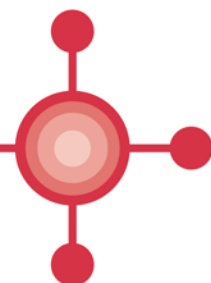


All Wales Medicines Strategy Group

Grŵp Strategaeth Meddyginiaethau Cymru Gyfan



# Primary Care Antimicrobial Guidelines

September 2015

This report has been prepared by the All Wales Antimicrobial Guidance Group (AWAGG), with support from the All Wales Prescribing Advisory Group (AWPAG) and the All Wales Therapeutics and Toxicology Centre (AWTTC), and has subsequently been endorsed by the All Wales Medicines Strategy Group (AWMSG).

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## RESOURCES TO HELP MANAGE ANTIBIOTIC PRESCRIBING

### Background

Using the correct antibiotics only when needed, with the correct dose intervals and for the correct duration, is vital to help tackle growing resistance.

Studies show that patients are less likely to ask their GP for antibiotics if they are advised what to expect during the course of an illness and are given a self-care plan. To aid in this, a patient specific leaflet for adults has been developed for use in primary care. It contains information relating to how long common illnesses normally last, self care and when patients should contact their GP/NHS Direct (see 'Antibiotic information leaflet for adults' in the resources section below).

### Resources

**Antibiotic information leaflet for adults**

Endorsed by  
RCGP  
Royal College of  
General Practitioners

Patient's name: \_\_\_\_\_

No antibiotic prescription given  Antibiotic prescription given today  but it should ONLY be collected after \_\_\_\_\_ days if needed from: surgery reception  GP

**Why did you not get antibiotics today?**

- Colds and most coughs, sinusitis, otitis media (earache) and sore throats often get better without antibiotics.
- The table below shows you how long these illnesses normally last, what you can do to ease your symptoms and when you should go back to your GP practice or contact NHS Direct Wales (0845 46 47).

Illness	How long it lasts on average	What you can do to ease the symptoms	When should you (or your child) go back to your GP practice or contact NHS Direct Wales? (Listed in order of urgency, with the most urgent symptoms first.)
Ear infection	4 days	<ul style="list-style-type: none"> <li>• Have plenty of rest.</li> <li>• Drink enough fluids to avoid feeling thirsty.</li> </ul>	<ul style="list-style-type: none"> <li>9. If you develop a severe headache and are sick.</li> <li>10. If your skin is very cold or has a strange colour, or you develop an unusual rash.</li> <li>11. If you feel confused or have slurred speech or are very drowsy.</li> <li>12. If you have difficulty breathing. Signs that suggest breathing problems can include:                             <ul style="list-style-type: none"> <li>• breathing quickly</li> <li>• turning blue around the lips and the skin below the mouth, and</li> <li>• skin between or above the ribs getting sucked or pulled in with every breath.</li> </ul> </li> <li>13. If you develop chest pain.</li> <li>14. If you have difficulty swallowing or are drooling.</li> <li>15. If you cough up blood.</li> <li>16. If hearing problems develop or if there is fluid coming out of your ears.</li> </ul>
Sore throat	1 week	<ul style="list-style-type: none"> <li>• Ask your local pharmacist to recommend medicines to bring down your temperature or control pain (see below).</li> <li>• Other things you can do suggested by GP/urse</li> </ul>	
Common cold	1-3 weeks		
Sinusitis	2-3 weeks		
Cough or bronchitis	3 weeks		
Other			

**Why should you only take antibiotics when they are needed**

- Bacteria can adapt and find ways to survive the effects of an antibiotic. They become antibiotic resistant so that the antibiotic no longer works. The more you use an antibiotic, the more bacteria become resistant to it.
- Antibiotic resistant bacteria don't just infect you, they can spread to other people in close contact with you.
- Antibiotics can upset the natural balance of bacteria in your body. This allows other more harmful bacteria to increase. This may result in diarrhoea and thrush.
- Some antibiotics can cause allergic reactions such as rashes, being sick if you also drink alcohol and reactions to sunlight – and other symptoms.

Logos: Health Protection Agency, RCGP, Royal College of General Practitioners, NHS, GIG NHS, Royal College of Nursing, IOS Infection Prevention Society, BIAAA British Infection Association



[Antibiotic information leaflet for adults \(Adobe Acrobat version\)](#). Official leaflet from RCGP.

[Antibiotic information leaflet for adults \(Microsoft Word version\)](#). Locally adapted for use on clinical systems as requested by a number of practices.

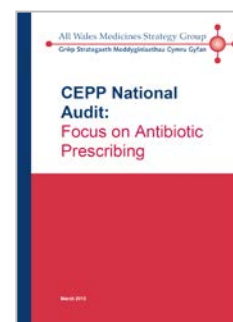
The [When Should I Worry?](#) Booklet. This provides information for parents about the management of respiratory tract infections (coughs, colds, sore throats and ear aches) in children, and has been designed to be used in primary care consultations.

[RCGP TARGET Antibiotics toolkit](#) for clinicians. Includes:

- Clinical resources including one from the 'Stemming the Tide of Antimicrobial Resistance' (STAR) programme, which aims to explain to clinicians why appropriate antibiotic prescribing is important and how to improve prescribing through software supported, self-directed learning, reflecting on video and actual consultations.
- A primary care self assessment tool which aims to provide strategies that may help to optimise antibiotic prescribing.
- Patient/parent resources.



[AWMSG CEPP National Audit: Focus on Prescribing](#)



[WeMeReC Bulletin](#): Appropriate antibiotic use – whose responsibility?

[WeMeReC Supplement](#): Appropriate antibiotics for respiratory tract infections

Further information can be found [\[FOR LOCAL ADAPTATION\]](#).

## AIMS

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- To provide a simple, effective, economical and empirical approach to the treatment of common infections.
- To minimise the emergence of bacterial resistance in the community.
- Guidance will be updated in real-time as required.

## PRINCIPLES OF TREATMENT

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- This guidance is based on the best available evidence but professional judgement should be used and patients should be involved in the decision.
- It is important to initiate antibiotics as soon as possible in severe infection.
- A dose and duration of treatment for adults is usually suggested, but may need modification for age, weight and renal function. Children's doses are provided for certain indications. Further information can be found in the British National Formulary (BNF) for Children. In severe or recurrent cases, consider a larger dose or longer course. Please refer to the BNF for further dosing and interaction information (e.g. interaction between macrolides and statins) if needed and please check for allergy. Particular consideration should be given to interactions when prescribing for patients on anti-rejection drugs e.g. tacrolimus.
- Consider lower threshold for antibiotics in immunocompromised patients or those with multiple morbidities; consider culture and seek advice.
- Suspect neutropenic sepsis if patients having cancer treatment become unexpectedly or seriously unwell. Refer patients with suspected neutropenic sepsis immediately for assessment at their appropriate local hospital.
- Prescribe an antibiotic only when there is likely to be a clear clinical benefit.
- Consider a no, or delayed, antibiotic strategy for acute self-limiting upper respiratory tract infections.
- Limit prescribing over the telephone to exceptional cases.
- Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics (e.g. co-amoxiclav, quinolones and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase risk of *Clostridium difficile*, MRSA and resistant UTIs. The table on page 5 shows the risks of *Clostridium difficile*-infection associated with various antibiotics.
- Avoid widespread use of topical antibiotics (especially those agents also available as systemic preparations, e.g. fusidic acid).
- In [pregnancy](#), take specimens to inform treatment; where possible avoid [aminoglycosides](#) unless benefit outweighs risks. [Quinolones](#) should be avoided in pregnancy; however, a single dose of ciprofloxacin may be used for the prevention of a secondary case of meningococcal meningitis. [Tetracyclines](#) should not be given to pregnant women. Short-term use of [nitrofurantoin](#) (at term, theoretical risk of neonatal haemolysis) is not expected to cause foetal problems. [Trimethoprim](#) is also unlikely to cause problems unless poor dietary folate intake or taking another folate antagonist e.g. antiepileptic.
- Where a 'best guess' therapy has failed or special circumstances exist, microbiological advice can be obtained from your local microbiology team.

