Guidelines for the Treatment of Ear Nose and Throat Infections in Adults	University Hospitals of Leicester NHS NHS Trust **Trust reference number: B20/2020**

1. Introduction and Who Guideline applies to

This guideline has been developed to deliver safe and appropriate empirical use of antibiotics for adult patients presenting with Ear Nose and Throat (ENT) infections at University Hospitals of Leicester NHS Trust. The guideline applies to adult inpatient and discharge prescriptions and should be used in conjunction with the Antimicrobial Prescribing Policy; it can also serve as a guide to prescribing in the outpatient setting.

The recommendations within this guideline provide targeted empirical regimens covering likely pathogenic organisms for defined infections and aim to promote the evidence-based use of antibiotics, minimise the effect of antibiotics on the patient's normal bacterial flora and adverse effects.

2. Guideline Standards and Procedures

Specimens are essential to guide therapy, especially for patients who may require prolonged courses of antibiotics.

Duration of treatment may vary according to individual patient circumstances. Complex or deep-seated infections should be discussed with Microbiology.

2.1. General Advice •

- Take appropriate specimens for microscopy, culture and sensitivity testing prior to starting antibiotics.
- The choice of antibiotic must be reviewed with the culture and antimicrobial sensitivity results.
- Intravenous (IV) therapy should be reserved for those patients who are seriously ill with moderate to severe infections or are unable to take medications enterally.
- Review IV treatment within 72 hours with a view to switching to oral therapy as soon as clinically appropriate.
- The antibiotic doses recommended in this guidance are intended for adult patients with normal renal and liver function who are not pregnant or breast feeding. Refer to a pharmacist for further advice in these patients. Some advice for dose recommendations in renal impairment can be found on the Antimicrobial Website and App.

2.2. Specific Antibiotic Advice

Fluoroquinolones e.g. Ciprofloxacin: Please refer to stewardship section for MHRA restrictions on fluoroquinolone use in Microguide prior to prescribing.

2.3. Empiric antimicrobial therapy

Indication	Recommended Initial Empirical Therapy		Recommended Empirical IV to Oral Switch	Recommended duration	Notes
Peritonsillar abscess	1st line	Benzylpenicillin IV 1.2g QDS + Metronidazole IV 500mg BD	Amoxicillin orally 1g TDS + Metronidazole orally 400mg BD	Up to 10 days	Refer to ENT for drainage of abscess
	Penicillin allergy	Clarithromycin IV 500mg BD + Metronidazole IV 500mg BD	Clarithromycin orally 500mg BD + Metronidazole orally 400mg BD		
Acute epiglottitis / supraglottitis	1st line	Ceftriaxone IV 2g OD	Co-amoxiclav orally 625mg TDS + Amoxicillin orally 500mg TDS	5 days For longer durations of treatment discuss with microbiology.	Urgent ENT referral for airway management.
	Penicillin allergy	Co-trimoxazole IV 960mg BD	Review available oral antibiotic options based on microbiology results		

Sore throat/ Pharyngitis/ Tonsillitis ***with systemic symptoms or FeverPain score ≥4*** Use Fever Pain score to determine whether antibiotics are required. Treat only if FeverPain score is ≥4 or ***with systemic upset*** (i.e., temperature, HR, RR or WBC deranged)	1st Line	Phenoxymethylpenicillin orally 500mg QDS *Or* Benzylpenicillin IV 1.2g QDS (if patient unable to swallow) (Add Metronidazole 500mg IV BD if there is abscess formation or Lemierre Syndrome)	Phenoxymethylpenicillin orally 500mg QDS (Add Metronidazole orally 400mg BD if there is abscess formation or Lemierre Syndrome)	5 to 10 days	All patients with Lemierre syndrome should be referred to ENT as they typically require 4 weeks of antibiotic treatment. Link for FeverPain score: https://ctu1.phc.ox.ac.uk/feverpain/index.php
	Penicillin allergy	Clarithromycin orally 500mg BD (IV if patient unable to swallow) (Add Metronidazole orally 400mg BD if there is abscess formation or Lemierre Syndrome. If unable to swallow, metronidazole IV 500mg BD can be given instead)	Clarithromycin orally 500mg BD + (Add Metronidazole orally 400mg BD if there is abscess formation or Lemierre Syndrome)	5 days	
Acute Uncomplicated Otitis Media	1st line	Amoxicillin orally 1g TDS	N/A	5 days	If the patient has been treated with Amoxicillin in the community and symptoms persist, discuss with ENT. Consider treatment with oral co-amoxiclav 625mg TDS + oral amoxicillin 500 mg TDS.
	Penicillin allergy	Clarithromycin orally 500mg BD	N/A	5 days	

