

**PHYSICIAN ORDERS**  
FOR  
**PEDIATRIC MULTISYSTEM TRAUMA in the**  
**EMERGENCY DEPARTMENT**

Page 1 of 3

Patient Identification

Weight: \_\_\_\_\_ kg    Height: \_\_\_\_\_ cm    Allergies: \_\_\_\_\_

**This order set is to be used for patients with Pediatric Multisystem Trauma**

Refer to [TREKK's Pediatric Multisystem Trauma Algorithm](#)

***To activate an order, initial on blank line preceding order***

**INITIAL STABILIZATION AND MANAGEMENT:**

- Cardiorespiratory monitoring; 100% O<sub>2</sub> by non-rebreather mask.
- 2 large-bore antecubital IVs; IO access if 2 failed IV attempts or arrest/peri-arrest. Consider lidocaine for IO line infusion in alert patients (see Medications below).
- POCT glucose if decreased level of consciousness and/or for infants/young children. If glucose  $\leq$  2.6 mmol/L give D10W IV (see Medications below) and recheck glucose in 5 minutes.
- Full set of vitals, with Glasgow Coma Scale and temperature.

**INVESTIGATIONS:**

- Type & Screen and venous blood gas (priority). Add CBC, lytes, Ca, LFTs, amylase/lipase, lactate, fibrinogen, INR/PTT, urine routine and microscopy, if possible.
- Ethanol level and/or beta HCG, if applicable.

***Initial on all lines applicable***

**FLUIDS**

\_\_\_\_  **NS** OR  **RL** bolus \_\_\_\_\_ mL (20 mL/kg) IV/IO rapid infusion/push over 5-10 min (1<sup>st</sup> bolus for resuscitation)  
\_\_\_\_  **NS** OR  **RL** bolus \_\_\_\_\_ mL (10 mL/kg, if volume still indicated and blood not yet available) IV/IO rapid infusion or push over 5-10 min (2<sup>nd</sup> bolus for resuscitation)  
\_\_\_\_ **D5NS** \_\_\_\_\_ mL/hr IV (for maintenance)

**BLOOD PRODUCTS**

\_\_\_\_ **Packed Red Blood Cells** (PRBCs) (warmed) \_\_\_\_\_ mL (10 mL/kg) IV/IO rapid infusion or push over 10 min (1<sup>st</sup> transfusion)

\_\_\_\_ **PRBCs** (warmed) \_\_\_\_\_ mL (10 mL/kg) IV/IO rapid infusion or push over 10 min (2<sup>nd</sup> transfusion)

\* If ongoing need for transfusion after 20 mL/kg PRBCs activate Massive Hemorrhage Protocol (MHP) if available and arrange for transport ASAP. Follow MHP directives for calcium replacement or see below.

**MEDICATIONS**

*IO insertion/medication administration in alert patients*

\_\_\_\_ **lidocaine** \_\_\_\_\_ mg (0.5 mg/kg/dose, MAX 40 mg/dose; use preservative-free 2%, 20 mg/mL) IO over 1-2 minutes. Follow with NS flush.

*Hypoglycemia*

\_\_\_\_ **D10W** \_\_\_\_\_ mL (5 mL/kg/dose, MAX 250 mL/dose) IV/IO bolus over 2 – 5 mins.

**\*\*\* Continued on Page 2. Ensure nurse is aware of Page 2 at the time of completion. \*\*\***

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NURSE SIGNATURE

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PRINT NAME OF NURSE

\_\_\_\_\_  
DATE & TIME

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*Bleeding/Hemostasis*

While there is currently limited evidence for tranexamic acid (TXA) in pediatric trauma, TXA is often used when transfusion is needed or within massive hemorrhage protocols. Use higher end of dosing range for severe bleeding. Do NOT administer TXA if greater than 3 hours since injury.

\_\_\_\_\_ **tranexamic acid** \_\_\_\_\_ mg (15-30 mg/kg/dose, MAX 1000 – 2000 mg/dose) IV/IO bolus over 10-20 min;  
follow with infusion if bleeding continues and vascular access allows.

