

Pediatric "Normals" Chart

Pediatric Glasgow Coma Scale

APGAR Scoring Chart

Primary Survey

Pediatric Cardiac Arrest P1

Neonatal Resuscitation P2

Pediatric Respiratory Distress P3

Pediatric Bradycardia P4

Pediatric Tachycardia Adequate Perfusion P5a

Pediatric Tachycardia Poor Perfusion P5b

Pediatric Shock P6

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Pediatric Altered Level of Consciousness P9

Pediatric Toxic Exposures P10

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Apparent Life Threatening Event (ALTE) P13

PEDIATRIC “NORMALS” CHART

	Kg/lb	Minimum Systolic BP	Normal Heart Rates	Normal Resp. Rates	ET Tube Size	Fluid Challenge (cc)
Premature	<2.5/5.5	40	120-170	40-60	2.5-3.0	<50
Term	3.5/7.7	50	100-170	40-60	3.0-3.5	70
3 months	6/13.2	50	100-170	30-50	3.5	120
6 months	8/17.6	60	100-170	30-50	4.0	160
1 year	10/22	65	100-170	30-40	4.0	200
2 years	13/28.6	65	100-160	20-30	4.5	260
4 years	15/33	70	80-130	20	5.0	660
6 years	20/44	75	70-115	16	5.5	880
8 years	25/55	80	70-110	16	6.0	1100
10 years	30/66	85	60-105	16	6.5	1320
12 years	40/88	90	60-100	16	7.0	1760

PEDIATRIC GLASGOW COMA SCALE

(for use in children 2 years of age and under)

Eye opening

- (4) spontaneous
- (3) to speech
- (2) to pain
- (1) none

Verbal Response

- (5) coos, babbles
- (4) irritable cry
- (3) cries to pain
- (2) moans to pain
- (1) none

Motor Response

- (6) normal spontaneous movement
- (5) withdraws to touch
- (4) withdraws to pain
- (3) abnormal flexion
- (2) abnormal extension
- (1) none

APGAR SCORING CHART

	0	1	2
Appearance	Blue-pale	Body pink, limbs blue	Pink all over
Pulse	None	< 100	> 100
Grimace	No response	Grimace	Cough, cry, sneeze
Activity	Flaccid	Some flexion	Active movement
Respiratory effort	Absent	Slow, irregular	Strongly drying

Check APGAR score at 5 minutes and every 5 minutes thereafter.

PRIMARY SURVEY

<p>1. Evaluate airway and protective airway reflexes</p>	<p>Signs of airway obstruction and respiratory distress include:</p> <table border="0"> <tr> <td>Cyanosis</td> <td>intercostal retractions</td> </tr> <tr> <td>stridor</td> <td>absent breath sounds</td> </tr> <tr> <td>drooling</td> <td>bradycardia</td> </tr> <tr> <td>nasal flaring</td> <td>apnea or bradypnea</td> </tr> <tr> <td>choking</td> <td>tachypnea</td> </tr> <tr> <td>grunting</td> <td>irritability, lethargy</td> </tr> </table>	Cyanosis	intercostal retractions	stridor	absent breath sounds	drooling	bradycardia	nasal flaring	apnea or bradypnea	choking	tachypnea	grunting	irritability, lethargy
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grunting	irritability, lethargy												
<p>2. Basic airway/spinal immobilization prn</p>	<p>Open airway using jaw thrust, chin lift (and/or head tilt if no suspected spinal trauma) and suction. Consider placement of OPA if unconscious. If cervical spine trauma suspected, immobilize neck with appropriate device. Infants and children may require under-shoulder support to achieve neutral cervical spine position.</p>												
<p>3. Oxygen</p>	<p>Use nasopharyngeal or oropharyngeal airway, mask, or oxygen by blow-by, as tolerated, with child in position of comfort.</p>												
<p>4. Assist ventilation if needed</p>	<p>Use chest rise as indicator of adequate ventilation. If chest rise inadequate, consider:</p> <ul style="list-style-type: none"> • repositioning the airway • foreign body in airway • inadequate bag volume or activated pop-off valve <p>Rescue breathing included two initial, slow breaths then 20/min for infant or child</p>												
<p>5. Evaluate circulation</p>	<p>Assess perfusion using:</p> <table border="0"> <tr> <td>heart rate</td> <td>mental status</td> </tr> <tr> <td>skin signs</td> <td>quality of pulse</td> </tr> <tr> <td>capillary refill</td> <td>blood pressure</td> </tr> </table> <p>Compression rate 120/min for newborn, 100/min for infants and children with 5:1 compression: ventilation ratio. Depths are 1/2 -1 inch for infant and 1-1 1/2 inches for children</p>	heart rate	mental status	skin signs	quality of pulse	capillary refill	blood pressure						
heart rate	mental status												
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PEDIATRIC CARDIAC ARREST P1 (revised 1/1/07)

