

# Paediatric Critical Care Intravenous Infusion Chart – Vasoactive and other commonly used medications

For use by centers caring for paediatric patients who do NOT currently have access to the National Paediatric SCI Drug Library

\*See example of calculations for **Standard** Concentration Infusions and **Individualised Weight-based** Concentration Infusions on final page

For **Standard** Concentration Infusions:

$$\text{Actual Rate (mL/hour)} = \frac{\text{Actual Dose} \times \text{Default Rate (mL/hour)}}{\text{Default Dose}}$$

Drug	Patient Group/ Wt range	Dilution Instructions	Compatible Diluents	Flow Rate Calculation		Typical Dosage Range Special considerations
				Standard Concentration Infusion  Default rate (mL/hour) = Default dose (dose/kg/time) <i>(Wt always in kg)</i>	or Individualised Weight-based Concentration Infusion	
Adrenaline (Central Line)	≤20kg	0.3mg/kg diluted to 50mL final volume	NaCl 0.9%w/v Glucose 5%w/v	⇒	1 mL/hour = 0.1 microgram/kg/min	0 -0.1 microgram/kg/min Max dose:1.5 microgram/kg/min
	>20kg	6mg diluted to 50mL final volume (1mL contains 120 microgram)		$(0.025 \times Wt)\text{mL/hour} =$ 0.05 microgram/kg/min	n/a	
amIODAROne (Central Line)	≤40kg	15mg/kg diluted to 50mL final volume	Glucose 5%w/v	⇒	1 mL/hour = 5 microgram/kg/min	Step 1 – Load: 5mg/kg (Max 300mg) load over 60 minutes (Concentration must not be less than 0.6mg/mL) Step 2 – Maintenance: 5-15 microgram/kg/min continuous IV infusion. Max dose:1200mg/24hours
	>40kg	600mg diluted to 50mL final volume(1mL contains 12mg)		$(0.025 \times Wt)\text{mL/hour} =$ 5 microgram/kg/min	n/a	
amIODAROne (Peripheral Line)	All patient groups	300mg diluted to 250mL final volume (1mL contains 1.2mg)	Glucose 5%w/v	$(0.25 \times Wt)\text{mL/hour} =$ 5 microgram/kg/min	n/a	Step 1 – Load: 5mg/kg (max 300mg) over 60 minutes Step 2 – Maintenance: 5-15 microgram/kg/min continuous IV infusion. Max dose:1200mg/24hours
amINOPHYLLine (Central or Peripheral Line)	All patient groups	500mg diluted to 500mL final volume (1mL contains 1mg)	NaCl 0.9%w/v Glucose 5%w/v	$(0.5 \times Wt)\text{mL/hour} =$ 0.5 mg/kg/hour	n/a	0-1mg/kg/hr

# Paediatric Critical Care Intravenous Infusion Chart – Vasoactive and other commonly used medications

For use by centers caring for paediatric patients who do NOT currently have access to the National Paediatric SCI Drug Library

\*See example of calculations for **Standard** Concentration Infusions and **Individualised Weight-based** Concentration Infusions on final page

For **Standard** Concentration Infusions:

$$\text{Actual Rate (mL/hour)} = \frac{\text{Actual Dose} \times \text{Default Rate (mL/hour)}}{\text{Default Dose}}$$

