

### PAEDIATRIC PARENTERAL ADMINISTRATION CHART: ANTI INFECTIVES

DRUG	VIAL SIZE	RECONSTITUTION		ROUTE	SUITABLE DILUENT	MAX CONCENTRATION	RATE OF ADMINISTRATION (MINS)	RECOMMENDED USUAL DAILY DOSES** Click <a href="#">here</a> for KKH Antimicrobial Guidelines; dosing may differ
		ADD with (WFI)	Final volume					
ACYCLOVIR	250 mg (Powder)	10 mL	10 mL	IV Infusion	D5%, NaCl 0.9%, D5% / NaCl 0.45%	7 mg/mL Fluid restricted: 10 mg/mL (central line) <i>Extravasations have been reported with higher conc.</i>	≥60 min	15 - 60 mg/kg/day
	250mg (Liquid)	-	10mL					
AMIKACIN	500 mg/2 mL	-	2 mL	IV Infusion	D5%, NaCl 0.9%, D5% / NaCl 0.45%	10 mg/mL	≥30	15 - 22.5 mg/kg/day
				IM	No further dilution	250 mg/mL	---	
AMPICILLIN	500 mg	5 mL	5 mL	IV Bolus (Dose ≤ 500mg)	Can be given undiluted	100 mg/mL	3-5	100 - 200 mg/kg/day
				IV Infusion (Dose > 500mg)	NaCl 0.9%	30 mg/mL	≥30	
		1.8 mL	2 mL	IM	No further dilution	250 mg/mL	---	
AMPICILLIN, SULBACTAM (Unasyn®)	1000 mg ampicillin/ 500 mg sulbactam	3.2 mL	4 mL	IV Bolus (Dose ≤ 500mg ampicillin)	Can be given undiluted	250 mg/mL (ampicillin)	3-5	100 - 200 mg ampicillin component/kg/day
				IV Infusion (Dose > 500mg ampicillin)	D5%, NaCl 0.9%, D5% / NaCl 0.45%	30 mg/mL (ampicillin)	15-30	
				IM	No further dilution	250 mg/mL (ampicillin)	---	
CO-AMOXICLAV	1200 mg	19 mL	20 mL	IV Bolus	Can be given undiluted	60 mg/mL	3-5	120mg/kg/day, divided Q8H (Max: 1200mg/dose)
				IV Infusion	NaCl 0.9%	12 mg/mL	≥30	
CEFAZOLIN	1000 mg	3.4 mL	4 mL	IV Bolus	D5%, NaCl 0.9%	100 mg/mL	3-5	100 - 150 mg/kg/day
				IV Infusion	D5%, NaCl 0.9%, D5% / NaCl 0.45%	40 mg/mL	≥30	
				IM	No further dilution	250 mg/mL	---	

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CEFEPIME	2000 mg	10 mL	Final concentration ~160 mg/mL	IV Bolus	Can be given undiluted	160 mg/mL	3-5	100-150mg/kg/day
				IV Infusion	D5%, D10%, NaCl 0.9%, D5% / NaCl 0.9%	40mg/mL	30	
		6 mL	8.8 mL	IM	No further dilution	230 mg/mL	---	
CEFOTAXIME	500 mg	2 mL	2.2 mL	IV Bolus	D5%, NaCl 0.9%	200 mg/mL	3-5	75 - 200mg/kg/day
				IV Infusion		60 mg/mL	30	
		2 mL	2.2 mL	IM	No further dilution	230 mg/mL	---	
CEFTAZIDIME	1000 mg	9 mL	10 mL	IV Bolus	Can be given undiluted	100 mg/mL	3-5	75 - 150 mg/kg/day
				IV Infusion	D5%, NaCl 0.9%, D5% / NaCl 0.45%	40 mg/mL	15-30	
		*3 mL (with 1% Lignocaine)	4 mL	IM	No further dilution	250 mg/mL	---	
CEFTRIAXONE	1000 mg	9.6 mL	10 mL	IV Bolus (Dose ≤ 1g)	Can be given undiluted	100 mg/mL	3-5	50 - 100 mg/kg/day  <b>Note:</b> Ceftriaxone and Ca-containing solutions/TPN should <b>NOT</b> be given via the same site (including double-lumen lines) at the same time
				IV Infusion (Dose > 1g)	D5%, NaCl 0.9%, D5% / NaCl 0.45%	40 mg/mL	≥30	
		*2.1 mL (with 1% Lignocaine)	2.85 mL	IM	No further dilution	350 mg/mL	---	
CIPROFLOXACIN	200 mg/100 mL	-	100 mL	IV infusion	No further dilution	2 mg/mL	60 min	10 - 40mg/kg/day
CLINDAMYCIN	300 mg/2 mL	-	2 mL	IV Infusion (Dose ≤600 mg)	D5%, NaCl 0.9%, D5% / NaCl 0.45%	18 mg/mL	10-20 min Max rate: 30 mg/min	15 - 40mg/kg/day
				IV Infusion (Dose >600 mg)			30-60 min Max rate: 30 mg/min	
				IM (Dose ≤600 mg)	No further dilution	150 mg/mL	---	