RISKS OF *CLOSTRIDIUM DIFFICILE* INFECTION

HIGH RISK	MEDIUM RISK	LOW RISK
Ciprofloxacin	Clarithromycin	Aminoglycosides e.g. gentamicin, tobramycin, amikacin
Ofloxacin	Erythromycin	Rifampicin
Levofloxacin	Co-amoxiclav	Doxycycline
Clindamycin	Amoxicillin	Glycopeptides e.g. vancomycin, teicoplanin
3 <sup>rd</sup> generation cephalosporins e.g. cefotaxime, ceftazidime, ceftriaxone	Co-trimoxazole	Piperacillin and tazobactam
2 <sup>nd</sup> generation cephalosporins e.g. cefuroxime, cefaclor	1 <sup>st</sup> generation cephalosporins e.g. cefalexin	Metronidazole
	Carbapenems e.g. meropenem, imipenem, ertapenem	Benzyl penicillin/Penicillin V
		Flucloxacillin
		Nitrofurantoin
		Trimethoprim

Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children			
Upper Respiratory Tract Infections			
Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Treatment of influenza (adults)</b> <a href="#">PHE Influenza</a> , <a href="#">UKTIS</a> , <a href="#">NICE</a>	<b>Annual vaccination is essential for all those at increased risk of complications from influenza.</b> <b>Treatment of uncomplicated influenza:</b> Antivirals are not recommended for otherwise healthy adults. When influenza is circulating in the community, treat 'at risk'* patients within 48 hours of onset of symptoms. Even when influenza is not circulating in the community, treat 'at risk'* people in long-term residential and nursing homes during localised outbreaks, if there is a high level of certainty that the causative agent is influenza and within 48 hours of onset of symptoms. * <b>At risk:</b> pregnant (including up to two weeks post partum), 65 years or over, chronic respiratory disease (including COPD and asthma), significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus, chronic neurological, renal or liver disease.		
	Use 5 days treatment with <b>oseltamivir 75 mg BD</b> unless <a href="#">pregnant</a> or if there is resistance to oseltamivir, use 5 days <b>zanamivir 10 mg</b> (2 inhalations by diskhaler) <b>BD</b> and seek advice.		
<b>Prophylaxis of influenza</b>	See NICE ( <a href="#">NICE Influenza</a> ). Patients under 13 years, see <a href="#">PHE Influenza</a> link.		
<b>Acute sore throat</b> <a href="#">NICE CKS</a>	<b>AVOID ANTIBIOTICS</b> as 90% resolve in 7 days without, and pain only reduced by 16 hours. If Centor score 3 or 4: (lymphadenopathy; no cough; fever; tonsillar exudate) consider 2 or 3-day delayed/immediate antibiotics. RCT in < 18 year olds shows 10d had lower relapse <ul style="list-style-type: none"> <li>• <b>Antibiotics to prevent quinsy NNT &gt; 4,000</b></li> <li>• <b>Antibiotics to prevent otitis media NNT 200</b></li> </ul>		
	No antibiotic	When no antibiotic is prescribed, please consider using the ' <a href="#">Antibiotic Information Leaflet for Adults.</a> '	
	Phenoxymethylpenicillin	500 mg QDS or 1g BD (QDS when severe)	10 days
	<b>Penicillin allergy:</b> Clarithromycin	250–500 mg BD	5 days



<b>Acute otitis media</b> <i>(child doses)</i> <a href="#">NICE CKS</a>	<b>OPTIMISE ANALGESIA AND TARGET ANTIBIOTICS</b> Otitis media resolves in 60% of cases in 24 hours without antibiotics, which only reduce pain at 2 days (NNT15) <b>and do not prevent deafness.</b> Consider 2 or 3-day delayed or immediate antibiotics for pain relief if: <ul style="list-style-type: none"> <li>• <b>&lt; 2 years</b> AND bilateral acute otitis media (NNT4) or bulging membrane AND <math>\geq 4</math> marked symptoms (fever, pain, irritability, cough, nasal discharge)</li> <li>• <b>Children of all ages</b> with otorrhoea (NNT3).</li> </ul> Antibiotics to prevent mastoiditis NNT > 4000		
	No antibiotic	Please consider using the <a href="#">When Should I Worry?</a> booklet	
	Amoxicillin	<b>Child doses:</b> Neonate 7–28 days 30 mg/kg (max. 125 mg) TDS Child 1 month–1 year 125 mg TDS; increased if necessary up to 30 mg/kg TDS Child 1–5 years 250 mg TDS; increased if necessary up to 30 mg/kg TDS Child 5–12 years 500 mg TDS; increased if necessary up to 30 mg/kg (max. 1 g) TDS Child 12–18 years 500 mg TDS; in severe infection 1 g TDS	5 days
<b>Penicillin allergy:</b> Clarithromycin	<b>Child doses:</b> Neonate 7.5 mg/kg BD Child 1 month–12 years: Body-weight under 8 kg 7.5 mg/kg BD Body-weight 8–11 kg 62.5 mg BD Body-weight 12–19 kg 125 mg BD Body-weight 20–29 kg 187.5 mg BD Body-weight 30–40 kg 250 mg BD Child 12–18 years 250 mg BD	5 days	
<b>Acute otitis externa</b> <a href="#">NICE CKS</a>	First use aural toilet (if available) and analgesia. Cure rates similar at 7 days for topical acetic acid or antibiotic +/- steroid. If cellulitis or disease extending outside ear canal, start oral antibiotics and refer.		
	Acetic acid 2% (A proprietary preparation containing acetic acid 2% is on sale to the public)	1 spray TDS	7 days
	<b>Alternative:</b> Neomycin sulphate with corticosteroid	3 drops TDS	7 days min. to 14 days max.

