint fractures and dress wounds
 - D. Notify Trauma Center ASAP!

PROCEDURE

If patient meets inclusion criteria listed above:

- I. Administer TXA 1 gram (gm) in fifty to one hundred (50-100) milliliters (mL) of NS via IV/IO Bolus drip over ten (10) minutes
 - A. **(Do not administer IVP – This will cause hypotension)**
- II. Follow IV fluid resuscitation,
- III. Place the approved neon green wristband on patient prior to transporting patient to a Trauma Center
- IV. Trauma Hospital contact is mandatory. Advise Trauma Hospital of:
 - A. Patient assessment
 - B. VS
 - C. EBL and condition
 - D. TXA administration
- V. Upon transfer of care at the receiving Trauma Center, obtain a signature of receiving clinician on the **TXA Trail Study Tracking Form**, retain a copy to be scanned into the ePCR, and ensure the form remains with the patient

**ADVERSE EFFECTS**

- I. Thromboembolism
 - A. Deep Vein Thrombosis (DVT)
 - B. Pulmonary Embolism (PE)

- II. Gastrointestinal effects including:
 - A. Nausea
 - B. Vomiting
 - C. Diarrhea

- III. Headache
- IV. Fatigue
- V. Dizziness
- VI. Visual Disturbance

DOCUMENTATION REQUIREMENTS

- I. Documentation must include:
 - A. Meets trauma triage criteria
 - B. Age
 - C. Weight
 - D. Date/time of injury onset of symptoms
 - E. Mechanism of injury
 - F. Initial SBP and VS
 - G. EBL, both pre and post TXA administration
 - H. Blunt or penetrating trauma location and description of injuries
 - I. VS including Glasgow Coma Scale and temperature: pre, during and post TXA administration
 - J. Any fluid administration
 - K. Date/time TXA was started
 - L. Past medical history
 - M. Allergies
 - N. Race/ethnicity
 - O. Gender
 - P. Any first response agency or transport service defined questions related to TXA

CROSS REFERENCES



YOLO COUNTY EMS AGENCY TXA TRIAL STUDY TRACKING FORM

9002.1

EMS DATA POINTS

Incident Date:		Incident Time:		Incident #:	
Patient Name:			Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other		
Patient Age:		Patient Weight:		Time of Injury:	
Primary Impression:			Mechanism of Injury:		
Dose of TXA Administration:			Time of TXA Administration:		
Pre TXA Vital Signs	HR: _____ Temp: _____	RR: _____ F/C Skin Signs: _____	BP: _____ GCS: _____	Cap Refill: _____ sec	Est. Total Blood Loss: _____ mL
Post TXA Vital Signs	HR: _____ Temp: _____	RR: _____ F/C Skin Signs: _____	BP: _____ GCS: _____	Cap Refill: _____ sec	Est. Total Blood Loss: _____ mL
Narrative Details:					

Received by:

Print Name: _____ Signature: _____ Date: _____

TRAUMA CENTER DATA POINTS

Incident Date:		Incident Time:		Medical Record #:	
Receiving Hospital:			ICD – 10 Code:		
Mechanism of Injury:			Procedure Performed:		
Date to Operating Room:			Time to Operating Room:		
Disposition (Outcome):					
Complications:					
Serious Adverse Effects:					
Mortality: Yes <input type="checkbox"/> No <input type="checkbox"/>			Cause of Death:		
Discharge Diagnosis:					
Transfused Blood Products: Yes <input type="checkbox"/> No <input type="checkbox"/>			Blood Product: Yes <input type="checkbox"/> No <input type="checkbox"/>		
Blood Type:			Number of Units Given:		
Hospital Days:			ICU Days:		
Ventilator Use: Yes <input type="checkbox"/> No <input type="checkbox"/>			Or Use:		



9003.1

Yolo Emergency Medical Services Agency

Trial

Revised Date: December 12, 2017

TRANEXAMIC ACID (TXA) TRIAL STUDY REFERENCE CARD

Tranexamic Acid (TXA)

Inclusion Criteria

1. Meets YEMSA Anatomic, Physiologic, and/or Mechanism Trauma Triage Criteria and;
2. 18 years of age or older and;
3. Victim of blunt or penetrating trauma within 3 hours of injury and;
4. Patient meets 1 or more of the following criteria:
 - Blunt or penetrating trauma with signs and symptoms of hemorrhagic shock
 - SBP < 90 mmHg at any time during patient care
 - Patients who are high risk for significant hemorrhage:
 - Estimated blood loss of 500 mL or more with a HR > 120 BPM
 - Bleeding not controlled by direct pressure or tourniquet
 - Major amputation of any extremity above the wrist or ankle