<p>Field treatment</p> <ol style="list-style-type: none"> Primary survey Determine pulselessness & begin CPR Attach monitor/defibrillator 	<p>Considerations</p> <p><i>Use length based color coded resuscitation tape whenever possible</i></p>	
<p>Asystole/Pulseless Electrical Activity</p>	<p>Ventricular Fibrillation or Pulseless Ventricular Tachycardia</p>	
<ol style="list-style-type: none"> Evaluate rhythm. If rhythm is unclear and possibly ventricular fibrillation, refer to pediatric ventricular fibrillation protocol. Advanced airway management Vascular access: IV or IO NS at TKO Consider Fluid bolus, 20 ml/kg Epinephrine: IV/IO: 0.01 mg/kg (1:10,000) 0.1cc/kg MR q 3-5 min Consider and treat possible contributing factors: Hypovolemia, Hypoxia, Hydrogen ion (acidosis), Hypo/Hyperkalemia, hypoglycemia, Hypothermia, Toxins, Tamponade, Tension pneumothorax, Thrombosis (coronary or pulmonary), Trauma Contact 	<ol style="list-style-type: none"> Evaluate rhythm. Defibrillate 2 J/kg monophasic (or biphasic equivalent). Resume CPR immediately. Advanced airway management Vascular access: IV or IO NS at TKO Perform rhythm/pulse check; for persistent V-Fib defibrillate 4J/kg monophasic (or biphasic equivalent). Resume CPR immediately. Epinephrine IV/IO: 0.01 mg/kg (1:10,000) 0.1cc/kg – repeat every 3-5 minutes Consider Amiodarone 5 mg/kg IV/ IO (followed by, or diluted in, 20 to 30 ml NS); May repeat x 2. Maximum single dose = 300mg. Contact hospital 	

NEONATAL RESUSCITATION P2

<p>Field Treatment</p> <ol style="list-style-type: none"> 1. Dry and keep warm with thermal blanket or dry towel 2. Position airway 3. Suction mouth and nasopharynx 4. Stimulate by drying vigorously including head and back 5. Evaluate respirations 6. Assist as follows: O₂ blow-by or 100% O₂/mask if mild distress; 40-60 breaths/min with assisted ventilation if severe resp. depression 7. Check heart rate at cord site 	<p>Considerations</p> <ul style="list-style-type: none"> • Length based tape for all drug doses • <u>Epinephrine administration is indicated</u> for asystole or spontaneous heart rate less than 80 beats per minute despite adequate ventilation with 100% oxygen & chest compressions. • If medications require endotracheal administration, flush with 3 cc NS, and give several positive pressure ventilations. • If maternal narcotics suspected, give narcan 0.1 mg/kg IV/IM/IO/SQ/ET. Repeat every 2-3 min. • Clamp & cut cord as appropriate <p>Epinephrine concentrations: Epinephrine 1:1000 =1 mg/cc Epinephrine 1:10,000=1 mg/10cc</p>
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HR < 60/min	HR 60-80/min	HR 80-100/min and rising	HR >100/min
<ol style="list-style-type: none"> 8. Continue assisted ventilation 9. Begin chest compressions 120/min, using both thumbs to do compressions 10. If no improvement in 30 sec., perform endotracheal intubation 11. If no improvement in 1 min: Epinephrine 1:10000 0.01-0.03mg/kg IV/IO/ or ET. Repeat every 3-5 min. 12. If condition deteriorates to cardiac arrest, follow cardiac arrest protocol 13. Reassess heart rate and respirations en route 14. Contact hospital 	<ol style="list-style-type: none"> 8. Continue assisted ventilation 9. If no improvement after 30 sec. of ventilation with 100% oxygen, begin chest compressions, using both thumbs 10. If heart rate remains < 80: Epinephrine 1:10000 0.01 mg/kg IV/IO/ET. Repeat every 3-5 min. 11. Reassess HR and resp rate en route 12. Contact hospital 	<ol style="list-style-type: none"> 8. Continue assisted ventilation 9. Reassess HR after 15-30 sec 10. Contact hospital 	<ol style="list-style-type: none"> 8. Check skin color. Give O₂ by blow-by or mask if peripheral cyanosis 9. Reassess HR and resp. en route 10. Contact hospital

