PEDIATRIC SURGE POCKET GUIDE

Clinical checklists, guides, and just-in-time references to manage a surge of pediatric patients.

Sections

Normal Values
Triage and Assessment
Treatment and Medications
Equipment
Decontamination
Mental Health
Pediatric Safe Areas

Public Health

PEDIATRIC SURGE POCKET GUIDE

This Pocket Guide was a collaborative effort by:
Los Angeles County Department of Public Health
Los Angeles County Emergency Medical Services Agency
Childrens Hospital Los Angeles
Pediatric Liaison Nurses of Los Angeles County
Pediatric Disaster Resource Center
Long Beach Department of Health and Human Services
Pasadena Public Health Department

This publication was supported by Grant Cooperative Agreement number
5U90TP917012-08 from the U.S. Centers for Disease Control and Prevention (CDC).
Its contents are solely the responsibility of the authors
and do not necessarily represent the official views of the CDC.

June 2009

PEDIATRIC SURGE POCKET GUIDE: CONTENTS

Antipyretics

Antivirals

Asthma Medications

Cardiac Medications

Other Medications

Color Code Drug Doses by Weight

Nerve Agent & Cyanide Treatment

OVERVIEW: PEDIATRIC RISKS DURING DISASTERS

Characteristic	Risk
Respiratory	Higher breaths/minute increases exposure to inhaled agents Nuclear fallout and heavier gases settle lower to the ground and may affect children more severely.
Gastrointestinal	May be more at risk for dehydration from vomiting and diarrhea after exposure to contamination.
Skin	Higher body surface area increases risk of skin exposure. Skin is thinner and more susceptible to injury from burns, chemicals and absorbable toxins.
Endocrine	Increased risk of thyroid cancer from radiation exposure.
Thermoregulation	Less able to cope with temperature problems with higher risk of hypothermia.
Developmental	Less capability to escape environmental dangers or anticipate hazards.
Psychological	Prolonged stress from critical incidents. Susceptible to separation anxiety.

SECTION 1: NORMAL VALUES

Contents

USING KILOGRAMS

Weigh all children in kilograms.

1kg = 2.2 lbs

Example: 20 lb child
20 lb divided by 2.2 = 9 kg

Method to estimate weight:

- Newborn (term): usually 3 kg
- 1-10 yrs: age multiplied by 2 + 10 (kg)
- >10 yrs: age multiplied by 2 + 20 (kg)

If available, a Broselow Tape may be used for weight estimation.

NORMAL PEDIATRIC VITAL SIGNS

	HR beats/min	RR breaths/min	BP (sys) mm/Hg	BP (dias) mm/Hg
Newborn 0-1 month	100-180	30-60	73-92	52-65
Infant 1-12 months	80-150	30-60	90-109	53-67
Toddler 1-3 years	75-130	25-35	95-105	56-68
Pre-School Age 3-5 years	75-120	22-32	99-110	55-70
School Age 5-11 years	70-110	20-30	97-118	60-76
Adolescent 13-18 years	65-105	16-22	110-133	63-83
Adult 18+ years	50-90	12-20	113-136	65-84

NORMAL DEVELOPMENT

Age	Gross Motor Skills	Fine Motor Skills
2 months	Flexed position when prone	Inhibited grasp reflex
4 months	Rolls from front to back, back to side	Carries object to mouth
6 months	Rolls from back to abdomen	Holds bottle
9 months	Sits steady, creeps or crawls	Holds objects in both hands and bangs together
12 months	Cruises well	Bangs 2 blocks together
15-18 mos	Pushes and pulls toys	Uses cup well, some spoon agility
2 years	Runs well with wide stance	Turns doorknob and unscrews lids
3 years	Climbs stairs alternating feet	Copies circles and cross
4 years	Hops, jumps, and skips on one foot	Draws person with greater than 3 body parts
5 years	Skips alternating feet	Prints some letters

DAILY MAINTENANCE FLUID AND ELECTROLYTE REQUIREMENTS

	Calculation
Fluids Per Hour	4mL/kg/hr for first 10kg of weight 2mL/kg/hr for next 10 kg of weight 1mL/kg/hr for each kg over 20kg
Fluids Per 24 Hour Period	100mL/kg for the first 10kg body weight 1000mL+ 50mL/kg for the next 10kg body weight 1500mL+ 20mL for each kg of body weight over 20kg
Maintenance Electrolyte Calculations for IV Fluid	**Sodium**: 3-4 mEq/kg/day or 30-50 mEq/m2/day **Potassium**: 2-3 mEq/kg/day or 20-40 mEq/m2/day

NORMAL BLOOD VOLUME

Total blood volume varies by weight.

Approximate volume is 80mL/kg.

Examples:
Newborn = ~3 kg x 80mL = 240 mL
5 year old = ~25 kg x 80mL = 2000 mL (2L)
13 year old = ~50 kg x 80mL = 4000 mL (4L)

PRBC/Platelet/Albumin 5%/FFP = 10mL/kg

IV ADMINISTRATION TIPS

For IV infusions in children, an over–the-needle 22 to 24 gauge catheter may be used • It may be possible to place a larger gauge catheter in older children
Catheter should be secured with a transparent dressing and tape
Use of a padded armboard may be helpful to secure IV in young children
It is important to secure IV tubing to prevent infants and children from becoming entangled or from accidently pulling catheter or needle out
If possible, amount of fluid hung that can be infused to patient should be limited to 2 hours of fluid with the use of buretrol or IV pump

APPROPRIATE INFANT NUTRITIONAL COMPONENTS

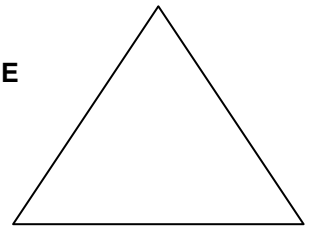
Age	
Birth - 1 month	2-3 ounces (6-90 mL) per feeding breast or bottle every 2-3 hours
2-4 months	3-4 ounces (90-120 mL) per feeding every 3-4 hours
4-6 months	4-5 ounces (120-150 mL) per feeding, four or more time daily Begins baby food, usually rice cereal
6-8 months	6-8 ounces (180-240 mL) per feeding, four times daily Eats baby food such as rice cereal, fruits and vegetables
8-10 months	6 ounces (180 mL) per feeding, four times a day Soft finger foods
10-12 months	6-8 ounces (180-240mL) per feeding, four times a day Soft table foods, uses spoon and cup with lid
Formulas	Milk Based: Enfamil, Enfacare & Similac Soy Based: Prosobee & Isomil

SECTION 2: TRIAGE AND ASSESSMENT TOOLS

Contents

PEDIATRIC ASSESSMENT TRIANGLE

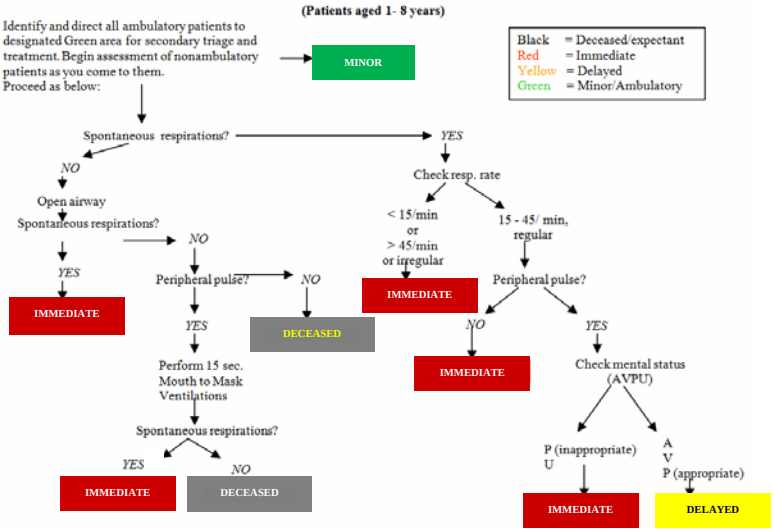
APPEARANCE
Mental status
Muscle tone
Body position



CIRCULATION
Color

Component	Signs
Appearance	Focus on the child's mental status and muscle tone
Breathing	Direct attention to respiratory rate and respiratory effort
Circulation	Use skin signs, color and capillary refill as indicators of the patient's circulatory status

JUMPSTART FIELD PEDIATRIC MULTICASUALTY TRIAGE SYSTEM



TREATMENT PRIORITIZATION

Triage Category	Description
RED Immediate	Patients who do not obey commands, **or** do not have a peripheral pulse, **or** are in respiratory distress, **or** have uncontrolled major hemorrhage
YELLOW Delayed	Remaining patients who do not fit the Red/Immediate or Green/Minimal categories
GREEN Minimal	Patients with mild injuries that are self-limited and can tolerate a delay in care without increasing mortality risk
BLACK Expectant or Dead	**Expectant**: Patients who have injuries incompatible with life given the currently available resources **Dead**: Patients who are not breathing after life-saving interventions

CLINICAL FEATURES OF DEHYDRATION

Feature	Mild (<5%)	Moderate (5% to 10%)	Severe (<10%)
Heart rate	Normal	Slightly increased	Rapid, weak
Systolic BP	Normal	Normal to orthostatic, >10 mmHg change	Hypotension
Urine output	Decreased	Moderately decreased	Marked decrease, anuria
Mucous membranes	Slightly dry	Very dry	Parched
Anterior fontanel	Normal	Normal to sunken	Sunken
Tears	Present	Decreased, eyes sunken	Absent, eyes sunken
Skin	Normal turgor	Decreased turgor	Tenting
Skin perfusion	Normal capillary refill (<2 seconds)	Capillary refill slowed (2-4 seconds); skin cool to touch	Capillary refill markedly delayed (>4 seconds); skin cool, mottled, gray

WONG-BAKER FACES PAIN RATING SCALE

Instructions:

1. Point to each face using the words to describe the pain intensity.
2. Ask the child to choose face that best describes own pain and record the appropriate number.

Rating scale is recommended for persons age 3 years and older.