Signs and Symptoms of Hemorrhagic Shock

- Pale clammy skin
- Altered mentation
- Pulse > 100
- Narrowing pulse pressure
- SBP < 90 (late sign)

Contraindications

- Any patient < 18 years of age
- Any patient with an active thrombolytic event within the last 24 hours (stroke, myocardial infarction, pulmonary embolism, deep vein thrombosis)
- Any patient with hypersensitivity to TXA
- Any patient that is more than 3 hours post injury
- Traumatic arrest with > 5 minutes of CPR without return of vital signs
- Penetrating cranial injury
- Traumatic brain injury with brain matter exposed
- Isolated drowning or hanging
- Cervical cord injury with motor deficits

Procedure

1. **TXA 1 gram in 100 mL Normal Saline (NS)** IV/IO drip over 10 minutes
2. **250 mL NS bolus** titrate to SBP of 90 mmHg
3. Place the green wrist band on the patient and document time
4. Advise the trauma hospital of TXA administration
5. Complete the EMS section of TXA Trail Study Form and obtain a signature from the receiving clinician (scribe nurse or physician)
 - Pink Copy scanned into EPCR
 - Yellow and white copy to trauma hospital



BASIC LIFE SUPPORT (BLS) LOCAL SCOPE

PURPOSE

To establish the requirements and responsibilities for a Yolo County Emergency Medical Services Agency (YEMSA) BLS Service Provider Agency to perform BLS Local Scope. The BLS Local Scope skills in YEMSA are:

- I. Administration of Epinephrine by auto-injector for suspected anaphylaxis.
- II. Administration of Naloxone (Narcan) for suspected narcotic overdose.
- III. Perform finger stick blood glucose testing.

AUTHORITY

California Code of Regulations, Title 22, Division 9, Chapter 2, Article 2, § 100063

POLICY

Any BLS Service Provider Agency wishing to utilize any of the BLS Local Scope skills for BLS employees shall meet all the requirements set forth by the State law, regulations, and YEMSA policy.

- I. BLS Local Scope Training Requirements and Responsibilities:
 - A. Only individuals working for a BLS Service Provider Agency within Yolo County may practice BLS Local Scope skills and must be approved by their employer.
 - B. BLS Service Provider Agencies shall provide bi-annual training, skills verification and shall:
 1. Utilize the YEMSA approved Skills Verification Form.
 2. Utilize instructors qualified by education or experience to teach the required curriculum. The Instructor shall be a Physician (MD), Registered Nurse (RN), Physician's Assistant (PA), Paramedic or Advanced EMT, licensed or certified in California or a MD licensed in another state. An EMT trained in the Local Scope Skill may assist in demonstration of competency and training of that skill, but cannot sign-off on the skill.
- II. Records/Data Collection:
 - A. A YEMSA BLS Local Scope Medication Administration form shall be completed for each patient on whom Epinephrine or Narcan were administered if the Service Provider Agency is not using a NEMSIS 3.4 compliant system.
 1. BLS Local Scope Medication Administration Forms shall be submitted to YEMSA within twenty-four (24) hours of medication administration.
 2. Forms may be submitted via email to yemsa@yolocounty.org or mailed to 137 N. Cottonwood Street, Suite 1300, Woodland, CA 95695.
 - B. A verbal or written report shall be given to the transporting ALS crew at time of transfer of patient care.
 - C. Service Provider Agencies shall notify YEMSA, in writing, of any medication errors or adverse events utilizing the Occurrence Incident Reporting Form.