PEDIATRIC RESPIRATORY DISTRESS P3

<p>Field Treatment</p> <ol style="list-style-type: none"> 1. Primary Survey 2. Position of comfort to maintain airway 3. Oxygen 100% by blowby or NRM; allow parent to administer if appropriate 	<p>Considerations</p> <ul style="list-style-type: none"> • DO NOT attempt to visualize the throat or insert anything into mouth if epiglottitis suspected • KEEP PATIENT CALM. Separation of child from parent may exacerbate distress; incorporate parent into care. AVOID agitating patient; minimize noxious stimuli • IV access should NOT be attempted unless patient progresses to respiratory failure and/or shock or severe hypo-perfused state • If basic airway cannot be established, consider foreign body obstruction and proceed with appropriate airway clearance maneuvers based on patient age 	
<p>Stridor</p>	<p>Lower Airway Obstruction (wheezing)</p>	<p>Foreign Body Obstruction</p>
<ol style="list-style-type: none"> 4. Transport in position of comfort: allow parent to hold child during transport, if feasible 5. Maintain airway & oxygen 6. If moderate to severe respiratory distress, give Epinephrine 1:1000 5mg in 5cc via nebuliser 7. If respiratory failure/apnea/complete obstruction develops: <ul style="list-style-type: none"> --attempt positive pressure ventilation via bag-valve-mask --if unable to ventilate, attempt intubation 	<ol style="list-style-type: none"> 4. Albuterol 2.5 mg in 3cc NS via hand-held nebulizer, mask or bag-valve-mask 5. Repeat Albuterol x 1 6. If response inadequate: Epinephrine 1:1000 0.01 mg/kg SQ Maximum single dose: 0.3mg 7. If respiratory failure/apnea/complete obstruction develops: <ul style="list-style-type: none"> --attempt positive pressure ventilation via bag-valve-mask --if unable to ventilate, attempt intubation 	<ol style="list-style-type: none"> 4. <u>Attempt to clear the airway:</u> <ol style="list-style-type: none"> A. Infants < 1 year old: five back blows, 5 chest thrusts >/+ 1 year old: Heimlich maneuver B. Visualize larynx & remove foreign body with magill forceps. C. Assist ventilation: bag-valve-mask; Attempt intubation if unsuccessful.

PEDIATRIC BRADYCARDIA P4

Field Treatment	Considerations
<ol style="list-style-type: none"> 1. Primary survey 2. Assure adequate oxygenation and ventilation; most bradycardia in children is due to hypoxia 3. Shock position for diminished perfusion 	<p>If unable to establish IV/IO access, administer drugs via ETT as indicated</p> <p>Special considerations may apply with hypothermia</p> <p>Use pulse oximeter if available</p>
Bradycardia, no cardiorespiratory compromise	Severe cardiorespiratory compromise: -infant, child with poor perfusion, hypotension, resp. difficulty
<ol style="list-style-type: none"> 4. Cardiac monitor; observe. Support ABCs. 5. Consider vascular access 6. Contact Hospital 	<ol style="list-style-type: none"> 4. Cardiac monitor 5. Reposition airway: assure adequate oxygenation & ventilation 6. Perform chest compressions if heart rate <60/min associated with poor systemic perfusion 7. Vascular access: 3 attempts, or 90 sec. If no success, attempt IO 8. Epinephrine: IV/IO: 0.01 mg/kg (1:10000) 0.1cc/kg ET: 0.1 mg/kg (1:1000) 0.1cc/kg Repeat every 3-5 min at the same dose 9. Atropine 0.02 mg/kg Minimum dose: 0.1 mg Maximum single dose: 0.5mg for child, 1 mg for adolescent Repeat x one 10. Contact hospital

