



50 kg

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Intubation – prepare ONE size tube above and below recommended size			
ETT size – mm – CUFFED	7 mm	NG tube	12 - 14 Fr
ETT size – mm – UNCUFFED	7.5 mm	ICC tube	20 - 32 Fr
ETT at lips – cm	19 cm	LMA	3
ETT at nose – cm	22 cm	IDC	12 - 14 Fr

ANAPHYLAXIS		
IM Adrenaline (Epinephrine) 1:1000 (1 mg/mL)		
Dose	Volume	Autoinjector
500 microg	0.5 mL	300 microg

\*Use autoinjector only if adrenaline 1:1000 not available

Resuscitation	Vial concentration	Recommended dose/kg	Preparation		Dose	Final volume to administer	Administration
			Dilution – Sodium Chloride 0.9%	Final concentration			
Adrenaline (Epinephrine) 1:10 000 (1 mg/10 mL)	100 microg/mL	10 microg/kg	Undiluted	100 microg/mL	<b>500 microg</b>	5 mL	Push
DC shock – VF/ pulseless VT		4 Joule/kg	Round up energy level to next highest setting on defibrillator		<b>200 Joule</b>		Use adult pads
AmiODAROne (150 mg/3 mL)	50 mg/mL	5 mg/kg	<i>Dilute 6 mL (300 mg) to 30 mL in glucose 5%</i>	10 mg/mL	<b>250 mg</b>	25 mL	Push over 5 mins
Fluid Bolus		10 mL/kg	Sodium Chloride 0.9%			500 mL	Push
Fluid Bolus		20 mL/kg	Sodium Chloride 0.9%			1000 mL	Push
Glucose 10%	100 mg/mL	2 mL/kg	Glucose 10%		100 mg/mL	100 mL	Push
Adenosine (6 mg/2 mL) – 1st dose	3 mg/mL	0.1 mg/kg	Undiluted	3 mg/mL	<b>5 mg</b>	1.7 mL	Push via proximal vein or CVL – Follow immediately by a 10 - 20 mL fast flush
Adenosine (6 mg/2 mL) – 2nd dose	3 mg/mL	0.2 mg/kg			<b>10 mg</b>	3.3 mL	
Adenosine (6 mg/2 mL) – 3rd dose	3 mg/mL	0.3 mg/kg			<b>12 mg</b>	4 mL	
Synchronised Cardioversion		1 Joule/kg	Round up energy level to next highest setting on defibrillator		<b>50 Joule</b>		Use adult pads
		2 Joule/kg			<b>100 Joule</b>		
Atropine (600 microg/mL)	600 microg/mL	20 microg/kg	Dilute 1 mL (600 microg) to 6 mL	100 microg/mL	<b>600 microg</b>	6 mL	Push
<b>Push dose pressors – Doses may be repeated if required</b>							
Adrenaline (Epinephrine) 1:10 000 (1 mg/10 mL)	100 microg/mL	1 microg/kg	Dilute 1 mL (100 microg) to 10 mL	10 microg/mL	<b>50 microg</b>	5 mL	Push
Metaraminol (Syringe 5 mg/10 mL)	500 microg/mL	10 microg/kg	500 microg/mL (10 mL syringe)	500 microg/mL	<b>500 microg</b>	1 mL	Push

Induction agents	Vial concentration	Recommended dose/kg	Dilution – Sodium Chloride 0.9%	Final concentration	Dose	Final volume	Administration
Fentanyl (100 microg/2 mL)	50 microg/mL	2 - 5 microg/kg	Dilute 2 mL (100 microg) to 10 mL	10 microg/mL	<b>100 microg</b>	10 mL	Push over 1 - 3 mins
Ketamine (200 mg/2 mL)	100 mg/mL	1 - 2 mg/kg	Dilute 2 mL (200 mg) to 20 mL	10 mg/mL	<b>50 mg</b>	5 mL	Push over 60 secs
PropOFol (200 mg/20 mL)	10 mg/mL	2 - 3 mg/kg	Undiluted	10 mg/mL	<b>100 mg</b>	10 mL	Push over 30 secs
Midazolam	Various strengths	0.1 - 0.2 mg/kg	Dilute to 1 mg/mL regardless of ampoule strength	1 mg/mL	<b>5 mg</b>	5 mL	Push over 30 secs