<b>Acute rhinosinusitis</b> <a href="#">NICE CKS</a>	<b>AVOID ANTIBIOTICS</b> – 80% resolve in 14 days without, and they only offer marginal benefit after 7 days. <b>Use adequate analgesia</b> – Consider 7 day delayed or immediate antibiotic when purulent nasal discharge.		
	No antibiotic	When no antibiotic is prescribed, please consider using the <a href="#">Antibiotic Information Leaflet for Adults</a>	
	Amoxicillin	500 mg TDS (1 g TDS if severe)	7 days
	<b>Penicillin allergy:</b> Doxycycline	200 mg stat then 100 mg OD	7 days
	<b>Tetracyclines should not be given to children under 12 years as deposition of tetracyclines in growing bone and teeth (by binding to calcium) causes staining and occasionally dental hypoplasia.</b>		
	<b>For persistent symptoms:</b> Co-amoxiclav	625 mg TDS	7 days

**Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children**

**Lower Respiratory Tract Infections**

**Note:** Low doses of penicillins are more likely to select out resistance. **Do not use quinolones** first-line due to poor *Pneumococcal* activity. Reserve all quinolones for proven resistant organisms.

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Acute cough, bronchitis</b> <a href="#">Prodigy</a> , <a href="#">NICE 69</a>	<b>ANTIBIOTICS ARE OF LITTLE BENEFIT IF THERE IS NO CO-MORBIDITY.</b> Consider 7-day delayed antibiotic with advice. Symptom resolution can take 3 weeks. Consider immediate antibiotics if > 80 year and ONE of: hospitalisation in past year, oral steroids, diabetic, congestive heart failure OR > 65 years with 2 of above.		
	No antibiotic	When no antibiotic is prescribed, please consider using the <a href="#">Antibiotic Information Leaflet for Adults</a>	
	Amoxicillin	500 mg TDS	5 days
	<b>Penicillin allergy:</b> Doxycycline	200 mg stat then 100 mg OD	5 days
<b>Acute infective exacerbation of COPD</b> <a href="#">NICE</a> , <a href="#">Gold</a>	Treat exacerbations promptly with antibiotics if more purulent sputum <b>and</b> increased shortness of breath <b>and/or</b> increased sputum volume.		
	Doxycycline	200 mg stat then 100 mg OD	5 days
	<b>If doxycycline unsuitable:</b> Clarithromycin	500 mg BD	5 days
	or Amoxicillin	500 mg TDS	5 days
	<b>If patient exposed to antibiotics in the past 3 months:</b>		
Co-amoxiclav	625 mg TDS	5 days	

<p><b>Community-acquired pneumonia in adults</b></p> <p><b>Treatment in the community</b>  <a href="#">BTS 2009 Guideline</a></p> <p><b>Note:</b> Low doses of penicillins are more likely to select out resistance. <b>Do not use quinolones</b> first-line due to poor <i>Pneumococcal</i> activity. Reserve all quinolones for proven resistant organisms.</p>	<p>Use CRB65 score to help guide and review. Each scores 1:</p> <ul style="list-style-type: none"> <li>• Confusion (AMT &lt; 8) (<i>Age, time, address for recall at end of test, year, place, identification of 2 persons, DOB, year of WW1, present monarch, count backwards 20–1</i>).</li> <li>• Respiratory rate ≥ 30/min</li> <li>• BP systolic &lt; 90 or diastolic ≤ 60</li> <li>• Age ≥ 65</li> </ul> <p>Score 0: suitable for home treatment; Score 1–2: consider hospital assessment or admission; <b>Score 3–4: urgent hospital admission</b>  <i>Mycoplasma</i> infection is rare in over 65s.</p>		
	<p><b>CRB65 score 0:</b> Amoxicillin</p>	500 mg TDS	5 days
	<p><b>CRB65 score 0 alternative:</b> Doxycycline or Clarithromycin</p>	200 mg stat then 100 mg OD	5 days
	<p><b>CRB65 score 1 AND AT HOME:</b> Amoxicillin <b>plus</b> Clarithromycin</p>	500 mg TDS 500 mg BD	7–10 days
	<p><b>CRB65 score 1 AND AT HOME alternative:</b> Doxycycline</p>	200 mg stat then 100 mg OD	7–10 days
	<p><b>Community-acquired pneumonia in children</b></p> <p><b>Treatment in the community</b>  <a href="#">BTS 2011 Guideline</a></p>	<ul style="list-style-type: none"> <li>• All children with a clear clinical diagnosis of pneumonia should receive antibiotics, as bacterial and viral pneumonia cannot reliably be distinguished from each other.</li> <li>• Children aged &lt; 2 years presenting with mild symptoms of lower respiratory tract infection do not usually have pneumonia and do NOT need to be treated with antibiotics, but should be reviewed if symptoms persist. A history of conjugate <i>Pneumococcal</i> vaccination gives greater confidence to this decision.</li> </ul>	
Amoxicillin		See BNF for Children	7 days
<p><b>Penicillin allergy:</b> Clarithromycin</p>		See BNF for Children	As above
<p><b>Pneumonia associated with influenza:</b> Co-amoxiclav</p>		See BNF for Children	7 days

**Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children**

**Meningitis**  
 Clinically suspected meningitis is a notifiable disease – Please contact the Health Protection Team.  
[NICE fever guidelines](#)

Infection	Formulary choice	Dose	Reconstitution	Duration of treatment
<b>Suspected meningococcal disease</b> <a href="#">PHE</a>	<b>Transfer all patients to hospital immediately.</b> If time before admission, and non-blanching rash, give IV benzylpenicillin or cefotaxime, unless definite history of hypersensitivity.			
	IV or IM benzylpenicillin	<u>Age</u> ≥ 10 years: 1200 mg 1–9 years: 600 mg < 1 year: 300 mg	<u>IM</u> – Reconstitute with Water for Injection (WFI) – 1.6–2 ml for each 600 mg vial <u>IV</u> – Reconstitute with WFI or NaCl 0.9% – 4 ml for each 600 mg vial. Further diluted to a final volume of 10 ml WFI or NaCl 0.9%.	(give IM if vein cannot be found)
	<b>Or:</b>			
IV or IM cefotaxime	<u>Age</u> ≥ 12 years: 1 g < 12 years: 50 mg/kg (max. 1 g)	<u>IM</u> – Reconstitute with WFI – 2 ml for each 500 mg vial, 4 ml for each 1 g vial <u>IV</u> – Reconstitute with WFI – 2 ml for each 500 mg vial, 4 ml for each 1 g vial		
Prevention of secondary cases of meningitis: Only prescribe following advice from Public Health Doctor:				

**Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children**

**Urinary Tract Infections**

Refer to [PHE UTI guidance for diagnosis information](#)

**Note:** People > 65 years: do not treat asymptomatic bacteriuria; it is common but is not associated with increased morbidity.

Catheter in situ: antibiotics will not eradicate asymptomatic bacteriuria; only treat if systemically unwell or pyelonephritis likely.

