

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Transport
AIRWAY EQUIPMENT				
Airways:				
• Oropharyngeal (Sizes 0 – 6)	2 each	1 each	1 each	2 each
• Nasopharyngeal, soft rubber (sizes 14Fr., 18Fr., 22Fr., 26Fr., 28Fr., 30Fr., 32Fr., 34Fr., 36Fr.)	2 each	1 each	1 each	2 each
Atomizer for intranasal medication administration (MAD device)	0	0	1	3
Bite Stick	2	0	1	2
King Airway				
• Size 3	0	0	1	2
• Size 4	0	1	1	2
• Size 5	0	0	1	2
Continuous Positive Airway Pressure Device	0	0	(optional)	1
Intubation Equipment				
• Laryngoscope handle (battery powered)	0	1	1	1
• Additional batteries	0	0	2	2
• Blades (curved 1 - 4)	0	1 x #4	1 each	1 each
• Blades (straight 0 – 4)	0	1 x #4	1 each	1 each
• Bulbs (extra or disposable)	0	0	1	1
• Magill forceps (adult and pediatric)	0	0	1	1 each
• Endotracheal tubes				
sizes 2.5-6.0 mm: cuffed and/or uncuffed	0	Size 6 = 1	1 each	2 each
sizes 6.0-8.0 mm: cuffed	0	Size 7.5 = 1	1 each	2 each
• Disposable stylets (adult and pediatric)	0	1	1	2 each
• End-Tidal CO2 Detectors				
Adult – Colormetric	0	1	1	2
Pediatric – Colormetric	0	0	1	2
OR				
Capnograph or digital (optional)	0	0	1	1
• Esophageal Detector Device (optional if Capnometer is utilized)	0	1	1	1
• Endotracheal Tube Introducer (ETTI)	0	1	1	2
• ET Tube Holder (adult and pediatric)	0	0	1	2 each
• Meconium Aspirator	0	0	1	1
Videolaryngoscopy (adult and pediatric)	0	0	optional	optional
Nebulizer				
• Hand-held OR Patient activated	0	0	1	2
• In-line nebulizer equipment with T-piece	0	0	1	2

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Transport
Oxygen Equipment and Supplies				
• Fixed tank in vehicle with regulator; M-tank or H-tank	1	0	0	1
• Regulator	1	0	1	1
• Portable tank (minimum D tank)	2	0	1	2
• Adult face masks: transparent, non-rebreathing; Child/infant: simple or non-rebreathing	4 each 2, 2	0	1 each	4 each 2,2
• Nasal cannulas (adult, child, infant)	4 each 2, 2	0	1 each	4 each 2,2
• Portable Pulse Oximetry	Optional	optional	Optional	1
Pleural Decompression kit: ≥14g needle, ≥2 ¼ inches long; Heimlich valve; occlusive dressing;10 ml syringe	0	1	1	1
Resuscitation bag-valve-mask (BVM) Adult, pediatric, infant	1 each	1 adult	1 each	2,1,1
Suction Equipment and Supplies				
• Suction apparatus – Portable / battery powered	1	1 portable self contained unit	1 portable self contained unit	1
• Suction apparatus – Wall Mount	1	0	0	1
• Pharyngeal tonsil tip (rigid)	2	equivalent	equivalent	2
• Suction catheters: 6 Fr, 8 Fr, 10 Fr, 14 Fr, 16 Fr, 18 Fr	2 each	0	0	2 each
• Suction canister (spares)	2	0	0	2
• Suction tubing	2	0	0	2
DRESSING MATERIALS				
Bandages				
• Bulk non-sterile	1 box / pkg	0	0	1 box
• 4 x 4" sterile gauze pads	12	6	12	12
• 10 x 30" universal dressings	2	0	2	2
• ABD Pads	6	0	0	6
• 40" triangular bandage with safety pins	4	2	2	4
• Elastic bandage 3" (Ace)	2	2	2	2
• Occlusive dressing	4	2	2	4
* Hemostatic dressings (must be CA EMSA approved)	optional	optional	optional	optional
• Roller bandages (2", 3", 4", or 6")	6	2	3	6
Band-Aids (Assorted)	1 box	0	1 box	1 box
Burn Sheets (sterile) or commercial burn kit	2	2	2	2
Cold Packs / Hot Packs	4ea / 4ea	2 each	2 each	4ea / 4ea
Tape (1" and 2")	2 each	1" = 2 rolls	1 each	2 each
Trauma shears	1	1	1	1

