



Sepsis First Dose Empirical Parenteral Antibiotic Guideline Paediatric Emergency Department



The Clinical Excellence Commission (CEC) Sepsis Paediatric Empirical Parenteral Antibiotic Guideline aims to guide the prescription and timely administration of the **FIRST DOSE** of antibiotics for **paediatric patients** (1 month to 16 years of age) who have a diagnosis of sepsis. Antibiotics can be administered via intraosseous access or intramuscularly when intravenous access is not available. Intramuscular antibiotics should only be used **FOR SHORT TERM**.

The guideline is based on MIMS, 2011¹ and the Therapeutic Guidelines: Antibiotic version 14, 2010.² Some doses may vary from Therapeutic Guidelines as they are under review. The CEC guideline incorporates best available evidence and expert opinion^{3,4,5} and is intended to provide an accessible resource which can be adapted to suit individual facility preferences as required.

This is a guideline for the FIRST DOSE of antibiotics after which clinicians should seek local assistance and examine results of tests to inform ongoing directed therapy.

For general guidance, refer to *Principles for antimicrobial use (Therapeutic Guidelines)*.⁶

Important notes

- **PROMPT ADMINISTRATION OF ANTIBIOTICS** (within one hour of provisional diagnosis) and **resuscitation fluids is vital in the management of the patient with sepsis.**
- A **differential diagnosis** should always be considered and documented.
- **If further advice is required call your LOCAL PAEDIATRICIAN.**
- Always discuss patients who present with **febrile neutropenia** with the relevant Oncology or Haematology consultant.
- Obtain blood cultures if possible before administering antibiotics. Don't wait for other test results before commencing antibiotics.
- **All** penicillin and cephalosporin class antibiotics are **contraindicated** in patients with history of DRESS (drug rash with eosinophilia and systemic symptoms) or documented immediate allergy (including Stevens Johnson syndrome) to penicillin or cephalosporin in the past. See also [Antimicrobial hypersensitivity \(Therapeutic Guidelines\)](#).⁷

Use Table 1 when there is no obvious source of infection

Use Table 2 when the source of infection is suspected or known



Table 1: PAEDIATRIC antibiotic prescribing when NO OBVIOUS SOURCE OF INFECTION

	FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen	FIRST DOSE empirical intramuscular (IM) antibiotic regimen	Anaphylaxis to penicillin FIRST DOSE empirical Intravenous (IV) or intraosseous (IO) antibiotic regimen
Severe sepsis with NO OBVIOUS SOURCE of infection See Table 3 for common infecting bacteria	cefotaxime 50mg/kg/dose IV/IO, 8-hourly (max. dose 2g) OR ceftriaxone 50mg/kg/dose IV/IO, 24 hourly (max. dose 2g) PLUS gentamicin** 5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)	cefotaxime 50mg/kg/dose IM, 8-hourly (max. dose 2g) OR ceftriaxone 50mg/kg/dose IM, 24-hourly (max. dose 2g) PLUS gentamicin** (dose based on lean body weight) <10 years, 7.5mg/kg /dose IM, 24-hourly (max. dose 320 mg) ≥10 years, 6mg/kg/dose IM, 24-hourly (max. dose 560mg) <div> vancomycin CANNOT be given intramuscularly </div>	gentamicin** 5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg) PLUS moxifloxacin 10mg/kg/dose IV/IO, 24-hourly (max. dose 400mg) OR ciprofloxacin 10mg/kg/dose IV/IO, 12-hourly (max. dose 400mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)



Table 2: PAEDIATRIC antibiotic prescribing when SOURCE OF INFECTION IS SUSPECTED OR KNOWN