YOLO COUNTY EPINEPHRINE AUTO-INJECTOR AND NARCAN ADMINISTRATION FORM

644.1

Date:		Agency:	
Incident Location:			
Patient Initials:		DOB:	<input type="checkbox"/> Male <input type="checkbox"/> Female
Assessment			
Epinephrine Auto-Injector		Naloxone (Narcan)	
Signs and Symptoms	Post Administration Assessment	Signs and Symptoms	Post Administration Assessment
<input type="checkbox"/> Adult Dose <input type="checkbox"/> Pediatric Dose		Did patient require 2 nd dose of Narcan <input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Difficulty speaking or swallowing <input type="checkbox"/> Difficulty breathing <input type="checkbox"/> Hives/rash/swelling <input type="checkbox"/> Flushed or pale skin <input type="checkbox"/> Rapid weak pulse <input type="checkbox"/> Blood pressure < 90 mmHg	<input type="checkbox"/> Improved speaking or swallowing <input type="checkbox"/> Decrease in difficulty breathing <input type="checkbox"/> Improved skin signs <input type="checkbox"/> Improved pulse <input type="checkbox"/> Improved blood pressure	<input type="checkbox"/> No painful stimuli <input type="checkbox"/> Respirations irregular or absent <input type="checkbox"/> Pupils "pinpoint" and non-reactive <input type="checkbox"/> Pale or cyanotic skin <input type="checkbox"/> Slow pulse <input type="checkbox"/> Blood pressure < 90 mmHg	<input type="checkbox"/> Increased level of consciousness <input type="checkbox"/> Increased respiratory rate <input type="checkbox"/> Pupils reactive <input type="checkbox"/> Improved skin signs <input type="checkbox"/> Improved pulse <input type="checkbox"/> Improved blood pressure
Administration Times:			
Epinephrine:		Narcan 1 st Dose:	
		Narcan 2 nd Dose:	
Additional Information:			
Transfer Agency Unit #:		Transfer of Care Time:	

Form Completed by: _____

Signature _____

Date _____



SKILLS COMPETENCY VERIFICATION: NARCAN ADMINISTRATION

NAME: _____ DATE: _____

AGENCY: _____ EVALUATOR: _____

OBJECTIVE

The candidate will demonstrate the ability to correctly identify the indications for Narcan and properly administer the medication.

EQUIPMENT

Manikin or simulated patient, required medication and administration equipment, Oxygen (O₂), stethoscope, pen light, appropriate Personal Protective Equipment (PPE).

PERFORMANCE CRITERIA AND CONDITIONS

The candidate will be presented with a manikin or simulated patient who has Signs and Symptoms (Si/Sx) of an Opioid overdose and is unconscious. The candidate will correctly assemble and administer Narcan.

EVENT	DOES	DOES NOT
1. States the indications for the use of Narcan. <ul style="list-style-type: none"> • Si/Sx of Opioid overdose. <ul style="list-style-type: none"> ○ Low BP ○ Slow weak pulse ○ No response to painful stimuli ○ Decreased respiratory rate less than (<) ten (10) beats per minute (BPM) ○ No breathing (Apnea) ○ Constricted "Pinpoint" Pupils ○ Profuse sweating ○ Pale or cyanotic skin 		
2. States the possible side effects of Narcan. <ul style="list-style-type: none"> • Withdrawal symptoms • Vomiting 		
3. States or demonstrates the use of appropriate PPE.		
4. Checks medication for damage, proper dose, cloudy or discolored liquid and expiration date.		
5. Properly assembles equipment.		
6. Properly informs/instructs the patient on medication application and use.		
7. Re-assesses patient for effectiveness of treatment and side effects.		



SKILLS COMPETENCY VERIFICATION: EPINEPHRINE AUTO-INJECTOR ADMINISTRATION

NAME: _____

DATE: _____

AGENCY: _____

EVALUATOR: _____

OBJECTIVE

The candidate will demonstrate the ability to correctly identify the indications for Epinephrine and properly administer the medication.

EQUIPMENT

Manikin or simulated patient, required auto-injector equipment, Oxygen (O₂), stethoscope, appropriate Personal Protective Equipment (PPE).

PERFORMANCE CRITERIA AND CONDITIONS

The candidate will be presented with a manikin or simulated patient who has Signs and Symptoms (Si/Sx) of Anaphylaxis and is in severe distress. The candidate will correctly assemble and administer the Epinephrine auto-injector device and properly inform/instruct the patient on its use.

EVENT	DOES	DOES NOT
1. States the indications for the use of Epinephrine. <ul style="list-style-type: none"> • Si/Sx of Anaphylaxis. <ul style="list-style-type: none"> ○ Low BP ○ Rapid weak pulse ○ Difficulty speaking or swallowing ○ Difficulty breathing ○ Rash/Hives ○ Flushed or pale skin ○ Nausea/Vomiting ○ Anxiety 		
2. States the contraindications for the use of Epinephrine. <ul style="list-style-type: none"> • Weight is less than (<) 15 kilograms (kg)/33 pounds (lbs). • Si/Sx of an allergic reaction only. 		
3. States the possible side effects of Epinephrine. <ul style="list-style-type: none"> • Rapid or irregular pulse • Anxiety • Dizziness • Nausea/Vomiting • Chest Pain 		
4. States or demonstrates the use of appropriate PPE.		
5. Checks medication for damage, proper dose, cloudy or discolored liquid and expiration date.		
6. Properly assembles equipment.		



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7. Properly informs/instructs the patient on medication application and use.		
8. Re-assesses patient for effectiveness of treatment and side effects.		