

PEDIATRIC VITAL SIGNS + EQUIPMENT SIZES

AGE	SBP(HR)	Wt (kg) (BSA m ²)	ETT	BLADE	CHEST TUBE (Fr)	NG/ FOLEY (Fr)	ART LINE (gauge)	RESP RATE
Prem	55(160)	< 1	2.5	0	8	5	24	30-60
Prem	60(160)	1-2	3.0	0	8-10	5	24	30-60
Prem	62(160)	2-3	3.0	0-1	10	5	24	30-60
Newborn	65(150)	3.5 (0.225)	3.5	0-1	10-12	5-6	24	30-60
6 m	95(140)	7 (0.38)	4.0	1	12-16	6	22	30-60
1 y	95(125)	10 (0.5)	4.0	1	16-20	8	22	24-40
2-3 y	100(110)	12-14 (0.6)	4.5	1.5-2	16-20	8	22	24-40
4-6 y	100(100)	16-20 (0.75)	5.0	1.5-2	20-28	10	22	22-34
6-8 y	105(90)	22-27 (0.9)	5.5-6.0	2	24-32	10	22	18-30
10-12 y	115(80)	30-40 (1.1)	6.0-6.5	2-3	28-32	10-12	22	18-30
16 y	115(75)	>50 (>1.4)	6.5-7.0	2-3	32-42	>12	20	12-16

PALS Hypotension: <60 mmHg (<1month), <70mmHg (1-12mos), 70 + age x 2 (1-10 years), <90mmHg (>10yrs)

ETT size: (age/4) + 3 (cuffed), or (age/4) + 4 (uncuffed)

Depth of insertion (oral): 3 x I.D. (cm) ETT

Weight (kg): 2 x age(yr) + 9 (<8yrs) OR 3 x age (yr) for > 8 yrs

WEIGHT (kg)	LMA Size	CENTRAL LINE					
		Internal Jugular		Subclavian		Femoral	
		Diam (Fr)	Length (cm)	Diam (Fr)	Length (cm)	Diam (Fr)	Length (cm)
<5.0	1	4	5	4	8	4	8
5-10	1.5	4-5	5-8	4-5	8-12	4-5	8-12
10-20	2	5	8	5	12	5	12
20-30	2.5	5	8	5	12	5	12
30-50	3	5	8	5	12	5	12
50-70	4	7	16	7	16	7	16
70-100	5	7-9	16	7-9	16	7-9	16
>100	6	7-9	16	7-9	16	7-9	16

VENTILATOR SETTINGS**

FiO₂ 0.5-1.0 (check SaO₂)
 PEEP: 5 cm H₂O
 I:E Ratio: Approx. 1:2
 Pressure-limited ventilation: PIP 16-25 cm H₂O
 Insp. Time: 0.5-1.5 s
 Volume-limited ventilation: Vol: 8-10 ml/kg
 (Neonate Vol: 4-6 mL/kg)

Ventilation rates

Newborn: 25-30/min
 1 yr: 15-20/min
 Adolescent: 8-10/min

****For healthy patients receiving general anesthesia**

BMI = Weight (Kg)/Height (m²)

MUSCLE RELAXANTS

Cisatracurium IV: 0.1-0.2 mg/kg; maintenance 0.03 mg/kg prn
 Pancuronium IV: 0.04-0.1 mg/kg; maintenance 0.01 mg/kg prn
 Rocuronium IV: 0.6 mg/kg (intubation 1 mg/kg); maintenance 0.1 mg/kg prn
 Succinylcholine IV: < 1yr 2 mg/kg (consider pretreatment with atropine IV 0.02 mg/kg); >1yr: 1-2 mg/kg; IM: 2.5-4 mg/kg