PEDIATRIC TACHYCARDIA P5a
RAPID HEART RATE WITH ADEQUATE PERFUSION

<p>Field Treatment *This algorithm is used for children with rapid heart rate, but ADEQUATE perfusion</p> <ol style="list-style-type: none"> Primary survey, refer to normal vital sign chart Cardiac monitor Pulse oximeter 	<p>Considerations</p> <ul style="list-style-type: none"> Treat only symptomatic infants & children, or children with rhythm which may deteriorate; otherwise, rapid transport If < 2 years old, physiological rates may be in 200/min range; slower (180-220/min) if > 2 years old; consider fever, injury, pain, hypoxia, abnormal electrolytes 	
QRS (</= 0.08sec)		QRS (>0.08sec)
Probable sinus tachycardia Infants: rate <220bpm Children: rate < 180bpm	Probable supraventricular tachycardia Infants: rate >220bpm Children: rate>180bpm	
<ol style="list-style-type: none"> Contact hospital Consider fluid bolus 20cc/kg IV/IO 	<ol style="list-style-type: none"> Contact hospital Consider vascular access Have Adenosine 0.1mg/kg available: If administered , push as rapidly as possible, followed by 5 cc rapid flush --double & repeat x 1 --maximum dose = 12mg 	<ol style="list-style-type: none"> Contact hospital Vascular access Lidocaine 1 mg/kg to maximum of 3 mg/kg If Lidocaine unsuccessful: Consider adenosine 0.1mg/kg, Followed by 5 cc rapid flush --double & repeat x 1 --maximum dose = 12 mg.

PEDIATRIC TACHYCARDIA P5b
RAPID HEART RATE WITH POOR PERFUSION

<p>Field Treatment *This algorithm is used for children with rapid heart rate and POOR perfusion</p> <ol style="list-style-type: none"> Primary survey, refer to normal vital sign chart Assess & maintain airway Cardiac monitor Pulse oximeter 		<p>Considerations</p> <ul style="list-style-type: none"> RAPID TRANSPORT Treat only symptomatic infants & children, or children with rhythm which may deteriorate Signs of systemic hypoperfusion include change in LOC, Mottled, cool skin; cap refill > 3 sec; pallor If < 2 years old, physiological rates may be in 200/min range; slower (180-220/min) if > 2 years old; consider fever, injury, pain, hypoxia, abnormal electrolytes For synchronized cardioversion: <ul style="list-style-type: none"> *peds paddles if <10 kg. If not available: *adult paddles in A-P position Biphasic equivalent dosing when applicable
QRS (<= 0.08sec)		QRS (>0.08sec)
<p>Probable sinus tachycardia Infants: rate <220bpm Children: rate <180bpm</p>	<p>Probable supraventricular tachycardia Infants: rate >220bpm Children: rate >180bpm</p>	
<ol style="list-style-type: none"> Vascular access Fluid bolus 20cc/kg Contact hospital 	<ol style="list-style-type: none"> Contact hospital If vascular access present or rapidly available: Adenosine 0.1mg/kg: Push as rapidly as possible, followed by 5 cc rapid flush --double & repeat x 1 --maximum dose = 12mg If no vascular access available OR adenosine does not convert pt: Synchronized cardioversion for SVT: 0.5-1.0 J/kg or biphasic equivalent Repeat as necessary 	<ol style="list-style-type: none"> Contact hospital DO NOT DELAY CARDIOVERSION IF IV NOT AVAILABLE If vascular access present or rapidly available: Lidocaine 1 mg/kg (no cardioversion delays) Synchronized Cardioversion: 0.5 to 1.0 J/kg or biphasic equivalent Repeat as necessary