Acute Otitis Media with suspected intracranial extension or Mastoiditis with suspected intracranial extension	1st line	Ceftriaxone 2g IV BD + Metronidazole orally 400mg TDS (If NBM Metronidazole IV 500mg TDS can be given instead))	N/A	Up to 4 weeks. Review antimicrobial choice at 48 hours with culture results.	Case to be discussed with ENT and microbiology
	Severe penicillin allergy or Cephalosporin allergy	Discuss with Microbiology			
Acute uncomplicated Mastoiditis	1st Line	Co-amoxiclav 1.2g IV TDS	Co-amoxiclav orally 625mg TDS + Amoxicillin orally 500mg TDS	Up to 4 weeks. Review antimicrobial choice at 48 hours with culture results.	Refer all cases to ENT and discuss with microbiology.
	Non-severe penicillin allergy	Ceftriaxone 2g IV OD + Metronidazole orally 400mg BD (If NBM Metronidazole IV 500mg BD can be given instead)			

	Severe penicillin allergy or Cephalosporin allergy	Co-trimoxazole orally 960mg BD (if NMB Co-trimoxazole IV 960mg BD) + Metronidazole orally 400mg BD (If NBM metronidazole IV 500mg BD)	Review available oral antibiotic options based on microbiology results		
Uncomplicated Otitis Externa	1st line	Topical acetic acid 2% 1 spray TDS	N/A	Continue until two days after symptoms have disappeared but no longer than 7 days	Use of aural toilet should be considered to remove debris from the ear canal before treatment.
	2nd line	Ciprofloxacin 2mg/ml (Cetraxal®) ear drops apply contents of single ampoule (2mg in 1ml) BD	N/A	5 days	
	For ENT use only: Contraindicated in perforated tympanic membrane	Sofradex® or Gentisone HC® ear drops apply 2 drops 4 times daily Must document in patients' notes that it has been confirmed that tympanic membrane is intact - *Sofradex* contains dexamethasone, framycetin, and gramicidin - *Gentisone* contains gentamicin and hydrocortisone	N/A		

Otitis Externa with Cellulitis or disease extending outside the ear canal	1st line	Ear drops as per Uncomplicated Otitis Externa + Flucloxacillin orally 1g QDS	N/A	5 days	Refer to ENT
	Penicillin allergy	Ear drops as per Uncomplicated Otitis Externa +			
Malignant otitis externa	1st line	Doxycycline 200mg orally OD Piperacillin-tazobactam IV 4.5g QDS	N/A	Empirical treatment should be reviewed once microbiology results are available. The remainder of the course will need to be based on microbiology sensitivity results. Usual duration 6 weeks.	Discussed management with Microbiology and ENT.
	Penicillin allergy	Ciprofloxacin 750mg orally BD If NBM: Ciprofloxacin IV 400mg TDS	N/A		

<table>
<tr>
<td rowspan="3">Acute Uncomplicated Sinusitis (no orbital cellulitis or central nervous system involvement) with no systemic upset (i.e. temperature, HR, RR or WBC not deranged)

Issue antibiotic prescription only if several of the following are present:
• symptoms for more than 7 days
• discoloured or purulent nasal discharge
• severe localised unilateral pain (particularly pain over teeth and jaw)
• fever
•marked deterioration after an initial milder phase</td>
<td colspan="3">For outpatients/ED:

Provide information on self-care and signpost patient to their local pharmacy if symptomatic relief is sought.

If after self-care, symptoms worsen rapidly or significantly, or do not start to improve in 7 days, patients should be advised to visit their GP with a copy of their discharge summary to obtain a prescription for antibiotics.</td>
<td rowspan="3">Sinusitis is normally caused by a virus and is self-limiting which can last up to 3 weeks.

If delaying prescription ensure thorough patient counselling (i.e., self-care, when to seek advice and when to see their GP with a copy of their discharge summary to obtain antibiotic prescription).</td>
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<tr>
<td>1st Line</td>
<td>For inpatients:
Consider delaying antibiotic prescription. If symptoms worsen rapidly or significantly, or do not improve in 7 days prescribe:
Phenoxymethylpenicillin orally 500mg QDS</td>
<td rowspan="2">5 days</td>
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<tr>
<td>Penicillin allergy</td>
<td>Doxycycline orally 200mg OD</td>
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Severe Acute Uncomplicated Sinusitis (no orbital cellulitis or central nervous system involvement) ***with systemic upset*** (i.e., temperature, HR, RR or WBC deranged)	1st line	Co-amoxiclav IV 1.2g TDS	Co-amoxiclav orally 625mg TDS + Amoxicillin orally 500mg TDS	5 days	Refer ENT
	Penicillin allergy	Clarithromycin IV 500mg BD (Add Metronidazole orally 400mg BD if dental abscess present)	Clarithromycin 500mg orally BD (Plus, Metronidazole orally 400mg BD if dental abscess present)		
Acute Complicated Sinusitis (concomitant orbital cellulitis, subperiosteal abscess, central nervous system involvement)	First line and patients with non-severe penicillin allergy	Ceftriaxone 2g IV BD + Metronidazole orally 400mg TDS (If NBM Metronidazole IV 500mg TDS can be given instead))	Contact microbiology	7 days initially (but likely to require longer duration). Discuss with microbiology	Discuss all cases with ENT and microbiology
	Severe penicillin allergy or cephalosporin allergy	Contact Microbiology			
Chronic Sinusitis	1st line	Co-amoxiclav orally 625mg TDS + Amoxicillin orally 500mg TDS	N/A	5 days initially (but likely to require longer duration).	Longer courses may be indicated for selected patients after discussion with Microbiology and ENT
	Penicillin allergic	Clindamycin orally 300mg QDS			