REVERSAL AGENTS

Neostigmine IV: 0.025-0.08 mg/kg + Glycopyrrolate 0.01-0.014 mg/kg
 Edrophonium IV: 0.5-1 mg/kg + Atropine 0.01 mg/kg (min=0.1 mg, max = 2 mg)
 Flumazenil IV: 0.01 mg/kg (max = 0.2 mg); repeat up to total dose of 0.05 mg/kg (max total dose = 1 mg)
 Naloxone IV/IM/SC: 0.01 mg/kg
 Physostigmine IV: 0.01-0.03 mg/kg/dose over 5 minutes; may repeat after 15-20 minutes (max total dose = 2 mg)

PAEDIATRIC EMERGENCY DRUGS

Epinephrine 1:10,000 (0.1 mg/mL)

Epinephrine 1:1000 (1 mg/mL)

Adenosine

Amiodarone

Atropine

Dextrose 50%
 Dextrose 25%
 Intralipid (fat emulsion 20%)

Lidocaine (2%)

Magnesium sulfate
 Naloxone

Sodium bicarbonate (8.4%)
 Fluid bolus (NS 0.9% NaCl)
 Defibrillation
 Cardioversion

BRONCHODILATORS (Asthma Exacerbation)

Epinephrine (1:1000 solution) Nebulizer: 0.5 mg/kg/dose (<5kg); 2.5-5 mg/dose (=5kg)
 Ipratropium (250 mcg/mL) 250-500 mcg by nebulizer q 20 min X 3;
 Inhaler: 4-8 puffs
 Salbutamol (5 mg/mL) 0.15 mg/kg in 3 mL NS by nebulizer q 20min X 3 doses; max 5 mg/dose
 Salbutamol MDI (100 mcg/puff) 4-8 puffs PRN (use with aerochamber)
 Hydrocortisone succinate IV: 5 mg/kg q6h for **status asthmaticus**
 Magnesium sulfate IV: 25-50 mg/kg over 10-20 min; max 2.5 g/dose
 Methylprednisolone IV: 1 mg/kg (max 125 mg)
 Prednisone/Prednisolone PO: 1-2 mg/kg/day (max 60 mg/day)

ANALGESICS

Acetaminophen PO: 10-15 mg/kg q4-6h (max = 75 mg/kg/day or 4 g/day, whichever is less)
 PR: 25-35 mg/kg 1st dose; then 10-20 mg/kg q4-6h;
 Same max dose as above
 Ibuprofen PO: 5-10 mg/kg q6-8h; Max 40 mg/kg/d
 Ketorolac IV: 0.5 mg/kg q6-8h; max dose 15 mg < 16 yrs, 30 mg > 16 yrs; caution <1yr
 PO: 5-7 mg/kg q12h (max 1 g/day)

OPIOIDS

Fentanyl IV: 0.5-1 mcg/kg q 5-10 min
 Hydromorphone IV: 10-20 mcg/kg q2h prn ; PACU 4-8 mcg/kg
 Morphine IV: 0.05-0.1 mg/kg bolus q1-2h (max = 5 mg)
 IV: 10-30 mcg/kg/h infusion
 Remifentanyl IV: 0.5-1 mcg/kg or 0.1-0.3 mcg/kg/min infusion

