Recommended Pediatric Equipment Checklist

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Monitoring

Equipment	Yes	No
Defibrillator (0-400J) capability with pediatric paddles (4.5 cm)	☐	☐
Pediatric monitor electrodes	☐	☐
Pulse oximeter with sensors sizes (newborn through adult)	☐	☐
Thermometer/rectal probe*	☐	☐
Blood Pressure cuffs–neonatal, infant child, adult and thigh cuff	☐	☐
Method to monitor endotracheal tube and placement†	☐	☐

* Suitable for hypothermic and hyperthermic measurements with temperature capability from 25ºto 44º.
† May be satisfied by a disposable ET co² detector, bulb, or feeding tube methods for endotracheal tube placement.

Vascular Access

Equipment	Yes	No
Butterfly needles (19-25-gauge)	☐	☐
Catheter-over-needle devices (14 to 24 gauge)	☐	☐
Infusion device‡	☐	☐
Tubing for above	☐	☐
Intraosseous needles (16 and 18 gauge)§	☐	☐
Arm boards – (infant, child)	☐	☐
Intravenous fluid/blood warmers	☐	☐
Umbilical vein catheters (sizes 3.5 Fr and 5 Fr)‼	☐	☐
Seldinger technique vascular access kit (with pediatric sizes 3, 4, 5, Fr catheters)	☐	☐

‡ To regulate rate and volume.
§ May be satisfied by standard bone marrow aspiration needles, 13- or 15- gauge.
‼ Available within the hospital

Pediatric Injuries

Injury continues to cause more deaths in children than the next 5 causes of childhood death combined. The unique anatomic and physiologic differences in children can lead to pitfalls in their treatment especially for providers who care for children infrequently.

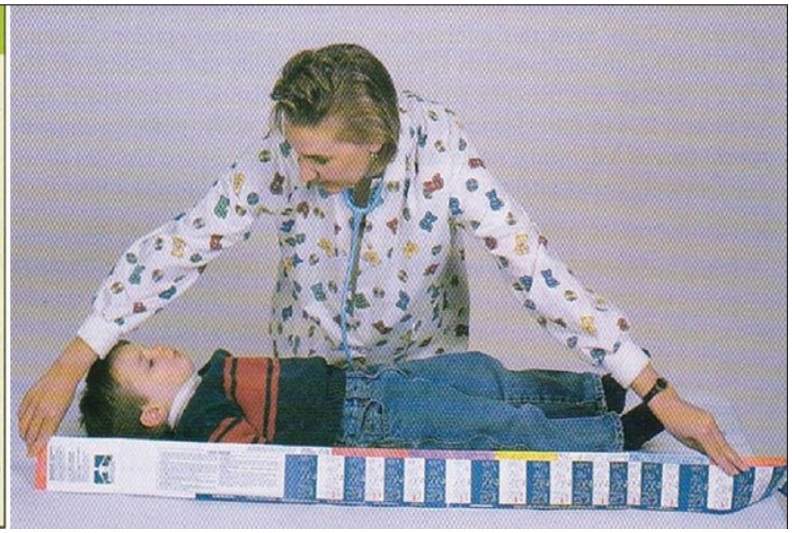
Special considerations for your trauma program related to injured children:

- It is important that adequate pediatric resources be available to your staff
    - Length based resuscitation tape – adjunct for rapid determination of weight based on length so ensure appropriate fluid volumes, drug dosages, and equipment sizes are used
    - Pediatric sized equipment readily available
    - Resources for drug dosing in children
    - Additional resources for pediatric care can be found on the American Academy of Pediatrics website (https://www.aap.org)
- Per DSHS trauma rules, nurses caring for trauma patients in the emergency room must have pediatric specific education, such as ENPC or PALS. Please refer to the current DSHS designation criteria at www.dshs.state.tx.us/emstraumasystems

- Transfer guidelines should be developed to expedite the movement of the injured child to the most appropriate facility
- Policies should exist specific to the care of pediatric population
- The trauma PI program should monitor the care of pediatric patients using Pediatric Specific Performance Improvement Indicators.
    - Pediatric Specific Standards for Chart Review:
        - Was definitive airway placed in a timely manner
        - Was shock recognized early – difficult in children
            - Signs of early shock in children include sustained tachycardia for age, increased respiratory rate for age, capillary refill > 2 seconds, diminished peripheral pulses
            - Hypotension is a late sign (after 25% blood volume loss)
        - Was shock treated appropriately
            - Children in shock should get 20cc/kg bolus of warmed crystalloid
            - If signs of poor perfusion persist was bolus repeated
            - If signs of poor perfusion persist did child get blood products
            - Blood product dosing is weight based 10cc/kg
        - Able to establish vascular access
        - Was child treated appropriately for pain
        - Only necessary imaging was performed prior to transfer
            - There is growing recognition of potential effects of ionizing radiation on the developing brain of children
            - Clinical decision making regarding imaging in children must always include consideration of important of injury identification in addition to radiation exposure risk.
            - Transfer should never be delayed for imaging
        - Was child transferred to the appropriate definitive care destination
- Care providers need to be alert to the possibility of non-accidental trauma.

