A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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**Empirical Antibiotic Therapy in Children**

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**Important Note:**

The Intranet version of this document is the only version that is maintained. Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.
Infection Management Guideline: Empirical Antibiotic Therapy in Children

This policy is intended to guide medical staff in GG&C hospitals on the choice of appropriate treatment of infections in children. Please consult local unit guidance for patients in Schiehallion ward and the neonatal unit.

The initial treatment may need to be modified according to clinical response and results of microbiology and other investigations. The appropriate specimens for microbiology should be taken whenever possible before administering antibiotics, however this will depend upon the severity of the illness and the nature of the specimen. In patients who are stable and not septic, and in whom infection is only one of a number of possibilities, consideration should be given to deferring antibiotics until the results of cultures are known, as long as there is no change in the clinical condition in the interim.

The need for antibiotics and their route of administration should be reviewed daily. A definite decision regarding treatment should be taken at 2 and 5 days. When clinically reasonable, consider changing from IV to oral therapy.

Doses of antibiotics are as recommended in the childrens BNF.

### CNS infection

- **Bacterial meningitis**
  - Always refer to senior staff under 6 weeks.
  - IV Cefotaxime
  - IV Amoxicillin + IV Gentamicin
  - Strokes are not proven benefit in this age group
  - 6 weeks to 3 months
  - IV Cefotaxime
  - Strokes are not proven benefit in this age group
  - Over 3 months
  - IV Cefotaxime
  - Add Dexamethasone for 4 days if bacterial meningitis without purpura
  - If true penicillin allergy: contact ID or microbiology for advice
  - Duration: on advice from ID or microbiology
  - After 48 hours if child is > 3 months and unlikely to require IV fluids, consider switching from Cefotaxime to Ceftriaxone

Seek ID / microbiology advice about every case of meningococcal infection
Inform Public Health Medicine on 0141 201 4917 during office hours and 0141 211 3600 outwith office hours to discuss possible prophylaxis and contact tracing (Prophylaxis not required for index case)

*In neonates see cautions / contraindications in BNF

### Immunocompromised patient

- **Immunocompromised plus sepsis**
  - (see also Schiehallion neutropenia and fever policy if patient known to Schiehallion)
  - IV Piperacillin/Tazobactam + IV Gentamicin
  - If staphylococcal infection (i.e. line related sepsis or soft tissue infection) suspected add ADO
  - IV Vancomycin
  - If true penicillin allergy: IV Vancomycin + IV Gentamicin

NB If haematology/oncology patient discuss with appropriate specialist and/or seek microbiology or ID advice.
Duration: on advice from ID or microbiology

### Septicaemia of unknown origin

- **Neonate - Community acquired**
  - Early onset <72 hours of age
  - IV Benzylpenicillin + IV Gentamicin
  - Late onset >72 hours of age
  - IV Cefotaxime + IV Amoxicillin + IV Gentamicin
  - 1 month and above – Community acquired
  - IV Cefotaxime + IV Gentamicin if severe

If meningitis cannot be excluded consider adding IV Amoxicillin for Tinea cover up to 6 weeks of age.
1 month and above – Hospital acquired
- IV Piperacillin/Tazobactam + IV Gentamicin
- If true penicillin allergy: consult ID or microbiology for advice

Duration: on advice from ID or microbiology

### Lower respiratory tract

- **Non severe community acquired pneumonia (CAP)**
  - Under 5 years
  - 3 pneumococci + the local likely pathogens
  - Oral Amoxicillin
  - Duration 7 days
  - In amoxicillin may be used if oral route compromised
  - If true penicillin allergy: Oral Azithromycin
  - Duration 5 days

### Upper respiratory tract

#### Tonsillitis (If antibiotic required)

- Oral Penicillin V
  - IV Benzylpenicillin if unable to swallow
  - Duration 10 days
  - If true penicillin allergy: oral Azithromycin**
  - Duration 5 days