FLACC POST-OPERATIVE PAIN SCALE

Category	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaws, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans, whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort

Five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; and (C) Consolability; is scored from 0-2, which results in a total score between zero and ten.

GLASGOW COMA SCALE

Category	For Patients <2 Years Old	For Patients >2 Years Old
Eye Opening (E)	(4) Spontaneous (3) To speech (2) To pain (1) None	(4) Spontaneous (3) To speech (2) To pain (1) None
Verbal Response (V)	(5) Coos, babbles (4) Irritable, cries (3) Cries to pain (2) Moans to pain (1) None	(5) Oriented (4) Confused (3) Inappropriate words (2) Incomprehensible (1) None
Motor Response (M)	(6) Normal spontaneous movements (5) Withdraws from touch (4) Withdraws from pain (3) Abnormal flexion (2) Abnormal extension (1) None	(6) Obeys commands (5) Localizes to pain (4) Withdrawal to pain (3) Flexion to pain (2) Extension to pain (1) None

The lowest possible score is 3 (deep coma or death).
The highest is 15 (fully awake and aware)

BURN ASSESSMENT: PEDIATRIC RULE OF NINES

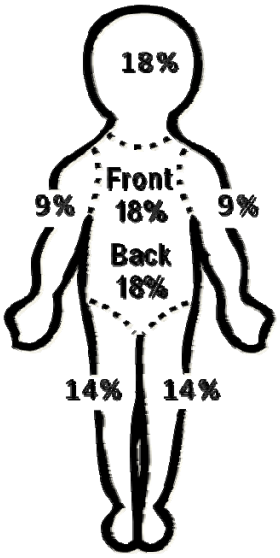
The "**Rule of Nines**" is a convenient, quick method to determine burn size.

Only second and third degree burn injury are used to calculate the extent of burn that is applied to burn formula calculations.

Alternate Method: The size of the patient's hand, including the fingers, represents approximately 1% of their body surface. This is useful to for mapping irregular areas of burns.

Pediatric Considerations

- Increased fluid requirements relative to adults
- Increased surface area : mass ratio
- Hypoglycemia may occur in infants (<30 kg) due to limited glycogen reserves



SECTION 3: TREATMENT AND MEDICATIONS

Contents

Nerve Agent & Cyanide Treatment

FLUID RESUSCITATION

1. Administer 20 mL/kg of isotonic or crystalloid solution (NS or LR)
2. Monitor
   - Peripheral perfusion
   - Urine output
   - Vital signs
   - LOC
3. Repeat bolus if no improvement
4. Reassess status

Consider blood products in traumatic injuries requiring >40-60 mL/kg of fluid

PRBC/Platelet/Albumin 5%/FFP @ 10mL/kg

See next page on Hypovolemic Shock.

HYPOVOLEMIC SHOCK

Hypovolemic shock is the most common type of shock in children.

Blood is the ideal fluid replacement for volume losses caused by trauma in children who do not respond to 40-60 mL/kg of NS/LR.

Children increase their cardiac output by tachycardia, therefore:
Bradycardia is an ominous sign!

Things to look for:

- Slow or irregular breathing
- Grunting
- Bradycardia
- Cyanosis
- Hypotension
- Decreased LOC

ANALGESICS, PART 1: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Acetamin-ophen	10-15 mg/kg/ every 4-6 hours	Oral	30-45 mg	50-75 mg	100-150 mg	150-225 mg	200-300 mg
Ibuprofen	5-10 mg/kg every 6-8 hours Max 40 mg/ kg/day	Oral	X	25-50 mg	50-100 mg	75-150 mg	100-200 mg
Morphine	0.1-0.2 mg/kg every 2-4 hours, as needed Max 15mg/ dose	IV/IM/ SubQ	0.15 -0.3 mg q 4-8 hrs	0.5-1 mg	1-2 mg	1.5-3 mg	2-4 mg

ANALGESICS, PART 1: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Acetamin-ophen	10-15 mg/kg/ q 4-6 hours Max 4 g/day	Oral	250-375 mg	300-450 mg	400-600 mg	500-750 mg
Ibuprofen	5-10 mg/kg q 6-8 hours Max 40 mg/ kg/day or 1.2 g/day	Oral	125-250 mg	150-300 mg	200-400 mg	250-500 mg
Morphine	0.1-0.2 mg/kg every 2-4 hours, as needed Max 15 mg/ dose	IV/IM/ SubQ	2.5-5 mg	3-6 mg	4-8 mg	5-10 mg

ANALGESICS, PART 2: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Fentanyl	*Neonates*: Slow IV push: 1-4 µg/kg/dose; May repeat every 2-4 hours. *Children, 1-12 years*: Sedation for minor procedures/ analgesia *Children, 1-3 years*: 1-3 µg/kg/dose 3 min. before procedure, may repeat after 30-60 minutes. *Children: 3-12 years*: 1-2 µg/kg/dose 3 min. before procedure; may repeat after 3-60 minutes.	Neonates: Slow IV push Children: IM/ slow IV push	3-12 µg	5-20 µg	10-30 µg	15-45 µg	20-40 µg

ANALGESICS, PART 2: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Fentanyl	*Children, 1-12 years*: Sedation for minor procedures/analgesia *Children, 3-12 years*: 1-2 µg /kg/dose 3 min. before procedure; may repeat after 3-60 minutes.	IM/ slow IV push	25-50 µg	30-60 µg	40-80 µg	50-100 µg

ANALGESICS, PART 3: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Dilaudid	*Young children <11 years*: 0.03-0.1 mg/kg/ dose every 4-6 hours as needed Max dose 5mg/dose.	Oral	0.09 mg	0.15-0.5 mg	0.3-1 mg	0.45-1.5 mg	0.6-2 mg
Dilaudid	*Young children <11 years*: 0.015 mg/kg/dose every 3-6 hours as needed.	Children <11 years: IV	0.045 mg	0.075 mg	0.15 mg	0.225 mg	0.3 mg

ANALGESICS, PART 3: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Dilaudid	*Young children <11 years*: 0.03-0.1 mg/kg/dose every 4-6 hours as needed; Max dose 5mg/dose. *Older children >12 years*: 1-2 mg/dose every 3-4 hours as needed	Oral	0.75-2.5 mg	0.9-3 mg	1-2 mg	1-2 mg
Dilaudid	*Young children <11 years*: 0.015 mg/kg/dose every 3-6 hours as needed. *Older children >12 years*: 0.2-0.6 mg/dose every 3-4 hours as needed	*Children <11 yrs*: IV *Children >12 yrs*: IM/IV/ SubQ	0.375 mg	0.45 mg	0.2-0.6 mg	0.2-0.6 mg

ANALGESICS, PART 4: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Lortab For moderate to severe pain	*Children and adults <50 kg*: Usual initial dose: 0.2 mg/kg every 3-4 hours as the hydrocodone component.	Oral	X	X	2 mg	3 mg	4 mg

ANALGESICS, PART 4: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Lortab For moderate to severe pain	*Children and adults <50 kg*: Usual initial dose: 0.2 mg/kg every 3-4 hours *Children and adults ≥50 kg*: Usual initial dose: 10 mg every 3-4 hours as the hydrocodone component.	Oral	5 mg	6 mg	8 mg	10 mg

ANTIBIOTICS, PART 1: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Doxycycline	None for ages Newborn to 6 years	n/a	None				
Doxycycline for Anthrax	None for ages Newborn to 6 years	n/a	None				

ANTIBIOTICS, PART 1: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Doxycycline	*Children ≥ 8 yrs*: 1-2 mg/kg every12 hours Not to exceed 200 mg/day. *Adolescents and adults*: 100-200 mg/day in 1-2 divided doses	Oral/IV	25-50 mg	30-60 mg	50-100 mg	
Doxycycline for Anthrax	*Children ≥ 8 yrs*: 2.5 mg/kg every 12 hours for 60 days *Adolescents and adults*: 100 mg every 12 hours for 60 days.	Oral/IV	62.5 mg	75 mg	100 mg	

ANTIBIOTICS, PART 2: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Clindamycin	*Neonates >2000 g*: 20-30 mg/kg/day divided every 6-8 hours *Infants and children*: 25-40 mg/kg/day divided every 6-8 hours Max dose: 4.8 g/day	*Neonates*: IM/IV *Infants, children*: Oral/IM/IV	60-90 mg per day divided every 6-8 hours	125-200 mg per day divided every 6-8 hours	250-400 mg per day divided every 6-8 hours	375-600 mg per day divided every 6-8 hours	500-800 mg per day divided every 6-8 hours

ANTIBIOTICS, PART 2: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Clindamycin	*Infants and children*: 25-40 mg/kg/day divided every 6-8 hours Max dose: 4.8 g/day. *Adolescents and adults*: 1.2-1.8g/day in divided doses Max dose: 4.8 g/day	Oral/IM/IV	625-1000 mg per day divided every 6-8 hours	750-1200 mg per day divided every 6-8 hours	1.2-1.8 g per day divided every 6-8 hours	

ANTIBIOTICS, PART 3

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Vancomycin	*Neonates > 2000g*: 45 mg/kg/day divided every 8 hrs *Infants >1 month and children*: 40 mg/kg/day in divided doses every 6 hrs	IV	45 mg every 8 hours	50 mg every 6 hours	100 mg every 8 hours	150 mg every 8 hours	200 mg every 8 hours

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Vancomycin	40 mg/kg/day in divided doses every 6 hrs	IV	250 mg every 8 hours	300 mg every 8 hours	400 mg every 8 hours	500 mg every 8 hours

ANTIBIOTICS, PART 4

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Metronidazole	*Neonates >2000 g*: 30 mg/kg/day divided every12 hrs *Infants and children*: 30mg/kg/day divided every 6-8 hours Max dose: 4 g/ day	Oral/IV	45 mg every 12 hours	150 mg per day divided every 6-8 hours	300 mg per day divided every 6-8 hours	450 mg per day divided every 6-8 hours	600 mg per day divided every 6-8 hours

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Metronidazole	30mg/kg/day divided every 6-8 hrs Max dose: 4 g/day	Oral/IV	750 mg per day divided q 6-8 hours	900 mg per day divided q 6-8 hours	1200 mg per day divided q 6-8 hours	1500 mg per day divided q 6-8 hours