Apparent source of sepsis	FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen	FIRST DOSE empirical intramuscular (IM) antibiotic regimen	Anaphylaxis to penicillin FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen
Severe pneumonia (community acquired)	ceftriaxone 50mg/kg/dose IV/IO, 24-hourly (max. dose 2g) OR cefotaxime 50mg/kg/dose IV/IO, 8-hourly (max. dose 2g) PLUS clindamycin 15mg/kg/dose IV/IO, 8-hourly (max. dose 900mg) OR lincomycin 15mg/kg/dose IV/IO, 8-hourly (max. dose 600mg)	ceftriaxone 50mg/kg/dose IM, 24-hourly (max. dose 2g) OR cefotaxime 50mg/kg/dose IM, 8-hourly (max. dose 2g) PLUS clindamycin 15mg/kg/dose IM, 8-hourly (max. dose 900mg) OR lincomycin 15mg/kg/dose IM, 8-hourly (max. dose 600mg)	moxifloxacin 10mg/kg/dose IV/IO, 24-hourly (max. dose 400mg) OR ciprofloxacin 10mg/kg/dose IV/IO, 12-hourly (max. dose 400mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)
Urinary tract infection	ampicillin 50mg/kg/dose IV/IO, 6-hourly (max. dose 2g) PLUS gentamicin** 5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg)	ampicillin 50mg/kg/dose IM, 6-hourly (max. dose 2g) PLUS gentamicin** (dose based on lean body weight) <10 years, 7.5mg/kg/dose IM, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IM, 24-hourly (max. dose 560mg)	gentamicin** 5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg IV/IO, 6-hourly (max. dose 750mg)



Table 2: PAEDIATRIC antibiotic prescribing SOURCE OF INFECTION IS SUSPECTED OR KNOWN (cont.)

Apparent source of sepsis	FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen	FIRST DOSE empirical intramuscular (IM) antibiotic regimen	Anaphylaxis to penicillin FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen
Intra-abdominal source including cholangitis	<p>gentamicin** 5 MINUTE PUSH (dose based on lean body weight)</p> <p><10 years, 7.5mg/kg/dose IV/IO 24-hourly (max. dose 320 mg)</p> <p>≥10 years, 6mg/kg/dose IV/IO 24-hourly (max. dose 560mg)</p> <p>PLUS</p> <p>ampicillin 50mg/kg/dose IV/IO 6-hourly (max. dose 2g)</p> <p>PLUS</p> <p>metronidazole 12.5mg/kg/dose IV/IO, 12-hourly (max. dose 500mg)</p>	<p>gentamicin** (dose based on lean body weight)</p> <p><10 years, 7.5mg/kg/dose IM, 24-hourly (max. dose 320mg)</p> <p>≥10 years, 6mg/kg/dose IM, 24-hourly (max. dose 560mg)</p> <p>PLUS</p> <p>ampicillin 50mg/kg/dose IM, 6-hourly (max. dose 2g)</p> <p>PLUS</p> <p>clindamycin 15mg/kg/dose IM, 8-hourly (max. dose 900mg)</p> <p>OR</p> <p>lincomycin 15mg/kg/dose IM, 8-hourly (max. dose 600mg)</p>	<p>gentamicin** 5 MINUTE PUSH (dose based on lean body weight)</p> <p><10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg)</p> <p>≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg)</p> <p>PLUS</p> <p>metronidazole 12.5mg/kg/dose IV/IO, 12-hourly (max. dose 500mg)</p> <p>PLUS</p> <p>vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)</p>
<p>Meningitis / encephalitis</p> <p>Steroids prior to antibiotic therapy may be indicated; see Meningitis: immediate and early hospital management (Therapeutic Guidelines)</p>	<p>ceftriaxone 50mg/kg/dose IV/IO, 12-hourly (max. dose 2g)</p> <p>OR</p> <p>cefotaxime 50mg/kg/dose IV/IO, 6-hourly (max. dose 2g)</p> <p>PLUS</p> <p>vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)</p> <div> <p>If signs of encephalitis ADD aciclovir</p> <p>1 month-5 years 20mg/kg/dose IV/IO, 8 hourly</p> <p>5 -12 years, 15mg/kg/dose IV/IO, 8 hourly</p> <p>>12 years, 10mg/kg/dose IV/IO, 8 hourly</p> <p>then seek ID/MICRO advice</p> </div>	<p>ceftriaxone 50mg/kg/dose IM, 12-hourly (max. dose 2g)</p> <p>OR</p> <p>cefotaxime 50mg/kg/dose IM, 6-hourly (max. dose 2g)</p> <div> <p>vancomycin and aciclovir CANNOT be given intramuscularly</p> <p>then seek ID/MICRO advice</p> </div>	<p>moxifloxacin 10mg/kg/dose IV/IO, 24-hourly (max dose 400mg)</p> <p>OR</p> <p>ciprofloxacin 10mg/kg/dose IV/IO, 12-hourly (max. dose 400mg)</p> <p>PLUS</p> <p>vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)</p> <div> <p>If signs of encephalitis ADD acyclovir</p> <p>1 month - 5 years, 20mg/kg/dose IV/IO, 8 hourly</p> <p>5 -12 years, 15mg/kg/dose IV/IO, 8 hourly</p> <p>>12 years, 10mg/kg/dose IV/IO, 8 hourly</p> </div>