### Gastro-intestinal

- **Gastroenteritis**
  - No antibiotic usually required

### Urinary tract

- **Upper tract UTI/Pyelonephritis**
  - Fever above 38°C and significant systemic upset or if patient below 6 months age
  - I.V. Ceftriaxone &+ gentamicin
  - If true penicillin allergy: use gentamicin initially and discuss with micro or ID
  - Duration 5 days

### Intra-abdominal sepsis

- IV Cefotaxime + IV Metronidazole
  - If true penicillin allergy: IV Clindamycin + IV Gentamicin

### Pertussis

- Oral Clindamycin
  - Duration 7 days

### Otitis media

- Children with acute otitis media should not be routinely prescribed antibiotics. Consider delayed antibiotic treatment
  - Oral Amoxicillin
  - Duration 5 days
  - If true penicillin allergy: Oral Clindamycin
  - Duration 5 days

### Aspiration pneumonia

- IV Co-amoxiclav
  - If true penicillin allergy: IV Clindamycin

### Pneumonia complicating influenza

- IV Co-amoxiclav
  - If true penicillin allergy: consult ID or microbiology for advice

### Acute mastoiditis

- IV Cefuroxime + IV Metronidazole
  - Switching to oral Co-amoxiclav
  - If true penicillin allergy: IV Clindamycin and IV Gentamicin switching to oral clindamycin

**Ceftriaxone in neonates see cautions / contraindications in BNF

-an alternative is Cefotaxime if higher dose of Cefotaxime is indicated in very severe infection see BNF dosing.

**Azithromycin/Clarithromycin numerous serious drug interactions see BNF or contact pharmacy for details

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**RATIONALISE ANTIBIOTIC THERAPY when microbiology results become available or clinical condition changes. NB. Recommended doses are based on normal renal/liver function, see BNF for dose adjustments in renal/liver impairment.

### Septic arthritis/osteomyelitis

- 5 years and under
  - IV Cefuroxime
  - Switching to oral co-amoxiclav
  - Consult microbiology or ID
  - If true penicillin allergy: use IV Clindamycin only

- If incomplete HB immunisation then use IV Co-amoxiclav

- 6 years and above
  - IV Flucloxacillin +
  - Oral Sodium fusidate
  - Switching to oral co-amoxiclav liquid or flucloxacillin capsules
  - If true penicillin allergy: IV Clindamycin switching to oral Clindamycin

### Cellulitis

- IV Benzylpenicillin +
  - IV Flucloxacillin
  - Switching to oral Flucloxacillin only

- If true penicillin allergy: IV Clarithromycin** or
  - IV Clindamycin

- Duration 7-10 days

- If severe sepsis or incomplete HB immunisation ADD Gentamicin.
  - Modify therapy according to culture results and clinical response

### Orbital cellulitis / Peri-Orbital Cellulitis

Refer to ENT / Ophthalmology guidance
- IV Cefotaxime +
  - IV Flucloxacillin
  - IV Metronidazole if no clinical improvement after 24-36 hrs

- Switching to oral co-amoxiclav
  - If true penicillin allergy: IV Clindamycin + IV Gentamicin

- Switching to oral clindamycin

- Duration: 7-10 days

### Infected human/animal bite

- Oral Co-amoxiclav
  - If true penicillin allergy: Human bite
  - Oral Metronidazole +
  - Oral Clindamycin**
  - Animal bite:
  - Oral Metronidazole +
  - Oral Co-trimoxazole

- Duration: 7 days

- 3 days of prophylactic antibiotics should be given to all moderate/severe bites especially if enzootic, crush, puncture wounds, facial, genital, hand or foot bites or immuno-compromised hosts. Consider tetracycline prophylaxis and for human bites, blood borne virus transmission. Consider rabies if animal bite acquired in endemic area.

### FURTHER ADVICE

Can be obtained from a Consultant Microbiologist, a Consultant in Paediatric ID or the Paediatric Antimicrobial Pharmacist.
Infection Control advice may be given by a Consultant Microbiologist or Infection Control Nurses.


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