Drug	Patient Group/ Wt range	Dilution Instructions	Compatible Diluents	Flow Rate Calculation		Typical Dosage Range Special considerations
				Standard Concentration Infusion  Default rate (mL/hour) = Default dose (dose/kg/time) <i>(Wt always in kg)</i>	or Individualised Weight-based Concentration Infusion	
Atracurium (Central or Peripheral Line)	All patient groups	Use neat (1mL contains 10mg)	n/a	$(0.03 \times \text{Wt})\text{mL/hour} =$ 300 microgram/kg/hour	n/a	300-1800 microgram/kg/hour (Higher doses are often needed to ensure neuomuscular blockade). Ensure adequate ventilation and sedation.
Dinoprostone (Central or Peripheral Line)	≤5kg	50 microgram diluted to 50mL final volume (1mL contains 1microgram)  <i>(click on drug title hyperlink for preparation instructions)</i>	Glucose 5%w/v (preferred)	$(0.3 \times \text{Wt})\text{mL/hour} =$ 5 nanogram/kg/min	n/a	Dose on advice of consultant cardiologist. 5-10nanogram/kg/min, may be increased up to 20nanogram/kg/min. Doses of 100-180nanogram/kg/min have been used
Dobutamine (Central Line)	≤ 15kg	15mg/kg diluted to 50mL final volume	NaCl 0.9%w/v Glucose 5%w/v	➡		1mL/hour = 5microgram/kg/min
	> 15kg	250mg diluted to 50mL final volume (1mL contains 5mg)		$(0.06 \times \text{Wt})\text{mL/hour} =$ 5 microgram/kg/min	n/a	2-20microgram/kg/min
Dobutamine (Peripheral Line)	All patient groups	75mg diluted to 50mL final volume (1mL contains 1.5mg)	NaCl 0.9%w/v Glucose 5%w/v	$(0.2 \times \text{Wt})\text{mL/hour} =$ 5 microgram/kg/min	n/a	2-20microgram/kg/min

# Paediatric Critical Care Intravenous Infusion Chart – Vasoactive and other commonly used medications

For use by centers caring for paediatric patients who do NOT currently have access to the National Paediatric SCI Drug Library

\*See example of calculations for **Standard** Concentration Infusions and **Individualised Weight-based** Concentration Infusions on final page

For **Standard** Concentration Infusions:

$$\text{Actual Rate (mL/hour)} = \frac{\text{Actual Dose} \times \text{Default Rate (mL/hour)}}{\text{Default Dose}}$$

Drug	Patient Group/ Wt range	Dilution Instructions	Compatible Diluents	Flow Rate Calculation		Typical Dosage Range Special considerations
				Standard Concentration Infusion  Default rate (mL/hour) = Default dose (dose/kg/time) <i>(Wt always in kg)</i>	or Individualised Weight-based Concentration Infusion	
Dopamine (Central Line)	≤ 15kg	15mg/kg diluted to 50mL final volume	NaCl 0.9%w/v Glucose 5%w/v	➡	1mL/hour = 5microgram/kg/min	2-20microgram/kg/min
	> 15kg	250mg diluted to 50mL final volume (1mL contains 5mg)		$(0.06 \times \text{Wt})\text{mL/hour} =$ 5 microgram/kg/min	n/a	
Dopamine (Peripheral Line)	All patient groups	75mg diluted to 50mL final volume (1mL contains 1.5mg)	NaCl 0.9%w/v Glucose 5%w/v	$(0.2 \times \text{Wt})\text{mL/hour} =$ 5 microgram/kg/min	n/a	2-20microgram/kg/min
Glyceryl Trinitrate (Central Line)	≤15kg	3mg/kg diluted to 50mL final volume	NaCl 0.9%w/v Glucose 5%w/v	➡	1mL/hour = 1microgram/kg/min	Initially 0.2-0.5 microgram/kg/min dose adjusted according to response; usual dose 1-3 microgram/kg/min; max 10 microgram/kg/min (do not exceed 200microgram/min)
	>15kg	50mg diluted to 50mL final volume (1mL contains 1mg)		$(0.06 \times \text{Wt})\text{mL/hour} =$ 1 microgram/kg/min	n/a	
Labetalol (Central Line)	All patient groups	Use neat and give via central line – i.e. 250mg in 50mL final volume (1mL contains 5mg)	Glucose 5%w/v NaCl 0.9%w/v	$(0.1 \times \text{Wt})\text{mL/hour} =$ 0.5 mg/kg/hour	n/a	0.5 mg/kg/hour adjusted at intervals of at least 15 minutes to response; Max dose: Neonates-4mg/kg/hour 1 month-12 years-3mg/kg/hour 12-18 years- 30-120mg/hour ( NOTE not mg/kg/hour for 12-18 years)
Labetalol (Peripheral Line)	All patient groups	50mg diluted to 50mL final volume (1mL contains 1mg)		$(0.5 \times \text{Wt})\text{mL/hour} =$ 0.5 mg/kg/hour	n/a	