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Transport
EQUIPMENT AND SUPPLIES				
Alcohol swabs	12	6	12	12
Bedpan OR Fracture Pan/Covered Urinal	1	0	0	1
Betadine swabs or solution	0	4	4	8
Blanket - disposable	2	2	1	2
Blood Pressure Cuffs (adult, large arm, thigh, pediatric, infant)	1 each	1 adult	1 x adult, thigh, pedi	1 each
Bulb Syringe	1	0	1	1
Drinking Water (one gallon)	1	0	0	1
Emesis basin/ disposable bag/ Covered waste container	2	0	1	2
EMS Field Manual Patient Care (8000) Series	1		1	1
Glucometer	0	1	1	1
Irrigation Equipment				
· Saline (sterile) 1000 ml	2	0	1	2
· Tubing for irrigation	2	0	1	2
Length based color-coded resuscitation tape (most current)	0	0	1	1
Lubricant, water soluble	4	0	4 packs	4 packs
Monitor/defibrillator equipment				
· Cardiac monitor – (portable) must have strip recorder, defibrillator/transcutaneous pacing ability for child / adult. May be biphasic or monophasic (biphasic preferred)	0	0	12-lead optional pacing	1
· ECG electrodes	0	0	0	1 box
· 12-lead ECG capability	0	0	0	1 set
· A.E.D.	1	1	1	0
OB Delivery				
· Separate and sterile kit includes: Towels, 4" x 4" dressing, umbilical tape or clamp, sterile scissors or other cutting utensil, bulb suction, sterile gloves, and blanket	1	0	1	1
· Thermal absorbent blanket and head cover, aluminum foil roll, or appropriate heat-reflective material (enough to cover newborn)	1	0	1	1
· Appropriate heat source for ambulance compartment	1	0	0	1
Pen Light	1	1	1	1
Sharps container	1	1	1	2
Sheet, pillow case, blanket, towel	4 each	0	0	4 each
Pillow	2	0	0	2 or equivalent
Stethoscope	1	1	1	1
Thermometer (with core temp capability)	Optional	0	0	1
Triage tags	20	6	20	20
Biohazard bags (large and small)	4 each	2 small	2 each	4 each
PPE kit (gloves, gown, booties, face shield, cap)	2 per person	0	1per person	2 per person
Disposable gloves S/M/L	Box	6 pair	Box	Box

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Transport
Face protection mask – N95 or P100	2 pp	0	1 pp	2 pp
Stair chair or equivalent	1	0	0	1
Scoop stretcher or breakaway flat	Optional	0	0	Optional
Road Flares or Equivalent (30 min)	6	0	0	6
Flashlight	1	0	0	1
Marin County Map	1	0	Optional	1
Vehicle Emergency Lights	Set	0	Optional	Set
MERA Radio	1	Optional	Optional	1
Company Radio	1	Optional	Optional	1
Spare Tire	1	0	Optional	1
Fire Extinguisher	1	0	Optional	1
IMMOBILIZATION and RESTRAINT DEVICES				
Cervical collars – adjustable Sizes to fit all patients over 1 yr old (adult/pedi)	4, 2	1	2, 1	4, 2
Head immobilization device	4	0	2	4
Spinal immobilization (radiolucent) backboard	2	0	1	2
· Strap system, adult	2	0	1	2
· K.E.D. or equivalent	1	0	0	1
Splints (vacuum/cardboard/equivalent)				
· Short, medium, long	2 each	1 moldable	1 each	2 each
Traction splint, adult / pediatric	1 each	0	0	1 each
Quick release synthetic soft restraints (or padded leather)	1	0	0	1
IV EQUIPMENT / SYRINGES / NEEDLES				
Arm board (Short)	0	0	1	2
Catheters – 1” long 14g, 16g, 18g, 20g, 22g, 24g	0	2 each	2 each	4 each
Intraosseous Equipment – adult and pedi				
· IO needles and/or mechanical device	0	0	optional	1
· Extra batteries if needed by model	0	0	0	1
Intravenous Solutions - 0.9% NL Saline				
· 100 cc bag	0	1000 cc total	1	2
· 1000 cc bag	0	0	2	6
Glucose Paste, 15 gm/ tube	2 tubes	2 tubes	2 tubes	2 tubes
Pressure Infusion Bags	0	0	0	1
Saline Lock	0	0	2	4
Syringes				
· 1 cc TB with removable needle	0	2	2	4
· 3 cc with 25 g x 5/8” needle	0	0	0	4
· 10 cc without needle	0	2	1	2
· filter needle	0	2	2	2
· 30 cc without needle	0	0	0	2