PEDIATRIC SHOCK P6

<p>Field Treatment</p> <ol style="list-style-type: none"> 1. Primary survey 2. Advanced airway management 3. Shock position if tolerated, keep patient warm 4. Cardiac monitor 5. Vascular access/IO access 6. Oximeter 	<p>Considerations</p> <p>Shock is a clinical condition in which inadequate organ and tissue perfusion exists, manifested in extreme cases by acidosis and/or hypoxemia. Shock may be compensated—blood pressure is maintained through physiologic responses; or uncompensated—physiologic responses are exhausted & a subsequent state of low cardiac output occurs. Shock in children may be the result of respiratory failure, hypovolemia, distributive causes (sepsis, anaphylaxis) or cardiogenic related problems (rhythm disturbances, myocarditis, blunt chest trauma, etc.). Signs & symptoms in late shock may include cool, clammy, ashen or mottled skin; diminished level of consciousness or response to parents or pain; flaccid muscle tone; poorly palpable pulses; delayed capillary filling time; tachypnea & respiratory distress, progressing to diminished respirations and respiratory failure; hypotension; and oliguria/anuria.</p>	
<p style="text-align: center;">Hypovolemia Dehydration, burns, blood loss, extreme GI losses</p>	<p style="text-align: center;">Distributive Sepsis, anaphylaxis</p>	<p style="text-align: center;">Cardiogenic Rhythm disturbances; myocarditis</p>
<ol style="list-style-type: none"> 7. Fluid bolus 20 ml/kg IV/IO 8. Contact hospital, initiate transport 9. Repeat fluid bolus 20ml/kg IV/IO 	<ol style="list-style-type: none"> 7. Fluid bolus 20 mg/kg IV/IO 8. Contact hospital, initiate transport 9. If suspected allergic reaction, follow protocol for anaphylaxis 10. Repeat fluid bolus 20ml/kg IV/IO 	<ol style="list-style-type: none"> 7. Treat according to appropriate protocol if rhythm disturbance present 8. Fluid bolus, 10 ml/kg IV/IO 8. Contact hospital, initiate transport

PEDIATRIC ALLERGIC REACTION P7

INFORMATION NEEDED

- Exposure to common allergens (stings, drugs, nuts, seafood, meds), prior allergic reactions
- Respiratory: wheezing; stridor; grunting; nasal flaring; respiratory distress; edema of lips, tongue or face
- Other symptoms: nausea, weakness, anxiety, abdominal cramping

OBJECTIVE FINDINGS

<u>Mild</u>	<u>Moderate</u>	<u>Severe (Anaphylaxis)</u>
<ul style="list-style-type: none"> • Hives, rash • No respiratory distress 	<ul style="list-style-type: none"> • Hives, rash * Abdominal cramping • Normotensive * Mild bronchospasm <ul style="list-style-type: none"> • Swelling of mucous membranes 	<ul style="list-style-type: none"> • Altered mental status * Angioedema • Hypoperfusion * Abdominal cramping • Respiratory distress – grunting, flaring, stridor, bronchospasm

BLS TREATMENT

- Remove etiologic agent if possible or relocate patient
- Ensure patent airway, Administer O2 by blow-by or BVM
- For severe allergic reaction/anaphylaxis, **Auto-Injector Epi-Pen*** (> 30 kg) or **Epi-Pen Jr.*** (<30 kg), MR in 5 minutes if necessary (may use appropriate dosage pre-filled syringe) * *Only EMTs trained in Auto-Injector Epi- Pen administration may perform this procedure*

ALS TREATMENT

<u>Mild</u>	<u>Moderate</u>	<u>Severe (Anaphylaxis)</u>
<ul style="list-style-type: none"> • Pulse Oximetry • Consider Benadryl 1 mg/kg IM (max. 50 mg) 	<ul style="list-style-type: none"> • Pulse Oximetry • Cardiac Monitor • IV, O2 • Benadryl • Epinephrine SQ (1:1000) 0.01 mg/kg, (0.01 ml/kg) max 0.3 mg (0.3ml) • Resp. Symptoms: Albuterol 2.5 mg/3ml NS via HHN, MR x 1 if no improvement 	<ul style="list-style-type: none"> • Pulse Oximetry • Epinephrine SQ (1:1000) 0.01 mg/kg (0.01ml/kg); Max.0.3 mg (0.3 ml) • IV, IO If Needed • Fluid challenge 20ml/kg if hypotensive. MR • O2, 100% NRB If Needed • Epinephrine (1:10,000) 0.01 mg/kg (0.1ml/kg)IV/IO, Max 0.3 mg (3 ml) • Albuterol 2.5 mg/3ml NS if wheezes or resp. distress • Benadryl 1 mg/kg IV/IO, max of 50 mg