ANTIBIOTICS, PART 5: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Amoxicillin	*Neonates and infants <3 mos*: 20-30 mg/kg/day in divided doses every 12 hours *Infants >3 months and children*: 25-50 mg/kg/day in divided doses every 12 hours	Oral	60-90 mg per day divided every 12 hours	125-250 mg per day divided every 12 hours	250-500 mg per day divided every 12 hours	375-750 mg per day divided every 12 hours	500-1000 mg per day divided every 12 hours

ANTIBIOTICS, PART 5: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Amoxicillin	*Children*: 25-50 mg/kg/day in divided doses every 12 hours *Adults*: 250-500 mg every 8 hours Max dose 2-3 g/day	Oral	625-1250 mg per day divided every 12 hours	750-1500 mg per day divided every 12 hours	1000-2000 mg per day divided every 12 hours	Adults 750-1500 mg per day divided every 8 hours

ANTIBIOTICS, PART 6: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Cefazolin	*Neonates >2000g*: 60 mg/kg/day divided every 8 hours. *Infants and children*: 50-100 mg/kg/day in divided doses every 8 hours Max dose 6g/day	Oral	180 mg per day divided every 8 hours	250-500 mg per day divided every 8 hours	500-1000 mg per day divided every 8 hours	750-1500 mg per day divided every 8 hours	1000-2000 mg per day divided every 8 hours

ANTIBIOTICS, PART 6: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Cefazolin	*Children*: 50-100 mg/kg/day in divided doses every 8 hours Max dose 6g/day *Adults*: 0.5-2 g every 6-8 hours.	Oral	1250-2500 mg per day divided every 8 hours	1500-3000 mg per day divided every 8 hours	2000-4000 mg per day divided every 8 hours	0.5-2 g every 6-8 hours

ANTIBIOTICS, PART 7: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Ceftriaxone	*Neonates >2000g*: 50-75 mg/kg/day given every 24 hours *Infants and children*: 50-75 mg/kg/day divided every 12-24 hours	*Neonates* Oral *Infants and children*: Oral/IM	150-225 mg every 24 hours	250-375 mg per day divided every 12-24 hours	500-750 mg per day divided every 12-24 hours	750-1125 mg per day divided every 12-24 hours	1000-1500 mg per day divided every 12-24 hours

ANTIBIOTICS, PART 7: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Ceftriaxone	*Children*: 50-75 mg/kg/day divided every 12-24 hours *Adults*: 1-2 g every 12-24 hours Max dose: 4 g/day	*Children*: Oral/IM *Adults*: Oral	1250-1875 mg per day divided every 12-24 hours	1500-2250 mg per day divided every 12-24 hours	2000-3000 mg per day divided every 12-24 hours	1-2 g per dose

ANTIBIOTICS, PART 8: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Ciprofloxacin	*Neonates*: 7-40 mg/kg/day divided q 12 hrs *Children*: IV 20-30 mg/kg/day divided q 12 hrs Max dose: 800 mg/day	*Neonates*: IV *Children*: Oral/IV	21-120 mg per day divided every 12 hours	35-200 mg per day divided every 12 hours	70-400 mg per day divided every 12 hours	105-600 mg per day divided every 12 hours	400-600 mg per day divided every 12 hours
Ciprofloxacin for Anthrax	Children: 20-30 mg/kg/day divided every 12 hrs for 60 days Max dose: 800 mg/day	*Oral*: 30 mg/kg/day divided q 12 hours *IV*: 20 mg/kg/day divided q 12 hours	21-120 mg per day divided every 12 hours	35-200 mg per day divided every 12 hours	70-400 mg per day divided every 12 hours	105-600 mg per day divided every 12 hours	400-600 mg per day divided every 12 hours

ANTIBIOTICS, PART 8: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Ciprofloxacin	*Children*: IV 20-30 mg/kg/day divided q 12 hours Max dose: 800 mg/day *Adults*: 200-400 mg every 12 hours	Children: Oral/IV Adults: Oral/IV	500-750 mg per day divided every 12 hours	600-900 mg per day divided every 12 hours	800-1200 mg per day divided every 12 hours	200-400 mg per day divided every 12 hours
Ciprofloxacin for Anthrax	*Children*: 20-30 mg/kg/day divided q 12 hrs for 60 days Max dose: 800 mg/day *Adults*: *Oral*: 500 mg q 12 hours for 60 days *IV*: 400 mg q 12 hrs for 60 days	*Oral*: 30 mg/kg/day divided q 12 hours *IV*: 20 mg/kg/day divided q 12 hours	500-750 mg per day divided every 12 hours	600-900 mg per day divided every 12 hours	800-1200 mg per day divided every 12 hours	200-400 mg per day divided every 12 hours

ANTIBIOTICS, PART 9: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Cefotaxime	*Neonates >2000g*: 150-200 mg/kg/day divided every 6-8 hours *Infants and children, 1-12 years: <50 kg*: 100-200 mg/kg/day divided every 6-8 hours Max: 2g/dose	IV	450-600 mg per day divided every 6-8 hours	500-1000 mg per day divided every 6-8 hours	1000-2000 mg per day divided every 6-8 hours	1500-2000 mg per day divided every 6-8 hours Max 2 g/ dose	2000-4000 mg per day divided every 6-8 hours Max 2 g/ dose

ANTIBIOTICS, PART 9: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Cefotaxime	*Children, 1-12 years: <50 kg*: 100-200 mg/kg/day divided every 6-8 hours Max: 2 g/dose *≥ 50 kg*: 1-2 g every 6-8 hrs Max: 12 g/day	IV	2500 mg per day divided every 6-8 hours Max 2 g/ dose	6 g per day divided every 6-8 hours Max 2 g/ dose	1-2 g per dose every 6-8 hours Max 2 g/ dose	1-2 g per dose every 6-8 hours Max 12 g/ day

ANTIPYRETICS

Drug	Dose	Route	0-3 mos (3 kg)	4-11 mos (6 kg)	1-2 years (9 kg)	2-3 yrs (12 kg)
Acetaminophen	10-15 mg/kg every 4-6 hours	Oral	40 mg	80 mg	120 mg	160 mg
Ibuprofen	5-10 mg/kg	Oral	X	5-10 mg/kg every 6-8 hours Max 40 mg/kg/day		

Drug	Dose	Route	4-5 yrs (18 kg)	6-8 yrs (24 kg)	9-10 yrs (30 kg)	11 yrs (36 kg)
Acetaminophen	10-15 mg/kg every 4-6 hours	Oral	240 mg	320 mg	400 mg	480 mg
Ibuprofen	5-10 mg/kg	Oral	5-10 mg/kg every 6-8 hours Max 40 mg/kg/day			

ANTIVIRALS: SEASONAL FLU

Recommendations for the treatment and chemoprophylaxis of influenza change frequently, in particular because of changes in circulating strains and their antiviral resistance. It is important to check the CDC website for the latest recommendations.

CDC antiviral recommendations can be found here:
http://www.cdc.gov/flu/professionals/antivirals

ANTIVIRALS: H1N1 INFLUENZA: LESS THAN 1 YEAR

Recommendations for the treatment and chemoprophylaxis of H1N1 influenza change frequently, in particular because of ongoing antiviral resistance. Check the CDC website for the latest recommendations: http://www.cdc.gov/h1n1flu/recommendations.htm

Age	**Oseltamivir: Recommended treatment dose for 5 days**
<3 months	12 mg twice daily
3-5 months	20 mg twice daily
6-11 months	25 mg twice daily
Age	**Oseltamivir: Recommended prophylaxis dose for 10 days**
<3 months	Not recommended unless situation judged critical due to limited data on use in this age group
3-5 months	20 mg once daily
6-11 months	25 mg once daily

Pregnant women are known to be at higher risk for complications from infection with seasonal influenza viruses, and severe disease among pregnant women was reported during past pandemics. For further information about influenza antiviral medications, including contraindications and adverse effects, refer to the CDC website.

ANTIVIRALS: H1N1 INFLUENZA: 1 YEAR AND OLDER

Recommendations for the treatment and chemoprophylaxis of H1N1 influenza change frequently, in particular because of ongoing antiviral resistance. It is important to check the CDC website for the latest recommendations. Information contained in the tables below can be found here: http://www.cdc.gov/h1n1flu/recommendations.htm

Agent, group		Treatment	Chemoprophylaxis
Oseltamivir			
Children ≥ 12 months	15 kg or less	60 mg per day divided into 2 doses	30 mg once per day
	15-23 kg	90 mg per day divided into 2 doses	45 mg once per day
	24-40 kg	120 mg per day divided into 2 doses	60 mg once per day
	>40 kg	150 mg per day divided into 2 doses	75 mg once per day
Zanamivir			
Children		Two 5-mg inhalations (10 mg total) twice per day (age, 7 years or older)	Two 5-mg inhalations (10 mg total) once per day (age, 5 years or older)

ASTHMA MEDICATIONS, PART 1: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Albuterol	<12 years: 1-2 inhalation 4 times/day using a tube spacer >12 years and greater 1-2 inhalations every 4-6 hours	Inhalation MDI: 90 µg/ spray	<12 years: 1-2 inhalation 4 times/day using a tube spacer				
Albuterol	0.01-0.05 mL/kg of 0.5% solution every 4-6 hours • Range: every 2-6 hrs • Max dose: 5 mg = 1 mL • Min dose: 1.25 mg • Dilute dosage in 1-2 mL NS	Inhalation solution (for nebulization)	0.03-0.15 mL	0.05-0.25 mL	0.1-0.5 mL	0.15-0.75 mL	0.2-1.0 mL

ASTHMA MEDICATIONS, PART 1: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Albuterol	<12 years: 1-2 inhalation 4 times/day using a tube spacer > 12 years: 1-2 inhalations every 4-6 hours	Inhalation MDI: 90 µg/ spray	<12 years: 1-2 inhalation 4 times/day using a tube spacer		12 years and greater 1-2 inhalations every 4-6 hours.	
Albuterol	0.01-0.05 mL/kg of 0.5% solution every 4-6 hours • Range: every 2-6 hrs • Max dose: 5 mg = 1 mL • Min dose 1.25 mg • Dilute dosage in 1-2 mL NS	Inhalation solution (for nebulization)	0.25-1.0 mL	0.3-1.0 mL	0.4-1.0 mL	0.5-1.0 mL