Table 2: PAEDIATRIC antibiotic prescribing SOURCE OF INFECTION IS SUSPECTED OR KNOWN (cont.)

Apparent source of sepsis	FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen	FIRST DOSE empirical intramuscular (IM) antibiotic regimen	Anaphylaxis to penicillin FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen
Skin/soft tissue/bone/joint (with shock)	flucloxacillin 50mg/kg/dose IV/IO, 6-hourly (max. dose 2g) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)	flucloxacillin 50mg/kg/dose IM, 6-hourly (max. dose 2g) PLUS clindamycin 15mg/kg/dose IM, 8-hourly (max. dose 900mg) OR lincomycin 15mg/kg/dose IM, 8-hourly (max. dose 600mg) <div>vancomycin CANNOT be given intramuscularly</div>	clindamycin 15mg/kg/dose IV/IO, 8-hourly (max. dose 900mg) OR lincomycin 15mg/kg/dose IV/IO, 8-hourly (max. dose 600mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)
Female genital tract (sexually acquired pelvic inflammatory disease)	ceftriaxone 50mg/kg/dose IV/IO, 24-hourly (max. dose 2g) OR cefotaxime 50mg/kg/dose IV/IO, 8-hourly (max. dose 2g) PLUS metronidazole 12.5mg/kg/dose IV/IO, 12-hourly (max. dose 500mg) PLUS azithromycin 10mg/kg/dose IV/IO, 24-hourly (max. dose 500mg)	ceftriaxone 50mg/kg/dose IM, 24-hourly (max. dose 2g) OR cefotaxime 50mg/kg/dose IM, 8-hourly (max. dose 2g) PLUS metronidazole 12.5mg/kg/dose 12-hourly ORALLY if tolerated (max. dose 400mg) PLUS azithromycin 10mg/kg/dose 24-hourly ORALLY if tolerated (max dose 500mg) <div>metronidazole and azithromycin CANNOT be given intramuscularly and therefore must be given orally</div>	gentamicin**5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg) PLUS clindamycin 15mg/kg/dose IV/IO, 8-hourly (max. dose 900mg) OR lincomycin 15mg/kg/dose IV/IO, 8-hourly (max. dose 600mg) PLUS azithromycin 10mg/kg/dose IV/IO, 24-hourly (max. dose 500mg)


Table 2: PAEDIATRIC antibiotic prescribing SOURCE OF INFECTION IS SUSPECTED OR KNOWN (cont)