	BLS Transport	ALS Fireline/ Tactical	ALS First Responder	ALS Transport
Extension set (saline lock)	0	0	2	4
Constriction band	0	2	2	2
Three way stop cock	0	0	1	2
Tubing – with adjustable flow				
· macro drip (10gtt/cc – 15gtt/cc- adjustable)	0	2	2 each	4 each
· micro drip (60 micro gtts/cc)	0	0	1	2
MEDICATIONS AND SOLUTIONS				
Activated Charcoal, 25 gms	0	0	1 bottle	2 bottles
Adenosine, 6 mg in 2 ml NS	0	0	18 mg	36 mg
Albuterol Unit Dose	0	1 MDI w/Spacer	3	9
Amiodarone, 150 mg in 3 cc NS	0	3	3	6
ASA (chewable), 81 mg	0	1	1 bottle	1 bottle
Atropine, 1 mg in 10 ml	0	2	3	10
Calcium Chloride 10%, 1 gm in 10 ml	0	0	1	2
Dextrose 10%	0	0	1	2
Diphenhydramine, 50 mg/1ml	0	4	2	4
Dopamine (pre-mix), 400 mg/ 250 ml	0	0	1	1
Duo-Dote (Nerve Gas Auto-injector)	See County policy			
Epinephrine 1:1000, 1 mg/1 ml (multidose)	0	4	1	2
Epinephrine 1:10,000, 1 mg/10 ml	0	4	3	9
Glucagon, 1 mg	0	1 mg	1 mg	2 mg
Ipratropium (Atrovent), Unit Dose	0	0	1	4
Lidocaine 2% (20mg/ml)	0	0	0	2
Midazolam, 2 mg/2 ml	0	10	optional	4
Midazolam, 5 mg/1 ml	0	0	optional	optional
Morphine Sulfate, 10 mg/1 ml	0	6	optional	3
Naloxone (Narcan), 2 mg/ 5 ml	0	2	3	6
Nitroglycerine, 0.4mg /tablet or spray	0	1 container	1 container	1 container
Ondansetron (Zofran) 4mg PO tablet	0	6	4	8
Ondansetron (Zofran) 4mg/2ml	0	0	1	4
Sodium Bicarbonate, 50 mEq/ 50 ml	0	0	1	2

~~ADULT ORAL~~ ENDOTRACHEAL INTUBATION PROCEDURE

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Severe ventilatory compromise where the airway cannot be adequately maintained by BLS techniques

CONTRAINDICATION

- Absolute
 - Patient whose height is less than the length of the color-coded resuscitation tape and <12 years of age
 - Epiglottitis
- Relative
 - Spontaneous respirations are present
 - Responsive patient with intact gag reflex
 - Suspected opiate overdose
 - Profound hypoglycemia

EQUIPMENT

- Battery powered laryngoscope handle, extra batteries and bulbs or equivalent devices
- Laryngoscope blades
- Video Laryngoscopy (if available; refer to manufacturer's recommendation for use)
- McGill forceps
- Cuffed endotracheal tubes
- ETTI
- Lubricating jelly
- Disposable stylets
- Suction
- Pulse oximetry
- End Tidal CO2 detector
- Esophageal Detector Device (EDD)
- Capnometer or capnograph when available

PROCEDURE

- Open airway and pre-oxygenate with BVM for 1-3 minutes with 100% O2. Avoid hyperventilation in cardiac arrest.
- Select proper ETT
- Insert stylet
- Select proper sized blade and visualize the larynx
- Suction as needed
- If possible, provide continuous high flow oxygen during procedure
- Under direct visualization insert ETT 2-3 cm past the cords. Each attempt should not exceed 30 seconds, hyperventilating between attempts.
- Remove stylet
- Inflate cuff
- Verify placement using all of the following:
 - Rise and fall of chest

- Absence of epigastric sounds
- Bilateral breath sounds
- Capnometry/capnography or EDD *and* Colormetric Device
- Secure the tube. Consider spinal immobilization to prevent extubation. Do NOT use C-collar.
- Reassess tube placement after each patient movement. If any doubt about placement, confirm by capnography or direct visualization.

SPECIAL CONSIDERATION

- Defibrillation should precede intubation in cardiac arrest VF / VT situations.
- Limit intubation attempts (an attempt is defined as passing the device beyond the patient's teeth).
- Consider use of ETTI if difficult intubation.
- If unable to intubate, manage airway with other airway adjunct.

RELATED POLICIES/ PROCEDURES

- Endotracheal Tube Introducer (ETTI) Procedure ALS PR 4
- King Airway Procedure ALS PR 14
- Head Trauma T 2
- **Pediatric Respiratory Distress P03**

ENDOTRACHEAL TUBE INTRODUCER (ETTI) PROCEDURE

ALWAYS USE BODY SUBSTANCE ISOLATION PRECAUTIONS

INDICATION

- Airway structure or condition which prevents adequate visualization by standard tools of endotracheal intubation. May include:
 - Patients with Grade II through IV laryngeal views (Cormack-Lehane grade)
 - Patients with airway edema regardless of laryngeal view

CONTRAINDICATION

- Endotracheal tubes smaller than 6.0
- Patient whose height is less than the length of the color-coded resuscitation tape and <12 years of age