Documentation for adherence to protocol:

- Oxygen given * Estimated Pediatric Weight (kg)
- Level of distress (mild, moderate, severe) and associated respiratory distress findings * Correct dosages of medications if administered

PRECAUTIONS AND COMMENTS:

- Epinephrine may cause anxiety, tremors, palpitations, tachycardia, and headache.
- Verify the proper dilution and dose of Epinephrine prior to administration
- Use Pediatric Broslow Tape for estimated weight and medication dosing when possible.
- Edema of the soft structures of the upper airway may be lethal. Be prepared for early intubation before swelling precludes this intervention.
- Only EMTs trained and certified in Auto-Injector Epi-Pen administration may perform Epi-Pen emergency treatment
- Preloaded Epinephrine syringe (0.15mg or 0.3mg) may be substituted for the Auto-Injector Epi-Pen

PEDIATRIC SEIZURE P 8

INFORMATION NEEDED

- Onset, duration, and description of seizures
- History and duration of infection or fever (record patient’s temperature)
- Medical history (medications; seizure history; medical problems including diabetes, recent illness, allergies, possible toxic ingestion; trauma)

OBJECTIVE FINDINGS

- Level of consciousness, neurological status * Blood glucose level
- Signs of trauma * Medic Alert tag

<p>BLS Treatment</p> <ul style="list-style-type: none"> • Primary Survey • Ensure ABC’s – oxygenation/ventilation/suction as needed • Oxygen via blow-by, mask, or high flow as needed • Protect from injury; do not restrain • Rapid Cooling measures if febrile 	<p>ALS Treatment</p> <ul style="list-style-type: none"> • Pulse oximetry • Cardiac monitor • IV if needed • Evaluate blood glucose. If <60 (40 if neonate) or immeasurable: Neonate – 3 Mos: Dextrose 10% 3cc/kg IV/IO 3 months - 2 yrs: Dextrose 25% 2cc/kg IV/IO If no vascular access, Glucagon 0.1mg/kg (0.1 cc/kg)SQ/IM, max 1 mg (1 cc) SQ/IM • ALS Transport • If seizure continues, Diazepam(Valium) 0.5 mg/kg (0.1cc/kg) rectal, max 10 mg • If seizure continues for 10 min. after rectal Valium, administer Diazepam (Valium) 0.1-0.2 mg/kg (0.02 cc/kg)IV <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • Midazolam (Versed) 0.05mg/kg slow IVP or IM (max. dose of 5 mg) • Advanced airway management as indicated
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Documentation for adherence to protocol:

- Blood glucose level check performed
- Number, description, and duration of seizures
- Estimated Pediatric Weight (Kg)
- Correct dosages of medications if administered

PRECAUTIONS AND COMMENTS

- Always consider treatable etiologies (hypoglycemia, hypoxia, narcotic overdose, fever) prior to administering antiseizure medications
- Treatment should be based on the severity and length of the seizure activity
- Focal seizures without mental status changes may not require prehospital pharmacological intervention.
- Midazolam (Versed) IM is the preferred drug if no vascular access
- Respiratory depression and/or arrest are possible if Midazolam (Versed) given rapid IVP
 - Utilize Pediatric length based tape for estimated weight and medication dosing when possible