ASTHMA MEDICATIONS, PART 2: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Methyl-prednisolone	1 mg/kg/dose every 6 hours	IV	X	X	10 mg	15 mg	20 mg
Prednisone	1-2 mg/kg/day in divided doses 1-2 times/day for 3-5 days	Oral	X	5-10 mg	10-20 mg	15-30 mg	20-40 mg

ASTHMA MEDICATIONS, PART 2: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Methyl-prednisolone	1 mg/kg/dose every 6 hours	IV	25 mg	30 mg	40 mg	50 mg
Prednisone	1-2 mg/kg/day in divided doses 1-2 times/day for 3-5 days	Oral	25-50 mg per day divided doses, 1-2 times/day	30-60 mg per day divided doses, 1-2 times/day	40-60 mg per day divided doses, 1-2 times/day Max: 60 mg/day	50-60 mg per day divided doses, 1-2 times/day Max: 60 mg/day

ASTHMA MEDICATIONS, PART 3: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Racemic Epinephrine	160–250 µg (1 inhalation of a commercially available aerosol preparation) Repeated once, if necessary, after at least 1 minute Subsequent doses should not be administered for at least 3 hours.	Inhalation: MDI	X	X	X	X	1 inhalation
Racemic Epinephrine, 2.25% solution	1–3 deep inhalations Do not repeat more often than every 3 hours Discontinue if symptoms not relieved within 20 minutes or if symptoms become worse	Inhalation: Hand bulb nebulizer	X	X	X	X	1-3 deep inhalations

ASTHMA MEDICATIONS, PART 3: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Racemic Epinephrine	160–250 µg (1 inhalation of a commercially available aerosol preparation) Repeated once, if necessary, after at least 1 minute Subsequent doses should not be administered for at least 3 hours.	Inhalation: MDI	1 inhalation			
Racemic Epinephrine, 2.25% solution	1–3 deep inhalations Do not repeat more often than every 3 hours Discontinue if symptoms not relieved within 20 minutes or if symptoms become worse	Inhalation: Hand bulb nebulizer	1–3 deep inhalations			

ASTHMA MEDICATIONS, PART 4: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Atrovent (Oral, MDI)	*Children*: 1-2 inhalations every 6-8 hours; up to 6 inhalations in 24 hours	Oral inhalation (MDI)	X	1-2 inhalations every 6-8 hours; up to 6 inhalations in 24 hours			
Atrovent (Inhalation, Nebulizer)	*Neonates*: 25 µg/kg/dose 3 times/day *Children*: 250-500 µg every 6-8 hours	Inhalation solution (for nebulization)	75 µg	250-500 µg every 6-8 hours			

ASTHMA MEDICATIONS, PART 4: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Atrovent (Oral, MDI)	*Children*: 1-2 inhalations every 6-8 hours; up to 6 inhalations in 24 hours *Adolescents and adults*: 2-3 inhalations 4 times/day; up to 12 inhalations in 24 hours	Oral inhalation (MDI)	1-2 inhalations every 6-8 hours; up to 6 inhalations in 24 hours	2-3 inhalations 4 times/day; up to 12 inhalations in 24 hours		
Atrovent (Inhalation, Nebulizer)	Children: 250-500 µg every 6-8 hours	Inhalation solution (for nebulization)	250-500 µg every 6-8 hours			

ASTHMA MEDICATIONS, PART 5: NEWBORN - 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Xopenex (levalbuterol) Acute asthma exacerbation (NAEPP, 2007)	Children: 0.075 mg/kg (minimum dose: 1.25 mg) every 20 minutes for 3 doses then 0.075-0.15 mg/kg (not to exceed 5 mg) every 1-4 hours as needed	Nebulizer	X	X	0.75 mg	1.125 mg	1.5 mg
Xopenex (levalbuterol) Acute asthma exacerbation (NAEPP, 2007)	Children: 4-8 puffs every 20 minutes for 3 doses then every 1-4 hours	Inhalation, MDI: 45 µg/spray	X		4-8 puffs every 20 minutes for 3 doses then every 1-4 hours		

ASTHMA MEDICATIONS, PART 5: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Xopenex (levalbuterol) Acute asthma exacerbation (NAEPP, 2007)	*Children*: 0.075 mg/kg (minimum dose: 1.25 mg) every 20 minutes for 3 doses then 0.075-0.15 mg/kg (not to exceed 5 mg) every 1-4 hours as needed	Nebulizer	1.875 mg	2.25 mg	3 mg	3.75 mg
Xopenex (levalbuterol) Acute asthma exacerbation (NAEPP, 2007)	Children: 4-8 puffs every 20 minutes for 3 doses then every 1-4 hours *Adults*: 4-8 puffs every 20 minutes for up to 4 hours then every 1-4 hours as needed	Inhalation, MDI: 45 µg/spray	4-8 puffs every 20 minutes for 3 doses then every 1-4 hours			

CARDIAC MEDICATIONS: NEWBORN TO 6 YEARS OLD

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Adenosine	0.1-0.3 mg/kg	IV rapid	0.3-0.9 mg	0.5-1.5 mg	1-3 mg	1.5-3 mg	2-6 mg
Furosemide	1 mg/kg	IV	3 mg	5 mg	10 mg	15 mg	20 mg
Labetalol	0.2-1.0 mg/kg	IV	X	1-5 mg	2-10 mg	3-15 mg	4-20 mg
Nifedipine	0.25-0.5 mg/kg	PO	X	1.25-2.5 mg	2.5-5 mg	3.75-7.5 mg	5-10 mg

CARDIAC MEDICATIONS: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Adenosine	0.1-0.3 mg/kg	IV rapid	2.5-7.5 mg	3-9 mg	4-12 mg	max 6-12 mg
Furosemide	1 mg/kg	IV	25 mg	30 mg	40 mg	50 mg
Labetalol	0.2-1.0 mg/kg	IV	5-20 mg	6-20 mg	8-20 mg	max 10-20 mg
Nifedipine	0.25-0.5 mg/kg	PO	6.25-10 mg	7.5-10 mg	8-10 mg	max 10 mg

INFUSION FORMULAS

Drug	Dose in µg/kg/min	Preparation
Dopamine/ Dobutamine	Dopamine: 2-20 Dobutamine: 2.5-20	[6 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 1 µg/kg/min
Epinephrine/ Norepinephrine	Epi: 0.1-1 Norepi: 0.1-2	[0.6 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 0.1 µg/kg/min
Amiodarone	5-10 (load 5 mg/kg)	[6 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 1 µg/kg/min
Lidocaine	20-50	[120 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 20 µg/kg/min
Milrinone	0.25-0.75 (load 50-75 µg/kg)	[0.6 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 0.1 µg/kg/min
Nitroprusside/ Nicardipine	Nitro: 0.5-4 Nicard: 0.5-3	[6 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 1 µg/kg/min
Terbutaline	0.4	[0.6 x (wt in kg)] = mg to add to 100mL D5W/IV rate of 1mL/hr = 0.1 µg/kg/min

NEUROLOGY MEDICATIONS: NEWBORN TO 6 YEARS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Lorazepam	0.05-0.1 mg/kg	IV slow	0.15-0.3 mg	0.25-0.5 mg	0.5-1 mg	0.75-1.5 mg	1-2 mg
Diazepam Rectal	0.2-0.5 mg/kg	Rectal	X	X	5 mg	5-10 mg	10 mg
Fosphenytoin	Load PE = 10-20 mg/kg	IV 30 min	X	50-100 mg	100-200 mg	150-300 mg	200-400 mg
Phenobarbital	Load 15-20 mg/kg	IV infusn	45-60 mg	75-100 mg	150-200 mg	225-300 mg	300-400 mg
Mannitol 20%	0.5-1 g/kg	IV slow	1.5-3 g	2.5-5 g	5-10 g	7.5-16 g	10-20 g

NEUROLOGY MEDICATIONS: 7 YRS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Lorazepam	0.05-0.1 mg/kg	IV slow	1.25-2.5 mg	1.5-3.0 mg	2-4 mg	max 4 mg
Diazepam Rectal	0.2-0.5 mg/kg	Rectal	12.5 mg	15 mg	15 mg	20 mg
Fosphenytoin	Load PE = 10-20 mg/kg	IV 30 min	250-500 mg	300-600 mg	400-800 mg	500 mg - 1 g
Phenobarbital	Load 15-20 mg/kg	IV infusn	375-500 mg	450-600 mg	600-800 mg	750 mg - 1 g
Mannitol 20%	0.5-1 g/kg	IV slow	12.5-25 g	15-30 g	20-40 g	max 50 g

PARALYZING AGENTS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Rocuronium	0.6-1.0 mg/kg	IV	1.8-3.0 mg	2-3 mg	6-10 mg	9-15 mg	12-20 mg
Succinylcholine	1-2 mg/kg	IV	3-6 mg	5-10 mg	20 mg	15-30 mg	20-40 mg
Vecuronium	0.1 mg/kg	IV	0.3 mg	0.5 mg	1 mg	1.5 mg	2 mg

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Rocuronium	0.6-1.0 mg/kg	IV	15-25 mg	18-30 mg	24-40 mg	30-50 mg
Succinylcholine	1-2 mg/kg	IV	25-50 mg	30-60 mg	40-80 mg	50-100 mg (max 150)
Vecuronium	0.1 mg/kg	IV	2.5 mg	3 mg	4 mg	5 mg (max 10)

RESUSCITATION MEDS, PART 1: NEWBORN - 6 YRS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Atropine	0.02 mg/kg	IV/ETT	0.1 mg	0.1 mg	0.2 mg	0.3 mg	0.4 mg
Amiodarone	5 mg/kg x 3 max	IV	15 mg	25 mg	50 mg	75 mg	100 mg
Calcium Chloride 10%	20 mg/kg = 0.2 mL/kg	IV slow	60 mg	100 mg	200 mg	300 mg	400 mg
Epinephrine 1:10,000	0.01 mg/kg = 0.1 mL/kg	IV/IO	0.3 mL	0.5 mL	1 mL	1.5 mL	2 mL
Epinephrine 1:1000	0.1 mg/kg = 0.1 mL/kg	IV/ETT/IO	X	0.5 mL	1 mL	1.5 mL	2 mL