Do not use prophylactic antibiotics for catheter changes unless history of catheter-change-associated UTI or trauma ([NICE](#) and [SIGN](#) guidance)

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Acute prostatitis</b> <a href="#">BASHH</a> , <a href="#">NICE CKS</a>	Send MSU for culture and start antibiotics. A 4-week course may prevent chronic prostatitis. Quinolones achieve higher prostate levels.		
	Ciprofloxacin <b>or</b> Ofloxacin	500 mg BD 200 mg BD	28 days 28 days
	<b>Allergy:</b> Trimethoprim	200 mg BD	28 days
<b>Acute pyelonephritis</b> <a href="#">NICE CKS</a>	If admission not needed, send MSU for culture and sensitivities and start antibiotics. If no response within 24 hours, admit.		
	Ciprofloxacin <b>or</b> Co-amoxiclav	500 mg BD 625 mg TDS	7 days 14 days
<b>UTI in adults (no fever or flank pain)</b> <a href="#">PHE QRG</a> , <a href="#">SIGN</a> , <a href="#">NICE CKS women</a> , <a href="#">NICE CKS men</a>	<b>Women</b> with severe/or $\geq 3$ symptoms*: treat <b>Women</b> with mild/or $\leq 2$ symptoms*: use dipstick results to guide treatment. <b>Men:</b> Consider prostatitis and send pre-treatment MSU OR if symptoms mild/non-specific, use negative dipstick to exclude UTI. *Symptoms: dysuria, frequency, suprapubic tenderness, urgency, polyuria, haematuria.		
	Nitrite & blood/leucocytes has 92% positive predictive value; negative nitrite, leucocytes, and blood has a 76% negative predictive value.		
	Trimethoprim <i>or</i> Nitrofurantoin	200 mg BD  100 mg m/r BD	<b>Men – <u>minimum</u> 7 days</b> <b>Women all ages – 3 days</b>
<b>Second line:</b> Perform culture in all treatment failures. <b>Amoxicillin resistance is common; only use if susceptible (C+S results)</b>			

<b>UTI in pregnancy</b> <a href="#">PHE QRG</a> , <a href="#">NICE CKS women</a> , <a href="#">UKTIS</a>	Send MSU for culture and start antibiotics. Short-term use of <a href="#">nitrofurantoin</a> in <a href="#">pregnancy</a> is unlikely to cause problems to the foetus. Avoid at term – may produce neonatal haemolysis. Avoid <a href="#">trimethoprim</a> if low folate status or on folate antagonist (e.g. antiepileptic or proguanil).		
	Nitrofurantoin	100 mg m/r BD	7 days
	<b>If susceptible (C+S results):</b> <a href="#">Amoxicillin</a>	500 mg TDS	7 days
	<b>Second line:</b> Trimethoprim <i>In first trimester prescribe folate supplement if not already taking one. (Folic acid 400 micrograms OD or 5 mg OD if high risk of neural tube defect)</i>	200 mg BD (off-label)	7 days
	<b>Third line:</b> <a href="#">Cefalexin</a>	500 mg BD	7 days
<b>Recurrent symptomatic UTI in non-pregnant women ≥ 3 UTIs/year</b>	Cranberry products OR post-coital antibiotics OR standby antibiotics may reduce recurrence. Once daily prophylaxis (at night) reduces UTIs but puts patient at risk of adverse effects.		
	Nitrofurantoin <b>or</b> Trimethoprim	50–100 mg 100 mg	<i>Post coital</i> stat dose (off-label) or OD at night
<b>Lower UTI in children</b> <a href="#">PHE QRG</a> , <a href="#">NICE</a>	Send pre-treatment MSU for all children with suspected UTI. <b>Child &lt;3 months:</b> refer urgently for assessment. <b>Child ≥ 3 months:</b> use positive nitrite to start antibiotics. Imaging: only refer if child < 6 months, recurrent or atypical UTI.		
	Trimethoprim <b>or</b> Nitrofurantoin	See BNF for Children	3 days
	<b>Second line:</b> Cefalexin	See BNF for Children	3 days
	<b>If susceptible (C+S):</b> Amoxicillin	See BNF for Children	3 days

<b>Upper UTI in children</b> <a href="#">PHE QRG</a> , <a href="#">NICE</a>	Send pre-treatment MSU for all children with suspected UTI. <b>Child &lt; 3 months:</b> refer urgently for assessment. <b>Child ≥ 3 months:</b> use positive nitrite to start antibiotics. Imaging: only refer if child < 6 months, recurrent or atypical UTI.		
	Co-amoxiclav	See BNF for Children	10 days
	<b>Second line:</b> Cefixime	See BNF for Children	10 days



Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children

Gastro-intestinal Tract Infections

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Oral candidiasis (adults)</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>Antifungal agents absorbed from the gastrointestinal tract e.g. fluconazole prevent oral candidiasis in patients receiving treatment for cancer.</li> <li>Exclude risk factors such as HIV infection, cancer, diabetes, anaemia, or haematinic deficiencies. Oral candidiasis is uncommon in people other than infants, denture wearers, and the elderly. In otherwise healthy people, candidiasis may be the first presentation of an undiagnosed risk factor. If the person has diabetes, review diabetic control and manage accordingly, particularly if there are recurrent episodes of oral candidal infection.</li> <li>If the person is using an inhaled corticosteroid, provide advice on the prevention of oral candidal infection (e.g. good technique, mouth rinsing, spacer devices). If the person wears dentures, advise about hygiene measures to aid healing and prevent recurrence.</li> <li>For advice on treating oral thrush in HIV patients, please see CKS.</li> </ul>		
	Miconazole oral gel BEWARE INTERACTIONS: although an oral gel, absorption can occur, leading to potential significant increases in INR in patients receiving warfarin.”	5–10 ml QDS	7 days. Extend to 14 days if infection has not resolved but there has been some response. Continue treatment for 2 days after symptoms resolve.
	<b>If miconazole unsuitable or no response after 7 days of miconazole:</b> Nystatin suspension	1 ml QDS	7 days. Extend to 14 days if infection has not resolved but there has been some response. Continue treatment for 2 days after symptoms resolve.
	<b>For severe or extensive candidiasis:</b> Fluconazole	50 mg OD	For 7 days. Extend to 14 days if infection has not completely resolved.
<b>Oral candidiasis (immune-competent children)</b> <a href="#">NICE CKS</a>	Miconazole oral gel (off label if < 4 months)	See BNF for children	7 days. Extend to 14 days if infection has not resolved but there has been some response. Continue treatment for 2 days after symptoms resolve.
	<b>If miconazole unsuitable or no response after 7 days of miconazole:</b> Nystatin suspension (off-label in neonates)	See BNF for children	7 days. Continue treatment for 2 days after symptoms resolve.

