Yolo County Health & Human Services Agency

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DATE: February 18, 2022
TO: Yolo County Providers and Agencies
FROM: Yolo County EMS Agency
SUBJECT: March 1, 2022 EMS Protocol and Policy Revisions

MEMORANDUM

On March 1, 2022 two updated protocols and updated inventory lists will go into effect for all Yolo County Providers. The Protocol App and Website will be updated to reflect all updates. It is the responsibility of each agency to ensure that their personnel receive this information.

Attached to this memo are the draft protocols and policy that go into effect on March 1, 2022; highlights include:

1. **Pain Management**: Addition of fentanyl SIVP/IM for adults.

2. **Trauma Patient Care**: Changes to purpose. Changes to physiological, anatomical, mechanism of injury criteria and removal of neurosurgical criteria to align with current American College of Surgeons definitions. Removal of trauma level of service from each criteria.

3. **All Inventory Lists**: Head immobilizers were removed from inventory due to change to spinal motion restriction. Inventory lists are not attached here but will be updated in Protocol App and Website March 1st.

Please review the additions and changes thoroughly. If you have any questions, please contact Douglas Brim at Douglas.Brim@yolocounty.org

PAIN MANAGEMENT

Adult	Pediatric

BLS

Mild Pain

Assess Vital Signs
O_2, titrate SpO_2 to ≥ 94%
Provide calming measures
Treat underlying cause for pain:
reposition, bandage, splint, elevation, traction, compression, and/or cold pack

ALS

Moderate to Severe Pain

Cardiac Monitor, Consider Vascular Access

Acetaminophen 15 mg/kg IV Infusion
- Administer over 15 minutes
- Total max dose 1,000 mg
- No repeat

Fentanyl 50 mcg SIVP/IM
- IV - May repeat every 5 minutes
- IM - May repeat every 10 minutes
- Single max dose 50 mcg
- Total max dose 200 mcg

Ketamine (Ketalar) 0.5 mg/kg IN (50 mg/mL)
- ½ dose per nare
- Single max dose is 50 mg
- May repeat x 1 after 20 minutes

Or

Ketamine (Ketalar) 0.3mg/kg in 100 mL NS IV Infusion
- Administer over 10 minutes
- Total max dose 30 mg
- May repeat x 1 after 20 minutes

* Ketamine may be administered in addition to Acetaminophen and Fentanyl for **severe pain**

Acetaminophen 15 mg/kg IV Infusion
- Use a length based pediatric resuscitation tape to determine weight for dosing
- Administer over 15 minutes
- Total max dose 1,000 mg
- No repeat

Patients < 4 years – Base Physician contact required for Fentanyl

Fentanyl 1 mcg/kg SIVP/IM
- IV - May repeat every 5 minutes
- IM - May repeat every 10 minutes
- Single max dose 50 mcg
- Total max dose 200 mcg

Or

Fentanyl 1 mcg/kg IN
- ½ dose per nare
- May repeat every 10 minutes
- Single max dose 50 mcg
- Total max dose 200 mcg

Contraindications

Acetaminophen
- Liver Disease or complications (e.g. Transplant)

Ketamine (Ketalar)
- RR ≤ 12
- SBP ≤ 100
- GCS < 15 or agitation

Fentanyl
- SBP < normal range for age
- GCS < 15

DIRECTION

- Contact Receiving ED Physician for additional pain management

TRAUMA PATIENT CARE

Adult | **Pediatric**

Purpose

To identify trauma patients who are at the greatest risk for serious injury and determine the most appropriate destination.

- Trauma Centers improve outcomes for patients with significant traumatic injuries. Patients with significant traumatic injuries requiring an operating room within the first 4 hours benefit from being transported immediately to an appropriate trauma center.
- Patients meeting Critical Trauma Criteria should be transported as soon as possible. On scene procedures should be limited to patient assessment, airway management, external hemorrhage control, and spinal motion restriction procedures. Additional interventions should take place en route with the exception of those incidents requiring prolonged extrication.

