

Department of Anesthesiology
Suggested Pediatric Drug Dosages
 7/05/2005

Dosages and drugs are intended as general guidelines ONLY. The actual drugs and their doses should be only administered following discussion with the attending.

ET=endotracheal; IC=intracardiac;
 IM=intramuscular; IO=intraosseous;
 IV=intravenous; PO=oral; PR=rectal;
 SC=subcutaneous; mcg=microgram

Resuscitation Medication

Atropine: 0.01-0.03 mg/kg IM, IV, ET, IC, IO
 Bicarbonate: 1-2 mEq/kg (0.3 x kg x BE)
 IV, IC, IO
 Calcium Chloride 10%(27 mg Ca⁺⁺/ml): 0.1 - 0.3 ml/kg IV, IC slowly (max 1 g/dose)
 Calcium Gluconate 10%(9 mg Ca⁺⁺/ml): 0.6-1 ml/kg (max 2 g/dose) IV, IC
 Dextrose 0.5-1 g/kg IV = 1-2 ml/kg D₅₀;
 2-4 ml/kg D₂₅W;
 5-10 ml/kg D₁₀W;
 10-20 ml/kg D₅NS
 Diltiazem (Cardizem): 0.25 mg/kg over 2 min;
 May repeat in 15 min @ 0.35 mg/kg over 2 min
 Ephedrine: 0.2-0.3 mg/kg/dose
 Epinephrine (1:10,000) 10 mcg/kg = 0.1 ml/kg IV, IC, IO;
 [ET = 0.1 mg/kg (0.1 ml/kg of 1:1,000)]
 Lidocaine: 1 mg/kg IV, IC, ET, IO

Cardioversion

Atrial arrhythmias: 0.5-1 joule/kg;
 adult dose begins at 20 joules
 Ventricular Fibrillation: 2 joules/kg
 (unsynchronized) using the largest paddles that fit
 Ventricular Tachycardia: 1-2 joules/kg
 Adenosine: 0.1 mg/kg (Max 6 mg);
 Repeat 0.2 mg/kg (Max 12 mg)

Anticonvulsants

Diazepam: 0.1-0.3 mg/kg IV, IO (adult dose 10 mg)
 Lorazepam: 0.05 mg/kg IV, IO, IM (Max 4 mg)
 Phenobarbital: 10-20 mg/kg IV; Maintenance 2.5 mg/kg/dose BID
 Phenytoin: 10-20 mg/kg IV over 20 min in NS;
 Maintenance 2.5 mg/kg/dose BID (Max 1 g)

Antibiotics

Ampicillin: 25 mg/kg/dose q4-6h
 Cefazolin: 30 mg/kg/dose IV q6h
 Clindamicin: 5-10 mg/kg/dose q6-8h (Max 4g/day)
 Gentamicin: 2-2.5 mg/kg/dose q8h (Max dose 80 mg)
 Metronidazole (Flagyl): 15 mg/kg/load;
 Maintenance: 7.5 mg/kg/dose IV, PO q6h
 Vancomycin: 10 mg/kg/dose slowly IV

Unasyn: 75 mg/kg/dose slowly IV over 10- 15 min

Zosyn: <6mos: 150-300 mg/kg/day/q6-8h
 >6mos: 240-400 mg/kg/day/q6-8h

Antihypertensives

Captopril: 0.1-5 mg/kg/d PO q8h
 Diazoxide: 5 mg/kg/dose rapid IV push (Max 10 mg/kg)
 Esmolol: 0.5 mg/kg bolus over 1 min;
 Maintenance: 50-300 mcg/kg/min
 Hydralazine: 0.1-0.2 mg/kg/dose IM, IV q4-6h
 Labetolol: 0.25 mg/kg IV q1-2h
 Nifedipine: 0.01-0.02 mg/kg IV or 1-2 mg/kg/d PO, SL (adult dose 10-30 mg PO)
 Phentolamine: 0.1 mg/kg/dose IV
 Propranolol: 0.01-0.15 mg/kg IV slowly

Analgesics - NSAID

Acetaminophen: PO 10-15 mg/kg/dose q4h
 PR (1st dose only) 30-40 mg/kg followed by PO dose 6 h later (max 30mg/kg/d in newborn; 60 mg/kg/d in infants, 90 mg/kg/d in children; 4 gm/d in adults)
 Ibuprofen: 10 mg/kg PO q6h
 Ketorolac: 0.5 mg/kg IV q6h (with normal Cr & no bleeding diathesis; Max 5 days)
 Celecoxib (Celebrex): >12 yrs 100-200 mg q12h

