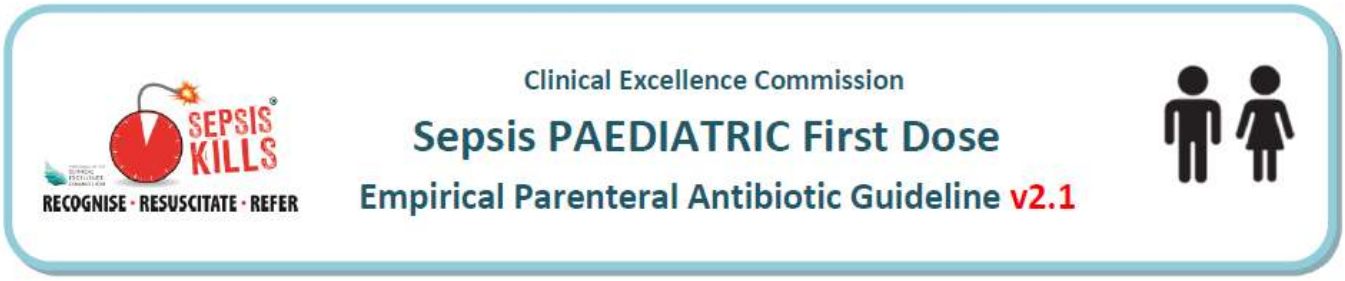
Sepsis PAEDIATRIC FIRST DOSE Empirical Parenteral Antibiotic Guideline



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 (IO) access or intramuscularly (IM) when intravenous (IV) access is not available.
- IM antibiotics should only be used FOR SHORT TERM.

The guideline is based on MIMS, 2011 and the Therapeutic Guidelines: Antibiotic version 14.
Some doses may vary from Therapeutic Guidelines as they are under review.
The CEC guideline incorporates best available evidence and expert opinion 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.

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.
- Consult guideline "management of fever in the neutropenic oncology patient" for patients who meet this criteria and ALWAYS discuss these patients with your LOCAL PAEDIATRICIAN and, if needed, 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.

References

1. ACI/CEC 2011 Sepsis Kills: Recognise—Resuscitate—Refer

Note: see Sepsis Neonatal Empirical Parenteral Antibiotic Guideline for patients < 1 month of age.

ANTIMICROBIAL ADMINISTRATION

- Administer the antibiotic in the order provided on the next page.
- To avoid drug incompatibility flush the IV line with 0.5mL sterile sodium chloride 0.9% before and after the antibiotic injection/infusion.
- When injecting antibiotics directly into an IV injection port which has resuscitation fluid (0.9% sodium chloride) running: clamp the infusion fluid line and administer antibiotic over the required time.

Paediatric Parenteral Antibiotic Prescribing: FIRST DOSE

WHEN NO OBVIOUS FOCUS

	FIRST DOSE empirical IV or IO antibiotic regimen	FIRST DOSE empirical IM antibiotic regimen (route IM unless otherwise stated)	ANAPHYLAXIS TO PENICILLIN FIRST DOSE empirical IV or IO antibiotic regimen
Severe sepsis with **NO OBVIOUS SOURCE OR INFECTION**	**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)	**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 320mg) ≥10 years, 6mg/kg/dose IM, 24-hourly (max. dose 560mg) Vancomycin ***CANNOT*** be given IM	**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) ***PLUS*** **Vancomycin**** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max, dose 750mg)
Fever in the Neutropenic Oncology patient	See guideline "Management of fever in the neutropenic oncology patient". http://int.ncahs.nsw.gov.au/documents/view.php documentid=4810&status=&message=&PHPSESSID=9ebd083a70bbe305309912b1f6f8de40		

SOURCE OF INFECTION IS SUSPECTED OR KNOWN

APPARENT SOURCE OF INFECTION	FIRST DOSE empirical IV or IO antibiotic regimen	FIRST DOSE empirical IM antibiotic regimen (route IM unless otherwise stated)	ANAPHYLAXIS TO PENICILLIN FIRST DOSE empirical IV or IO antibiotic regimen
Severe pneumonia (community acquired)	**Ceftriaxone** 50mg/kg/dose IV/IO, 24-hourly (max. dose 2g) ***PLUS*** **Lincomycin** 15mg/kg/dose IV/IO, 8-hourly (max. dose 600mg)	**Ceftriaxone** 50mg/kg/dose IM, 24-hourly (max. dose 2g) ***PLUS*** **Lincomycin** 15mg/kg/dose IM, 8-hourly (max. dose 600mg)	**Moxifloxacin** 10mg/kg/dose IV/IO, 24-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/dose IV/IO, 6-hourly (max. dose 750mg)

For administration guidelines consult individual antibiotic drug guideline on intranet.