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		ADD with (WFI)	Final volume					
CLOXACILLIN	500 mg	5 mL	5 mL	IV Bolus	Can be given undiluted	100 mg/mL	3-5	100-200 mg/kg/day
				IV Infusion	D5%, NaCl 0.9%	20mg/mL Fluid restricted: 50 mg/mL	30-40	
		1.7 mL	2 mL	IM	No further dilution	250 mg/mL	---	
COTRIMOXAZOLE	80 mg trimethoprim/ 400 mg sulphamethoxazole	-	5 mL	IV Infusion	D5%, NaCl 0.9%, D5% / NaCl 0.45%	0.64 mg/mL (trimethoprim)  Fluid restricted (in D5% only): 1.07 mg/mL (trimethoprim) <i>Precipitation may occur at 1-2 hours for concentrations above 0.64 mg/mL TMP</i>	60-90	8 - 12 mg TMP/kg/day
ERYTHROMYCIN LACTOBIONATE	500 mg	9.4 mL	10 mL	IV Infusion	NaCl 0.9%	5 mg/mL 10 mg/mL (central line)	60	15 - 50 mg/kg/day
ERTAPENEM	1000mg	10 mL	10.7 mL	IV Infusion	NaCl 0.9%	20mg/mL	30	15 mg/kg/dose every 12 hours
		*3.2 mL (with 1% Lignocaine)	Final conc is 280mg/mL	IM	No further dilution	280mg/mL	---	
FLUCONAZOLE	100 mg/ 50 mL	-	50 mL	IV Infusion	Can be given undiluted (May be diluted with NaCl 0.9% or D5% if necessary)	2 mg/mL	Dose < 8 mg/kg: over 1 hour  Dose ≥ 8 mg/kg: over 2 hours  Max rate: 200 mg/hr	3 – 12 mg/kg/dose, depending on indication

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		ADD with (WFI)	Final volume					
GENTAMICIN SULPHATE	80 mg/2mL	-	2 mL	IV Infusion	D5%, NaCl 0.9%	10 mg/mL	30	5 - 7.5 mg/kg/day
				IM	No further dilution	40 mg/mL	---	
LEVOFLOXACIN	250 mg/ 50 mL	-	50 mL	IV Infusion	No further dilution	5 mg/mL	60-90	<5 years : 20 mg/kg/day every 12 hours ≥5 years : 10 mg/kg/day once daily
LINEZOLID	600 mg/ 300 mL	-	300 mL	IV Infusion	D5%, NaCl 0.9%	2 mg/mL	30-120	30 mg/kg/day
MEROPENEM	500 mg	10 mL	10 mL	IV Bolus	No further dilution	50 mg/mL	≥ 5	60 - 120 mg/kg/day
				IV Infusion	D5%, NaCl 0.9%,	50 mg/mL	15-30	
METRONIDAZOLE	500 mg/ 100 mL	-	100 mL	IV Infusion	No further dilution	5 mg/mL	30-60	22.5 – 40 mg/kg/day
PENICILLIN G SODIUM	5 million units (5 MU)	3 mL	5 mL	IV Infusion	D5%, NaCl 0.9%	1 million (MU) units/mL	15-30	100,000 - 500,000 units/kg/day
				IM	No further dilution required, but may be further diluted up to ≤100,000 units/mL with WFI for less discomfort		---	
PENTAMIDINE	300mg	5mL	Final conc. is 60mg/ mL	IV Infusion	NaCl 0.9%, D5%	6 mg/mL	60-120 (1-2 hrs)	4mg/kg every 2 to 4 weeks
PIPERACILLIN, TAZOBACTAM	4000 mg Piperacillin/ 500 mg Tazobactam	17 mL	20 mL	IV Bolus <i>"Emergency setting only, not for inpatient use"</i>	No further dilution	200 mg/mL (piperacillin)	3-5	240 – 320 mg piperacillin component/kg/day (Max 16 g piperacillin/day i.e.