EQUIPMENT

- Intubation supplies
- ETT Introducer

PROCEDURE

- Perform laryngoscopy and obtain the best possible laryngeal view
- Holding the ETTI in your right hand and the angled tip pointing upward, gently advance the ETTI anteriorly (under the epiglottis) to the glottic opening (cords).
- For grade II views:
 - Direct through the cords
- For all other situations:
 - Direct the ETTI to the area where the cords should lie, and feel for washboard sensation as the tip ratchets on the tracheal rings.
- Gently advance the ETTI until resistance is encountered at the carina. Because the ETTI can potentially cause pharyngeal/ tracheal perforation, NEVER FORCE IT. If no resistance is encountered and the entire length of the ETTI is inserted, the device is in the esophagus.
- The ETTI is correctly placed when you see the device going through the cords, when the ratcheting of the tip on the trachea, and/or when resistance is met while advancing the device (ETTI is at the carina).
- Once positioned, withdraw the ETTI until the 37 cm black line mark is aligned with the lip and advance an endotracheal tube over the ETTI and into the trachea. This indicates that the tip is well beyond the cords and the proximal end has enough length to slide the endotracheal tube over it.
- If resistance is encountered – caused by the endotracheal tube catching on the arytenoids or aryepiglottic folds – withdraw the endotracheal tube slightly, rotate 90 degrees and reattempt. If this is unsuccessful, attempt with a smaller tube.
- Once the endotracheal tube is in position, while holding the tube, remove the ETTI through the endotracheal tube.
- Because this is a blind intubation, capnography should be utilized to confirm tracheal placement.

SPECIAL CONSIDERATION

- Use the confirmation methods standard for endotracheal intubation to verify placement of the endotracheal tube, both prior to and after initiating ventilation.

RELATED POLICIES/ PROCEDURES

- Adult Oral Endotracheal Intubation ALS PR 3

VERIFICATION OF TUBE PLACEMENT PROCEDURE

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- To verify the placement of an endotracheal tube

CONTRAINDICATIONS

- ~~Do not use the EDD (Esophageal Detector Device) when performing oral intubation on patients <5 years of age or <20 kg.~~

EQUIPMENT

- Esophageal Detector Device (EDD)
- End Tidal Carbon Dioxide Detector (ETCO2 Detector)
- Stethoscope
- Capnography device

PROCEDURE

- After tube placement, apply EDD prior to first ventilation.
- Check for the following:
 - Auscultate the lungs; assess for presence and equality of breath sounds
 - Movement of air through the tube
 - Presence of condensation in the tube
 - Auscultate the stomach; assess for absence of air movement
- Apply capnometer or capnography if available.

DOCUMENTATION

- Response of EDD
- Color change of ETCO2 Detector
- Number and waveform of capnography

RELATED POLICIES/ PROCEDURES

- Adult Oral **Endotracheal** Intubation Procedure ALS PR 3

KING AIRWAY PROCEDURE

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- When ventilation cannot be adequately maintained by BVM or other BLS techniques and intubation is anticipated to be difficult or intubation is unsuccessful after no more than one attempt (cardiac arrest patients) or two attempts (respiratory arrest patients)

CONTRAINDICATION

- Responsive patient with an intact gag reflex
- Patient with known esophageal disease
- Patients who have ingested caustic substances
- Tracheal stoma
- Patient < 4 feet tall or < 12 years of age

EQUIPMENT

- King Airway
- Syringe
- Water soluble lubricant
- Portable suction device
- Capnometry/capnography or Colormetric Device
- Stethoscope

Size	Patient Criteria	Color	Inflation Volume
3	4 – 5 ft.	Yellow	45 - 60 ml.
4	5 – 6 ft.	Red	60 - 80 ml.
5	> 6 ft.	Purple	70 - 90 ml.

PROCEDURE

- Open airway and pre-oxygenate with BVM for 1-3 min. with 100% O₂. Avoid hyperventilation in cardiac arrest.
- Test cuff according to manufacturer's instructions
- Apply water soluble lubricant to the distal end of the tube.
- Position the head into the "sniffing" position or neutral position if trauma is suspected
- Remove dentures before placing tube to prevent laceration of the cuffs
- Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums
- Inflate cuffs based on size of tube
- Attach bag-valve to King Airway
- While gently bagging the patient to assess ventilation, withdraw the airway until ventilation is easy and free flowing
- Verify placement using all of the following:
 - Rise and fall of chest
 - Bilateral breath sounds
 - Absence of epigastric sounds
 - Capnometry/capnography or Colormetric Device
- Secure the tube with tape or commercial tube holder, noting depth marking on tube

SPECIAL CONSIDERATION

- If there is any doubt about the proper placement of the King Airway, deflate the cuffs and remove device; ventilate the patient with BVM for 30 seconds and repeat sequence of steps
- If unsuccessful on second attempt, resume BLS airway management

NEWBORN RESUSCITATION

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Prehospital delivery of a newborn

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent =>14 years**
- Peripheral cyanosis is considered a normal finding

TREATMENT

- BEFORE BIRTH** (as possible)
 - Check & Prepare Equipment (BVM, suction, warm/clean linen, cord clamps, sterile blade/shears, SpO2 monitor)
- AT BIRTH**
 - DRY AND STIMULATE**
 - ASSESS:** Crying/breathing, muscle tone
 - TREATMENT:**