CARDIAC DRUGS AND INFUSIONS

Diltiazem IV: 0.25 mg/kg (max 20 mg)
 Dopamine IV/IO: 1-20 mcg/kg/min (max 50 mcg/kg/min)
 Dobutamine IV/IO: 2.5-20 mcg/kg/min (max 40 mcg/kg/min)
 Enalaprilat IV: 5-10 mcg/kg/dose q8-24 (adults: 0.625-1.25 mg/dose)
 Ephedrine IV: 0.2-0.3 mg/kg/dose
 Esmolol IV: LD 0.1-0.5 mcg/kg; 0.1-0.5 mcg/kg/min (Max: 1000 mcg/kg/min)
 Hydralazine IV: 0.1-0.2 mg/kg q4-6h (Max: 20 mg/dose)
 Isoproterenol IV: 0.025-2 mcg/kg/min
 Labetalol IV: 0.2-1 mg/kg (Max 20mg/dose or 2 mg/kg/dose whichever is less); 0.25-1 mg/kg/hr
 Lidocaine IV/IO/ETT: LD 1 mg/kg (anti-arrhythmic); then 10-50 mcg/kg/min
 Milrinone IV: LD 50 mcg/kg over 15 min: 0.25-0.75 mcg/kg/min infusion; Max 1.13 mg/kg/day
 Nitroglycerin IV :Initial: 0.25-0.5 mcg/kg/minute IV; Titrate by 0.5-1 mcg/kg/minute IV Q 3-5 minutes PRN; Usual dose: 0.5-10 mcg/kg/minute
 Nitroprusside IV: 0.5-10 mcg/kg/min ; max dose 8-10 mcg/kg/min ; (protect from sunlight; cyanide toxicity)
 Norepinephrine IV:0.01-0.1 mcg/kg/min ; Max 2 mcg/kg/min
 Phentolamine IV : 0.05-0.1 mg/kg (Max 5 mg) ; 0.2-2 mcg/kg/min
 Phenylephrine **SVT:** 0.01 mg/kg/dose IV, increase in 0.01 mg/kg increments up to 0.1 mg/kg/total dose.

TET spell: 5 mcg/kg/dose iv followed by continuous iv infusion of 0.1-4 mcg/kg/min
Hypotension/shock: 0.1 mg/kg/dose IM/SC Q 1-2 hours PRN; (Max: 5 mg); 5-20 mcg/kg/dose IV. Push Q 10-15 min PRN; 0.1-0.5 mcg/kg/minute IV Infusion, titrate as required
Paroxysmal supraventricular tachycardia: 5-10 mcg/kg IV over 20-30 seconds, increase by 10 mcg/kg increments up to 100 mcg/kg/total dose
 Procainamide IV : 15-18 mg/kg over 1 hr ; 20-80 mcg/kg/min (Max 2 gms/d)
 Propranolol IV : **Tet Spell** : 0.05-0.1 mg/kg (Max 1 mg infants, 3 mg child); **Arrhythmia:** 0.01-0.15 mg/kg/dose IV Q 6-8 hours PRN, (Max 1 mg/dose infants, 3 mg/dose children); **Resuscitation:** 0.01-0.1 mg/kg/dose IV for newborns
 Prostaglandin E IV:0.01-0.1 mcg/kg/min
 Sildenafil PO : 0.25-.5 mg/kg q4-8h ; max 2 mg/kg/dose q4h
 Vasopressin IV continuous infusion : **Vasodilatory shock** : 0.0003-0.002 units/kg/min
GI Hemorrhage :0.002-0.005 units/kg/hr ; Max 0.01 units/kg/min
Diabetes insipidus (initial dose) : 0.0005 units/kg/hr ; Max 0.01 units/kg/hr

ANTICONVULSANTS

Lorazepam IV: 0.05-0.1 mg/kg (max = 4 mg/dose)
 Midazolam IV: 0.15 mg/kg then 2 mcg/kg/min infusion for refractory status epilepticus
 Diazepam PR: 0.3-0.5 mg/kg (max = 20 mg/dose)
 IV: 0.3 mg/kg (max <5 yr = 5 mg/dose; >= 5 yrs = 10 mg/dose)
 Phenobarbital IV: 10-20 mg/kg over 10-20 min (max = 1000 mg)
 Phenytoin IV: 20 mg/kg over 20-30 min (max =1000 mg)
 Thiopental IV: 4 mg/kg then 1 mg/kg/h infusion if refractory to Midazolam
 Valproic acid IV: 5-10 mg/kg (max = 500 mg) over 5-10 min for patients already on valproic acid with refractory status epilepticus; IV: 30 mg/kg over 5 mins for patients new to valproic acid; add 10 mg/kg if necessary; maintenance 10 mg/kg IV q8h