Apparent source of sepsis	FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen	FIRST DOSE empirical intramuscular (IM) antibiotic regimen	Anaphylaxis to penicillin FIRST DOSE empirical intravenous (IV) or intraosseous (IO) antibiotic regimen *
IV line related <i>N.B. remove line</i>	gentamicin** 5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)	ceftriaxone 50mg/kg/dose IM, 24-hourly (max. dose 2g) OR cefotaxime 50mg/kg/dose IM, 8-hourly (max. dose 2g) PLUS gentamicin** (dose based on lean body weight) <10 years, 7.5mg/kg/dose IM, 24-hourly (max. dose 320mg) ≥10 years, 6mg/kg/dose IM, 24-hourly (max. dose 560mg) <div style="border: 1px solid black; padding: 5px; text-align: center;"> vancomycin CANNOT be given intramuscularly </div>	gentamicin** 5 MINUTE PUSH (dose based on lean body weight) <10 years, 7.5mg/kg/dose IV/IO, 24-hourly (max. dose 320 mg) ≥10 years, 6mg/kg/dose IV/IO, 24-hourly (max. dose 560mg) PLUS vancomycin*** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg)

Notes for Tables 1 and 2:

IM administration is indicated FOR SHORT TERM USE ONLY if unable to obtain intravenous or intraosseous access.

** Gentamicin: most patients have a single dose only.

- Dose relates to [Ideal Body Weight](#).
- For infants and children < 10 years, use 7.5mg/kg/dose IV initially (max. dose 320 mg).
- For children ≥ 10 years, use 6mg/kg/dose IV initially (max. dose 560mg).
- For subsequent dosing, see [Aminoglycoside dosing and monitoring \(Therapeutic Guidelines\)](#).
- Administration via a 5 MINUTE PUSH is safe and will deliver rapid therapy. ^{7, 8,9,10}
- Monitoring of levels is NOT required for empirical therapy less than 48 hours duration.

***Vancomycin: for infants and children use 15mg/kg/dose (up to 750mg) IV 6-hourly.

- Dosing relates to actual body weight.
- For children with renal impairment or failure or neonates, see recommendations in [Vancomycin dosing and monitoring \(Therapeutic Guidelines\)](#).
- Monitoring of levels is NOT required for empirical therapy less than 48 hours duration.

For subsequent dose modifications of other antimicrobials in renal failure, see [Table 2.31 \(Therapeutic Guidelines\)](#). Use [estimated calculated creatinine clearance](#) or eGFR for estimating renal function.