RESUSCITATION MEDS, PART 1: 7 YRS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Atropine	0.02 mg/kg	IV/ETT	0.5 mg	0.6 mg	0.8 mg	max 1 mg
Amiodarone	5 mg/kg x 3 max	IV	125 mg	150 mg	200 mg	250-300 mg
Calcium Chloride 10%	20 mg/kg = 0.2 mL/kg	IV slow	500 mg	500 mg	500 mg	max 500 mg
Epinephrine 1:10,000	0.01 mg/kg = 0.1 mL/kg	IV/IO	2.5 mL	3 mL	4 mL	max 10 mL
Epinephrine 1:1000	0.1 mg/kg = 0.1 mL/kg	IV/ETT/IO	2.5 mL	3 mL	4 mL	max 10 mL

RESUSCITATION MEDS, PART 2: NEWBORN - 6 YRS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Glucose (D25W)	0.5 g/kg = 2mL/kg	IV	X	10 mL	20 mL	30 mL	40 mL
Glucose (D10W)	0.5 g/kg = 5mL/kg	IV	15 mL	25 mL	X	X	X
Lidocaine	1 mg/kg	IV/IO	3 mg	5 mg	10 mg	15 mg	20 mg
Sodium bicarb 4.2%	1 mEq/kg = 2 mL/kg	IV	6 mL	10 mL	X	X	X
Sodium bicarb 8.4 %	1 mEq/kg = 1 mL/kg	IV	X	X	10 mL	15 mL	20 mL

RESUSCITATION MEDS, PART 2: 7 YRS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Glucose (D25W)	0.5 g/kg = 2mL/kg	IV	50 mL	60 mL	80 mL	100 mL
Glucose (D10W)	0.5 g/kg = 5mL/kg	IV	X	X	X	X
Lidocaine	1 mg/kg	IV/ETT	25 mg	30 mg	40 mg	max 100 mg
Sodium bicarb 4.2%	1 mEq/kg = 2 mL/kg	IV	X	X	X	X
Sodium bicarb 8.4 %	1 mEq/kg = 1 mL/kg	IV	25 mL	30 mL	40 mL	50 mL

REVERSAL AGENTS

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)
Flumazenil	0.01 mg/kg	IV	0.03 mg	0.05 mg	0.1 mg	0.15 mg
Naloxone	0.1 mg/kg	IV/ETT	0.3-6 mg	0.5 mg	1.0 mg	1.5 mg

Drug	Dose	Route	4-6 yrs (20 kg)	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Flumazenil	0.01 mg/kg	IV	0.2 mg	0.25 mg	0.3 mg	0.4 mg	0.5 mg (1 mg max)
Naloxone	0.1 mg/kg	IV	2.0 mg	2.0 mg	2.0 mg	2.0 mg	2.0 mg

SEDATION MEDICATIONS: NEWBORN TO 6 YEARS OLD

Drug	Dose	Route	Newborn (3 kg)	3-6 mos (5 kg)	1 year (10 kg)	2-3 yrs (15 kg)	4-6 yrs (20 kg)
Etomidate	0.3 mg/kg	IV	0.9 mg	1.5 mg	3 mg	4.5 mg	6 mg
Fentanyl analgesic	<36 mos: 1-3µg/kg >36 mos: 1-2µg/kg	IV slow	2-12 µg	5-20 µg	10-40 µg	15-50 µg	20-80 µg
Ketamine	1-2 mg/kg	IV	3-6 mg	5-10 mg	10-20 mg	15-30 mg	20-40 mg
Midazolam	0.05-0.1 mg/kg	IV	0.15-0.3 mg	0.25-0.5 mg	0.5-1 mg	0.75-1.5 mg	1-2 mg
Thiopental	4-6mg/kg	ETT	12-18 mg	20-30 mg	40-60 mg	60-90 mg	80-120 mg

SEDATION MEDICATIONS: 7 YEARS AND OLDER

Drug	Dose	Route	7-9 yrs (25 kg)	10-12 yrs (30 kg)	13-15 yrs (40 kg)	>15 yrs (>50 kg)
Etomidate	0.3 mg/kg	IV	7.5 mg	9 mg	12 mg	15-20 mg
Fentanyl	1-4µg/kg	IV slow	25-100 µg	30-120 µg	40-150 µg	50-200 µg (max 400)
Ketamine	1-2 mg/kg	IV	25-20 mg	30-60 mg	40-80 mg	100-150 mg
Midazolam	0.1-0.3 mg/kg	IV	2.5-5 mg	3-5 mg	4-5 mg max	max 5 mg
Thiopental	4-6mg/kg	ETT	100-150 mg	120-180 mg	160-240 mg	200-300 mg

OTHER MEDICATIONS

Drug	Dose	Route
DT (Diphtheria Tetanus)	0.5 mL	IM DO NOT give SubQ

COLOR CODE DRUG DOSES BY WEIGHT: 3 KG

COLOR CODE: GREY

GREY	NORMAL VITAL SIGNS • Heart Rate: 100-160 • Respirations: 30-60 • B/P Systolic: >60 **DEFIBRILLATION** Cardioversion 3 Joules 6 Joules 6 Joules Defibrillation 6 Joules 12 Joules 12 Joules	**ACLS DRUGS-- INITIAL DOSE** • Adenosine: 0.3 mg • Calcium Chloride: 60 mg • Epinephrine 1:10,000: 0.03 mg • Amiodarone: 15 mg • Sodium Bicarbonate: 3 mEq **DOPAMINE (400 mg / 5mL)** • Add 18 mg (0.2 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	**MEDICATIONS** • Albuterol HHN: 2.5 mg • Dextrose 25% slow IV: 6 mL • Midazolam IV/IM/IN: 0.3 mg • Diphenhydramine*: 3 mg • Epinephrine 1:1,000 IM: 0.03 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 0.3 mg • Naloxone IV/IM/IN: 0.3 mg • Normal Saline IV Bolus: 60 mL * IV or IM	GREY

COLOR CODE DRUG DOSES BY WEIGHT: 4 KG

COLOR CODE: GREY

GREY	NORMAL VITAL SIGNS • Heart Rate: 100-160 • Respirations: 30-60 • B/P Systolic: >60 **DEFIBRILLATION** Cardioversion 4 Joules 8 Joules 8 Joules Defibrillation 8 Joules 16 Joules 16 Joules	**ACLS DRUGS-- INITIAL DOSE** • Adenosine: 0.4 mg • Calcium Chloride: 80 mg • Epinephrine 1:10,000: 0.04 mg • Amiodarone: 20 mg • Sodium Bicarbonate: 4 mEq **DOPAMINE (400 mg / 5 mL)** • Add 24 mg (0.3 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	**MEDICATIONS** • Albuterol HHN: 2.5 mg • Dextrose 25% slow IV: 8 mL • Midazolam IV/IM/IN: 0.4 mg • Diphenhydramine*: 4 mg • Epinephrine 1:1,000 IM: 0.04 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 0.4 mg • Naloxone IV/IM/IN: 0.4 mg • Normal Saline IV Bolus: 80 mL * IV or IM	GREY

COLOR CODE DRUG DOSES BY WEIGHT: 5 KG

COLOR CODE: GREY

GREY	NORMAL VITAL SIGNS • Heart Rate: 100-160 • Respirations: 30-60 • B/P Systolic: >60 **DEFIBRILLATION** Cardioversion 5 Joules 10 Joules 10 Joules Defibrillation 10 Joules 20 Joules 20 Joules	**ACLS DRUGS-- INITIAL DOSE** • Adenosine: 0.5 mg • Calcium Chloride: 100 mg • Epinephrine 1:10,000: 0.05 mg • Amiodarone: 25 mg • Sodium Bicarbonate: 5 mEq **DOPAMINE (400 mg / 5 mL)** • Add 30 mg (0.4 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	**MEDICATIONS** • Albuterol HHN: 2.5 mg • Dextrose 25% slow IV: 10 mL • Midazolam IV/IM/IN: 0.5 mg • Diphenhydramine*: 5 mg • Epinephrine 1:1,000 IM: 0.05 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 0.5 mg • Naloxone IV/IM/IN: 0.5 mg • Normal Saline IV Bolus: 100 mL * IV or IM	GREY

COLOR CODE DRUG DOSES BY WEIGHT: 6-7 KG

COLOR CODE: PINK: 3-6 MONTHS; LENGTH: 59.5-66.5 CM

PINK	NORMAL VITAL SIGNS • Heart Rate: 100-160 • Respirations: 30-60 • B/P Systolic: >70 **DEFIBRILLATION** Cardioversion 7 Joules 14 Joules 14 Joules Defibrillation 13 Joules 26 Joules 26 Joules	**ACLS DRUGS-- INITIAL DOSE** • Adenosine: 0.65 mg • Calcium Chloride: 130 mg • Epinephrine 1:10,000: 0.065 mg • Amiodarone: 32 mg • Sodium Bicarbonate: 6 mEq **DOPAMINE (400 mg / 5 mL)** • Add 40 mg (0.5 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	**MEDICATIONS** • Albuterol HHN: 2.5 mg • Atropine IV: 0.13 mg • Dextrose 25% slow IV: 13 mL • Midazolam IV/IM/IN: 0.6 mg • Diphenhydramine*: 6 mg • Epinephrine 1:1,000 IM: 0.065 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 0.6 mg • Naloxone IV/IM/IN: 0.6 mg • Normal Saline IV Bolus: 130 mL * IV or IM	PINK