1. FIRST 60 SECONDS:

ASSESS: Crying/breathing, muscle tone

<p>IF term gestation, crying, has good muscle tone:</p> <ul style="list-style-type: none"> - Dry, warm - Position airway, clear secretions as needed - Place SpO2 on Right Hand - 60 seconds after birth: place 1st clamp at least 2 inches from child and second clamp 3 inches from first clamp. Cut cord in-between two clamps - Ongoing evaluation (See Step 5)
<p>IF NOT crying/good muscle tone:</p> <ul style="list-style-type: none"> - Dry, warm - Stimulate by rubbing back, soles of feet

Assess: Heart Rate (brachial or gently hold umbilical stump at base)

<p>IF HR below 100 OR gasping/apnea:</p> <ul style="list-style-type: none"> - Initiate PPV - Place SpO2 monitor - Consider ECG monitoring
<p>IF HR above 100 and labored breathing/central cyanosis:</p> <ul style="list-style-type: none"> - Position and clear airway (Suction as needed) - Place SpO2 monitor - Administer Oxygen as needed (See normal SpO2 chart below)

2. NEXT 30 SECONDS:

ASSESS: Heart Rate

IF HR below 100:

- Check chest movement
- Reposition airway to optimize chest movement
- Check Mask Seal
- Continue PPV
- **Consider Advanced Airway (DELETE)**

3. NEXT 30 SECONDS:

ASSESS: Heart Rate

IF HR below 60:

- Initiate chest compressions
 - 3 compressions and 1 breath, goal of 90 compressions/min
- Initiate IV/IO access
- **Place ETT (If not done in Step 2) (DELETE)**

IF HR above 60:

- *Return to Step 2 above*

4. NEXT 30 SECONDS:

ASSESS: Heart Rate

IF HR below 60:

- Administer Epinephrine 0.01 mg/kg IV/IO
 - Repeat every 3-5 minutes
- Continue compressions and ventilation
- Administer fluid bolus 10 ml/kg
- Assess for pneumothorax

IF HR above 60:

- *Return to Step 3 above*

5. ONGOING EVALUATION (Post resuscitation/well child)

- Assess & Document APGAR Scores at 1 and 5 minutes (Chart below)
- Assess for hypoglycemia and treat according to Pediatric Dosing Guide
- Closely monitor temperature and ensure patient warmth
- Continuous assessment of SpO₂, HR, RR in transport

SpO2 Normal Values After Birth (In Min)	
1 min	60-65%
2 min	65-70%
3 min	70-75%
4 min	75-80%
5 min	80-85%
10 min	85-95%

APGAR SCORE			
Sign	0	1	2
Heart rate (bpm)	Absent	Slow (<100)	≥100
Respirations	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion	Active motion
Reflex/Irritability	No response	Grimace	Cough, sneeze, cry
Color	Blue or pale	Pink body with blue extremities	Completely pink

DOCUMENTATION- ESSENTIAL ELEMENTS

- Presence of meconium
- APGAR score at 1 and 5 minutes

PEDIATRIC RESPIRATORY DISTRESS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- Patient exhibits any of the following:
 - Wheezing
 - Stridor
 - Grunting
 - Nasal flaring
 - Apnea

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat according to the Pediatric Dosing Guide (P18A). Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years

TREATMENT

- ALS RMC
- Position of comfort to maintain airway
- Allow parent to administer oxygen if possible
- Upper Airway/ Stridor:
 - Mild to moderate respiratory distress: 3ml NS via HHN
 - Moderate to severe respiratory distress: **Epinephrine** 1:1,000 5 mg in 5 ml via nebulizer
- Lower Airway Obstruction/ Wheezing:
 - **Albuterol** 2.5 mg in 3 ml NS via HHN, mask, or bag-valve-mask; MR x 1 and
 - **Ipratropium** 500 mcg in 2.5 ml NS via HHN or bag-valve-mask
 - If response inadequate, **Epinephrine** 1:1,000 (0.01 mg/kg) IM, maximum single dose 0.3 mg; MR x 1 in 15 minutes.
- Foreign Body Obstruction:
 - Attempt to clear airway:
 - < 1 year: 5 back blows and 5 chest thrusts
 - > 1 year: 5 abdominal thrusts
 - **For foreign body airway obstruction refractory to above attempts, utilize laryngoscopy to visualize ~~larynx~~ and remove foreign body with Magill forceps**
- Respiratory failure/ apnea/ complete obstruction.
 - Attempt positive pressure ventilation via bag-valve-mask, **~~if unable to ventilate, attempt intubation~~**
 - **ET tube placement approved for patients who are 12yrs of age or older or height greater than the length of the color-coded resuscitation tape.**
 - **King Airway approved as a rescue airway for patients who are 12yrs of age or older and 4 feet tall**

SPECIAL CONSIDERATIONS

- Assess key history factors: recent hospitalizations, asthma, allergies, croup, and medication usage