Table 3: Antibiotics that treat common infecting organisms

Drug	Susceptible organism
aciclovir	Herpes simplex type 1, herpes simplex type 2 and varicella zoster viruses
ampicillin	Group A streptococcus (<i>Streptococcus pyogenes</i>), penicillin SENSITIVE <i>Staphylococcus aureus</i> , <i>E coli</i> , <i>Proteus mirabilis</i> . NOT <i>Klebsiella</i> species.
azithromycin	<i>Chlamydia trachomatis</i>
cefotaxime	Group A streptococcus (<i>Streptococcus pyogenes</i>), <i>Streptococcus pneumoniae</i> (pneumococcus), <i>Neisseria meningitidis</i> (meningococcus), methicillin SENSITIVE <i>Staphylococcus aureus</i> , <i>E coli</i> , <i>Klebsiella</i> , <i>Proteus mirabilis</i> . Note: Good central nervous system penetration.
ceftriaxone	Group A streptococcus (<i>Streptococcus pyogenes</i>), <i>Streptococcus pneumoniae</i> (pneumococcus), <i>Neisseria meningitidis</i> (meningococcus), methicillin SENSITIVE <i>Staphylococcus aureus</i> , <i>E coli</i> , <i>Klebsiella</i> , <i>Proteus mirabilis</i> . Note: Good central nervous system penetration.
ciprofloxacin	<i>Enterobacteriaceae</i> (e.g. <i>E. coli</i> , <i>Klebsiella</i> , <i>Proteus</i> , <i>Enterobacter</i> , <i>Serratia</i> , <i>Citrobacter</i> species), <i>Pseudomonas aeruginosa</i> , <i>Staphylococcus aureus</i> .
clindamycin	<i>Staphylococcus aureus</i> if sensitive. Note this drug covers the majority of Community Acquired-Methicillin RESISTANT <i>Staphylococcus aureus</i> *, Group A streptococcus* (<i>Streptococcus pyogenes</i>)* <i>Streptococcus pneumoniae</i> * (pneumococcus) and anaerobes
flucloxacillin	Methicillin SENSITIVE <i>Staphylococcus aureus</i> , group A streptococcus (<i>Streptococcus pyogenes</i>).
gentamicin	<i>Enterobacteriaceae</i> (e.g. <i>E coli</i> , <i>Klebsiella</i> , <i>Proteus</i> , <i>Enterobacter</i> , <i>Serratia</i> , <i>Morganella</i> , <i>Hafnia</i> species) and <i>Pseudomonas aeruginosa</i> . Note: Poor central nervous system penetration.
lincomycin	<i>Staphylococcus aureus</i> * if sensitive. Note this drug covers the majority of Community Acquired-Methicillin RESISTANT <i>Staphylococcus aureus</i> , Group A streptococcus* (<i>Streptococcus pyogenes</i>)* <i>Streptococcus pneumoniae</i> * (pneumococcus) and anaerobes (<i>Streptococcus pyogenes</i>)* and anaerobes
metronidazole (flagyl)	Anaerobic gram negative bacteria including <i>Bacteroides fragilis</i> .
moxifloxacin	<i>Streptococcus pneumoniae</i> (pneumococcus), <i>Staphylococcus aureus</i> , Group A streptococcus (<i>Streptococcus pyogenes</i>), <i>Neisseria</i> , <i>Haemophilus</i> and <i>Moraxella</i> species, <i>Enterobacteriaceae</i> , many anaerobes.
vancomycin	Methicillin RESISTANT <i>Staphylococcus aureus</i> , group A streptococci (<i>Streptococcus pyogenes</i>), cefotaxime RESISTANT <i>Streptococcus pneumoniae</i> (pneumococcus) in central nervous system infections.

* = if sensitive

Footnote: This table provides information about common infecting bacteria and their probable sensitivities. This is not an exhaustive list further information can be obtained from a microbiologist or infectious diseases physician. Final sensitivities are dependent on laboratory testing.

Table 4: PAEDIATRIC antibiotic administration

- Administer the antibiotic which takes the least time to inject or infuse, in the order provided.
- Reconstitute antibiotics with sterile water for injection (WFI) unless stated otherwise.
- If further dilution is required for IV injection or infusion, use sterile sodium chloride 0.9% or sterile glucose 5% unless stated otherwise.
- To avoid drug incompatibility without delaying fluid administration, flush the IV line with sterile sodium chloride 0.9% before and after the antibiotic injection or infusion.
- When injecting antibiotics directly into an IV injection port which has resuscitation fluid running:
 - clamp the infusion fluid line and flush with 20mL sterile sodium chloride 0.9%
 - administer antibiotic over the required time
 - flush the line with 20mL sterile sodium chloride 0.9% and recommence resuscitation fluid

Antibiotic	Presentation	Reconstitution volume / fluid for intravenous (IV) or intraosseous (IO) administration	Final volume IV/IO	Minimum IV/IO administration time	Intramuscular (IM) administration	Notes
aciclovir	Vial:	50mL WFI	250mg/ 50mL or 5mg/mL	60 minutes	Do NOT give intramuscularly	Dose interval adjusted if renal impairment
	250mg/10mL					
ampicillin	Vial:	5mL WFI	100mg/mL	Doses ≤500mg:	Reconstitute with WFI	Penicillin class antibiotic.
	500mg			5 minutes	500mg vial with 1.7mL WFI	
	1g			Doses >500mg:	1g vial with 1.3mL WFI	
				30 minutes		
azithromycin	Vial: 500mg	4.8mL WFI	100mg/mL	60 minutes	Do NOT give intramuscularly	Rare reports of prolonged QT interval.
cefotaxime	Vial:		100mg/mL	3 minutes	Reconstitute with WFI or lignocaine 0.5%	Cephalosporin class antibiotic. It is inadvisable to give more than 4mL by the IM route. If IM injection is required, ceftriaxone is the preferable agent.
	500mg	5mL WFI				
	1g	10mL WFI			500 mg vial with 2mL	
	2g	20mL WFI			1g vial with 3mL	