# Paediatric Critical Care Intravenous Infusion Chart – Vasoactive and other commonly used medications

For use by centers caring for paediatric patients who do NOT currently have access to the National Paediatric SCI Drug Library

\*See example of calculations for **Standard** Concentration Infusions and **Individualised Weight-based** Concentration Infusions on final page

For **Standard** Concentration Infusions:

$$\text{Actual Rate (mL/hour)} = \frac{\text{Actual Dose} \times \text{Default Rate (mL/hour)}}{\text{Default Dose}}$$

Drug	Patient Group/ Wt range	Dilution Instructions	Compatible Diluents	Flow Rate Calculation		Typical Dosage Range Special considerations
				Standard Concentration Infusion Default rate (mL/hour) = Default dose (dose/kg/time) <i>(Wt always in kg)</i>	or Individualised Weight-based Concentration Infusion	
Midazolam (Central Line)	All patient groups	3mg/kg diluted to 50mL final volume	NaCl 0.9%w/v Glucose 5%w/v	⇒	1mL/hour = 1microgram/kg/min	Sedation: 0-4microgram/kg/min Status Epilepticus: 0-24microgram/kg/min
Midazolam (Peripheral Line)	≤15kg	3mg/kg diluted to 50mL final volume		⇒	1mL/hour = 1microgram/kg/min	
	>15kg	50mg diluted to 50mL final volume (1mL contains 1mg)		$(0.06 \times \text{Wt})\text{mL/hour} =$ 1 microgram/kg/min	n/a	
Milrinone (Central or Peripheral Line)	≤30kg	1.5mg/kg diluted to 50mL final volume	⇒	1mL/hour = 0.5microgram/kg/min	0.5-0.75microgram/kg/min	
	>30kg	Use neat and give via central line- i.e. 50mg in 50mL final volume (1mL contains 1mg)	$(0.03 \times \text{Wt})\text{mL/hour} =$ 0.5 microgram/kg/min	n/a		
Morphine (Central or Peripheral Line)	All patient groups	1mg/kg diluted to 50mL final volume. (max conc:1mg/mL)	NaCl 0.9%w/v Glucose 5%w/v	⇒	1mL/hour = 20microgram/kg/hour	5-20microgram/kg/hour Monitor vital signs May cause respiratory Depression
Noradrenaline (Central Line)	≤20kg	0.3mg/kg diluted to 50mL final volume	Glucose 5%w/v NaCl 0.9%w/v	⇒	1mL/hour = 0.1microgram/kg/min	0.02-0.1microgram/kg/min. Adjust according to response. Max dose:1microgram/kg/min
	>20kg	6mg diluted to 50mL final volume (1mL contains 120 micrograms)		$(0.025 \times \text{Wt})\text{mL/hour} =$ 0.05 microgram/kg/min	n/a	

# Paediatric Critical Care Intravenous Infusion Chart – Vasoactive and other commonly used medications

For use by centers caring for paediatric patients who do NOT currently have access to the National Paediatric SCI Drug Library

\*See example of calculations for **Standard** Concentration Infusions and **Individualised Weight-based** Concentration Infusions on final page

For **Standard** Concentration Infusions:

$$\text{Actual Rate (mL/hour)} = \frac{\text{Actual Dose X Default Rate (mL/hour)}}{\text{Default Dose}}$$