Analgesics - Opioids

Alfentanil: 30-50 mcg/kg induction;
 Supplemental Bolus: 10-15 mcg/kg
 Maintenance: 0.5-1.5 mcg/kg/min
 Codeine: 0.5-1.0 mg/kg PO q4h
 Tylenol #1: acetaminophen 300 mg + codeine 7.5 mg
 Tylenol #2: acetaminophen 300 mg + codeine 15 mg
 Tylenol #3: acetaminophen 300 mg + codeine 30 mg
 Tylenol #4: acetaminophen 300 mg + codeine 60 mg
 Fentanyl: 0.5-1 mcg/kg/dose IV q1h prn
 Hydrocodone/Oxycodone: 0.05-0.15 mg/kg PO q4h (usual start dose 0.1 mg/kg)
 Hydromorphone: 0.03 mg/kg/dose PO q4h 0.015 mg/kg/dose IV q2-4h prn
 Meperidine: 1 mg/kg/dose IV q2h prn For rigors 0.1 mg/kg/dose IV once
 Methadone: Mild pain: 25 mcg/kg/dose)
 Moderate pain: 50 mcg/kg/dose) IV q4h
 Severe pain: 75 mcg/kg/dose)
 Or 0.1 mg/kg q8-12h (beware of cumulative effects after 48-72 h)
 Morphine: 0.05-0.15 mg/kg/dose IV q2-4h prn 0.2-0.3 mg/kg/dose PO q4h
 Remifentanyl: 0.1-0.5 mcg/kg/min infusion
 Sufentanil: 10-25 mcg/kg induction

Antiemetics/H₂ Blockers

Granisetron: 10 mcg/kg/dose IV/PO q12h
 Lorazepam: 0.05 mg/kg/dose IV/PO q8h

Metoclopramide (Reglan): 0.1-0.2 mg/kg/dose IV/PO q6h (caution re:extrapyramidal signs) (max 0.15 mg/kg/dose)

Omeprazole (Prilosec): 0.6-0.7 mg/kg/dose PO qday to BID

Ondansetron: 0.15 mg/kg IV/SL/PO q8h slowly (max 8 mg/dose; 32 mg/day)

Prochlorperazine (Compazine): >2y 0.1 mg/kg/dose IM/PO q8h (caution re:extrapyramidal signs)

Promethazine (Phenergan): >2y 0.5 mg/kg/dose PO/IV/IM q6h (caution re:extrapyramidal signs)

Ranitidine (Zantac): 1-2 mg/kg/dose BID PO, IV (Max 150 mg BID)

Trimethobenzamide (Tigan):

<14kg = 100mg PR q8h;
 >14 kg = 200 mg PR q8h

Antipuritics

Diphenhydramine: 0.5 mg/kg/dose PO/IV q6h
 Hydroxyzine: 0.5 mg/kg/dose PO/IV q6h
 Nalbuphine: 0.1 mg/kg/dose q6h IV slowly (max 5 mg/dose)

Bronchodilators

Albuterol nebulizer (0.5% soln): 0.01 ml/kg/2.5 ml NS (Max 0.5 ml = 2.5 mg)
 Aminophylline: 7 mg/kg slowly over 30 min IV;
 Maintenance: 0.5-1.5 mg/kg/h
 Epinephrine(1:1,000): 0.01 ml/kg SC (max0.4ml)
 Racemic epi: 0.25-0.5 ml/5 ml NS nebulized
 Isoproterenol: 0.05 mcg/kg/min increasing by 0.1mcg/kg/min to effect or tachycardia is too fast
 Metaproterenol nebulizer (5% soln): 0.01 ml/kg/2.5 ml NS (Max dose 0.3 ml = 15 mg)
 Terbutaline(1 mg/ml): 0.01 ml/kg SC (max 0.25 ml)

Cardiac

Amiodarone (Cordarone): V Fib: 5 mg/kg IV load over 20 min then 5 - 15 mcg/kg/min; be prepared with volume & Ca⁺⁺; (max 15 mg/kg/d) SVT: 5 mg/kg over 10 min X 5 doses
 Amrinone (Inaminone): 0.75-1.0-mg/kg load over 3 min then 5-10 mcg/kg/min in normal saline
 Aprotinin (Trasylol): 0.1-1.0 ml test dose; Load: 2 ml/kg over 10-15 min Maintenance: 1 ml/kg/hr
 Digitalis: 20-40 mcg/kg given over 24 h (adult dose 1 mg);
 Morphine: 5 - 10 mcg/kg/dose BID
 IV dose = 2/3 PO dose
 Diltiazem (Cardizem): 0.25 mg/kg over 2 min;
 May repeat in 15 min @ 0.35 mg/kg over 2 min
 Dopamine, Dobutamine: 2-20 mcg/kg/min
 Epinephrine, Isoproterenol, Norepinephrine: 0.05-1 mcg/kg/min

Esmolol: 0.5 mg/kg bolus over 1 min;

Maintenance: 50-300 mcg/kg/min

Lidocaine: 1-2 mg/kg/dose IV (Max. 10 mg)