PEDIATRIC BRADYCARDIA

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

- HR < 60 causing cardio-respiratory compromise

CRITICAL INFORMATION

- Treat according to length based color-coded resuscitation tape. Apply corresponding wrist band.
- Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; adolescent = >14 years
- History of exposure to substances or medications

TREATMENT

- ALS RMC
- 12-lead ECG
- Obtain IV/IO access
- If responsive and no signs of shock
 - Monitor and transport
- If shock present:
 - Assist respirations with BVM prn
 - ~~Chest compressions CPR if < 8 years and HR < 60 after effective ventilations and patient is < 8 years with poor perfusion:~~
 - **Epinephrine** 1:10,000 IV/IO: 0.01 mg/kg (0.1 ml/kg); MR q 3-5 min.
 - If first degree block or Mobitz type I, **Atropine** 0.02 mg/kg IV/IO (max single dose: 0.5 mg; minimum single dose: 0.1 mg); MR x 1
 - **ET tube placement approved for patients who are 12 years of age or older or height greater than the length of the color-coded resuscitation tape.**
 - **King Airway approved as a rescue airway for patients who are 12 years of age or older and 4 feet tall**
 - ~~Consider endotracheal intubation~~
- Consider cardiac pacing if no response to above treatment.

SPECIAL CONSIDERATIONS

- Consider and treat possible contributing factors:

<ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxemia ▪ Hydrogen ion (acidosis) ▪ Hypo/Hyperkalemia ▪ Hypoglycemia ▪ Hypothermia 	<ul style="list-style-type: none"> ▪ Toxins (overdoses) ▪ Tamponade, cardiac ▪ Tension pneumothorax ▪ Thrombosis (coronary / pulmonary) ▪ Trauma
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RELATED POLICIES/ PROCEDURES

- External Cardiac Pacing Procedure ALS PR 11

PEDIATRIC BURNS

ALWAYS USE STANDARD PRECAUTIONS

INDICATION

Damage to the skin or an inhalation injury caused by contact with fire, heat, electricity, or caustic material.

CRITICAL INFORMATION

- Measure with color-coded resuscitation tape and treat per the Pediatric Dosing Guide (P18A). Apply corresponding wrist band (do not apply over burned areas). Neonate = birth to four weeks; infant = four weeks to 1 year; child = 1-14 years; Adolescent = >14 years
- Perform frequent airway assessments ~~and consider early intubation~~ for inhalation injury, i.e., facial or chest burns, singed nasal hairs, soot/blisters in oropharynx.
- Burns with trauma mechanism will be transported per the Marin County Trauma Triage Tool

TREATMENT

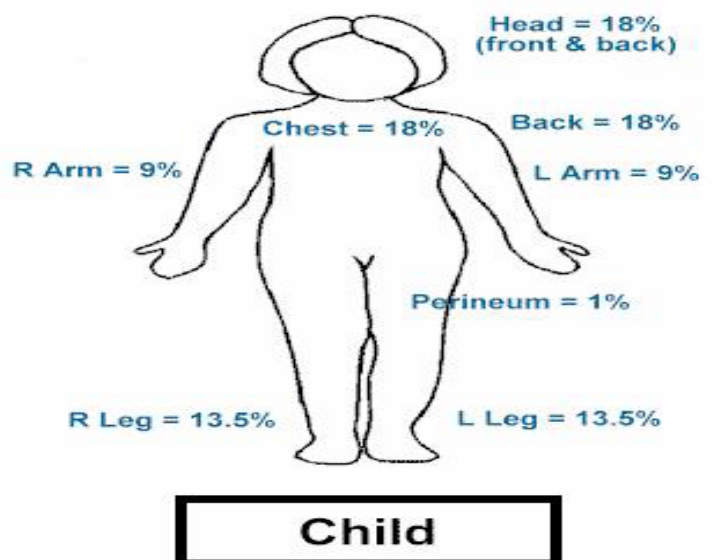
- Remove patient to safe area and stop the burning process
 - Remove offending agent, involved clothing and restrictive jewelry (unless adhered to skin)
 - Brush away dry chemicals
 - Flush with copious amounts of tepid water x 10-15 minutes to stop burning process or to decontaminate
 - Keep patient warm
 - Cover injuries with clean, dry linen
- ALS RMC
 - High-flow oxygen for inhalation injuries, facial or chest burns
 - If wheezing, consider bronchodilator therapy **Albuterol** 2.5 mg HHN; MR x 1
 - IV NS at TKO; do not administer fluid bolus
- Keep patient warm to avoid hypothermia
 - Provide pain management as soon as possible

DOCUMENTATION- ESSENTIAL ELEMENTS

- Estimated percentage of BSA affected
- Airway assessments

RELATED POLICIES/ PROCEDURES

- Pediatric Pain Management P15
- Pediatric Shock P7
- Pediatric Dosing Guide P18A
- Destination Guidelines GPC4
- Marin County Trauma Triage Tool, 4613a
- Pediatric Respiratory Distress P3