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		ADD with (WFI)	Final volume					
				IV Infusion	D5%, NaCl 0.9%, D5% / NaCl 0.9%		30	4 g piperacillin/DOSE)
POLYMYXIN B	500,000 units	2 mL	2 mL	IV Infusion	D5%	1,667 units/mL	60-90	< 2 years: Up to 40,000 units/kg/day ≥ 2 years: 15,000 – 25,000 units/kg/day
				IM (not routinely recommended due to severe pain)	No further dilution	250,000 units/mL	---	
VANCOMYCIN	500 mg	10 mL	10 mL	IV Infusion	D5%, NaCl 0.9%	5 mg/mL Fluid restricted : 10 mg/mL (central line)	≥60 (≤10 mg/min)	40-60mg/kg/day

\*To replace WFI (Water for Injection) with stated diluents

\*\* Doses stated are recommended usual daily doses; higher doses may be recommended especially for drugs that require therapeutic drug monitoring (TDM) or according to the indications

**PAEDIATRIC PARENTERAL ADMINISTRATION CHART: ANTI INFECTIVES**  
**MISCELLANEOUS**

To obtain the volume to be administered to patient based on the #Final Concentration under Reconstitution:

Dose ordered in mg = Volume required (mL)

e.g. Anidulafungin dose ordered: 40mg. Therefore, volume required: 40mg divided by 3.33mg in mL = **12 mL**

Final Concentration mg/mL

DRUG	VIAL SIZE	RECONSTITUTION		ROUTE	SUITABLE DILUENT	CONCENTRATION	RATE	Comments
		ADD with (WFI)	Final Concentration					
<b>AMBISOME®</b> Amphotericin B (liposomal)  <b>NOTE:</b> This product is <b>NOT INTERCHANGEABLE</b> with FUNGIZONE®	50 mg	12 mL  Refer Comments	4 mg/mL	IV Infusion	<b>D5%</b> <ul style="list-style-type: none"> <li>After withdrawing the required dose from the vial, attach the 5 micron filter provided to the syringe (use 1 filter per vial)</li> <li>Inject the contents of the syringe <u>through the filter provided</u> into the diluent</li> </ul>	Recommended: 1 – 2 mg/mL  Minimum concentration: 0.2 – 0.5 mg/mL	2 hours (may reduce to 1 hour if well-tolerated)	<ul style="list-style-type: none"> <li>For reconstitution, <b><u>shake the vial vigorously for 30 seconds</u></b> to completely disperse the AmBisome®.</li> <li>Administer using a separate line or flush line with D5% before infusion.</li> <li>Reconstituted vial may be stored for up to 24 hours at 30°C.</li> <li>Complete infusion within 6 hours of further dilution with D5%.</li> </ul>
<b>ANIDULAFUNGIN</b>	100 mg	30 mL	3.33 mg/mL	IV Infusion	D5%, NaCl 0.9%	<b>Must be 0.77 mg/mL</b>  <i>(the optimum concentration required for the micelle-forming surfactant to optimize solubilization)</i>	Max rate: 1.1 mg/min or 1.4 mL/min	The reconstituted and diluted solution may be stored at room temperature (up to 25°C) for up to 24 hours
<b>ARTESUNATE</b>	60 mg	<ul style="list-style-type: none"> <li>1 mL of 5% <b>sodium bicarbonate</b> (ampoule provided in box) to get 60 mg/mL</li> <li>Insert syringe needle in the vial to get rid of the gas.</li> </ul>		IV Bolus	<b>5 mL</b> of D5%, NaCl 0.9%	10 mg/mL	1-2 minutes	Reconstituted solutions are stable for 1 hour at room temperature
				IM	<b>2 mL</b> of D5%, NaCl 0.9%	20 mg/mL	-	