COLOR CODE DRUG DOSES BY WEIGHT: 8-9 KG

COLOR CODE: RED: 7-10 MONTHS; LENGTH: 66.5-74 CM

RED	NORMAL VITAL SIGNS	ACLS DRUGS-- INITIAL DOSE	MEDICATIONS	RED
	• Heart Rate: 100-160 • Respirations: 30-60 • B/P Systolic: >70 **DEFIBRILLATION** Cardioversion 9 Joules 17 Joules 17 Joules Defibrillation 17 Joules 34 Joules 34 Joules	• Adenosine: 0.85 mg • Calcium Chloride: 170 mg • Epinephrine 1:10,000: 0.085 mg • Amiodarone: 42 mg • Sodium Bicarbonate: 8 mEq **DOPAMINE (400 mg / 5 mL)** • Add 50 mg (0.6 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	• Albuterol HHN: 2.5 mg • Atropine IV: 0.17 mg • Dextrose 25% slow IV: 17 mL • Midazolam IV/IM/IN: 0.8 mg • Diphenhydramine*: 8 mg • Epinephrine 1:1,000 IM: 0.085 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 0.8 mg • Naloxone IV/IM/IN: 0.8 mg • Normal Saline IV Bolus: 170 mL * IV or IM	

COLOR CODE DRUG DOSES BY WEIGHT: 10-11 KG

COLOR CODE: PURPLE: 11-18 MONTHS; LENGTH: 74-84.5 CM

PURPLE	NORMAL VITAL SIGNS • Heart Rate: 90-150 • Respirations: 24-40 • B/P Systolic: >70 **DEFIBRILLATION** Cardioversion 10 Joules 20 Joules 20 Joules Defibrillation 20 Joules 40 Joules 40 Joules	**ACLS DRUGS--INITIAL DOSE** • Adenosine: 1 mg • Calcium Chloride: 210 mg • Epinephrine 1:10,000: 0.1 mg • Amiodarone: 52 mg • Sodium Bicarbonate: 10.5 mEq **DOPAMINE (400 mg / 5 mL)** • Add 60 mg (0.8 mL) to 100 mL bag of NS • Start at 10 mcgtt/minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	**MEDICATIONS** • Albuterol HHN: 5 mg • Atropine IV: 0.21 mg • Dextrose 25% slow IV: 20 mL • Midazolam IV/IM/IN: 1 mg • Diphenhydramine*: 10 mg • Epinephrine 1:1,000 IM: 0.1 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 1 mg • Naloxone IV/IM/IN: 1 mg • Normal Saline IV Bolus: 200 mL * IV or IM	PURPLE

COLOR CODE DRUG DOSES BY WEIGHT: 12-14 KG

COLOR CODE: YELLOW: 19-35 MONTHS; LENGTH: 84.5-97.5 CM

YELLOW	NORMAL VITAL SIGNS	ACLS DRUGS-- INITIAL DOSE	MEDICATIONS	YELLOW
	• Heart Rate: 90-150 • Respirations: 24-40 • B/P Systolic: >70 **DEFIBRILLATION** Cardioversion 13 Joules 26 Joules 26 Joules Defibrillation 26 Joules 52 Joules 52 Joules	• Adenosine: 1.3 mg • Calcium Chloride: 260 mg • Epinephrine 1:10,000: 0.13 mg • Amiodarone: 65 mg • Sodium Bicarbonate: 13 mEq **DOPAMINE (400 mg / 5mL)** • Add 80 mg (1 mL) to a 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	• Albuterol HHN: 5 mg • Atropine IV: 0.26 mg • Dextrose 25% slow IV**: 25 mL • Dextrose 50% slow IV**: 13 mL • Midazolam IV/IM/IN: 1.3 mg • Diphenhydramine*: 13 mg • Epinephrine 1:1,000 IM: 0.13 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 1.3 mg • Naloxone IV/IM/IN: 1.3 mg • Normal Saline IV Bolus: 250 mL * IV or IM ** D_{25} 0-2 years, D_{50} > 2 years	

COLOR CODE DRUG DOSES BY WEIGHT: 15-18 KG

COLOR CODE: WHITE: 3-4 YEARS; LENGTH: 97.5-110 CM

W H I T E	**NORMAL VITAL SIGNS** • Heart Rate: 80-140 • Respirations: 22-34 • B/P Systolic: >75 **DEFIBRILLATION** Cardioversion 17 Joules 33 Joules 33 Joules Defibrillation 33 Joules 66 Joules 66 Joules	**ACLS DRUGS-- INITIAL DOSE** • Adenosine: 1.7 mg • Calcium Chloride: 330 mg • Epinephrine 1:10,000: 0.17 mg • Amiodarone: 80 mg • Sodium Bicarbonate: 16.5 mEq **DOPAMINE (400 mg / 5 mL)** • Add 100 mg (1.2mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	**MEDICATIONS** • Albuterol HHN: 5 mg • Atropine IV: 0.33 mg • Dextrose 50% slow IV: 16 mL • Midazolam IV/IM/IN: 1.6 mg • Diphenhydramine*: 16 mg • Epinephrine 1:1,000 IM: 0.17 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 1.6 mg • Naloxone IV/IM/IN: 1.6 mg • Normal Saline IV Bolus: 300 mL * IV or IM	**W H I T E**

COLOR CODE DRUG DOSES BY WEIGHT: 19-22 KG

COLOR CODE: BLUE: 5-6 YEARS; LENGTH: 110-122 CM

BLUE	NORMAL VITAL SIGNS	ACLS DRUGS-- INITIAL DOSE	MEDICATIONS	BLUE
	• Heart Rate: 70-120 • Respirations: 18-30 • B/P Systolic: >80 **DEFIBRILLATION** Cardioversion 20 Joules 40 Joules 40 Joules Defibrillation 40 Joules 80 Joules 80 Joules	• Adenosine: 2 mg • Calcium Chloride: 420 mg • Epinephrine 1:10,000: 0.2 mg • Amiodarone: 105 mg • Sodium Bicarbonate: 20 mEq **DOPAMINE (400 mg / 5 mL)** • Add 125 mg (1.6 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	• Albuterol HHN: 5 mg • Atropine IV: 0.42 mg • Dextrose 50% slow IV: 20 mL • Midazolam IV/IM/IN: 2 mg • Diphenhydramine*: 20 mg • Epinephrine 1:1,000 IM: 0.2 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 2 mg • Naloxone IV/IM/IN: 2 mg • Normal Saline IV Bolus: 400 mL * IV or IM	

COLOR CODE DRUG DOSES BY WEIGHT: 24-28 KG

COLOR CODE: ORANGE: 7-9 YEARS; LENGTH: 122-137 CM

ORANGE	NORMAL VITAL SIGNS • Heart Rate: 70-120 • Respirations: 18-30 • B/P Systolic: >80 **DEFIBRILLATION** Cardioversion 27 Joules 53 Joules 53 Joules Defibrillation 52 Joules 104 Joules 104 Joules	ACLS DRUGS-- INITIAL DOSE • Adenosine: 2.6 mg • Calcium Chloride: 530 mg • Epinephrine 1:10,000: 0.26 mg • Amiodarone: 130 mg • Sodium Bicarbonate: 26 mEq **DOPAMINE** **(400 mg/ 5 mL)** • Add 160 mg (2 mL) to 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/minute	MEDICATIONS • Albuterol HHN: 5 mg • Atropine IV: 0.5 mg • Dextrose 50% slow IV: 25 mL • Midazolam IV/IM/IN: 2.5 mg • Diphenhydramine*: 25 mg • Epinephrine 1:1,000 IM: 0.26 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 2.5 mg • Naloxone IV/IM/IN: 2 mg • Normal Saline IV Bolus: 500 mL * IV or IM	ORANGE

COLOR CODE DRUG DOSES BY WEIGHT: 30-36 KG

COLOR CODE: GREEN: 10-12 YEARS; LENGTH: 137-150 CM

GREEN				GREEN
	NORMAL VITAL SIGNS • Heart Rate: 60-100 • Respirations: 12-16 • B/P Systolic: >90 **DEFIBRILLATION** Cardioversion 33 Joules 66 Joules 66 Joules Defibrillation 66 Joules 132 Joules 132 Joules	**ACLS DRUGS--INITIAL DOSE** • Adenosine: 3.3 mg • Calcium Chloride: 660 mg • Epinephrine 1:10,000: 0.33 mg • Amiodarone: 165 mg • Sodium Bicarbonate: 33 mEq **DOPAMINE (400 mg / 5 mL)** • Add 200 mg (2.5 mL) to a 100 mL bag of NS • Start at 10 mcgtt/ minute • Titrate to signs of adequate perfusion or maximum of 20 mcgtt/ minute	**MEDICATIONS** • Albuterol HHN: 5 mg • Atropine IV: 0.5 mg • Dextrose 50% slow IV: 30 mL • Midazolam IV/IM/IN: 3 mg • Diphenhydramine*: 25 mg • Epinephrine 1:1,000 IM: 0.3 mg • Glucagon IM: 1 mg • Morphine Sulfate*: 3 mg • Naloxone IV/IM/IN: 2 mg • Normal Saline IV Bolus: 500 mL * IV or IM	

NERVE AGENT & CYANIDE TREATMENT

Pediatric (Color Code) Dosages for Chemical Weapons

OVERVIEW

Atropine and 2PAM Chloride can be IV or IM, but if 2PAM Chloride is given IV, it should be given over 20 minutes.
Na^+ Nitrite and Na^+ Thiosulfate are to be given IV • Give Na^+ Nitrite over 10 minutes • Give Na^+ Thiosulfate over 20 minutes

NERVE AGENT & CYANIDE TREATMENT: 0-2 MONTHS

COLOR CODE: GREY - AVERAGE WEIGHT: 4 KG

Avg. 4 kg	MILD TO MODERATE EXPOSURE	GREY	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 0.2 mg 2PAM Chloride 100 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 1.2 ml 2nd Na+ Thiosulfate (25%) 6 ml		**Nerve Agent Exposure** Atropine 0.4 mg 2PAM Chloride 200 mg Diazepam 0.8 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 1.2 ml 2nd Na+ Thiosulfate (25%) 6 ml