Physiological Criteria

- Hypotension – Systolic Blood Pressure < 90 mmHg
- Respiratory Rate < 10 or > 29 breaths per minute (< 20 in infant aged <1 year) or need for ventilatory support
- Altered Mental Status – Glasgow Coma Scale (GCS) ≤ 13 or change from baseline with evidence of head trauma

Anatomical Criteria

- Penetrating injury to head neck, torso, or extremities proximal to knee or elbow
- Depressed or suspected open skull fracture
- Chest wall instability or deformity
- 2 or more proximal long bone fractures in an adult or 1 or more proximal long bone in patient < 14yrs.
- Paralysis
- Crushed, de-gloved, mangled extremity or pulseless extremity
- Amputation proximal to wrist and ankle
- Pelvic fracture

Mechanism of Injury Criteria

- High risk automobile crash
  - Intrusion into the passenger compartment: occupant side > 12 inches, any side > 18 inches
  - Death of occupant in the same compartment
  - Ejection from vehicle (partial or complete)
- Vehicle striking pedestrian or bicyclist with speed at impact > 20 MPH or involving torso run over
- Motorcycle or motorized vehicle crash with estimated speed of ≥ 20 MPH
- Falls
  - Adults >20 feet
  - Children (<14 yrs.) >10 feet or two to three times the height of the child

Adult	Pediatric

Special Considerations

Patients with either high energy or low energy mechanism are more prone to serious injury if they have one or more of the following risk factors:

- Patients 55 years or older
- Anticoagulant use or bleeding disorder
- Time sensitive extremity injury
- End stage renal disease requiring dialysis
- Pregnant patients > 20 weeks

These patients may have injuries that exceed the capabilities of the receiving hospital and should be considered for transport to a trauma center. **Contact Closest Trauma Hospital Physician if there is any concern about appropriate destination.**

BLS

Open and position the airway
Airway Adjuncts: OPA/NPA as needed to control the airway
O_2, titrate SpO_2 to $\geq$ 94%
SMR if indicated
Identify and treat life threatening conditions
Control external bleeding
Prevent hypothermia
Treat suspected shock

ALS

Cardiac Monitor, Waveform $EtCO_2$, Vascular Access

Fluid Bolus NS 250 mL IV/IO • Titrate SBP $\geq$ 90 mmHg Initiate second large bore IV	<u>If poor perfusion or suspected shock</u> **Fluid Bolus NS 20 mL/kg** IV/IO • Titrate to age appropriate SBP Initiate second large bore IV

ALS

Adult

Trauma patients with signs and symptoms of hemorrhagic shock meeting all of the following criteria:

1. Blunt or penetrating trauma to the chest, abdomen, or pelvis
2. Transport time > 30 minutes from a trauma center
3. Within 3 hours of injury
4. SBP < 90

TXA Bolus drip 1gm in NS 50 - 100 mL IV/IO over 10 minutes
- No repeat

Fluid Bolus NS 250 mL IV/IO
- Repeat as needed to maintain SBP ≥ 90

*** Place the approved neon green wristband on patient**

TXA Contraindications

- Active thromboembolic event (within the last 24 hours); i.e., active stroke, myocardial infarction, pulmonary embolism or DVT
- Hypersensitivity or anaphylactic reaction to TXA
- Traumatic arrest with > 5 minutes of CPR without return of vital signs
- Suspected traumatic brain injury
- Drowning or hanging victims
- Cervical cord injury with motor deficits

Consider

Consider advanced airway if GCS is ≤ 8 and BLS airway is ineffective
- IV/IO access should be initiated en route
- Consider pain management
- **Pregnant patients** meeting criteria should be taken to a **Trauma Center** with **obstetric** services.
- Air ambulances should only be used when they offer a measurable advantage to ground transport. Air ambulances may benefit patients injured in locations distant from a trauma center, and/or those in need of immediate procedures available to a Flight Nurse but outside the scope of practice of Paramedics.
- Patients with an uncontrolled airway may be considered for transport to the closest hospital.
- For trauma meeting burn criteria - refer to burn triage criteria
- This policy does not apply to Multi-Casualty Incidents

Direction

- If patient meets trauma triage criteria transport to a designated Trauma Receiving Center
- Contact the Trauma Center and advise them of a **"TRAUMA ALERT"** (preferably from the scene)
- If TXA administered advise the Trauma Hospital of **"TRAUMA ALERT TXA"**
- On scene time should be ≤ 10 minutes
- Contact the closest Trauma Center Physician for additional treatment or **transport decisions**
- When in doubt, transport to the closest Trauma Center