P18A		MARIN COUNTY EMS PEDIATRIC DOSING GUIDE (PAGE 1)								Oct 4, 2017	
		Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green	
WEIGHT	kg	3 - 5	6 - 7	8 - 9	10 - 11	12 - 14	15 - 18	19 - 23	24 - 29	30 - 36	
	lbs	6 - 11	13 - 15	18 - 20	22 - 24	27 - 31	33 - 40	42 - 51	53 - 64	66 - 80	
NS Fluid Bolus		60, 80, 100 ml	130 ml	170 ml	210 ml	260 ml	325 ml	420 ml	530 ml	660 ml	
DEFIBRILLATION 2 4 J/kg		1st	6 10J	13J	17J	20J	26J	33J	40J	53J	66J
		2nd	12 20J	26J	34J	40J	52J	66J	80J	106J	130J
CARDIOVERSION 0.5 1 J/kg, 2 J/kg		1st	3 - 5J	7J	9J	10J	13J	17J	20J	27J	33J
		2nd	6 - 10J	13J	17J	20J	26J	34J	40J	54J	66J
ACTIVATED CHARCOAL 1 gm/kg PO (Max dose 50 Concentration: 25 gm/120 ml bottle (1 gm/4.8 ml))		4 gm	6.5 gm	8.5 gm	10.5 gm	13 gm	16.5 gm	21 gm	26 gm	33 gm	
		19 ml	31 ml	41 ml	50 ml	62 ml	79 ml	100 ml	124 ml	158 ml	
ADENOSINE 0.1 mg/kg RIVP w/ 10ml NS flush MR x 1 double the dose (Max 1st dose 6 mg, max 2nd dose 12 mg) Concentration: 6 mg/2 ml (3 mg/ml)		1st	0.3 - 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2.1 mg	2.7 mg	3.3 mg
			0.14 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.6 ml	0.7 ml	0.9 ml	1.1 ml
		2nd	0.6 - 1 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.4 mg	4.2 mg	5.4 mg	6.6 mg
			0.25 ml	0.4 ml	0.6 ml	0.7 ml	0.9 ml	1.1 ml	1.4 ml	1.8 ml	2.2 ml
ALBUTEROL		Unit Dose 2.5 mg/3 ml									
AMIODARONE (Pulseless Arrest) 5 mg/kg IV/IO followed by 20 ml NS flush. MR x 2 refractory rhythm (Max single dose 300 mg) Concentration: 150 mg/3 ml (50 mg/ml)		15 25 mg	32 mg	42 mg	50 mg	65 mg	80 mg	105 mg	130 mg	165 mg	
		0.3 0.5 ml	0.6 ml	0.8 ml	1 ml	1.3 ml	1.6 ml	2.1 ml	2.6 ml	3.3 ml	
ATROPINE (Bradycardia) 0.02 mg/kg IV/IO MR x 1 in 3 - 5 minutes (Min dose 0.1 mg, Max single dose 0.5 mg) Concentration: 1 mg/10 ml (0.1 mg/ml)		0.1 mg	0.1 mg	0.2 mg	0.2 mg	0.3 mg	0.3 mg	0.4 mg	0.5 mg	0.5 mg	
		1 ml	1 ml	2 ml	2 ml	3 ml	3 ml	4 ml	5 ml	5 ml	
ATROPINE (Organophosphate Poisoning) 0.05 mg/kg IV/IO MR q 5 10 minutes until symptoms resolve Concentration: (preload) 1 mg/10 ml (0.1 mg/ml) Concentration: (multi dose vial) 0.4 mg/ml		0.15 0.25 mg	0.3 mg	0.4 mg	0.5 mg	0.7 mg	0.8 mg	1 mg	1.3 mg	1.7 mg	
		1.5 - 2.5 ml	3 ml	4 ml	5 ml	7 ml	8 ml	11 ml	13 ml	17 ml	
		0.4 - 0.6 ml	0.8 ml	1.1 ml	1.3 ml	1.6 ml	2.1 ml	2.6 ml	3.3 ml	4.1 ml	
BENADRYL 1 mg/kg IM/IV/IO (IV/IO Max dose 25 mg; IM Max dose 50 mg) Concentration: 50 mg/ml		4 mg	6.5 mg	8.5 mg	10.5 mg	13 mg	16.5 mg	21 mg	26 mg	33 mg	
		0.08 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml	
DEXTROSE 10% Give over 10 minutes		Neonates D10W 2 ml/kg IV/IO			> Neonate D10W 5 ml/kg IV/IO (max dose 125 ml)						
EPINEPHRINE (Cardiac Arrest/Bradycardia) 1:10,000 0.01 mg/kg IV/IO (Max dose 0.1 mg/kg) Concentration: 1 mg/10 ml		0.03 0.05 mg	0.07 mg	0.09 mg	0.1 mg	0.1 mg	0.2 mg	0.2 mg	0.3 mg	0.3 mg	
		0.3 - 0.5 ml	0.7 ml	0.9 ml	1 ml	1 ml	2 ml	2 ml	3 ml	3 ml	
EPINEPHRINE (Allergic Reaction & Asthma) 1:1,000 0.01 mg/kg IM; MR x 1 in 15 minutes (Max dose 0.6 Concentration: 1 mg/1 ml		0.03 - 0.05 mg	0.1 mg	0.1 mg	0.1 mg	0.1 mg	0.2 mg	0.2 mg	0.3 mg	0.3 mg	
		0.03 - 0.05 ml	0.1 ml	0.1 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	
EPINEPHRINE "Nebulized Epi" (Upper Airway/Stridor) 1:1,000		5 mg (5 ml) Via Nebulizer									