Paralytic agents	Vial concentration	Recommended dose/kg	Dilution – Sodium Chloride 0.9%	Final concentration	Dose	Final volume	Administration
Rocuronium (50 mg/5 mL)	10 mg/mL	1.2 mg/kg	Undiluted	10 mg/mL	<b>60 mg</b>	6 mL	Push
Suxamethonium (100 mg/2 mL)	50 mg/mL	2 mg/kg	Dilute 2 mL (100 mg) to 10 mL	10 mg/mL	<b>100 mg</b>	10 mL	Push
Vecuronium (10 mg)	10 mg	0.1 mg/kg	<i>Reconstitute vial with 10 mL WFI</i>	1 mg/mL	<b>5 mg</b>	5 mL	Push

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Reversal agents	Vial concentration	Recommended dose/kg	Preparation		Dose	Final volume to administer	Administration
			Dilution – Sodium Chloride 0.9%	Final concentration			
Sugammadex (200 mg/2 mL) Rocuronium reversal	100 mg/mL	16 mg/kg	Undiluted	100 mg/mL	<b>800 mg</b>	8 mL	Push
Flumazenil (500 microg/5 mL) Benzodiazepine reversal	100 microg/mL	5 microg/kg	Undiluted	100 microg/mL	<b>200 microg</b>	2 mL	Push – Every 60 secs Max single dose 200 microg Max total dose 2000 microg
Naloxone (400 microg/mL) Opioid reversal	400 microg/mL	10 microg/kg	Undiluted	400 microg/mL	<b>400 microg</b>	1 mL	Push – Every 2 - 3 mins May be given IM

Respiratory	Vial concentration	Recommended dose/kg	Dilution – Sodium Chloride 0.9%	Final concentration	Dose	Final volume	Administration
Nebulised Adrenaline (Epinephrine) 1:1000	1 mg/mL		Undiluted	1 mg/mL	<b>5 mg</b>	5 mL	Via nebuliser
Dexamethasone (4 mg/mL)	4 mg/mL	0.3 mg/kg	Undiluted	4 mg/mL	<b>12 mg</b>	3 mL	IV or IM
Magnesium Sulfate (10 mmol/5 mL)	2 mmol/mL	0.2 mmol/kg	Dilute 5 mL (10 mmol) to 50 mL	0.2 mmol/mL	<b>10 mmol</b>	50 mL	Infuse over 20 mins
Hydrocortisone (100 mg + 2 mL diluent)	50 mg/ mL	4 mg/kg	<i>Reconstitute vial with 2 mL WFI</i>	50 mg/mL	<b>200 mg</b>	4 mL	Push over 30 secs or IM
Methylprednisolone (40 mg/mL) sodium succinate	40 mg/mL	1 mg/kg	Dilute 2 mL (80 mg) to 8 mL	10 mg/mL	<b>50 mg</b>	5 mL	Push over 5 mins Sodium succinate ONLY
Salbutamol (5 mg/5 mL)	1 mg/mL	0.1 mg/kg	Dilute 5 mL (5 mg) to 50 mL	0.1 mg/mL	<b>5 mg</b>	50 mL	Load – Infuse over 20 mins
AminOPHYLLine (250 mg/10 mL)	25 mg/mL	5 mg/kg	Dilute 10 mL (250 mg) to 50 mL	5 mg/mL	<b>250 mg</b>	50 mL	Load – Infuse over 30 mins