NERVE AGENT & CYANIDE TREATMENT: 3-6 MONTHS

COLOR CODE: PINK - AVERAGE WEIGHT: 6.5 KG

Avg. 6.5 kg	MILD TO MODERATE EXPOSURE	PINK	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 0.3 mg 2PAM Chloride 150 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 2 ml 2nd Na+ Thiosulfate (25%) 10 ml		**Nerve Agent Exposure** Atropine 0.7 mg 2PAM Chloride 325 mg Diazepam 1.3 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 2 ml 2nd Na+ Thiosulfate (25%) 10 ml

NERVE AGENT & CYANIDE TREATMENT: 7-10 MOS

COLOR CODE: RED - AVERAGE WEIGHT: 8.5 KG

Avg. 8.5kg	MILD TO MODERATE EXPOSURE	RED	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 0.4 mg 2PAM Chloride 200 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 2.6 ml 2nd Na+ Thiosulfate (25%) 14 ml		**Nerve Agent Exposure** Atropine 0.9 mg 2PAM Chloride 425 mg Diazepam 1.7 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 2.6 ml 2nd Na+ Thiosulfate (25%) 14 ml

NERVE AGENT & CYANIDE TREATMENT: 11-18 MOS

COLOR CODE: PURPLE - AVERAGE WEIGHT: 10.5 KG

Avg. 10.5kg

MILD TO MODERATE EXPOSURE

Nerve Agent Exposure

Atropine	0.5 mg
2PAM Chloride	250 mg

Cyanide Antidote Kit

Inhale

Amyl Nitrite: on 15 sec; off 15 sec

Intravenous

1st Na+ Nitrite (3%)	3.2 ml
2nd Na+ Thiosulfate (25%)	16 ml

PURPLE

SEVERE EXPOSURE

Nerve Agent Exposure

Atropine	1 mg
2PAM Chloride	525 mg
Diazepam	2.0 mg

Cyanide Antidote Kit

Inhale

Amyl Nitrite: on 15 sec; off 15 sec

Intravenous

1st Na+ Nitrite (3%)	3.2 ml
2nd Na+ Thiosulfate (25%)	16 ml

NERVE AGENT & CYANIDE TREATMENT: 1.5 - 3 YRS

COLOR CODE: YELLOW - AVERAGE WEIGHT: 13 KG

Avg. 13kg	MILD TO MODERATE EXPOSURE	YELLOW	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 0.65 mg 2PAM Chloride 300 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 4.2 ml 2nd Na+ Thiosulfate (25%) 20 ml		**Nerve Agent Exposure** Atropine 1.3 mg 2PAM Chloride 650 mg Diazepam 2.5 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 4.2 ml 2nd Na+ Thiosulfate (25%) 20 ml

NERVE AGENT & CYANIDE TREATMENT: 3 - 4 YEARS

COLOR CODE: WHITE - AVERAGE WEIGHT: 16.5 KG

Avg. 16.5kg	MILD TO MODERATE EXPOSURE	WHITE	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 0.8 mg 2PAM Chloride 400 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 5 ml 2nd Na+ Thiosulfate (25%) 25 ml		**Nerve Agent Exposure** Atropine 1.7 mg 2PAM Chloride 800 mg Diazepam 3 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 5 ml 2nd Na+ Thiosulfate (25%) 25 ml

NERVE AGENT & CYANIDE TREATMENT: 5 - 6 YEARS

COLOR CODE: BLUE - AVERAGE WEIGHT: 20.5 KG

Avg. 20.5kg	MILD TO MODERATE EXPOSURE	BLUE	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 1 mg 2PAM Chloride 500 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 6.2 ml 2nd Na+ Thiosulfate (25%) 32 ml		**Nerve Agent Exposure** Atropine 2 mg 2PAM Chloride 1000 mg Diazepam 4 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 6.2 ml 2nd Na+ Thiosulfate (25%) 32 ml

NERVE AGENT & CYANIDE TREATMENT: 7 - 9 YEARS

COLOR CODE: ORANGE - AVERAGE WEIGHT: 26 KG

Avg. 26kg

MILD TO MODERATE EXPOSURE

Nerve Agent Exposure

Atropine	1.3 mg
2PAM Chloride	600 mg

Cyanide Antidote Kit

Inhale

Amyl Nitrite: on 15 sec; off 15 sec

Intravenous

1st Na+ Nitrite (3%)	8.5 ml
2nd Na+ Thiosulfate (25%)	40 ml

ORANGE

SEVERE EXPOSURE

Nerve Agent Exposure

Atropine	2.5 mg
2PAM Chloride	1300 mg
Diazepam	5 mg

Cyanide Antidote Kit

Inhale

Amyl Nitrite: on 15 sec; off 15 sec

Intravenous

1st Na+ Nitrite (3%)	8.5 ml
2nd Na+ Thiosulfate (25%)	40 ml

NERVE AGENT & CYANIDE TREATMENT: 10 - 12 YRS

COLOR CODE: GREEN - AVERAGE WEIGHT: 33 KG

Avg. 33kg	MILD TO MODERATE EXPOSURE	GREEN	SEVERE EXPOSURE
	Nerve Agent Exposure Atropine 1.6 mg 2PAM Chloride 600 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 10 ml 2nd Na+ Thiosulfate (25%) 50 ml		**Nerve Agent Exposure** Atropine 3.5 mg 2PAM Chloride 1600 mg Diazepam 6.5 mg **Cyanide Antidote Kit** Inhale Amyl Nitrite: on 15 sec; off 15 sec Intravenous 1st Na+ Nitrite (3%) 10 ml 2nd Na+ Thiosulfate (25%) 50 ml

BURN TREATMENT: FLUID RESUSCITATION

Fluid Resuscitation Formula: 3 - 4 mL / kg / %TBSA burn

For Infants (0 - 2 years; less than 30 kg):
Use maintenance fluid containing 5% dextrose in D5 Lactated Ringer's

Maintenance fluid requirements

- 1st 10kg of body wt: 4 mL/kg/hr
- 2nd 10kg of body wt: 2 mL/kg/hr
- For each kg over 20kg: 1 mL/kg/hr

Pediatric Considerations

- Increased fluid requirements relative to adults
- Increased surface area : mass ratio
- Hypoglycemia may occur in infants (<30 kg) due to limited glycogen reserves

SECTION 4: EQUIPMENT

Contents

EQUIPMENT ESTIMATIONS

Method to estimate Endotracheal Tube (ETT) size: Internal tube diameter (mm) = [16 + age(y)] / 4
ETT Depth in cm at lip = 3x ETT size

EQUIPMENT SIZES: NEWBORN - 6 YEARS OLD

Equipment	Newborn	3-6 mos	1 year	2-3 yrs	4-6 yrs
Weight	3 kg	5 kg	10 kg	15 kg	20 kg
ETT	3-3.5	3.5-4.0	4-4.5	4.5-5/0	5.0-5.5
L Blade	Miller 0-1	Miller 0-1	Miller 0-1	Miller 1-2	Miller 2
Suction	6-8 Fr	8-10 Fr	10 Fr	10 Fr	10 Fr
NG Tube	5-8 Fr	5-8 Fr	8-10 Fr	10-12 Fr	12-14 Fr
Foley	6-8 Fr	6-8 Fr	8-10 Fr	10-12 Fr	10-12 Fr
Chest Tube	10-12 Fr	12-16 Fr	16-20 Fr	20-24 Fr	24-32 Fr
LMA (cuff)	1 (4 mL)	1.5 (7 mL)	2 (10 mL)	2 (10 mL)	2-2.5 (14 mL)

EQUIPMENT SIZES: 7 YEARS AND OLDER

Equipment	7-9 yrs	10-12 yrs	13-15 yrs	>15 yrs
Weight	25 kg	30 kg	40 kg	> 50 kg
ETT	5.5-6.0 cuff	6.0-6t.5 cuff	7.0-7.5 cuff	7.5-8.0 cuff
L Blade	Mil/Mac 2	Mil/Mac 2-3	Mil/Mac 3	Mil/Mac 3
Suction	10 Fr	10 Fr	12 Fr	12-14 Fr
NG Tube	12-14 Fr	14-26 Fr	14-16 Fr	16-18 Fr
Foley	12 Fr	12 Fr	12-14 Fr	12-14 Fr
Chest Tube	28-32 Fr	28-32 Fr	32-40 Fr	32-40 Fr
LMA (cuff)	2.5 (17 mL)	3 (20 mL)	3 (20 mL)	4-6 (30-50 mL)

C-COLLAR SIZE INFORMATION

Size depends on the brand and type of collar.			
Collar packaging usually shows pediatric size per Broselow Tape.			
Necloc Extrication Collar Sizing			
Pediatric Sizes: By Age		Adult: By Neck Shape	
Age	Size	Stout	NL 200 EL (navy)
0-3 months	PAR 100 PAPOOSE	X-Small	NL 250 E (green)
0-2 years	NL-P1	Small	NL 300E (yellow)
2-6 years	NL-P2	Medium	NL 400 E (orange)
6-12 years	NL-P3	Large	NL 500 E (light blue)

SECTION 5: DECONTAMINATION

Contents

DECONTAMINATION CONSIDERATIONS

The smaller the child, the bigger the problem regarding any of these considerations.
Attention to airway management is a priority throughout decontamination.
Preventing hypothermia is critical: • Maintain **water temperature above 98°F.** • It is vital to **rapidly dry children** once decontaminated. • Provide warm blankets and a heated area before and after decontamination.
For young children, use **high-volume, low-pressure, heated water systems**.
Soap and water should be used for decontamination; bleach and other chemicals may be toxic to the sensitive skin of children.
Decontaminating children takes longer, due to the additional time required to assist them. **Expect up to as much as fifteen minutes per child**.
Parents/caregivers may not be able to decontaminate selves & children at same time.
Older children may resist decontamination out of fear, peer pressure, and modesty issues (even in front of their parents or caregivers).
Separation of families during decontamination should be avoided, but medical and safety concerns take priority.

AMBULATORY DECON: INFANTS AND TODDLERS LESS THAN 2 YEARS OLD

Steps:
1. Disrobe by child's caregiver and/or "hot zone" personnel
2. Direct supervision of decon (and of caregiver, too)
3. Escort through the decon shower by "warm zone" personnel and caregiver
Considerations:
• Soap and water should be used.
• Attention to airway management is a priority throughout decontamination.
• If the water temperature is below 98°F, the risk of hypothermia increases in the smaller, younger child.
• The smaller the child, the bigger the problem regarding any of these considerations.