P18A		MARIN COUNTY EMS PEDIATRIC DOSING GUIDE (PAGE 2)							Oct 4, 2017		
		Grey	Pink	Red	Purple	Yellow	White	Blue	Orange	Green	
WEIGHT	kg	3-5	6-7	8-9	10-11	12-14	15-18	19-22	24-28	30-36	
	lbs	6-11	13-15	18-20	22-24	27-31	33-40	42-51	53-64	66-80	
GLUCAGON (hypoglycemia/Beta blocker OD) 0.03 mg/kg IM MR x 2 q 15 minutes (Max dose 1 mg) <i>Concentration: 1 mg/1 ml</i>		0.09 - 0.15 mg	0.2 mg	0.3 mg	0.3 mg	0.4 mg	0.5 mg	0.6 mg	0.8 mg	1 mg	
		0.1 - 0.15 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.6 ml	0.8 ml	1 ml	
IPRATROPIUM - Atrovent 500 mcg per unit dose (2.5 ml)		500 mcg / 2.5 ml									
LIDOCAINE 2% - (IO Insertion) 0.5 mg/kg slow IO (Max dose 40 mg) <i>Concentration: 20mg/1ml</i>		1st	1.5 - 2.5 mg	3 mg	4 mg	5 mg	6 mg	8 mg	10 mg	13 mg	17 mg
			0.06 - 0.13 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml	0.8 ml
		2nd	0.75 - 1.25 mg	2 mg	2 mg	3 mg	3 mg	4 mg	5 mg	6 mg	8 mg
			.04 - .06 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.2 ml	0.3 ml	0.4 ml	0.4 ml
MIDAZOLAM - Versed (Seizure & Cardioversion) 0.05 mg/kg slow IV/IO (Max 1st Dose 1 mg, total max dose 5 mg) <i>Concentration: 2mg/2ml (1 mg/ml)</i>			0.15 - 0.25 mg	0.3 mg	0.4 mg	0.5 mg	0.7 mg	0.8 mg	1 mg	1 mg	1 mg
			0.15 - 0.25 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml	0.8 ml	1 ml	1 ml	1 ml
MIDAZOLAM - Versed (Seizure) IN: 0.2 mg/kg Split dose equally per nostril (Max dose 5 mg) <i>Concentration: 5 mg/ml</i>			0.6 - 1.0 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.3 mg	4.2 mg	5 mg	5 mg
			0.12 - 0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml	0.8 ml	1 ml	1 ml
MIDAZOLAM - Versed (Seizure) IM: 0.1 mg/kg MR x 1 in 10 minutes <i>Concentration: 5 mg/ml</i>			0.3 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.3 mg
			0.06 - 0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml	0.4 ml	0.5 ml	0.7 ml
MORPHINE (Pain/Burns) 0.1 mg/kg IV/IO/IM MR x 2 in 15 minutes (IV/IO) or in 30 minutes (IM) <i>Concentration: 10 mg/1 ml</i>			0.3 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2.1 mg	2.6 mg	3.3 mg
			0.03 - 0.05 ml	0.1 ml	0.1 ml	0.1 ml	0.1 ml	0.2 ml	0.2 ml	0.3 ml	0.3 ml
NARCAN - Naloxone 0.1 mg/kg IV/IO/IM MR q 5 minutes up to 2 mg <i>Concentration: 2 mg/2 ml</i>			0.3 0.5 mg	0.7 mg	0.9 mg	1 mg	1.3 mg	1.7 mg	2 mg	2 mg	2 mg
			0.3 - 0.5 ml	0.7 ml	0.9 ml	1 ml	1.3 ml	1.7 ml	2 ml	2 ml	2 ml
SODIUM BICARBONATE 1 mEq/kg IV/IO <i>Concentration: 1 mEq/ml</i>			3 5 mEq	6.5 mEq	8.5 mEq	10 mEq	13 mEq	17 mEq	21 mEq	26 mEq	33 mEq
			3 5 ml	6.5 ml	8.5 ml	10 ml	13 ml	17 ml	21 ml	26 ml	33 ml
ZOFRAN - Ondansetron <i>Concentration: 4 mg tab ODT, 4 mg/2 ml IV</i>		Age 2 - 3 years: Give 2 mg ODT or slow IVP Age 4 and up: Give 4 mg ODT or slow IVP									