Neurology/seizures	Vial concentration	Recommended dose/kg	Dilution – Sodium Chloride 0.9%	Final concentration	Dose	Final volume	Administration
Midazolam – <b>IV</b>	Various strengths	0.15 mg/kg	Dilute to 1 mg/mL regardless of ampoule strength	1 mg/mL	<b>7.5 mg</b>	7.5 mL	Push
Midazolam – <b>IM</b>	5 mg/mL	0.2 mg/kg	Undiluted	5 mg/mL	<b>10 mg</b>	2 mL	IM
Midazolam – <b>Buccal/Nasal</b>	5 mg/mL	0.3 mg/kg	Undiluted	5 mg/mL	<b>10 mg</b>	2 mL	Drip dose into alternate nostrils or inside cheek
Phenytoin (100 mg/2 mL) (250 mg/5 mL)	50 mg/mL	20 mg/kg	Dilute 20 mL (1000 mg) to 100 mL	10 mg/mL	<b>1000 mg</b>	100 mL	Infuse over 20 mins *use 0.22 micron filter*
Phenobarbitone (Phenobarbital) (200 mg/mL)	200 mg/mL	20 mg/kg	Dilute 5 mL (1000 mg) to 50 mL	20 mg/mL	<b>1000 mg</b>	50 mL	Infuse over 20 mins
Levetiracetam (500 mg/5 mL)	100 mg/mL	60 mg/kg	Dilute 30 mL (3000 mg) to 60 mL	50 mg/mL	<b>3000 mg</b>	60 mL	Push over 5 mins
Sodium Valproate (400 mg/4 mL)	100 mg/mL	40 mg/kg	Dilute 20 mL (2000 mg) to 50 mL	40 mg/mL	<b>2000 mg</b>	50 mL	Infuse over 10 mins
Mannitol 20%	0.2 g/mL	0.5 g (2.5 mL)/kg	Pre-mixed bag	0.2 g/mL	<b>25 g</b>	125 mL	Infuse over 10 mins *use 5 micron filter*
Sodium Chloride 3% – Hypertonic *For raised ICP or hyponatremic seizures*	0.5 mmol/mL	3 mL/kg	Pre-mixed bag	0.5 mmol/mL	<b>150 mL</b>	150 mL	Infuse over 10 mins via central/large vein

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Electrolytes	Vial concentration	Recommended dose/kg	Preparation		Dose	Final volume to administer	Administration
			Dilution – Sodium Chloride 0.9%	Final concentration			
<b>Hypokalaemia (↓ Potassium)</b> Potassium Chloride 10 mmol in 0.29% sodium chloride (100 mL)	0.1 mmol/mL	0.3 mmol/kg	Pre-mixed bag	0.1 mmol/mL	<b>15 mmol</b>	150 mL	Infuse over 1 hour
<b>Hyperkalaemia (↑ Potassium)</b> Calcium gluconate (2.2 mmol/10 mL)	0.22 mmol/mL	0.11 mmol/kg	Undiluted	0.22 mmol/mL	<b>4.4 mmol</b>	20 mL	Large vein push over 3 - 5 mins DO NOT give with sodium bicarbonate
Salbutamol Nebules	5 mg/2.5 mL	Age based	Dilute to 4 mL	–	<b>5 mg</b>	–	Inhale via nebuliser
Frusemide (Furosemide) (20 mg/2 mL)	10 mg/mL	1 mg/kg	Dilute 4 mL (40 mg) to 40 mL	1 mg/mL	<b>40 mg</b>	40 mL	Infuse over 10 mins
Glucose 10% (with insulin below)	See Infusion guide for doses and administration directions						
Insulin – Actrapid (300 units/3 mL)							
Sodium Bicarbonate 8.4%	1 mmol/mL	1 mmol/kg	Undiluted	1 mmol/mL	<b>50 mmol</b>	50 mL	Large vein push over 5 mins DO NOT mix with other drugs
Resonium A	–	0.25 g/kg	Mix 1 scoop (15 g) with 60 mL water	0.25 g/mL	<b>12.5 g</b>	50 mL	Oral, nasogastric or rectal
<b>Hypocalcaemia – Critical (↓ calcium)</b> Calcium gluconate (2.2 mmol/10 mL)	0.22 mmol/mL	0.11 mmol/kg	Undiluted	0.22 mmol/mL	<b>4.4 mmol</b>	20 mL	Large vein push over 3 - 5 mins DO NOT give with sodium bicarbonate
<b>Hypomagnesaemia or Arrhythmia</b> Magnesium Sulfate (10 mmol/5 mL)	2 mmol/mL	0.2 mmol/kg	Dilute 5 mL (10 mmol) to 50 mL	0.2 mmol/mL	<b>10 mmol</b>	50 mL	<b>Pulse absent</b> – Push over 3 - 5 mins <b>Pulse present</b> – Infuse over 20 mins