\_\_\_\_\_ **tranexamic acid infusion** \_\_\_\_\_ mg/hr (5-10 mg/kg/hr (MAX 125 mg/hr) IV/IO for the lesser of 8 hours or until bleeding stops.

*Impending cerebral herniation*

\_\_\_\_\_ **3% NaCl** \_\_\_\_\_ mL (5 mL/kg/dose, MAX 250 mL/dose) IV/IO over 10 minutes.

**AND/OR**

\_\_\_\_\_ **mannitol** \_\_\_\_\_ g (1 g/kg/dose, MAX 100 g/dose) IV/IO over 15 minutes.

*Neurogenic shock*

\_\_\_\_\_ **norepinephrine infusion** \_\_\_\_\_ mcg/kg/min IV/IO (**initial** 0.05 – 0.1 mcg/kg/min; **titrate** to effect in 0.02 mcg/kg/min increments; MAX 2 mcg/kg/min).

**OR**

\_\_\_\_\_ **EPINEPHrine infusion** \_\_\_\_\_ mcg/kg/min IV/IO (**initial** 0.05 – 0.1 mcg/kg/min; **titrate** to effect in 0.02 mcg/kg/min increments; MAX 1 mcg/kg/min).

*Analgesia*

\_\_\_\_\_ **fentaNYL** \_\_\_\_\_ mcg (1.5 mcg/kg/dose, MAX 100 mcg/dose) **INTRANASAL**. Give 50% of dose in each nostril.

**OR**

\_\_\_\_\_ **fentaNYL** \_\_\_\_\_ mcg (1 mcg/kg/dose, MAX 50 mcg/dose) IV/IO q1h PRN

**OR**

\_\_\_\_\_ **ketamine** (low dose) \_\_\_\_\_ mg (0.15 – 0.3 mg/kg/dose, MAX 7.5 – 15 mg/dose) IV/IO. Slow infusion over 15 minutes may decrease risk of dissociation.

**OR**

\_\_\_\_\_ **morphine** \_\_\_\_\_ mg (0.1 mg/kg/dose, MAX 10 mg/dose) IV/IO q2h PRN. If hemodynamically stable.

*Sedation for intubated patients – continuous infusions*

\_\_\_\_\_ **fentaNYL infusion** \_\_\_\_\_ mcg/hr (1 mcg/kg/hr) IV/IO

\_\_\_\_\_ **midazolam infusion** \_\_\_\_\_ mcg/hr (50 mcg/kg/hr) IV/IO. If further sedation required and if hemodynamically stable.

\_\_\_\_\_ **ketamine infusion** \_\_\_\_\_ mcg/hr (300 mcg/kg/hr) IV/IO. If further sedation required and if hemodynamically unstable.

**\*\*\* Continued on Page 3. Ensure nurse is aware of Page 3 at the time of completion. \*\*\***

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*Antimicrobial prophylaxis for open fractures*

\_\_\_\_\_ **ceFAZolin** \_\_\_\_\_ mg (30 mg/kg/dose, MAX 2000 mg/dose) IV/IO.

\_\_\_\_\_ **tetanus-containing vaccine** 0.5 mL IM \_\_\_\_\_ (order specific tetanus vaccine on blank line – age of child and immunization history informs product selection).

*Calcium replacement if massive hemorrhage protocol activated*

\_\_\_\_\_ **calcium gluconate** \_\_\_\_\_ mg (60 mg/kg/dose, MAX 2000 mg) IV/IO over at least 10 min. Dilute with at least an equal volume of NS. Repeat PRN for ongoing hypocalcemia.

**OR**

\_\_\_\_\_ **calcium chloride** \_\_\_\_\_ mg (20 mg/kg/dose, MAX 1000 mg/dose) IV/IO over at least 10 min. Dilute to ≤ 20 mg/mL in NS. Repeat PRN for ongoing hypocalcemia.

*Intubation*

Refer to **Drug Assisted Intubation** section in [TREKK's Severe Head Injury Bottom Line Recommendations](#).

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