<b>Infectious diarrhoea</b> <a href="#">NICE CKS</a>	Refer previously healthy children with acute painful or bloody diarrhoea to exclude <i>E. coli</i> 0157 infection. <b>Antibiotics are contra-indicated in <i>E. coli</i> 0157 infection as this may result in haemolytic uraemic syndrome (HUS).</b>						
	<b>Antibiotic therapy not indicated unless systemically unwell.</b> If systemically unwell and <i>Campylobacter</i> suspected (e.g. undercooked meat and abdominal pain) consider clarithromycin 250–500 mg BD for 5–7 days if treated early.						
<b>Travellers' diarrhoea</b> <a href="#">NICE CKS</a>	<b>Only consider standby antibiotics</b> for remote areas or people at high-risk of severe illness with travellers' diarrhoea. If standby treatment appropriate give: <b>ciprofloxacin 500 mg BD</b> for 3 days (private prescription). If quinolone resistance high (e.g. south Asia): consider bismuth subsalicylate (Pepto-Bismol®) 2 tablets QDS as prophylaxis or for 2 days treatment.						
	Empirical antibiotics are not generally indicated. Specific treatment should be directed by the results of stool sampling.						
<b>Eradication of <i>Helicobacter pylori</i></b> <a href="#">NICE</a>	<ul style="list-style-type: none"> <li>• Eradication is beneficial in known duodenal ulcer (DU), gastric ulcer (GU) or low grade MALToma.</li> <li>• For non-ulcer dyspepsia (NUD), the NNT is 14 for symptom relief.</li> <li>• Do not offer eradication for gastro-oesophageal reflux disease.</li> <li>• Do not use clarithromycin or metronidazole if used in the past year for any infection.</li> <li>• DU/GU relapse: retest for <i>H. pylori</i> using breath or stool test OR consider endoscopy for culture and sensitivities</li> <li>• NUD relapse: Do not retest, offer proton pump inhibitor (PPI) or H2-receptor antagonist</li> </ul>						
			<b>PPI</b>		<b>Antibacterial</b>		
				<b>Amoxicillin</b>	<b>Clarithromycin</b>	<b>Metronidazole</b>	<b>Levofloxacin</b>
	<b>First line options</b>	First Line	Omeprazole 20 mg BD	1 g BD		400 mg BD	
			Omeprazole 20 mg BD	1 g BD	500 mg BD		
			Lansoprazole 30 mg BD	1 g BD		400 mg BD	
			Lansoprazole 30 mg BD	1 g BD	500 mg BD		
		Penicillin allergy	Omeprazole 20 mg BD		500 mg BD	400 mg BD	
			Lansoprazole 30 mg BD		500 mg BD	400 mg BD	
	<b>Second line options</b>	Use either clarithromycin or metronidazole (whichever was not used first-line)	Omeprazole 20 mg BD	1 g BD	500 mg BD		
			Omeprazole 20 mg BD	1 g BD		400 mg BD	
			Lansoprazole 30 mg BD	1 g BD	500 mg BD		
Lansoprazole 30 mg BD			1 g BD		400 mg BD		
Previous exposure to clarithromycin AND metronidazole		Omeprazole 20 mg BD	1 g BD			250 mg BD	
		Lansoprazole 30 mg BD	1 g BD			250 mg BD	
Penicillin allergy		Omeprazole 20 mg BD	1 g BD		400 mg BD	250 mg BD	
		Lansoprazole 30 mg BD			400 mg BD	250 mg BD	
						All for 7 days	
						Relapse or MALToma 14 days	

<b>Threadworm</b> <a href="#">NICE CKS</a>	Treat all household contacts at the same time PLUS advise hygiene measures for 2 weeks (hand hygiene, wear pants at night, morning shower) PLUS wash sleepwear, bed linen, dust, and vacuum on day one.		
	<b>&gt; 6 months old:</b> Mebendazole (off label if < 2 years old) Contra-indicated in pregnancy. Manufacturer advises avoid in breastfeeding.	100 mg	stat
	<b>&lt; 6 months old:</b> 6 weeks hygiene only		
<b>Diverticulitis</b>	People with mild, uncomplicated diverticulitis can be managed at home with paracetamol, clear fluids, and antibiotics.		
	Co-amoxiclav	625 mg TDS	7–10 days
	<b>Penicillin allergy:</b> Ciprofloxacin <b>PLUS</b> Metronidazole	500 mg BD  400 mg TDS	Both for 7–10 days
<b>Biliary infection (cholecystitis/ cholangitis)</b>	Consider admission for surgical review		
	Co-amoxiclav	625 mg TDS	7–10 days
	<b>Penicillin allergy:</b> Ciprofloxacin <b>PLUS</b> Metronidazole	500 mg BD  400 mg TDS	Both for 7–10 days

***Clostridium difficile***  
[DH & PHE](#)

For further information please see the [Secondary care antimicrobial guidelines](#)

- Stop unnecessary antibiotics and/or proton pump inhibitors.
- 70% respond to metronidazole in 5 days; 92% in 14 days.
- If **severe** symptoms or signs\* discuss case with Microbiology and/or consider hospital referral.

\* Admit if: Temperature > 38.5; White cell count > 15, rising creatinine or signs/symptoms of severe colitis

**Interpreting *C. difficile* tests**

First stage test (GDH):

GDH (glutamate dehydrogenase) is an enzyme produced in large quantities by all toxigenic and non-toxigenic strains. Not all strains produce toxin and therefore not all cause illness. If a stool sample tests positive for GDH, a second stage toxin test is done.

Second stage test (toxin):

A positive toxin test is evidence of *C. difficile* infection. **Patients should only be treated if symptomatic.** If the toxin test is negative and there is high clinical suspicion of *C. difficile* infection, a repeat sample should be sent and the patient treated.

Routine clearance samples should not be sent. Samples from previously positive patients will not routinely be retested within 28 days. Clearance samples may still be positive due to **colonisation** with *C. difficile*, which does not require treatment if the patient is well and asymptomatic. Repeat samples are only necessary if the patient is clinically unwell or symptomatic, and the clinical information should be filled in on the request forms in these cases.

**FIDAXOMICIN must NOT be prescribed unless on the specific advice of a Consultant Microbiologist.**

<b>Non-severe:</b> Metronidazole	400 mg TDS	10–14 days
<b>Severe*/type 027</b> Oral vancomycin	125 mg QDS	10–14 days

**Discussion with a Consultant Microbiologist is recommended for severe cases with multiple co-morbidities, who are receiving concomitant antibiotic therapy and for ALL recurrent cases, in order for fidaxomicin to be considered as a therapeutic option**

\* Admit if: Temperature > 38.5; White cell count > 15, rising creatinine or signs/symptoms of severe colitis

Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children			
Antibiotic prophylaxis in asplenia			
Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Antibiotic prophylaxis in asplenia</b>	Long-term prophylaxis should be offered to the following high-risk groups: <ul style="list-style-type: none"> <li>• Age &lt; 16 years</li> <li>• Age &gt; 50 years</li> <li>• Inadequate response to Pneumococcal vaccine</li> <li>• Previous invasive Pneumococcal disease</li> <li>• Underlying haematological malignancy particularly in the context of ongoing immunosuppression</li> </ul> Patients not at high risk should be counselled regarding the risks and benefits of lifelong antibiotics, and may choose to continue or discontinue prophylaxis. After splenectomy for trauma, the risk is greatest in the immediate post-operative period and prophylaxis should cover this period at least.		
	Phenoxymethylpenicillin	250 mg BD	Lifelong
	<b>Penicillin allergy:</b> Erythromycin	500 mg BD	Lifelong

**Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children**

**Genital Tract Infections**

Contact [UKTIS](#) for information on foetal risks if patient is pregnant

STI screening – People with risk factors should be screened for chlamydia, gonorrhoea, HIV, syphilis. Refer individual and partners to GUM service.

Risk factors: < 25 years, no condom use, recent (< 12 month)/frequent change of partner, symptomatic partner.

