

## PAEDIATRIC CRITICAL CARE INFUSIONS

INTUBATION DRUGS			
DRUG	DOSE	CAUTION	
Atracurium	0.5 – 1 mg/kg		
Atropine	10 – 20 mcg/kg	In case of bradycardia min 100mcg; max 600mcg	
Fentanyl	2 – 4 mcg/kg	Hypotension	
Ketamine	1 -2 mg/kg	Not if ICP is raised; ↑secretions	
Propofol	2 – 5 mg/kg	Hypotension	
Rocuronium	0.6 – 1.0 mg/kg		
Sugammadex	2mg/kg	2-18yrs – Consult product literature	
Thiopental	2 – 4 mg/ kg	Hypotension	
STANDARD DRUG INFUSIONS			
RESPIRATORY			
Drug	Volume in syringe	Rate of infusion	Dosing range
Aminophylline	500mg in 500ml 5% Dextrose or 0.9% saline	1ml/kg/hr = 1mg/kg/hr	0.5-1 mg/kg/hr >12yr old refer to BNFC
Salbutamol (central inf)	50mg in 50ml 5% Dextrose or 0.9% saline	0.06ml/kg/hr = 1mcg/kg/min	1-2mcg/kg/min upto 5mcg/kg/min in ICU setting – monitor for toxicity if > 2mcg/min
Salbutamol (peripheral inf)	10mg in 50ml 5% Dextrose or 0.9% saline	0.3ml/kg/hr = 1mcg/kg/min	1-2mcg/kg/min upto 5mcg/kg/min in ICU setting - monitor for toxicity if > 2mcg/min
CARDIOVASCULAR			
Drug	Volume in syringe	Rate of infusion	Dosing range
Adrenaline (central only)	0.3mg/kg in 50ml 5% Dex or 0.9% saline	1ml/hr = 0.1mcg/kg/min	0.1 – 1 mcg/kg/min
Milrinone	1.5mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 0.5mcg/kg/min	0.3 – 0.75 mcg/kg/min
Noradrenaline	0.3 mg/kg in 50ml 5% Dextrose or 0.9% saline/5% dextrose	1ml/hr = 0.1mcg/kg/min	0.1 – 1 mcg/kg/min
Prostaglandin E1/E2	50mcg in 50ml 5% Dextrose or 0.9% saline	0.6ml/kg/hr = 10 nanograms/kg/min	2.5 – 50ng/kg/min
Vasopressin	0.3 units/kg in 50ml 5% Dextrose (Max 50units in 50ml) or 0.9% saline	1ml/hr = 0.0001 units/kg/min	0.0001 – 0.0008 units/kg/min
Adrenaline (peripheral inf)	0.3mg/kg in 500ml 5% Dextrose or 0.9% saline	10ml/hr = 0.1mcg/kg/min	0.1-1mcg/kg/min
NEUROLOGICAL			
Drug	Volume in syringe	Rate of infusion	Dosing range
Rocuronium	NEAT - 10mg/ml <10kg = 10ml syringe 10-30kg = 20ml syringe >30kg = 50ml syringe	(Weight ÷ 10) mL/hr = 1 mg/kg/hr	0.6-1 mg/kg/hr
Midazolam	3mg/kg in 50ml 5% Dextrose or 0.9% saline. Max 50mg/50ml	1ml/hr = 1mcg/kg/min (Calculation below if >16.5kg child)	1 – 4 mcg/kg/min
Morphine	1mg/kg in 50ml 5% Dextrose or 0.9% saline. Max 50mg/50ml	1ml/hr = 20mcg/kg/hr (Calculation below if >50kg child)	10 – 40 mcg/kg/hr
Propofol	NEAT	10mg/ml (1% solution)	2 – 4 mg/kg/hr

Other Drugs			
Drug	Volume in syringe	Rate of infusion	Dose range
Amiodarone	15mg/kg in 50ml 5% Dextrose	1ml/hr = 5mcg/kg/min	5 – 15 mcg/kg/min
Dobutamine	15mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 5mcg/kg/min	5 – 20 mcg/kg/min
Dopamine	15mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 5mcg/kg/min	5 – 20 mcg/kg/min
Esmolol	30mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 10mcg/kg/min	20 – 200 mcg/kg/min
GTN (Glyceryl Trinitrate)	3mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 1mcg/kg/min	1 – 8 mcg/kg/min (Max 200mcg/min)
Phentolamine	30mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 10mcg/kg/min	5 – 50 mcg/kg/min
SNP – Sodium Nitroprusside	3mg/kg in 50ml 5% Dextrose	1 ml/hr = 1mcg/kg/min	1 – 8 mcg/kg/min
Dopamine (peripheral inf)	3mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 1mcg/kg/min	5 – 10 mcg/kg/min
Atracurium	<b>NEAT</b> – 10mg/ml	(Weight ÷ 10) mL/hr = 1 mg/kg/hr	0.6 – 0.9 mg/kg/hr
Fentanyl	0.1mg/kg in 50ml 5% Dextrose or 0.9% saline <b>OR NEAT</b> (50mcg/ml) if >25kg	1ml/hr = 2mcg/kg/hr	1 – 5 mcg/kg/hr
Thiopental	125mg ( <b>NOT mg/kg</b> ) in 50ml 0.9% NaCl <u>ONLY</u> (0.25%)	1ml/hr = 2.5mg/hr 0.4ml/hr = 1mg/hr	1 – 8 mg/kg/hr (Max 48hr continuous infusion)
Ketamine (sedation dose)	<16kg=30mg/kg in 50ml 5% Dextrose or 0.9% saline	1ml/hr = 10mcg/kg/min	5-20mcg/kg/min

### Using Morphine and midazolam maximum concentration infusion (1mg/ml)

How to calculate the infusion rate (ml/hr):

Midazolam: What you want to give (1mcg/kg/min) x60 **divided by** what you have (1000mcg/ml) = rate/hr

Morphine: What you want to give (20mcg/kg/hr) **divided by** what you have (1000mcg/ml) = rate/hr

**Any concerns call NECTAR for help**

1. Unless specified all infusions can be made up in either 0.9% NaCl or 5% Dextrose.
2. Thiopental infusion: note this is a standard infusion (0.25%). Consider use of adult concentration (2.5%) in older children where large volumes are required.
3. Central lines primed with N Saline – be aware that the dead space may become relevant when running inotropes/vasopressors at low rates.

### Commonly used paediatric CVC priming volume/deadspace information, taken from Vygon and Cook websites November 2016.

Brand	Priming volume	Priming volume	Priming volume
VYGON Multicath 4.5Fr x 6cm	Distal (green) 0.20ml	Median (blue) 0.13ml	Proximal (orange) 0.17ml
COOK 5Fr x 8cm COOK 5Fr x 12cm	Distal (white) 0.3ml <b>MINIMUM</b>	Median (blue) 0.2ml <b>MINIMUM</b>	Proximal (red) 0.2ml <b>MINIMUM</b>
COOK 7Fr x 15cm	Distal (white) 0.5ml <b>MINIMUM</b>	Median (blue) 0.3ml <b>MINIMUM</b>	Proximal (red) 0.3ml <b>MINIMUM</b>