Neck abscess	1st Line	Co-amoxiclav IV 1.2g TDS	Co-amoxiclav orally 625mg TDS + Amoxicillin orally 500mg TDS	5 days initially if source control achieved. Longer durations may be required. Discuss with microbiology	Deep space neck abscesses should be discussed with Microbiology and ENT
	Non-severe penicillin allergy	Ceftriaxone 2g IV OD + Metronidazole orally 400mg BD (If NBM metronidazole IV 500mg BD)	Co-trimoxazole orally 960mg BD + Metronidazole orally 400mg BD		
	Severe penicillin allergy or cephalosporin allergy	Co-trimoxazole orally 960mg BD (if NMB Co-trimoxazole IV 960mg BD) + Metronidazole orally 400mg BD (If NBM metronidazole IV 500mg BD)	N/A		
Acute Bacterial Parotitis	1st Line	Co-amoxiclav IV 1.2g TDS	Co-amoxiclav orally 625mg TDS + Amoxicllin orally 500mg TDS	5 days	
	Penicillin allergy	Doxycycline orally 200mg OD + Metronidazole orally 400mg BD If NBM: Vancomycin IV *(as per vancomycin chart)* + Metronidazole IV 500mg BD	Doxycycline orally 200mg OD + Metronidazole orally 400mg BD		

Facial / Pinna Cellulitis	1st Line	Flucloxacillin IV 2g QDS	Flucloxacillin orally 1g QDS	5 days	Refer ENT
	Penicillin allergy	Vancomycin IV *(As per vancomycin chart)*	Doxycycline orally 200mg OD		
Ludwig's Angina	1st line	Co-amoxiclav IV 1.2g TDS	Review available oral antibiotic options based on microbiology results	14 days	Urgent ENT referral for airway management;
	Non-anaphylactic penicillin allergy	Ceftriaxone IV 2g OD + Metronidazole 400mg orally BD (If NBM metronidazole IV 500mg BD)			
	Anaphylactic penicillin allergy	Discuss with Microbiology			
Auricular Perichondritis	1st line	Ciprofloxacin orally 750mg BD	N/A	7 days initially (but likely to require longer duration). Discuss with microbiology	Refer ENT
	2nd line	Discuss with microbiology			

3. Education and Training

None

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Adherence to guideline in terms of choice and duration of antimicrobial therapy, and obtaining samples before commencing antimicrobial therapy	Annual Trust Wide Antimicrobial Prescribing Audit	Antimicrobial Pharmacists	Annual	CMGs and TIPAC

5. Supporting References (maximum of 3)

Uptodate: Ludwig angina. Epiglotittis. Suppurative parotitis. Accessed 27 February 2024.

NICE guideline NG84 Sore Throat Published: 26 January 2018

NICE guideline [NG79]. Sinusitis (acute): antimicrobial prescribing. October 2017

6. Key Words

ENT Ear Nose Throat Infection Antibiotic

CONTACT AND REVIEW DETAILS	
Guideline Lead (Name and Title) Dr Felicia Lim	**Executive Lead** **Dr Andrew Furlong**

Details of Changes made during review:

1. Empirical oral switch for acute epiglottitis. Doxycycline for penicillin allergy removed. Change to review based on antimicrobial results. Changed to high dose co-amoxiclav for Haemophilus cover. Penicillin allergy option changed to co-trimoxazole to reduce quinolone use in line with MHRA alert.
2. Acute otitis media or mastoiditis with suspected intracranial extension and acute uncomplicated mastoiditis. Duration updated to 'up to 4 weeks. Review antimicrobial choice at 48 hours with culture results'.
3. Acute uncomplicated mastoiditis oral switch changed to high dose co-amoxiclav for Haemophilus cover. Penicillin allergy option changed.
4. Malignant otitis externa. IV Piperacillin-tazobactam dose changed from 4.5g TDS to 4.5g QDS. Ciprofloxacin also changed to high dose for Pseudomonas cover.
5. Acute bacterial parotitis. First line antibiotics changed from flucloxacillin and metronidazole to co-amoxiclav for additional Haemophilus cover.
6. Ludwig angina. First line antibiotics changed from benzylpenicillin and metronidazole to co-amoxiclav. Penicillin allergy option changed from clindamycin to ceftriaxone and metronidazole in non-anaphylactic allergy. Penicillin anaphylaxis to be discussed with Microbiology. Oral switch to be discussed based on culture results.
7. Periauricular chondritis duration updated to '7 days initially (but likely to require longer duration).
8. Chronic sinusitis duration updated to '5 days initially (but likely to require longer duration)'. Updated co-amoxiclav dose for haemophilus cover.
9. Neck abscess duration updated to '5 days initially if source control achieved. Longer durations may be required. Discuss with microbiology'. Penicillin allergy option changed.
10. All oral co-amoxiclav dose updated to high dose co-amoxiclav for H. influenzae cover.