Table 4: PAEDIATRIC antibiotic administration (cont.)						
Antibiotic	Presentation	Reconstitution volume / fluid for intravenous (IV) or intraosseous (IO) administration	Final volume IV/IO	Minimum IV/IO administration time	Intramuscular (IM) administration	Notes
ceftriaxone	Vial:				Reconstitute with lignocaine 1%	Avoid in premature infants or in first 6 weeks of life due to bilirubin displacement. Ceftriaxone and IV calcium-containing solutions must not be administered within 48 hours of each other in newborn infants.
	1g	10mL WFI	Dilute to 40mg/mL	Doses ≤1g: 5 minutes	1g vials with 3.5mL lignocaine	
	2g	20mL WFI		Doses >1g: 30 minutes	IM injection without lignocaine is very painful	
ciprofloxacin	Infusion bag or infusion vial: 100mg/50mL 200mg/100mL 400mg/200mL	N/A	N/A	60 minutes	Do NOT give intramuscularly	May induce seizures in epileptics. Local site reactions are more frequent when shorter infusion times are used.
clindamycin	Ampoule: 300mg/2mL 600mg/4mL	N/A	Dilute to 18mg/mL	30mg/minute	Inject undiluted A single dose greater than 600mg at a single site is not recommended	FRIDGE ITEM: kept at 2-8°C Check product is clear of any crystals prior to administration.
flucloxacillin	Vial:		50 mg/mL	3 minutes	Reconstitute with WFI	Penicillin class antibiotic.
	500mg	10 mL WFI			500mg vial with 2mL	
	1g	20 mL WFI			1g vial with 2.5mL	
gentamicin	Ampoules: 10mg/1mL 80mg/2mL	N/A	Undiluted	5 minutes	Inject undiluted	IV gentamicin is inactivated by IV cephalosporins and penicillins. Flush line well before giving gentamicin to prevent inactivation. Monitoring required for ongoing dosing.
lincomycin	Vial: 600mg/2mL	N/A	10mg/mL	10mg/minute	Inject undiluted	Severe cardiopulmonary reactions have occurred when administering at a higher concentration or rate than recommended.



Table 4: PAEDIATRIC antibiotic administration (cont.)

Antibiotic	Presentation	Reconstitution volume / fluid for intravenous (IV) or intraosseous (IO) administration	Final volume IV/IO	Minimum IV/IO administration time	Intramuscular (IM) administration	Notes
metronidazole	Infusion bag: 500mg/100mL	N/A	Undiluted	20 minutes	Do NOT give intramuscularly	
moxifloxacin	Infusion bag: 400mg/250mL	N/A	Undiluted	60 minutes	Do NOT give intramuscularly	Not TGA approved for paediatric use. May prolong QT interval and lead to ventricular arrhythmias. May induce seizures in epileptics.
vancomycin	Vial:		Dilute to 5mg/mL	10mg/minute	Do NOT give intramuscularly	Infusion related effects are common, may flush with red “red man syndrome”. In this instance decrease infusion rate, check dosing and monitor closely. Serum Levels required for ongoing dosing
	500mg	10mL WFI				
	1000mg	20mL WFI				

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The Children's Hospital at Westmead Antimicrobial Stewardship Recommendations may also be useful for further information - drug doses based on MIMS (2011).

Acknowledgments

With kind thanks to The Children's Hospital at Westmead for use of their Antibiotic Guidelines which form the basis of Tables 1 and 2. The Antibiotic Guidelines are based on MMS (2011).