Maintenance: 20-50 mcg/kg/min (adult dose 1-4 mg/min)

Magnesium sulfate for Torsades de Pointe: 25-50 mg/kg (max. 2gm) over 10-20 min

Milrinone (Primacor): 20-50 mcg/kg load;

Maintenance: 0.3-0.7 mcg/kg/min

Nitroglycerin: 0.5-5 mcg/kg/min

Nitroprusside: 0.5-10 mcg/kg/min

PGE₁: 0.05-0.1 mcg/kg/min

Phenylephrine: 0.5-10 mcg/kg/min

Procainamide: 10-20 mg/kg over 45 min load;

Maintenance 20-60 mcg/kg/min (adult 1-4 mg/min)

Propranolol: 0.05-0.15 mg/kg IV slowly (Max 5 mg)

Vasopressin: Bolus 0.4-1 U/kg;

BP maintenance: Mix 1.5 U/kg in 50 ml so 1 ml/hr = 0.0005 U/kg/min. Double q 10 min until response achieved or until 4 U/hr (adult dose) is reached.

GI Bleed: 0.002-0.005 U/kg/min

Verapamil: 0.05-0.2 mg/kg IV over 2 min (Max 5 mg)

Diuretics

Aldactone: 0.25-0.8 mg/kg/dose PO BID-QID
 Chlorothiazide: 10-15 mg/kg/dose PO BID
 Furosemide: 0.5-1 mg/kg/dose PO, IM, IV
 Mannitol: 0.25-1 g/kg/dose IV

Fluids and Electrolytes

Maintenance: 4 ml/kg/h for 1st 10 kg + 2 ml/kg/h for 2nd 10 kg + 1 ml/kg/h for every kg >20 kg
 Potassium: 2-3 mEq/kg/d
 Calcium: 200-300 mEq/kg/d
 Glucose: 8 mg/kg/min
 Hyperkalemia: Dextrose 0.5-1 g/kg IV over 15 min with 0.2-0.3 U Reg Insulin/g Dextrose;
 Ca⁺⁺ = 4-5 mg/kg IV over 5-10 min;
 Kayexelate: 1-2 gm/kg PO, PR (with 20% Sorbitol)
 NaHCO₂ = 1-2 mEq/kg
 Shock: 10-20 ml/kg of NS, RL or 5% albumin
 PRBC: 10 ml/kg will raise Hg by 1 gm
 Platelets: 5-10 ml/kg will raise count 50-100x10⁹/L; for >10 kg patient 1 U/10 kg

Laxatives

Bisacodyl Suppository (Dulcolax):
 <2y 5 mg PR
 >2y 10 mg PR
 Docusate sodium (Colace):
 <3y: 10 mg PO q8h
 3 - 6y: 15 mg PO q8h
 6 - 12y: 50 mg PO q8h
 >12y: 100 mg PO q8h
 Senna Syrup (218 mg/5ml): > 3y 5 ml @ bedtime

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Miscellaneous

Dantrolene: 2.4 mg/kg IV load; If no response, 4.8 mg/kg until symptoms are controlled;
 Maintenance: 1.2 mg/kg IV q6h as needed
 Heparin: 50-100 U/kg IV bolus then 10-20 U/kg/h;
 Cardiopulmonary bypass: 300 U/kg IV
 Insulin: 0.02-0.1 U/kg/h
 Magnesium sulfate: 25-50 mg/kg (max 2g) over 10-20 min;
 Maintenance: 16 mg/kg/h to achieve plasma levels of 0.8-1.2 mmol/L (max 2g)

Muscle Relaxants

Cisatracurium: 0.1-0.2 mg/kg/dose IV; lasts 15 - 45 min
 Metubine: 0.1-0.4 mg/kg/dose IV; lasts 1-2 h
 Mivacurium: 0.2-0.3 mg/kg/dose IV; lasts 15-20 min
 Pancuronium: 0.1 mg/kg/dose IV; lasts 1-2 h
 Rocuronium: 0.4-1.0 mg/kg/dose IV; lasts 20-45 min
 Succinylcholine: 1-2 mg/kg IV; 4 mg/kg IM; consider giving atropine first
 Vecuronium: 0.1 mg/kg/dose IV; lasts 30 min

PCA

Hydromorphone (0.2 mg/ml):
 Demand: 0.003 mg/kg/dose q 10 min
 Night basal (optional): 0.003 mg/kg/h
 Nursing boluses: 0.006 mg/kg/dose up to 3 times q4h
 Morphine (1 mg/ml); if under 10 kg (0.5 mg/ml):
 Demand: 0.015 mg/kg/dose q 10 min; Night basal (optional): 0.015 mg/kg/h Nursing Boluses: 0.03 mg/kg/dose q15min up to 3 times q 4h