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Chlamydia trachomatis/ urethritis</b> <a href="#">SIGN</a> , <a href="#">BASHH</a> , <a href="#">PHE</a> , <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• Opportunistically screen all aged 15–25 years</li> <li>• Treat partners and refer to GUM service</li> <li>• Pregnancy or breastfeeding:                             <ul style="list-style-type: none"> <li>– Azithromycin is the most effective option</li> <li>– Due to lower cure rate in pregnancy, test for cure 6 weeks after treatment</li> </ul> </li> </ul>		
	Azithromycin <b>or</b> Doxycycline	1 g 100 mg BD	stat 7 days
	<b>Pregnant or breastfeeding:</b> Azithromycin <b>or</b> Erythromycin <b>or</b> Amoxicillin	1 g (off-label use) 500 mg QDS 500 mg TDS	stat 7 days 7 days
	<b>For suspected epididymitis in men:</b> Ofloxacin <b>or</b> Doxycycline	400 mg BD 100 mg BD	14 days 14 days
<b>Bacterial vaginosis</b> <a href="#">BASHH</a> , <a href="#">PHE</a> , <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• Oral metronidazole is as effective as topical treatment but is cheaper.</li> <li>• Less relapse with 7 days' treatment than 2 g stat at 4 weeks.</li> <li>• Treating partners does not reduce relapse.</li> </ul>		
	Oral metronidazole <b>or</b>	400 mg BD <i>or</i> 2 g	7 days stat
	Metronidazole 0.75% vaginal gel <b>or</b> Clindamycin 2% cream	5 g applicatorful at night 5 g applicatorful at night	5 nights 7 nights
<b>Pregnant or breastfeeding:</b> Oral metronidazole <b>or</b> Metronidazole 0.75% vaginal gel <b>or</b> Clindamycin 2% cream	400 mg BD 5 g applicatorful at night 5 g applicatorful at night	7 days 5 nights 7 nights	

<b>Vaginal candidiasis</b> <a href="#">BASHH</a> , <a href="#">PHE</a>	<ul style="list-style-type: none"> <li>All topical and oral azoles give 75% cure.</li> <li>In pregnancy: avoid oral azoles and use intravaginal treatment for 7 days.</li> </ul>		
	Clotrimazole <b>or</b> oral fluconazole	500 mg pessary or 10% cream 150 mg orally	stat stat
	<b>Pregnant:</b> Clotrimazole <b>or</b> Miconazole 2% cream	100 mg pessary at night 5 g intravaginally BD	6 nights 7 days
<b>Trichomoniasis</b> <a href="#">BASHH</a> , <a href="#">PHE</a> , <a href="#">NICE CKS</a>	Treat partners and refer to GUM service. <u><i>Pregnancy or breastfeeding:</i></u> Avoid 2 g single dose metronidazole. Consider clotrimazole for symptom relief (not cure) if metronidazole declined.		
	Metronidazole	400 mg BD or 2 g	5–7 days stat
	<b>Pregnant or breastfeeding:</b> Metronidazole <b>or</b> Clotrimazole (see note above)	400 mg BD 100 mg pessary at night	5–7 days 6 nights
<b>Pelvic Inflammatory disease</b> <a href="#">RCOG</a> , <a href="#">BASHH</a>	Refer patient and contacts to GUM service. Always culture for gonorrhoea and chlamydia. 28% of gonorrhoea isolates are now resistant to quinolones. If gonorrhoea likely (partner has it, severe symptoms, sex abroad) use ceftriaxone regimen or refer to GUM.		
	Metronidazole <b>PLUS</b> Ofloxacin	400 mg BD 400 mg BD	14 days 14 days
	<b>If high risk of gonorrhoea:</b> Ceftriaxone <b>PLUS</b> Metronidazole <b>PLUS</b> Doxycycline	500 mg IM 400 mg BD 100 mg BD	stat 14 days 14 days

Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children			
Skin Infections			
Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Impetigo</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>For extensive, severe, or bullous impetigo, use oral antibiotics.</li> <li>Reserve topical antibiotics for very localised lesions to reduce the risk of resistance.</li> <li>Reserve topical mupirocin for localised MRSA-positive lesions.</li> </ul>		
	Flucloxacillin	500 mg QDS	7 days
	<b>Penicillin allergy:</b> Clarithromycin	250–500 mg BD	7 days
	<b>Localised lesions:</b> topical fusidic acid	TDS	5 days
	<b>Localised MRSA-positive lesions:</b> Mupirocin	TDS	5 days
<b>Rosacea</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>Consider oral antibiotics in moderate or severe papulopustular rosacea i.e. papules, pustules, or plaques covering extensive areas that would be difficult to treat topically</li> </ul>		
	<b>If oral antibiotics are indicated:</b> Oxytetracycline	500 mg BD	A follow up appointment should be arranged after 12 weeks to assess treatment and determine future management. Refer to dermatology if papulopustular rosacea that has not responded to 12 weeks of oral plus topical treatment.
	<b>If compliance is an issue:</b>		
	Doxycycline [Unlicensed use] <b>or</b>	100 mg OD	
	Lymecycline [Unlicensed use] <b>or</b>	408 mg OD	
	Doxycycline MR [Licensed]	40 mg OD	Significantly more expensive
	<b>If tetracycline contra-indicated:</b> Erythromycin	500 mg BD	



<b>Acne vulgaris</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• Minocycline is not recommended.</li> <li>• Consider oral antibiotics (in combination with a topical retinoid or benzoyl peroxide) for moderate acne on the back or shoulders or if there is significant risk of scarring or substantial pigment change.</li> <li>• All people with severe acne and/or development/risk of scarring should be referred for specialised assessment and treatment. Treatment with an oral antibiotic in combination with a topical retinoid or benzoyl peroxide should be considered whilst waiting for an appointment.</li> <li>• If the person has not responded adequately, continue for 2–3 months before assuming treatment is ineffective. At this stage, consider seeking specialist advice or referring to a dermatologist. If there has been some response, continue for up to 6 months.</li> <li>• Do not prescribe an oral antibiotic alone.</li> <li>• Do not combine a topical and an oral antibiotic.</li> </ul>		
	<b>If oral antibiotics are indicated:</b> Doxycycline <b>or</b> Lymecycline <i>Together with a topical retinoid or benzoyl peroxide</i>	100 mg OD 408 mg OD	Follow up at 6–8 weeks to review the effectiveness and tolerability of treatment and the person's compliance with the treatment
	<b>If tetracycline contra-indicated:</b> Erythromycin	500 mg BD	As above
<b>Eczema</b>	If no visible signs of infection, use of antibiotics (alone or with steroids) encourages resistance and does not improve healing. In eczema with visible signs of infection, use treatment as in impetigo.		
<b>Panton-Valentine Leukocidin (PVL)</b> <a href="#">PHE QRG</a>	<ul style="list-style-type: none"> <li>• Panton-Valentine Leukocidin (PVL) is a toxin produced by 2% of <i>S. aureus</i> strains. It can rarely cause severe invasive infections in healthy people.</li> <li>• Send swabs if recurrent boils/abscesses.</li> <li>• At risk: close contact in communities or sport; poor hygiene.</li> </ul>		
<b>Cellulitis</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• If patient afebrile and healthy other than cellulitis, use oral flucloxacillin alone.</li> <li>• <b>If river or sea water exposure, discuss with Consultant Microbiologist.</b></li> <li>• If febrile and ill, admit for IV treatment.</li> <li>• <i>Stop clindamycin if diarrhoea occurs.</i></li> </ul>		
	Flucloxacillin	500 mg QDS	7 days – If slow response continue for a further 7 days
	<b>Penicillin allergy:</b> Clarithromycin or Clindamycin	500 mg BD 300–450 mg QDS	As above
	<b>Facial:</b> Co-amoxiclav	625 mg TDS	As above

Patients with lymphoedema/chronic oedema presenting with cellulitis may require antibiotics for 14 days or longer (see [Lymphoedema Guideline](#)). ALL patients with lymphoedema/chronic oedema and cellulitis should be referred to the Lymphoedema Service.