Drug	Patient Group/ Wt range	Dilution Instructions	Compatible Diluents	Flow Rate Calculation		Typical Dosage Range Special considerations
				Standard Concentration Infusion  Default rate (mL/hour) = Default dose (dose/kg/time) (Wt always in kg)	or Individualised Weight-based Concentration Infusion	
Salbutamol (Central or Peripheral Line)	All patient groups	10mg diluted to 50mL final volume (1mL contains 200 micrograms)	NaCl 0.9%w/v Glucose 5%w/v	$(0.3 \times \text{Wt})\text{mL/hour} = 1\text{microgram/kg/min}$	n/a	0 – 5 microgram/kg/min caution exceeding adult dosing. Adult dosing 3-20 microgram/min (NOTE not microgram/kg/min)
Sodium Nitroprusside (Central Line)	≤15kg	3mg/kg diluted to 50mL final volume	Glucose 5%w/v	⇒	1mL/hour = 1microgram/kg/min	0.5 – 8 microgram/kg/min; Max dose:4 microgram/kg/min if for >24hours Protect from light
	>15kg	50mg diluted to 50mL final volume (1mL contains 1mg)		$(0.06 \times \text{Wt})\text{mL/hour} = 1\text{microgram/kg/min}$	n/a	
Vasopressin (Central Line)	≤15kg	3 units/kg diluted to 50mL final volume	NaCl 0.9%w/v Glucose 5%w/v	⇒	1mL/hour = 1milliunit/kg/min <b>(NB 1 milliunit = 0.001 units) (1000 milliunits = 1 unit)</b>	0.3 – 4 milliunits/kg/min (= 0.0003 -0.004 units/kg/min) <b>(NB 1 milliunit = 0.001 units) (1000 milliunits = 1 unit)</b>
	>15kg	50 units diluted to 50mL final volume 1mL contains 1000 milliunits (= 1 unit)		$(0.03 \times \text{Wt})\text{mL/hour} = 0.5\text{milliunits/kg/min}$	n/a	

For further information, including references for the information on this table, please contact the CHI @ Crumlin Smart-Pump Team: 01-4096696 OR 01-4096100 (Bleep 8813) or by e-mailing: [moninne.howlett@olchc.ie](mailto:moninne.howlett@olchc.ie); [sharon.sutton@olchc.ie](mailto:sharon.sutton@olchc.ie); [eimear.mcgrath@olchc.ie](mailto:eimear.mcgrath@olchc.ie).

**Disclaimer:** Every effort has been made to ensure the information is accurate and up to date and the authors cannot accept any legal responsibility for any errors or omissions. In recognition of the need to stabilise children, other settings/hospitals may refer to this table but are solely responsible for all acts or omissions carried out in connection with, or in reliance on the material provided.

# Paediatric Critical Care Intravenous Infusion Chart – Vasoactive and other commonly used medications

For use by centers caring for paediatric patients who do NOT currently have access to the National Paediatric SCI Drug Library

## Example of rate calculation using **Standard Concentration Infusion**

A 17kg patient needs a Dopamine infusion (via Peripheral Line)

1. Prepare 75mg / 50mL final volume\* NaCl 0.9%w/v as per table (\*Final volume = Neat volume + Diluent volume)  
(In this case 1.9mL of Dopamine 40mg/mL + 48.1mL NaCl 0.9%w/v = 50mL final volume)
2. Calculate the “Default rate” for the “Default dose”  
 $(0.2 \times \text{Wt}) \text{ mL/hour} = 5 \text{ microgram/kg/min}$   
 $(0.2 \times 17) \text{ mL/hour} = 3.4 \text{ mL/hour}$   
 $3.4 \text{ mL/hour} = 5 \text{ microgram/kg/min}$

The infusion is started and titrated to maintain a target MAP.

What flow rate (actual rate) gives a dose of 8 microgram/kg/min (actual dose)?

3. Use the formula to calculate the “Actual Rate”  
– (colour coding may assist you)

$\text{Actual Rate (mL/hour)} = \frac{\text{Actual Dose} \times \text{Default Rate (mL/hour)}}{\text{Default Dose}}$
--

$$\text{Actual Rate (mL/hour)} = \frac{8 \times 3.4}{5} = 5.44 \text{ mL/hour}$$

## Example of rate calculation using **Individualised Weight-based Concentration Infusion**

A 6kg patient needs a Noradrenaline infusion (via Central Line)

1. Calculate the individualised weight-based formula as per table (0.3mg/kg in 50mL)  
 $0.3 \times 6 = 1.8 \text{ mg}$
2. Prepare a 1.8mg / 50mL final volume\* NaCl 0.9%w/v (\*Final volume = Neat volume + Diluent volume)  
(In this case 1.8mL of Noradrenaline 1mg/mL + 48.2mL NaCl 0.9%w/v = 50mL final volume)
3. When run at 1mL/hour this infusion gives a dose of 0.1 microgram/kg/min