BLOOD PRODUCTS (CMV negative/irradiated for NICU/Oncology patients)**

PRBCs: 10-20 mL/kg ** Increases Hct 3% or Hb 10 g/L
 FFP: 10-15 mL/kg Factor levels ↑ 15-20%
 Cryoprecipitate: 2 mL/kg Increases Fibrinogen 0.5 g/L
 Platelets: 5-10 mL/kg (child) Increases Platelets 30-40 x 10⁹/L
 15 mL/kg (neonate)
 Factor: VIII 1 unit/kg Increases Plasma level 2%

HYPNOTICS/SEDATIVES

Procedural Sedation

Chloral Hydrate	PO: 50-75 mg/kg (max = 1 g); repeat 25 mg/kg prn X1; 25 mg/kg if <3mo
Dexametomidine	IV: LD 0.5 mcg/kg; Infusion :0.2-1 mcg/kg/hr
Ketamine	IV: 0.5-1 mg/kg then 0.25-0.5 mg/kg as needed
Lorazepam	PO/SL: 0.05 mg/kg q4-8h; Max 2 mg/dose for sedation IV: 0.03-0.05 mg/kg
Midazolam	PO: 0.25-0.5 mg/kg(max=20 mg); IV:0.05-0.1mg/kg (max=6 mg infants); 0.025-0.05 mg/kg (max=10 mg 6-12 yrs)
Propofol	IV: 1.5-2.5 mg/kg induction, then 50-200 mcg/kg/min as needed
Induction of Anesthesia	
Etomidate	IV: 0.2-0.3 mg/kg
Ketamine	IV: 1-2 mg/kg; IM: 3-7 mg/kg
Propofol	IV: 2.5-3.5 mg/kg Maintenance: 200-300 mcg/kg/min (age > 3 yrs; short-term only)
Thiopental	IV: 4-6 mg/kg

ICU SEDATION/ANALGESIA

Morphine	IV: 10-40 mcg/kg/h infusion
Fentanyl	IV: 1-5 mcg/kg/h infusion
Midazolam	IV: 1-6 mcg/min infusion

MISCELLANEOUS DRUGS

Calcium chloride (10%)	IV/IO: 20 mg/kg/dose q10-20 min prn (0.2 mL/kg; max single dose 2 gm)
Calcium gluconate (10%)	IV: 60-100 mg/kg for CPR; 25-50 mg/kg for mod-severe hypocalcemia (max 3 gm)
Caffeine	IV/PO: 10 mg/kg ; maintenance 2.5-5 mg/kg
Dantrolene	IV: 1-2.5 mg/kg initial dose; repeat prn to max of 10 mg/kg/d; then 1-2 mg/kg PO q6h * 3 days
Dexamethasone	IV/IM/PO: 0.6 mg/kg (Croup); max 20 mg/dose IV: 0.15 mg/kg (nausea and vomiting)
DDAVP	IV/SC: 0.0003 mg/kg(0.3 mcg/kg);max 20mcg/dose
Furosemide	IV/PO: 0.5 -2 mg/kg (infants). Max: 6 mg/kg/dose PO and 80 mg/dose IV: Adults: 20-40 mg/dose
Glucagon	IV/IM/SC: Hypoglycemia <20kg: 0.02-0.03 mg/kg/dose; max 1 mg/dose >20kg: 0.5-1mg; repeat in 20 mins prn
Glycopyrrolate	IV/IM: 4-10 mcg/kg q3-4h (control of secretions); max 200 mcg/dose
Hydrocortisone succinate	Physiologic replacement PO: 0.5-0.75 mg/kg/day divided q8h Major stress dose IV: 1-2 mg/kg q8h (max = 100 mg)
Insulin (Regular)	IV: Diabetic ketoacidosis 0.1 units/kg; Infusion: 0.1 units/kg/h IV: 0.25-1 g/kg
Mannitol	IV: 0.5-1 mg/kg
Methylprednisolone	IV: 0.15 mg/kg (Nausea) ; IM/IV : 0.1-0.2 mg/kg qid 30 min before meals ; max 15 mg qid
Metoclopramide	IV: 0.1 mg/kg (max = 4 mg); give pre-induction IV: 1.5 mg/kg
Ondansetron	IV: 10-100 mg/kg, then 1-10 mg/kg/hr infusion; Adjust for renal impairment; high dose cardiac sx
Ranitidine	IV: 0.5-5 mg IV; 5 mg for significant bleeding
Tranexamic acid	
Vitamin K	