- Physical/history findings suggestive of child maltreatment/non-accidental trauma include but are not limited to:
    - Discrepancy in the reported history and the physical findings
    - Bruising in infants/children unable to move on their own
    - Intra-cranial bleeding without clear history of trauma
    - Perioral injuries
    - Trauma to genital or perianal area
    - Suspicious bruising patterns
    - Sharply demarcated burns in unusual areas
- Any suspicion of non-accidental trauma/ child maltreatment requires a report be filed with county social services.
    - Make sure you are aware of resources in your county

Equipment	Newborn/ Small infant (3-5 kg)	Infant (6-9 kg)	Toddler (10-11 kg)	Small Child (12-14 kg)	Child (15-18 kg)	Child (19-22 kg)	Large Child (24-30 kg)	Adult (≥32 kg)
Resuscitation bag	Infant	Child	Child	Child	Child	Child	Child/adult	Adult
O_2 mask	Newborn	Newborn	Pediatric	Pediatric	Pediatric	Pediatric	Adult	Adult
Oral airway	Infant/small child	Infant/small child	Small child	Child	Child	Child/small adult	Child/small adult	Medium adult
Laryngoscope blade (size)	0-1 straight	1 straight	1 straight	2 straight	2 straight or curved	2 straight or curved	2-3 straight or curved	3 straight or curved
Tracheal tube (mm)	Premature infant 2.5 Term infant 3.0-3.5 uncuffed	3.5 uncuffed	4.0 uncuffed	4.5 uncuffed	5.0 uncuffed	5.5 uncuffed	6.0 cuffed	6.5 cuffed
Tracheal tube length (cm at lip)	10-10.5	10-10.5	11-12	12.5-13.5	14-15	15.5-16.5	17-18	18.5-19.5
Stylet (F)	6	6	6	6	6	14	14	14
Suction catheter (F)	6-8	8	8-10	10	10	10	10	12
BP cuff	Newborn/ infant	Newborn/ infant	Infant/child	Child	Child	Child	Child/adult	Adult
IV catheter (G)	22-24	22-24	20-24	18-22	18-22	18-20	18-20	16-20
Butterfly (G)	23-25	23-25	23-25	21-23	21-23	21-23	21-22	18-21
Nasogastric tube (F)	5-8	5-8	8-10	10	10-12	12-14	14-18	18
Urinary catheter (F)	5-8	5-8	8-10	10	10-12	10-12	12	12
Defibrillation/ cardioversion external paddles	Infant paddles	Infant paddles until 1 yr or 10 kg	Adult paddles when ≥1 yr or ≥10 kg	Adult paddles	Adult paddles	Adult paddles	Adult paddles	Adult paddles
Chest tube (F)	10-12	10-12	16-20	20-24	20-24	24-32	28-32	32-40



Eye Opening		
CHILD		**INFANT**
Spontaneous	**4**	Spontaneous
To voice	**3**	To speech
To pain	**2**	To pain
None	**1**	None
Verbal Response		
Oriented	**5**	Coos/babbles
Confused	**4**	Irritable cry
Inappropriate	**3**	Cries (pain)
Incomprehensible	**2**	Moans (pain)
None	**1**	None
Motor Response		
Obeys commands	**6**	Spontaneous movement
Purposeful (pain)	**5**	Withdraws (touch)
Withdraws (pain)	**4**	Withdraws (pain)
Flexion (pain)	**3**	Abnormal flexion
Extension (pain)	**2**	Abnormal extension
None	**1**	None

MAYO CLINIC

Normal Pediatric Vital Signs

AGE GROUP	HEART RATE	RESPIRATORY RATE	SYSTOLIC B/P RANGE
Infants 1 year or less	100-180	30-60	70-80
Toddlers 1-2 years	80-150	25-40	75-84
Pre-schooler 2-5 years	70-120	20-35	80-110
School aged children ≥ 6 years	60-100	20-30	90-120
For All Age Groups: Capillary refill should be ≤ to 2 seconds