PCEA

Bupivacaine (0.625 or 1.25 mg/ml NS ± Fentanyl 2 mcg/ml ± Clonidine 0.1 mcg/ml): 0.1-0.4 ml/kg/h;
Do not to exceed:
 Neonates 0.2 mg/kg/h of bupivacaine
 Older Children 0.4 mg/kg/h of bupivacaine

Reversals

Atropine: 0.01-0.02 mg/kg IV
 Edrophonium: For PAT & myasthenia: 0.2 mg/kg IV;
 For muscle relaxants: 1 mg/kg IV with anticholinergic
 Flumazenil: Sedation reversal: 0.01 mg/kg IV
 Overdose: 0.01 mg/kg then 0.005-0.01

mg/kg/h (Max 0.2 mg/dose; 0.05 mg/kg or 1 mg)

Glycopyrrolate: 0.005-0.01 mg/kg IV
 Narcan: 0.01-0.1 mg/kg/dose IV, ET; lasts 20 min
 Neostigmine: 0.05-0.07 mg/kg IV with anticholinergic
 Physostigmine: 0.01 mg/kg slowly IV with anticholinergic (adult dose 2 mg)

Sedative/IV Anesthetics

Chloral Hydrate: 30-80 mg/kg/dose PO, PR
 Clonidine: 0.004 mg/kg PO (Max 0.1 mg)
 Diphenhydramine: 0.2-2 mg/kg/dose IV q4-6h; or 1.25 mg/kg/dose q6h (Max 400 mg/d)
 Etomidate: 0.3 mg/kg IV
 Haloperidol: 0.4-5 mg/dose
 Ketamine: 1-2 mg/kg IV; 3-6 mg/kg PO; 6-10 mg/kg PR; 3 mg/kg intranasal
 Methohexital: 1-2 mg/kg/dose IV; 30-40 mg/kg PR
 Midazolam: 0.05-0.3 mg/kg IV, IM;
 Infusion: 0.4 mcg/kg/min
 PO: 0.5-0.75 mg/kg
 PR: 0.5-1 mg/kg
 Intranasal: 0.2 mg/kg
 Pentobarbital: 2 mg/kg IM, IV, PO
 Propofol: 2-3 mg/kg IV;
 Maintenance: 50-300 mcg/kg/min
 Thiopental: 3-7 mg/kg IV
 PR: 20-40 mg/kg

Steroids

Dexamethasone: 0.3-1 mg/kg/dose IV
 Hydrocortisone (Solu-Cortef): 0.2-1 mg/kg/dose q6h (anti-inflammatory);
 Status asthmaticus: load 4-8 mg/kg then 2-4 mg/kg/dose q4-6h
 Methylprednisolone (Solu-Medrol): 0.04-0.2 mg/kg q6h (anti-inflammatory);
 Status asthmaticus: load 2 mg/kg then 0.5-1 mg/kg/dose q4-6h
 Spinal Shock: 30 mg/kg IV over 1 h then 5.4 mg/kg/h x 23 h
 Liver Transplantation: 20 mg/kg

Endotracheal Tubes

Endotracheal tube size = 4 + Age/4
 Endotracheal depth \geq 1 yr = 12 + Age/2 or 10 + Age
 Blade Size: Newborn = #0 Miller
 1-18 mos = #1 Miller
 18 mos - 8 yrs = #2 Mac/Miller
 >8 yrs = #3 Mac/Miller

Single Lung Ventilation

Age	ETT (ID in)	BB	Univent®	DLT
0.5-1	3.5-4.0	5		
1-2	4.0-4.5	5		
2-4	4.5-5.0	5		
4-6	5.0-5.5	5		
6-8	5.5-6	5	3.5	
8-10	6.0 cuffed	5	3.5	26
10-12	6.5 cuffed	5	4.5	26-28
12-14	6.5-7.0 cuffed	5	4.5	32
14-16	7.0 cuffed	5	6	35
16-18	7.0-8.0 cuffed	5 or 9	7	35

LMA Classic

Mask Size	Patient Size	Max Cuff Vol (air) (ml)	Largest ETT ID (mm)
1	Neonates/infants up to 5 kg	4	3.5
1½	Infants 5-10 kg	7	4
2	Infants/children 10-20 kg	10	4.5
2½	Children 20-30 kg	14	5
3	Children 30-50 kg	20	6
4	Adults 50-70 kg	30	6
5	Adults 70-100 kg	40	7
6	Large adults over 100 kg	50	7

LMA Flexible

Mask Size	Patient Size	Max Cuff Vol (air) (ml)	Internal diameter (mm)
2	Infants/children 10-20 kg	10	5.1
2½	Children 20-30 kg	14	6.1
3	Children 30-50 kg	20	7.6
4	Adults 50-70 kg	30	7.6
5	Adults 70-100 kg	40	8.7
6	Large adults over 100 kg	50	8.7