Trauma	Vial concentration	Recommended dose/kg	Dilution – Sodium Chloride 0.9%	Final concentration	Dose	Final volume	Administration
Blood – Initial		10 mL/kg			<b>500 mL</b>	500 mL	As clinically indicated
Tranexamic Acid – 1000 mg/10 mL	100 mg/mL	15 mg/kg	Dilute 10 mL (1000 mg) to 100 mL	10 mg/mL	<b>750 mg</b>	75 mL	Infuse over 10 mins

For ongoing bleeding refer to local Massive Haemorrhage Protocol for blood and product replacement

Analgesia	Vial concentration	Recommended dose/kg	Dilution – Sodium Chloride 0.9%	Final concentration	Dose	Final volume	Administration
Fentanyl – <b>Nasal</b> (100 microg/2 mL) Use Mucosal Atomiser Device (MAD)	50 microg/mL	1.5 microg /kg	Undiluted	50 microg/mL	<b>75 microg</b>	1.5 mL	Add 0.1 mL to initial dose to accommodate (MAD) dead space May repeat after 5 - 10 mins
Fentanyl – <b>IV</b> (100 microg/2 mL)	50 microg/mL	0.5 - 1 microg/kg	Dilute 2 mL (100 microg) to 10 mL	10 microg/mL	<b>25 microg</b>	2.5 mL	Dose may be repeated after 5 mins if required
Morphine – <b>IV</b> (10 mg/mL)	10 mg/mL	0.05 - 0.1 mg/kg	Dilute 1 mL (10 mg) to 10 mL	1 mg/mL	<b>2.5 mg</b>	2.5 mL	Dose may be repeated after 5 mins if required

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Analgesia if intraosseous IO drug or fluid administration causes pain	Vial concentration	Recommended dose/kg	Preparation	Final concentration	Dose	Final volume to administer	Administration
Lignocaine (Lidocaine) 1% <b>IO</b>	10 mg/mL (1%)	0.5 mg/kg	Undiluted	10 mg/mL	<b>25 mg</b>	2.5 mL	Instil dose - Follow with 1 mL slow push of sodium chloride 0.9% over 1-2 minutes. Allow to dwell for 1 minute. Rapid flush with 5 mL. Half original dose can be repeated as above

Antiarrhythmics - only in consultation with a Paediatric Cardiologist	Vial concentration	Recommended dose/kg	Preparation	Final concentration	Dose	Final volume	Administration
AmiODAROne (Load) 150 mg/3 mL	See Infusion guide for doses and administration directions						
Esmolol 100 mg/10 mL	10 mg/mL	0.25 - 0.5 mg/kg	Undiluted	10 mg/mL	<b>13 mg</b>	1.3 mL	LOAD – Push over 1 - 2 mins. Continuous infusion may be considered after loading dose
Verapamil 5 mg/2 mL	2.5 mg/mL	0.1 mg/kg	Dilute 2 mL (5 mg) up to 10 mL	0.5 mg/mL	<b>5 mg</b>	10 mL	Infuse over 5 - 10 mins

