Antibiotic Stewardship Programme in Primary Care Guidance Notes
Acute Otitis Media

1. Acute otitis media (AOM) is a common paediatric condition caused by respiratory viruses and/or bacteria. The usual bacterial pathogens are *Streptococcus pneumoniae* (28%), *Haemophilus influenzae* (nontypeable) (23%) and *Moraxella catarrhalis* (7%).

2. Clinical features include ear pain, new-onset ear discharge, fever and irritability in infant. Otoscopy may show acute inflammation of the tympanic membrane with middle ear effusion. Bilateral ear infection is more likely bacterial in origin.

3. Diagnosis is established clinically. Serious complications e.g. meningitis and brain abscess are very rare in developed countries.

4. Antibiotics should be prescribed for children less than 6 months of age with suspected or confirmed AOM. For children older than 6 months, the decision to prescribe antibiotics would depend on clinical characteristics.

5. Analgesics e.g. paracetamol or ibuprofen should be given regardless of the decision for antibiotics.

6. If symptoms are persistent after 48 to 72 hours of observation, reassess for the presence of otitis media and consider initiation of antibiotics. For those not responding to initial antibiotics therapy, consider to change antibiotic or refer to specialists.

Table 1. Indications of antibiotic prescription and suggested duration of therapy for Acute Otitis Media in children -

Age and Clinical Characteristics	Recommended treatment approach
Children 6 months or older with otorrhoea or severe signs or symptoms (moderate or severe otalgia, otalgia for at least 48 hours, or temperature of 102.2˚F [39˚C] or higher)	Antibiotic therapy for 10 days
Children 6 to 23 months of age with bilateral acute otitis media without severe signs or symptoms	Antibiotic therapy for 10 days
Children 6 to 23 months of age with unilateral acute otitis media without severe signs or symptoms	Observation or antibiotic therapy for 10 days
Children 2 years or older without severe signs or symptoms	Observation or antibiotic therapy for 5-7 days

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Table 2. Antibiotic recommendation for initial (first 48 to 72 hours) treatment of Acute Otitis Media in children# -

Severe illness e.g. fever >39°C, severe otalgia	Antibiotics recommended	Alternative antibiotics for penicillin allergy
No	**Amoxicillin** 80-90mg/kg per day in divided doses every 8 or 12 hours (maximum: 3000mg per day)	Non-type 1: **Cefuroxime**: 15 mg/kg/dose (maximum: 250 mg/dose) every 12 hours for infants > 3 months of age & Children <40kg; **Cefpodoxime**: 5 mg/kg/dose (maximum: 200 mg/dose) every 12 hours for Infants ≥ 2 months to Children <12 years of age Type 1 (rare): Macrolide e.g. **Azithromycin**, **Clarithromycin****
Yes	**Amoxicillin-clavulanate**^ (400mg/57mg per 5ml): 25 mg/3.6 mg/kg/day to 45 mg/6.4 mg/kg/day in divided doses every 12 hours; up to 70 mg/10 mg/kg/day in divided doses every 12 hours^^	Non-type 1: **Ceftriaxone**, 50 to 100 mg/kg/ day IV or IM in 1 to 2 divided doses every 12 or 24 hours (max 4000mg per day). Daily doses greater than 2g are divided into 2 doses.

Table 3. Antibiotic recommendation for failed initial treatment of Acute Otitis Media in children# -

Severe illness e.g. fever >39°C, severe otalgia	Antibiotics recommended	Alternative antibiotics for penicillin allergy
No	**Amoxicillin-clavulanate**^ (400mg/57mg per 5ml): 25 mg/3.6 mg/kg/day to 45 mg/6.4 mg/kg/day in divided doses every 12 hours; up to 70 mg/10 mg/kg/day in divided doses every 12 hours^^	Non-type 1: **Ceftriaxone**, 3 days; type 1 (rare): **Clindamycin**@
Yes	**Ceftriaxone**, 3 days	Referral to specialist

**Dosages of suggested macrolides are: Azithromycin: For children <15 kg (<3 years): 10 mg/kg once daily; For children ≥ 15 kg: 15-25 kg (3-7 years): 200 mg once daily; 26-35 kg (8-11 years): 300 mg once daily; 36-45 kg (12-14 years): 400 mg once daily; Over 45 kg: Dose as per adults
Clarithromycin: For children 6 months to 12 years of age: 7.5 mg/kg every 12 hours (maximum: 500 mg/dose).

^Amoxicillin-clavulanate is also indicated if 1) amoxicillin has been used in recent 30 days 2) purulent conjunctivitis is present as *H. influenzae* and *M. catarrhalis* are expected (cefuroxime is an alternative).

^^No clinical data are available for doses higher than 45 mg/6.4 mg per kg per day in children under 2 years and for all doses in infants under 2 months of age. Dosing recommendations cannot be made in these situations.

@Dosage of clindamycin in children is: 30 to 40 mg/kg/day in divided doses every 6 to 8 hours. Only capsule (not syrup) preparation is available locally. The capsule is dosed as 150mg each.

#The route of administration for all antibiotics recommended is oral except for ceftriaxone which is administered parenterally
Clinicians should tailor-make drug treatment based on clinical judgment. Definitive therapy should be based on microbiological and antibiotic sensitivity results if available. -
Management of outpatients with infections should be individualised. Doctors should check, document and get outpatients well informed about antibiotic treatment (e.g. indication, side effect, allergy, contraindication, potential drug-drug interaction, etc.). Outpatients should be reminded to take antibiotics exactly as prescribed by their family doctors.

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