Paediatric Parenteral Antibiotic Prescribing: FIRST DOSE

SOURCE OF INFECTION IS SUSPECTED OR KNOWN

APPARENT SOURCE OF INFECTION	FIRST DOSE empirical IV or IO antibiotic regimen	FIRST DOSE empirical IM antibiotic regimen (route IM unless otherwise stated)	**ANAPHYLAXIS TO PENICILLIN** FIRST DOSE empirical IV or IO antibiotic regimen
Intra-abdominal source including cholangitis	**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*** **Ampicillin** 50mg/kg/dose IV/IO, 6-hourly (max. dose 2g) ***PLUS*** **Metronidazole** 12.5mg/kg/dose IV/IO, 12-hourly (max. dose 500mg)	**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) ***PLUS*** **Ampicillin** 50mg/kg/dose IM, 6-hourly (max. dose 2g) ***PLUS*** **Lincomycin** 15mg/kg/dose IM, 8-hourly (max. dose 600mg)	**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*** **Metronidazole** 12.5mg/kg/dose IV/IO, 12-hourly (max. dose 500mg) ***PLUS*** **Vancomycin**** (dose based on actual body weight) 15mg/kg/ dose IV/IO, 6-hourly (max. dose 750mg)
Meningitis/ encephalitis Steroids prior to antibiotic therapy may be indicated; see eTG	**Ceftriaxone** 50mg/kg/dose IV/IO, 12-hourly (max. dose 2g) ***PLUS*** **Vancomycin**** (dose based on actual body weight) 15mg/kg/dose IV/IO, 6-hourly (max. dose 750mg) If signs of encephalitis ADD Aciclovir. then seek ID/MICRO advice	**Ceftriaxone** 50mg/kg/dose IM, 12-hourly (max. dose 2g) Vancomycin and Aciclovir ***CANNOT*** be given IM. then seek ID/MICRO advice.	**Moxifloxacin** 10mg/kg/dose IV/ IO, 24-hourly (max dose 400mg) ***PLUS*** **Vancomycin**** (dose based on actual body weight) 15mg/kg/ dose IV/IO, 6-hourly (max. dose 750mg) If signs of encephalitis ADD Aciclovir. then seek ID/MICRO advice.
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*** **Lincomycin** 15mg/kg/dose IM, 8-hourly (max. dose 600mg) Vancomycin ***CANNOT*** be given IM.	**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)

For administration guidelines consult individual antibiotic drug guideline on intranet.

Paediatric Parenteral Antibiotic Prescribing: FIRST DOSE

SOURCE OF INFECTION IS SUSPECTED OR KNOWN

APPARENT SOURCE OF INFECTION	FIRST DOSE empirical IV or IO antibiotic regimen	FIRST DOSE empirical IM antibiotic regimen (route IM unless otherwise stated)	**ANAPHYLAXIS TO PENICILLIN** FIRST DOSE empirical IV or IO antibiotic regimen
Female genital tract (sexually acquired pelvic inflammatory disease)	**Ceftriaxone** 50mg/kg/dose IV/IO, 24-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) ***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) Metronidazole and Azithromycin ***CANNOT*** be given IM and therefore must be given orally.	**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*** **Lincomycin** 15mg/kg/dose IV/IO, 8-hourly (max. dose 600mg) ***PLUS*** **Azithromycin** 10mg/kg/dose IV/IO, 24-hourly (max. dose 500mg)
IV line related N.B. remove line	**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) ***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) Vancomycin ***CANNOT*** be given IM	**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)

For administration guidelines consult individual antibiotic drug guideline on intranet.

***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 320mg).
- 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.
- 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.