Acute behavioural disturbance <b>Oral</b>	Medication preparation	Recommended dose	Preparation	Final concentration	Dose	Final volume	Administration
Diazepam	Liquid 1 mg/mL 5 mg tablet	0.2 mg/kg	If liquid unavailable dissolve two 5 mg tablets in 10 mL water	1 mg/mL	<b>10 mg</b>	10 mL	If tablet preferred round dose to nearest half or full tablet
Lorazepam	1 mg tablet	1 - 2 mg	Tablet may be dissolved in small volume of water		<b>1 - 2 mg</b>		
Olanzapine	2.5 - 5 mg wafer	5 - 10 mg	Place wafer on top of tongue		<b>5 - 10 mg</b>		Max daily dose not to exceed 20 mg
Risperidone	1 mg/mL liquid or tablets	0.02 - 0.04 mg/kg	If liquid unavailable tablets may be dissolved to make 1 mg/mL solution	1 mg/mL	<b>1 mg</b>	1 mL	Dose has been rounded

Acute behavioural disturbance <b>IM</b>	Vial concentration	Recommended dose	Preparation	Final concentration	Dose	Final volume	Administration
Droperidol	2.5 mg/mL	0.1 - 0.2 mg/kg	Undiluted	2.5 mg/mL	<b>5 mg</b>	2 mL	Max single dose not to exceed 10 mg. Total daily dose 0.4 mg/kg not to exceed 20 mg
Olanzapine	10 mg/mL	5 - 10 mg	Reconstitute vial with 2.1 mL WFI	5 mg/mL	<b>5 - 10 mg</b>	1 - 2 mL	Max single dose not to exceed 10 mg. Total daily dose 0.4 mg/kg not to exceed 20 mg

Reversal dystonia	Vial concentration	Recommended dose/kg	Preparation	Final concentration	Dose	Final volume	Administration
Benzotropine (Benzatropine) <b>IV or IM</b> 2 mg/2 mL	1 mg/mL	0.02 mg/kg	Undiluted	1 mg/mL	<b>1 mg</b>	1 mL	IV or IM

