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PURPOSE:

To provide guidelines for care of the pediatric trauma patient.

A. Broselow Color-Coded Emergency Equipment

Use a length-based resuscitation tape, such as a the Broselow color-coded tape, to measure the pediatric trauma victim for estimated weight, appropriate equipment sizes and drug doses. Relay estimated weight and color code to the trauma scribe. All medications will be pulled from the corresponding colored drawer in the pediatric code cart. In an emergency where this system is unavailable, refer to the table below.

B. Useful Medications

Epinephrine	0.01 mg/kg = 0.1 ml/kg 1:10,000 (1:1000 must be diluted)		
Sodium Bicarbonate	1 mEq/kg = 1 ml/kg of standard 8.4% solution		
Atropine	0.02 mg/kg with minimum of 0.1 mg= 0.2 ml/kg of 0.1 mg/ml solution		
Glucose	dilute D50W with equal volume sterile water and give 2-4 ml/kg		
Etomidate	0.03mg/kg (see Airway Algorithm)		
Succinylcholine	2mg/kg neonate	1-2 mg/kg child	1 mg /kg adult

C. Pediatric Trauma Score

PTS = Total Points (-6 to +12), PTS <= 8 indicates significant mortality risk

	+ 2	+ 1	-1
Size	>20 kg	10 – 20 kg	< 10 kg
Airway	Normal	Maintained (opa/npa/o2)	Uncontrolled (definitive airway)
SBP	> 90 mm Hg	50 – 90 mm Hg	< 50 mm Hg
CNS	Awake	Obtunded	Comatose
Open Wound	None	Minor (contusion, abrasion, laceration)	Major (tissue loss, wound through fascia)
Skeletal Injury	None	Closed, single	Open/multiple


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D. Pediatric Resuscitation Guide

AGE	0 – 6 MO	6 – 12 MO	1 – 3 YR	4 – 7 YR	8 – 10 YR
WEIGHT	3 – 7 kg	7 – 10 kg	10 – 13 kg	16– 18 kg	24 – 30 kg
NORMAL HR**	<160	<150	<140	<120-140	<100
NORMAL RR**	< 60 (term) 22 - 35	20 – 28	20 – 25	18 – 24	36 – 48 (3m) 24 – 36 (6m)
NORMAL SBP*	70	80 – 90	90 – 100	100	105 – 115
LARYNGOSCOPE BLADE/SIZE	1 straight	1 straight	1 straight	2 straight or curved	2 – 3 straight or curved
ETT	3.0 – 3.5 uncuffed	3.5 – 4.0 uncuffed or cuffed	4.0 – 4.5 uncuffed or cuffed	5.0 – 5.5 uncuffed	5.5 – 6.5 cuffed
NGT	10 Fr	12 Fr	12 Fr	12 Fr	14 Fr
IV CATHETER**	22 G	22 G	20-22 G	20 G	18 – 20 G
CHEST TUBE	12 – 18 Fr	14 – 20 Fr	14 – 24 Fr	20 – 28 Fr	28 – 32 Fr
URINARY CATHETER	6 Fr 5 – 8 Fr feeding	8 Fr	10 Fr	10 – 12 Fr	12 Fr
FLUID CHALLENGE	20 ml/kg				
PRBC TRANSFUSION	10 ml/kg				
MAINTENANCE IVF***	4mL/kg per hour		40mL/hr for first 10kg BW + 2ml/kg/hr for each kg above 10kg		60mL/hr for first 20kg BW + 1ml/kg/hr for each kg above 20kg
SET VENT RATE (I:E = 1:2)	25 – 30	20 – 25	20 – 25	18 – 25	15 – 20
TIDAL VOLUME****	5-8 mL/kg				
PEEP*	5-8 cm H ₂ O				
* Lower values correspond to lower end of age range ** Higher values correspond to lower end of age range *** Maximum of 100 ml/hr. Adjust for urine output and VS **** If PIP > 35 mm Hg, consider switching to pressure limited mode					

I. **ADDITIONAL RESOURCES**

- a. Advanced Trauma Life Support ATLS: Student Course Manual. (2018). 10th ed. Chicago: American College of Surgeons.
- b. **Up to date:** May 2020. Maintenance intravenous fluid therapy in children. **Author:** Michael J Somers, MD. **Section Editor:** Tej K Mattoo, MD, DCH, FRCP. **Deputy Editor:** Melanie S Kim, MD
- c. **Up to date:** May 2020. Initiating mechanical ventilation in children. **Authors:** Joshua Nagler, MD, MHPEd, Ra M Cheifetz, MD, FCCM, FAARC. **Section Editor:** Adrienne G Randolph, MD, MSc. **Deputy Editor:** James F Wiley, II, MD, MPH

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