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<b>AZITHROMYCIN</b> <b>(Zithromax®)</b> <i>[non-formulary]</i>	500 mg	4.8 mL	100 mg/mL	IV Infusion	D5%, NaCl 0.9%	1 – 2 mg/mL	<u>For conc. 1 mg/mL</u> 3 hours <u>For conc. 2 mg/mL</u> 1 hour	Reconstituted and diluted solutions are stable for 24 hours under refrigeration (2 - 8°C).
<b>DOXYCYCLINE</b> <i>[restricted formulary]</i>	100 mg/5 mL	-	20 mg/mL	IV infusion	D5%, NaCl 0.9%	0.1 – 1 mg/mL	1-4 hours (Recommended minimum infusion time for a dose of 100mg is 1 hr)	Avoid extravasation. Phlebitis is more common with concentrated solutions.
<b>FUNGIZONE®</b> Amphotericin B (conventional)  <b>NOTE:</b> This product is <b>NOT INTERCHANGEABLE</b> with AMBISOME®	50 mg	10 mL (minimum diameter: 20G needle)	5 mg/mL	IV Infusion	D5%, D10%	Max: <u>Peripheral line</u> 0.1 mg/mL  <u>Central line</u> 0.25 mg/mL	2-6 hours	<ul style="list-style-type: none"> <li>Administer using a separate line or flush line with D5% before infusion.</li> <li>Reconstituted vial may be stored at room temperature for up to 8 hours or under refrigeration (2-8°C) for up to 24 hours</li> </ul>
<b>MICAFUNGIN</b>	50 mg	*5 mL (with NaCl 0.9% , D5%)	10 mg/mL	IV Infusion	D5%, NaCl 0.9%	0.5 – 1.5 mg/mL (Max: 4 mg/mL) Use central line for conc > 1.5 mg/mL	1 hour	The infusion bag/bottle containing the diluted infusion solution should be kept in a grey bag for protection from light (it is not necessary to protect the drip chamber or tubing from light)
<b>REMDESIVIR</b>	100 mg	19 mL	5mg/mL	IV Infusion	NaCl 0.9%	<b>≥40kg:</b> Dilute dose in 100mL to achieve conc. of 1-2mg/mL  <b>≥ 3.5 to &lt; 40 kg:</b> Dilute to 0.4 to 1.25 mg/mL	30-120 mins (30 mins preferred to achieve highest intracellular conc.)	<ul style="list-style-type: none"> <li>Gently invert the infusion bag/syringe 20 times to mix the solution. Do not shake.</li> <li>Once infusion is complete, flush tubing with NaCl 0.9% to ensure delivery of the required dose.</li> <li>Diluted infusion solution is stable for 24 hours at room temperature (20 – 25°C) and under refrigeration (2°C to 8°C)</li> </ul>

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		ADD with (WFI)	Final Concentration					
VORICONAZOLE	200 mg	19 mL	10 mg/mL	IV Infusion	D5%, NaCl 0.45%, NaCl 0.9%	0.5 – 5 mg/mL	1 – 3 hours Max: 3 mg/kg/hour	

WFI: Water for Injection

\*To replace WFI (Water for Injection) with stated diluents

*Note:* To discard the balance reconstituted medication that is not administered after 30 minutes of reconstitution unless otherwise stated in the chart above or instructed by the pharmacist for expensive/Named-Physician-Named-Patient (NPNP) (single batch) medications.

For enquiries, please contact your pharmacists at Ext: 1774 / 8474

**References:** Lexicomp Online | Teddy Bear Book: Pediatric Injectable Drugs, 10<sup>th</sup> Edition | Trissel’s Online | Manufacturer’s Product Insert