Details of the service and local referral forms can be accessed at <http://howis.wales.nhs.uk/sitesplus/888/page/54900#referral>

<b>Leg ulcer</b> <a href="#">PHE QRG</a> , <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• <b>Leg ulcers are always colonised. Antibiotics do not improve healing unless active infection is present.</b></li> <li>• If active infection present (cellulitis/increased pain/pyrexia/purulent exudate/odour), send pre-treatment swab.</li> <li>• Review antibiotics after culture results.</li> </ul>		
	<b>Active infection:</b> Flucloxacillin	500 mg QDS	7 days – If slow response continue for a further 7 days
	<b>Penicillin allergy:</b> Clarithromycin	500 mg BD	As above
<b>MRSA</b>	<ul style="list-style-type: none"> <li>• For MRSA screening and suppression, see <a href="#">PHE MRSA quick reference guide</a>.</li> <li>• For active MRSA infection:                             <ul style="list-style-type: none"> <li>– Use antibiotic sensitivities to guide treatment.</li> <li>– If severe infection or no response to monotherapy after 24–48 hours, seek advice from Consultant Microbiologist on combination therapy.</li> </ul> </li> </ul>		
	<b>If active MRSA infection <u>confirmed</u> by lab results, infection not severe and admission not required:</b> Doxycycline alone <b>or</b> Clindamycin alone	100 mg BD 300–450 mg QDS	7 days 7 days <i>Stop if diarrhoea occurs</i>

<b>Bites</b> (Human/cat/dog) <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• Human:                         <ul style="list-style-type: none"> <li>– Thorough irrigation is important.</li> <li>– Antibiotic prophylaxis is advised even if there are no signs of infection.</li> <li>– Assess risk of tetanus, HIV and Hepatitis B and C.</li> </ul> </li> <li>• Cat/Dog:                         <ul style="list-style-type: none"> <li>– Thorough irrigation is important.</li> <li>– Assess risk of tetanus and rabies.</li> <li>– Antibiotic prophylaxis is advised in the following circumstances: All cat bites; dog bite to hand/foot/face/joint/tendon/ligament; puncture wound; suspected fracture; wounds requiring surgical debridement; wounds that have undergone primary closure; immunocompromised/diabetic/asplenic/cirrhotic/ prosthetic heart valve/prosthetic joint/patient at risk of serious wound infection.</li> </ul> </li> <li>• Bat: please see <a href="#">PHE guidance</a></li> </ul>		
	<b>Prophylaxis or treatment:</b>		
	Co-amoxiclav	375–625 mg TDS	7 days
	<b>Penicillin allergy:</b> Metronidazole <b>PLUS</b> Doxycycline (cat/dog/human) <b>or</b> Metronidazole <b>PLUS</b> Clarithromycin ( <b>human bites only</b> ) AND review at 24 and 48 hrs	200–400 mg TDS  100 mg BD  200–400 mg TDS  250–500 mg BD	7 days
<b>Scabies</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• Treat all home and sexual contacts within 24 hours.</li> <li>• Treat whole body from ear/chin downwards and under nails.</li> <li>• If under 2 years/elderly, also treat face/scalp.</li> </ul>		
	Permethrin	5% cream	2 applications 1 week apart
	(one 30 g pack should be sufficient, larger patients may require two 30 g packs)		
	<b>If allergy:</b> Malathion	0.5% aqueous liquid	As above

<b>Dermatophyte infection – skin</b> <a href="#">NICE CKS body &amp; groin,</a> <a href="#">NICE CKS foot,</a> <a href="#">NICE CKS scalp</a>	<ul style="list-style-type: none"> <li>• Terbinafine is fungicidal, so treatment time shorter than with fungistatic imidazoles.</li> <li>• If Candida possible, use imidazole.</li> <li>• If intractable: send skin scrapings.</li> <li>• If infection confirmed, use <u>oral</u> terbinafine/itraconazole.</li> <li>• Scalp: discuss with specialist.</li> </ul>		
	Topical terbinafine <b>or</b> Topical imidazole <b>or</b>	BD BD	1–2 weeks For 1–2 weeks after healing (i.e. 4–6 weeks) For 1–2 weeks after healing (i.e. 4–6 weeks)
	<b>Athlete’s foot only:</b> Topical undecanoate (Mycota®)	BD	For 1–2 weeks after healing (i.e. 4–6 weeks)
<b>Cold sores</b>	<ul style="list-style-type: none"> <li>• Cold sores resolve after 7–10 days without treatment.</li> <li>• Topical antivirals applied prodromally reduce duration by 12–24hrs</li> </ul>		
<b>Varicella zoster (Chicken pox)</b> <a href="#">NICE CKS</a>  <b>Herpes zoster (Shingles)</b>	<ul style="list-style-type: none"> <li>• Pregnant/immunocompromised/neonate: seek urgent specialist advice.</li> <li>• <b>Chicken pox:</b> If onset of rash &lt; 24 hours and &gt; 14 years old or severe pain or dense/oral rash or 2 household case or steroids or smoker consider aciclovir.</li> <li>• <b>Shingles:</b> Treat if &gt; 50 years and within 72 hours of rash (post-herpetic neuralgia rare if &lt; 50 years); or if active ophthalmic or Ramsey Hunt or eczema.</li> </ul>		
	<b>If indicated (see notes above):</b> Aciclovir	800 mg five times a day	7 days
	<b>Second line for shingles if compliance a problem, as ten times cost:</b> Valaciclovir <b>or</b> Famciclovir	1 g TDS 500 mg TDS	7 days 7 days

**Dermatophyte infection – nail**  
[NICE CKS](#)

- Take nail clippings: Material should be obtained by scraping nail material from the distal underside of the nail and then collecting all the material from the distal part of the nail bed.
- **Start therapy only if infection is confirmed by laboratory.**
- False-negative rates are high. Repeat the test if the result is negative, and there is high clinical suspicion that the nail is infected.
- Terbinafine is more effective than azoles.
- Liver reactions rare with oral antifungals.
- If Candida or non-dermatophyte infection confirmed, use oral itraconazole.
- For children, seek specialist advice