AMBULATORY DECON: PRE-SCHOOL
2 - 7 YEARS OLD

Steps:
1. Assist disrobing (child's caregiver or "hot zone" personnel)
2. Direct supervision of decon (and of caregiver, too)
3. Escort through the decon shower by "warm zone" personnel and caregiver
Considerations:
• Soap and water should be used.
• Attention to airway management is a priority throughout decontamination.
• If the water temperature is below 98°F, the risk of hypothermia increases in the smaller, younger child.
• The smaller the child, the bigger the problem regarding any of these considerations.

AMBULATORY DECON: SCHOOL AGE
8 - 18 YEARS OLD

Steps:
1. Disrobe without assistance - respect privacy
2. Child decons him/herself, but goes through decon shower in succession with caregiver or parent, if present
3. Respect modesty - have screens to provide for gender separation
Considerations:
• Soap and water should be used.
• Attention to airway management is a priority throughout decontamination.

NON-AMBULATORY DECON: ALL AGES

Steps:
1. Disrobe by child's caregiver and "hot zone" personnel
2. Place on a stretcher or restraining device or escort if ambulatory but disabled
3. Escort through the decon shower by "warm zone" personnel and caregiver
4. Direct supervision of decon (and of caregiver, too)
Considerations:
• Soap and water should be used.
• Attention to airway management is a priority throughout decontamination.
• If the water temperature is below 98°F, the risk of hypothermia increases in the smaller, younger child.
• The smaller the child, the bigger the problem regarding any of these considerations.

SECTION 6: MENTAL HEALTH

Contents

PSYCHOLOGICAL FIRST AID: OBJECTIVES

Primary objective:

To create and sustain an environment of:

- safety
- calm
- connectedness to others
- self-efficacy or empowerment
- hope

PSYCHOLOGICAL FIRST AID: STEPS 1-5

Step 1: Contact and engagement – "*My name is _____ and I am here to try to help you and your family. I am a _____ worker here, and I am checking with people to see how they are feeling. May I ask your name?*"
Step 2: Safety and comfort – "*Do you need anything to drink or eat? Is your family here with you? Do you have a place to stay? We are working hard to make you and your family safe. Do you have any questions about what we're doing to keep you safe?*"
Step 3: Stabilization (if needed) – "*After bad things happen, your body may have strong feelings that come and go like waves in the ocean. Even grown-ups need help at times like this. Is there anyone who can help you feel better when you talk to them? Can I help you get in touch with them?"*
Step 4: Information gathering – *"May I ask some questions about what you have been through? Can you tell me where you were during the disaster? Did you get hurt? Is your family safe? How scared were you? Is there anything else that you are worried about?"*
Step 5: Practical Assistance – "*It seems like what you are most worried about right now is _____. Can I help you figure out how to deal with this?*"

PSYCHOLOGICAL FIRST AID: STEPS 6-9

Step 6: Connection with Social Support – "*You are doing a great job letting grown-ups know what you need. It is important to keep letting people know how they can help you. That way, you can make things better.*"
Step 7: Information on Coping – "*It's normal for kids to feel scared after bad things happen. You will probably start to feel better soon. If you like, I can tell you some ways to help you feel better. You can also call 800-854-7771(hotline staffed by mental health professionals trained in disaster response) any time to talk to people who can help you.*"
Step 8: Other support - Provide direct referrals to a) county mental health services or those through private insurance, b) Red Cross and FEMA, as appropriate.
Step 9: Continuity in Helping Relationships – Facilitate referrals: "*May I help make some calls to people who can help you?*" and if feasible, "*I'd like to check in with you again to see how you are doing. How may I contact your parents later?*"
Getting Mental Health Care For crisis counseling and long-term mental health care resources in Los Angeles County, call the County of Los Angeles Department of Mental Health 24-hour access hotline: (800) 854-7771

MENTAL HEALTH CONSIDERATIONS

- **Sit or crouch at a child's eye level**.
- **Help children verbalize their feelings, concerns and questions**; provide simple labels for common emotional reactions (e.g., mad, sad, scared, worried). Match the children's language to help you connect with them, and to help them to feel understood and to understand themselves. Do **not increase their distress by using extreme words** like "terrified" or "horrified."
- **Match your language to the child's developmental level**. Children 12 years and under typically have much less understanding of abstract concepts and metaphors compared to adults. Use direct and simple language as much as possible.
- **Adolescents often appreciate having their feelings, concerns and questions addressed as adult-like**, rather than child-like responses.
- Reinforce these techniques with the child's parents to help them provide appropriate emotional support to their children.

SECTION 7: PEDIATRIC SAFE AREAS

Contents

SECURITY CONSIDERATIONS

Access to any area that children are being cared for or held should have strict security access control.
Once parent/child pair has been verified a method to quickly identify the pair should be implemented such as matching armbands.
If parent is capable, and when possible, child and parent should be kept together including during triage, treatment or decontamination.
It may be necessary to assign a staff member to supervise and escort an unattended child for duration of care.
Maintain procedures to ensure child's safety from predators.
Identify a Pediatric Safe Area for displaced, unaccompanied, and released children awaiting their caregivers has been identified.

PEDIATRIC SAFE AREA CONSIDERATIONS: LOCATION

Secure area away from crowd access
Secure medications and chemicals to prevent accidental poisoning
Cover electric outlets and keep electrical cords out of reach
Cribs should be provide for small children to prevent falls, if this is not available, mats on floor in supervised area may be used
Use of gates or gated areas may be used when supervised to assist in providing means to contain small children in holding areas
Care should be taken to prevent children from cause a trip hazard for elderly patients
Bathrooms should be readily available to the children
Windows should be locked
Remove injury-prone objects in the area (sharp objects, etc.)
The area should be away from stairwells and other fall-risks

PEDIATRIC SAFE AREA CONSIDERATIONS: EQUIPMENT AND SUPPLIES

There should be enough staff and security to ensure the safety of the children
There should be a sign-in and sign-out sheet to help with tracking, which includes times, the name of the adult picking up the child, and his/her contact information
Maintain a supply of age appropriate games, DVDs, toys, art supplies, etc to occupy children
Maintain a supply of pediatric snacks
High chairs for infants
Fans and heaters are identified and made safe

PEDIATRIC IDENTIFICATION CONSIDERATIONS FOR ACCOMPANIED CHILDREN

The identification document or band to be placed on the “accompanied” child should include the following, if available:

- Name of pediatric patient/visitor and date of birth
- Name of adult, relationship to child, and date of birth
- Admission date of adult (if the adult is a victim)
- Admission date of injured pediatric patient
- Date of visit of uninjured pediatric patient

RESOURCE CONTACTS

Los Angeles County Department of Public Health

- Acute Communicable Disease Control: (213) 240-7941
- Communicable Disease Reporting System (CDRS)
  Hotline: (888) 397-3993
  Faxline: (888) 397-3778

Los Angeles County Emergency Medical Services Agency

- Business Hours: (562) 347-1500
- 24/7 Medical Alert Center (MAC): (866) 940-4401

Los Angeles County Department of Mental Health: 24/7 Hotline: (800) 854-7771

Long Beach Department of Health and Human Services: 24/7 Hotline: (562) 570-4499

Pasadena Public Health Department: (626) 744-6005

Poison Control Center: 24/7 Hotline: (800) 222-1222

REFERENCES

- Agency for Healthcare Research and Quality. *Pediatric Terrorism and Disaster Preparedness - a Resource for Pediatricians*. Rockville, MD: Agency for Healthcare Research and Quality; October 2006, Revised: December 2006. AHRQ Publication No. 06(07)-0056.
- Ball JW. Bindler RC. *Pediatric Nursing, Caring for Children, Fourth Edition*. Upper Saddle River, NJ: Pearson Prentice Hall; 2008.
- Brymer M, Jacobs A, Layne C, Pynoos R, Ruzek J, Steinberg A, Vernberg E, Watson P, (National Child Traumatic Stress Network and National Center for PTSD). *Psychological First Aid Field Operations Guide, 2nd Edition*. Rockville, MD: National Child Traumatic Stress Network and National Center for PTSD, July 2006.
- California Emergency Medical Services Authority. *EMSC Pediatric Disaster Preparedness Guidelines: Hospitals, Draft for Public Comment Period #1, April 20, 2009-June 18, 2009*. Sacramento, CA: California Emergency Medical Services Authority; May 2008.
- Hockenberry MJ, Wilson D. *Wong's essentials of pediatric nursing, ed. 8.* St. Louis, MO: Mosby; 2008.
- Los Angeles County Emergency Medical Services Agency. *Color Code Drug Doses: LA County Kids*. Santa Fe Springs, CA: Los Angeles County Emergency Medical Services Agency; August 19, 2008.
- Merkel S et al. The FLACC: A behavioral scale for scoring postoperative pain in young children. *Pediatr Nurse.* 1997;23(3):293-297.

REFERENCES (CONTINUED)

- Slota MC. (editor). *Core Curriculum for Pediatric Critical Care Nursing, Second Edition*. St. Louis, MO: Saunders; 2006.
- Taketomo C. *Childrens Hospital Los Angeles Pediatric Dosing Handbook and Formulary, 19th Edition*. Hudson, OH: Lexi-Comp; 2008.
- Teasdale G, Jennett B. Assessment of coma and impaired consciousness. A practical scale. *Lancet*. 1974;2:81-84.
- Wong DL, Perry SE, Hockenberry MJ, Lowdermilk DL, Wilson D. *Maternal Child Nursing Care, Third Edition*. St. Louis, MO: Mosby Elsevier; 2006.

NOTES

NOTES

PEDIATRIC SURGE POCKET GUIDE

This document is available for download at
http://publichealth.lacounty.gov/eprp/plans.htm

For Pocket Guide comments and questions, or to report an error, contact
sreynaldo@ph.lacounty.gov or (213) 637-3600.

Los Angeles County Department of Public Health
June 2009

Constant and Associates, Inc.
info@constantassociates.com