PEDIATRIC ALTERED LEVEL OF CONSCIOUSNESS P9

Field Treatment	Considerations
<ol style="list-style-type: none">1. Primary survey2. Administer oral glucose if conscious, known diabetic with intact gag reflex	<ul style="list-style-type: none">• Consider etiology and appropriate protocols: shock, toxic exposure, head trauma, seizure, hypothermia, hypoglycemia.• A maximum of 25% dextrose should be infused peripherally• Pulse oximetry<ul style="list-style-type: none">• Avoid narcan with neonates unless strong suspicion of maternal exposure (refer to neonatal resuscitation protocol as indicated) <p>Dextrose 25%=mix 1 cc D 50% with 1 cc NS Dextrose 10%=mix 1 cc D 50% with 4 cc NS</p>
<ol style="list-style-type: none">3. Advanced airway as needed4. Cardiac monitor5. Vascular access and evaluation of blood glucose6. If glucose <60 (40 if neonate) or unmeasurable and<ul style="list-style-type: none">• > 2 yrs, give dextrose 50% 1 ml/kg IV/IO• < 2 yrs, give dextrose 25% 2 ml/kg IV/IO• neonate, give dextrose 10% 3ml/kg IV/IO• if no vascular access, glucagon 1 mg IM7. If mental status and respiratory effort are depressed, give narcan 0.1 mg/kg IM/IV/IO/ET. May repeat q 5 min if no improvement in LOC and strong suspicion of opiate exposure.8. Contact hospital	

PEDIATRIC TOXIC EXPOSURES P10

Field Treatment	Considerations
<ol style="list-style-type: none"> 1. Assess scene 2. Primary survey 3. Bring identifying substance containers to hospital when possible/appropriate 4. Airway management as appropriate 5. Cardiac monitor 6. Venous access if indicated 7. Transport as soon as possible 8. Contact hospital 	<ul style="list-style-type: none"> • Early contact with Poison Control Center • Pulse oximetry • Do NOT give charcoal or any meds by mouth if ANY respiratory compromise or decreasing level of consciousness exists or is a possibility (e.g. tricyclic OD); contact hospital for direction • If suspected opiate overdose in non-neonate, give Narcan 0.1 mg/kg IV/IO/IM prior to advanced airway management
<p>Hydrocarbons or Petroleum Distillates</p> <ul style="list-style-type: none"> • Do not induce vomiting • Transport immediately 	
<p>Caustics/Corrosives</p> <ul style="list-style-type: none"> • Do not induce vomiting • Transport immediately 	
<p>Insecticides</p> <ul style="list-style-type: none"> • If skin exposure, decontaminate patient; avoid contamination of prehospital personnel • Transport immediately • Contact hospital 	
<p>Cyclic Antidepressants</p> <ul style="list-style-type: none"> • Anticipate rapid deterioration of condition • If life-threatening dysrhythmias present: hyperventilate, give Sodium bicarbonate 1 mEq/kg IVP • If seizures occur, valium 0.1 mg/kg IV/IO may repeat 2 x or 0.5 mg/kg rectally, max of 10 mg 	
<p>Phenothiazine Reactions</p> <ul style="list-style-type: none"> • Reassurance; transport immediately • Contact hospital: for severe adverse reactions: Benadryl 1 mg/kg IM PHYSICIAN ORDER ONLY 	
<p>Other Non-Caustic Drugs (awake and alert and managing own airway)</p> <ul style="list-style-type: none"> • Activated charcoal 1 Gm/kg PO, max of 50 Gm 	

MAJOR PEDIATRIC BURNS P11

<p>Field Treatment</p> <ol style="list-style-type: none"> 1. Primary survey 2. Stop burning process, remove jewelry and clothing 3. If dry chemical, brush off, then flush with copious water. If liquid, flush with copious water 4. If eye involvement, flush continuously with NS during transport 5. Apply clean, <u>dry</u> wound dressing and/or sheet to involved area; protect blisters from rupture 6. Shock position if appropriate 7. Advanced airway as needed; 100% oxygen via blow-by or NRM If intubation required, consider an ETT one to two sizes smaller due to potential for airway swelling, injury 	<p>Considerations</p> <ul style="list-style-type: none"> • Major Burns: BSA >15% or burns to face, eyes, ears, airway. Smoke inhalation or suspected smoke inhalation should be considered as a major burn. • High flow oxygen if inhalation injury suspected: examine for hoarseness, facial burns, soot in the nose or mouth; respiratory distress, or burns which occurred in a closed space • Children have a higher ratio of body surface area to body mass than adults, and lose significantly more body heat. Do not apply cool dressings or allow environmental exposure due to risk of hypothermia.
Thermal Injury/Chemical Burns	Electrical Burns
<ol style="list-style-type: none"> 9. Vascular access if appropriate 10. Contact hospital 11. Pediatric pain management protocol as indicated 	<ol style="list-style-type: none"> 9.. Cardiac monitor 10. Vascular access if appropriate 11. Treat dysrhythmia by appropriate protocol 12. Contact hospital