<b>First line:</b> Terbinafine	250 mg OD	<u>Finger nail/s:</u> 6–12 weeks	<u>Toe nail/s:</u> 3–6 months
<b>Second line:</b> Itraconazole	200 mg BD	<u>Pulsed course:</u> 7 days then repeat after 21 days	
		<u>Finger nail/s:</u> 2 pulsed courses as above	<u>Toe nail/s:</u> At least 3 pulsed courses as above

Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children				
Eye Infections				
Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<b>Conjunctivitis</b> <a href="#">NICE CKS</a>	<ul style="list-style-type: none"> <li>• Treat if severe, as most viral or self-limiting.</li> <li>• Bacterial conjunctivitis is usually unilateral and <u>also</u> self-limiting; it is characterised by red eye with mucopurulent, not watery, discharge.</li> <li>• 65% resolve on placebo by day five.</li> <li>• Fusidic acid has less Gram-negative activity.</li> <li>• Consider screening for <i>Chlamydia</i> in neonatal conjunctivitis.</li> </ul>			
	<b>If severe:</b> Chloramphenicol 0.5% drop	2 hourly for 2 days then 4 hourly (whilst awake)		For 48 hours after resolution
	<b>and</b> Chloramphenicol 1% ointment	at night		As above
	<b>If there is no response to chloramphenicol – send a swab for C+S</b>			
	<b>Second line:</b> Fusidic acid 1% gel	BD		As above
<b>Ophthalmia neonatorum</b>	<ul style="list-style-type: none"> <li>• <b>Seek advice</b></li> </ul>			

**Dosages in Children: Details of drug dosage and administration can be found in the BNF for Children**

**Dental infections**

Derived from the Scottish Dental Clinical Effectiveness Programme 2011 [SDCEP Guidelines](#)

This guidance is not designed to be a definitive guide to oral conditions. It is for GPs for the management of acute oral conditions pending being seen by a dentist or dental specialist. GPs should not routinely be involved in dental treatment and, if possible, advice should be sought from the patient's dentist, who should have an answer-phone message with details of how to access treatment out-of-hours, or NHS Direct on 0845 4657.

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Mucosal ulceration and inflammation (simple gingivitis)</b>	<ul style="list-style-type: none"> <li>• Temporary pain and swelling relief can be attained with saline mouthwash</li> <li>• Use antiseptic mouthwash:                             <ul style="list-style-type: none"> <li>– If more severe and pain limits oral hygiene (to treat or prevent secondary infection).</li> <li>– The primary cause for mucosal ulceration or inflammation (aphthous ulcers, oral lichen planus, herpes simplex infection, oral cancer) needs to be evaluated and treated.</li> </ul> </li> </ul>		
	Simple saline mouthwash <i>(spit out after use)</i>	½ tsp salt dissolved in glass warm water	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.
	Chlorhexidine mouthwash 0.12–0.2% <i>(Do not use within 30 mins of toothpaste)</i> <i>(spit out after use)</i>	Rinse mouth for 1 minute BD with 5 ml diluted with 5–10 ml water	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.
	Hydrogen peroxide mouthwash 6% <i>(spit out after use)</i>	Rinse mouth for 2 minutes TDS with 15 ml diluted in ½ glass warm water	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.
<b>Acute necrotising ulcerative gingivitis</b>	<ul style="list-style-type: none"> <li>• Commence metronidazole and refer to dentist for scaling and oral hygiene advice.</li> <li>• Use in combination with antiseptic mouthwash if pain limits oral hygiene.</li> </ul>		
	Metronidazole	400 mg TDS	3 days
	Chlorhexidine mouthwash <b>or</b> Hydrogen peroxide mouthwash <i>(spit out after use)</i>	See above dosing in mucosal ulceration	Until oral hygiene possible

<b>Pericoronitis (inflammation around partially erupted teeth)</b>	<ul style="list-style-type: none"> <li>• Refer to dentist for irrigation and debridement.</li> <li>• If persistent swelling or systemic symptoms use metronidazole.</li> <li>• Use antiseptic mouthwash if pain and trismus limit oral hygiene.</li> </ul>		
	Amoxicillin	500 mg TDS	3 days
	<b>If persistent swelling or systemic symptoms:</b> Metronidazole	400 mg TDS	3 days
	<b>If pain and trismus limit oral hygiene:</b> Chlorhexidine mouthwash or hydrogen peroxide mouthwash ( <i>spit out after use</i> )	See above dosing in mucosal ulceration	Until oral hygiene possible
<b>Dental abscess</b>	<ul style="list-style-type: none"> <li>• Regular analgesia should be first option until a dentist can be seen for urgent drainage, as repeated courses of antibiotics for abscess are not appropriate. Repeated antibiotics alone, without drainage, are ineffective in preventing spread of infection.</li> <li>• Antibiotics are recommended if there are signs of severe infection, systemic symptoms or high risk of complications.</li> <li>• Severe odontogenic infections; defined as cellulitis plus signs of sepsis, difficulty in swallowing, impending airway obstruction, Ludwig's angina. Refer urgently for admission to protect airway, achieve surgical drainage and IV antibiotics.</li> <li>• The empirical use of cephalosporins, co-amoxiclav, clarithromycin, and clindamycin do not offer any advantage for most dental patients and should only be used if no response to first-line drugs when referral is the preferred option.</li> <li>• If <i>pus</i> is present, this should be drained by a dentist by incision, tooth extraction or via root canal and a sample sent to microbiology.</li> <li>• <i>True penicillin allergy</i>: use clarithromycin or clindamycin if severe infection.</li> <li>• <i>If spreading infection</i> (lymph node involvement, or systemic signs i.e. fever or malaise) ADD metronidazole</li> </ul>		
	Amoxicillin	500 mg TDS	Up to 5 days. Review at 3 days.
	<b>Penicillin allergy:</b> Clarithromycin	500 mg BD	As above
	<b>Severe infection (see notes above):</b> <b>ADD Metronidazole or</b> (if allergy to metronidazole): Clindamycin monotherapy	400 mg TDS	5 days
		300 mg QDS	5 days



## REFERENCES

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For further details of the references used in these guidelines, please see the original PHE '[Management of Infection Guidance for Primary Care for Consultation and Local Adaptation](#)' document.

## CONTACT DETAILS

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Advice on the diagnosis and treatment of microbial diseases may be obtained from [FOR LOCAL ADAPTATION].

## GLOSSARY

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<b>AMT</b>	Abbreviated Mental Test
<b>BP</b>	Blood pressure
<b>BTS</b>	British Thoracic Society
<b>CKS</b>	Clinical Knowledge Summaries
<b>C+S</b>	Culture and Sensitivities
<b>GUM</b>	Genito-urinary medicine
<b>MRSA</b>	Methicillin-resistant Staphylococcus aureus
<b>MSU</b>	Mid-stream urine
<b>NICE</b>	National Institute for Health and Care Excellence
<b>NNT</b>	Number Needed to Treat
<b>PHE</b>	Public Health England (formerly known as HPA – Health Protection Agency)
<b>SIGN</b>	Scottish Intercollegiate Guidelines Network
<b>UKTIS</b>	United Kingdom Teratology Information Service
<b>UTI</b>	Urinary tract infection