ANTI-EMETICS

Dexamethasone	IV, IM, PO: 0.6 mg/kg (croup); max 20 mg/dose IV: 0.15 mg/kg (N/V)
Dimenhydrinate (Gravol)	IV, PO: 0.5-1 mg/kg (max = 50 mg)
Metoclopramide	IV: 0.15 mg/kg
Ondansetron	IV: 0.1 mg/kg (max = 4 mg)

ANTI-PRURITICS

Diphenhydramine (Benadryl)	IV, PO: 0.5-1 mg/kg (max = 50 mg)
Nalbuphine (Nubain)	IV: 0.05 mg/kg/dose (max 5mg)

ANTIBIOTICS (Surgical Prophylaxis – use max of range as dose)

Ampicillin	IV: 25-50 mg/kg q6-8h
Cefazolin	IV: 20-35 mg/kg q8h; max 2 g (mild/mod infectn); 35-50 mg/kg q6-8h; max 2g/dose or 8 g/day (severe infection)
Cefotaxime	IV: 100-200 mg/kg/day div q6h
Cefprozil	PO: 15-30 mg/kg/day div BID
Ceftriaxone	IV: 50-100 mg/kg/day div q12-24h; max 2 g/dose
Cefuroxime	IV: 150 mg/kg/day div q8h (max 6 g/day)
Clindamycin	IV: 10 mg/kg q6-8h; max 600 mg/dose
Gentamicin	IV: 2.5 mg/kg q8h; max 360 mg
Metronidazole	IV: 10 mg/kg q8h ; max 500 mg
Vancomycin	IV: 10-15 mg/kg q6h

ENDOCARDITIS PROPHYLAXIS

Indications:

1. Prosthetic heart valves
2. Previous infective endocarditis
3. Cardiac transplantation recipients with cardiac valvulopathy
4. Serious congenital heart conditions:
 - Unrepaired or incompletely repaired cyanotic CHD with/without palliative shunts and conduits
 - Completely repaired CHD with prosthetic material or device in first 6 months post procedure
 - Repaired CHD with residual defects at/near site of prosthetic patch

Prophylaxis (PO regimens):

Amoxicillin: 50 mg/kg PO
Allergy to Penicillin (PO regimens):
Cephalexin 50 mg/kg PO 30-60 min preop
or Clindamycin 20 mg/kg PO 30 min preop (adults 600 mg PO 30-60 min preop or Azithromicin or Clarithromycin 15 mg/kg PO (max 500 mg) 30-60 min preop;
Prophylaxis (IV regimens):
Ampicillin 50 mg/kg IM, IV 30-60 min of procedure
Allergy to Penicillin (IM, IV regimens):
Cefazolin or Ceftriaxone 50 mg/kg IM/IV 30-60 min preop
Clindamycin 20 mg/kg IM/IV 30-60 min preop

KINGSTON DKA PROTOCOL (pH < 7.30, HCO₃ < 15)

Manage airway/ventilation if indicated, if patient in shock initial fluid bolus = 5-10 mL/kg 0.9% NaCl over 5-10 min then reassess