PEDIATRIC TRAUMA P12

Field Treatment	Considerations
<ol style="list-style-type: none">1. Primary survey2. ABCs: insure adequate airway with in-line cervical immobilization3. If compromised systemic perfusion: IV/IO as needed: isotonic crystalloid bolus of 20cc/kg4. Consider Load on MAST; if suspected pelvic or long bone fracture(s)5. Contact hospital	<ol style="list-style-type: none">1. More pediatric trauma preventable deaths are related to improper airway stabilization than c-spine, spinal cord, or multiple injuries.2. The child with multi-system trauma may have both respiratory failure and shock.3. In severe trauma, ABCs and RAPID pediatric trauma center transport.

Approach to the Child With Multiple Injuries

1. Open airway:
 Maintain manual in-line cervical spine stabilization
 Modified jaw thrust
2. Clear oropharynx.
3. Administer 100% oxygen using nonbreathing mask if child is awake and breathes spontaneously.
4. If altered mental status OR respiratory distress: hyperventilate with 100% oxygen.
5. If unresponsive OR respiratory failure: attempt intubation.
6. Maintain airway patency: suction, oropharyngeal airway as necessary.
7. Initiate CPR and control external bleeding.
8. Contact hospital/treat suspected tension/open pneumothorax if severe cardiorespiratory compromise exists.
9. Vascular access: 2 attempts or 90 seconds. IO if required.
10. If signs of poor systemic perfusion: 20cc/kg isotonic crystalloid solution. Infuse 2nd bolus if shock or severe hemorrhage.
11. Immobilize neck with semi-rigid collar or head immobilizer and tape.
12. Transport to Pediatric Trauma Center.

*Pediatric Advanced Life Support, American Heart Association, 1997-1999; 8-7.

APPARENT LIFE THREATENING EVENT (ALTE) P13

DEFINITION

An Apparent Life-Threatening Event (ALTE) is defined as an episode that is frightening to the observer and is characterized by some combination of:

- Apnea (central or obstructive)
- Color change (cyanosis, pallor, erythema)
- Marked change in muscle tone
- Unexplained choking or gagging

INFORMATION NEEDED

- Age (Although it usually occurs in infants < 12 months, any child under 24 months who experiences any of the above may be considered an ALTE)
- Medical history (i.e. recent illness or trauma, swallowing dysfunction, seizures, CNS abnormalities, respiratory disease, cardiac disease)
- Suspicion or history of child abuse
- Severity, nature and duration of the episode

CONDITIONS RESPONSIBLE FOR ALTE

- | | | | |
|--------------|--------------------------------|----------|--------------------------|
| *Child abuse | *Cardiac arrhythmias/anomalies | *Seizure | *Toxic Ingestions |
| *Meningitis | *SIDS | *Sepsis | *Intracranial hemorrhage |

BLS Treatment	ALS Treatment
<ul style="list-style-type: none"> • ABCs • Reassure patient and leave in caretaker's arms in position of comfort • Blow-by oxygen as tolerated 	<ul style="list-style-type: none"> • Pulse oximetry • Cardiac monitor • IV if needed • Evaluate blood glucose. If <60 (40 if neonate) or unmeasurable: <ul style="list-style-type: none"> - neonate - 3 mos: Dextrose 10% 3ml/kg IV/IO - 3 mos - 2 yrs: Dextrose 25% 2ml/kg IV/IO - if no vascular access, Glucagon 0.1 mg/kg (0.1 ml) IM • ALS Transport

Documentation for Adherence to Protocol:

- Comprehensive physical exam that includes the general appearance of the child, skin color, extent of interaction with environment, and evidence of trauma
- Treatment of any identifiable causes, including details of resuscitation required
- **Physician consult** if the parent/guardian is refusing medical care and/or transport

PRECAUTIONS AND COMMENTS

- Assume the parental history (above) is real, and treat and transfer child no matter how well the child might appear
- Most ALTE patients (formerly known as "near-miss SIDS") have a normal physical exam when assessed by responding field personnel