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Drug	Vial concentration	Recommended dose/kg range	Preparation		Final rate range	Administration/ route
			Glucose 5% or Sodium Chloride 0.9%	Final concentration		
<b>Inotropes</b>						
Adrenaline (Epinephrine)	1:1000; 1 mg/mL	<b>0.05 to 0.4 microg/kg/min</b>	Dilute <b>1 mL (1 mg)</b> to 50 mL	20 microg/mL	<b>7.5 to 60 mL/hr</b>	IV
<i>Adrenaline (Epinephrine) <b>STRONG</b></i>	1:1000; 1 mg/mL	<b>0.05 to 0.4 microg/kg/min</b>	<i>Dilute <b>6 mL (6 mg)</b> to 50 mL</i>	<i>120 microg/mL</i>	<b>1.3 to 10 mL/hr</b>	<i>Central Access</i>
Dobutamine	250 mg/20 mL	<b>2 to 20 microg/kg/min</b>	Dilute <b>6 mL (75 mg)</b> to 50 mL	1.5 mg/mL	<b>4 to 40 mL/hr</b>	IV
Noradrenaline (Norepinephrine)	4 mg/4 mL	<b>0.05 to 0.4 microg/kg/min</b>	Dilute <b>1 mL (1 mg)</b> to 50 mL	20 microg/mL	<b>7.5 to 60 mL/hr</b>	IV
<i>Noradrenaline (Norepinephrine) <b>STRONG</b></i>	4 mg/4 mL	<b>0.05 to 0.4 microg/kg/min</b>	<i>Dilute <b>4 mL (4 mg)</b> to 50 mL</i>	<i>80 microg/mL</i>	<b>1.9 to 15 mL/hr</b>	<i>Central Access</i>
<b>Antiarrhythmics - only in consultation with a Paediatric Cardiologist</b>						
AmiODAROne <u>LOAD</u>	50 mg/mL	<b>25 microg/kg/min</b> (for 4 hrs)	Dilute <b>10 mL (500 mg)</b> to 250 mL in Glucose 5%	2 mg/mL	Dose <b>300 mg (150 mL)</b> infuse at <b>37.5 mL/hr</b>	IV
AmiODAROne [after loading dose]	50 mg/mL	<b>5 to 12 microg/kg/min</b>	Dilute <b>10 mL (500 mg)</b> to 250 mL in Glucose 5%	2 mg/mL	<b>7.5 to 18 mL/hr</b>	IV
Esmolol	100 mg/10 mL	<b>50 to 200 microg/kg/min</b>	Undiluted – draw up 50 mL (500 mg)	10 mg/mL	<b>15 to 60 mL/hr</b>	IV
<b>Sedation</b>						
Fentanyl	100 microg/2 mL	<b>1 to 3 microg/kg/hr</b>	Dilute <b>10 mL (500 microg)</b> to 50 mL	10 microg/mL	<b>5 to 15 mL/hr</b>	IV
Ketamine	200 mg/2 mL	<b>5 to 20 microg/kg/min</b> (0.3 to 1.2 mg/kg/hr)	Dilute <b>2 mL (200 mg)</b> to 50 mL	4 mg/mL	<b>3.8 to 15 mL/hr</b>	IV
Midazolam <b>STRONG</b>	Various strengths	<b>30 to 120 microg/kg/hr</b>	Dilute <b>50 mg</b> to 50mL	1 mg/mL	<b>1.5 to 6 mL/hr</b>	IV
Morphine <b>STRONG</b>	Various strengths	<b>5 to 80 microg/kg/hr</b>	Dilute <b>30 mg</b> to 50mL	0.6 mg/mL	<b>0.4 to 6.7 mL/hr</b>	IV
PropOFol	200 mg/20 mL	<b>0.3 to 3 mg/kg/hr</b>	Undiluted – Draw up <b>50 mL (500 mg)</b>	10 mg/mL	<b>1.5 to 15 mL/hr</b>	IV
<b>Diabetic Ketoacidosis</b>						
Insulin (neutral) ACTRAPID	300 units/3 mL	<b>0.05 to 0.1 units/kg/hr</b>	Dilute <b>0.5 mL (50 units)</b> to 50 mL with Sodium Chloride 0.9%	1 unit/mL	<b>2.5 to 5 mL/hr</b>	IV
<b>Asthma</b>						
Aminophylline [after loading dose]	250 mg/10 mL	<b>1 mg/kg/hr</b>	Dilute <b>10 mL (250 mg)</b> to 50 mL	5 mg/mL	<b>10 mL/hr</b>	IV
Salbutamol	5 mg/5 mL	<b>1 to 2 microg/kg/min</b>	Undiluted – draw up <b>50 mL (50 mg)</b>	1 mg/mL	<b>3 to 6 mL/hr</b>	IV
<b>Paralytic Agents – only in consultation with Paediatric Intensivist</b>						
Vecuronium	10 mg vial	<b>1 to 3 microg/kg/min</b>	Dilute <b>25 mL (50 mg)</b> to 50 mL	1 mg/mL	<b>3 to 9 mL/hr</b>	IV
<b>Electrolytes</b>						
<b>Hyperkalaemia</b> Glucose 10%	–	<b>5 mL/kg/hr</b>	Use a glucose 10% bag – Undiluted <i>Administer with Actrapid infusion</i>	10%	<b>250 mL/hr</b>	IV. Run insulin and glucose infusions (concurrently) until K <sup>+</sup> within range monitor BSLs
<b>AND</b> ACTRAPID (Insulin neutral)	300 units/3 mL	<b>0.1 units/kg/hr</b>	Dilute <b>0.5 mL (50 units)</b> to 50 mL with <u>Sodium Chloride 0.9%</u> <i>Administer with Glucose infusion</i>	1 unit/mL	<b>5 mL/hr</b>	