If no shock initial fluid rate = 5 mL/kg/hr 0.9% NaCl for 1st hour
Subsequent fluid rate = 4-2-1 rule + 2 mL/kg/hr 0.9% NaCl
Add 40 mmol/L KCl to IV fluid once voiding and K⁺ < 5.5 mmol/L
After 1st hour of rehydration, repeat glucose measurement; bolus 0.1 units Regular insulin over 30 mins, then insulin (Regular) infusion at 0.1 units/kg/h and titrate to lower glucose by 3-5 mmol/L/h

Add dextrose to IV fluid when glucose < 15-17 mmol/L (D5 0.45%NaCl unless Na⁺ falling too quickly) and then maintain between 8-14 mmol/L until acidosis corrected

- Measured Na⁺ to rise 1-2 mmol/L/h as glucose falls
- Maintain corrected Na⁺ constant until glucose < 15-17 mmol/L then lower by 1 mmol/L/h (corr Na = meas Na + [(glucose – 5.6) x 0.3])
- Osmolality to fall by 2-3 mmol/L/h (osmo = 2 x Na + urea + glucose)

Assess neurologic status hourly for signs of cerebral edema; if suspected:

1. elevate HOB
2. half IV fluid rate
3. administer mannitol (0.25–0.5 g/kg) or 3% NaCl 2-4 mL/kg over 20 min
4. intubate and mildly hyperventilate (if necessary)

TREATMENT OF SEVERE HYPERKALEMIA (K⁺ > 7.0 mmol/L)

Insulin (regular)	IV: 0.1 units/kg
Dextrose 50%	IV: 0.5 g/kg (1 mL/kg) over 30 min
Calcium chloride (10%)	IV: 20 mg/kg (0.2 mL/kg); max 2g/dose
Sodium polystyrene (Kayexalate) PO, PR:	1 g/kg/dose



PAEDIATRIC DRUG DOSE CHART

Kingston General Hospital & Hotel Dieu Hospital Departments of Anesthesiology & Pediatrics

KGH Phone Numbers

Department of Anesthesiology	7827
Anesthesia Library	2435
OR Front Desk	7820
OR Manager (Anesthesiology)	7071
Anesthesia Resident (on call)	7080
OR Nurse Manager	7070
Same Day Admission (SDAC)	3452
Recovery Room (PACU)	4395
Obstetrics (C5)	2315
Neonatal ICU	2320
Pediatrics	2352
Pediatric Arrest pager	53-720
PECU (Enhanced Care Unit)	3480
ICU	7811
Emergency Dept.	2335
Pharmacy Night Call Pager	53-806
Anesthesia Support Staff (KGH):	
Anesthesia Assistants	7079
Anesthesia Tech	7086
MRI	2796
CT Scan	2301
Pharmacy	6021
Core Lab	7806
Blood Bank	4188
Hematology Lab	4174
KGH OR's:	
Room A: 3528	Room H: 3308
Room B: 3301	Room I: 3352
Room C: 3302 or 3312	Room J: 4214
Room D: 3303 or 3598	Room K: 3354
Room E: 3305 or 4618	Room L: 3353
Room F: 3306	Room ACT: 3912 or 4754
Room G: 3307	

HDH Phone Numbers

OR	2525
Day Surgery	2511
Recovery Room	2525
Pre-admission	2196
PAC Brock 1	2131
COPC	3152
Emergency (0800-2200)	2100
OR Nurse Manager	52-2444
Phase 2	52-3206
Anesthesia Tech (Sandy)	2509

HDH OR's:

Room 1: 3901
Room 2: 3902
Room 4: 3904
Room 5: 3905
Room 6: 3906
Room 8: 3908

The information on this card is for use in emergency situations.
The user should check authoritative literature for current dosages and indications.

Ted Ashbury MD, FRCPC ashburyt@kgh.kari.net
Daisy Chan, RPh, BScPhm, ACPR: Pharmacist KGH

Ellen Tsai MD, FRCPC (Editions 1&2)

Additional information adapted from CHEO: Amy Roeske MD, FRCPC
aeroeske@cheo.on.ca

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