

# Primary Care Antimicrobial Guidelines

March 2022

(August 2024 – Updates have been made to ‘acute cough, bronchitis’, ‘acute sore throat’, and ‘travellers’ diarrhoea’ to align with NICE guidelines. In addition, ophthalmic shingles has been updated following discussion with Optometry Wales. ‘Infectious diarrhoea’ has also been updated to reflect tinidazole no longer available in the UK. Please refer to the ‘Updates’ section at the end of the document for further details.)

This document has been prepared by the All Wales Antimicrobial Pharmacist Group (AWAPG) and 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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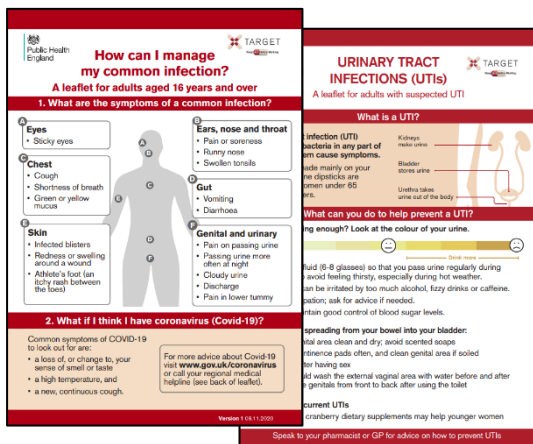
## Resources to help manage antibiotic prescribing

### 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



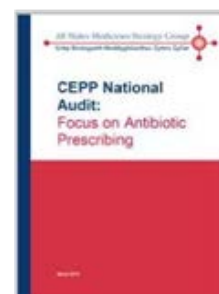
[Royal College of General Practitioners' \(RCGP\) 'Treat Antibiotics Responsibly, Guidance, Education and Tools' TARGET Antibiotics toolkit](#) for clinicians. Includes:

- A primary care self-assessment tool which aims to provide strategies that may help to optimise antibiotic prescribing.
- Patient/parent resources. [Leaflets to share with patients](#) ([rcgp.org.uk](http://rcgp.org.uk))

Patient information leaflets and guidance on medicines in pregnancy produced by UK Teratology Information Service (UKTIS) Bumps (best use of medicines in pregnancy) ([medicinesinpregnancy.org](http://medicinesinpregnancy.org)).

[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

All Wales Medicines Strategy Group (AWMSG) [Clinical Effectiveness Prescribing Programme \(CEPP\) National Audit: Focus on prescribing](#)



### Aims

- 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.
- To update guidance in real-time, as required.

### Principles of treatment

- This guidance is based on the best available evidence, but professional judgement should be used and patients should be involved in the decision.
- The guideline is intended for local implementation and adaptation.
- 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. For further information on drug dosing in renal impairment see the [British National Formulary \(BNF\)](#). Children's doses are provided for certain indications. Further information can be found in the [BNF for Children \(BNFc\)](#). 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.
- Where possible, limit prescribing for virtual consultations to exceptional cases and clear-cut diagnoses. N.B Face-to-face assessment before prescribing antibiotics remains best practice.
- Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics (e.g. co-amoxiclav, quinolones, clindamycin and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase the risk of *Clostridioides difficile* infection, MRSA and resistant urinary tract infections (UTIs). There are a range of National Prescribing Indicators that examine primary care use of these high-risk broad-spectrum agents. These empirical guidelines aim to use the safer, narrow spectrum antibiotics (e.g. tetracyclines) whenever possible. Visit the [AWTTC](#) website for further information on these indicators and [Server for Prescribing Information Reporting and Analysis \(SPIRA\)](#) for the most recent prescribing data.
- 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<sup>1</sup> may be used for the prevention of a secondary case of meningococcal meningitis (Patient Information Leaflet [PIL] [English](#) – [Welsh](#)). [Tetracyclines](#) should not be given to pregnant women.
- Fluoroquinolone antibiotics must now only be prescribed when other commonly recommended antibiotics are inappropriate. Consider updated (January 2024)

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<sup>1</sup> Consider updated (January 2024) prescribing restrictions and safety issues – see [MHRA](#) advice.

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prescribing restrictions and safety issues – see [MHRA](#) advice. See previous [MHRA advice](#) for restrictions and precautions for using fluoroquinolones due to very rare reports of disabling and potentially long-lasting or irreversible side effects affecting musculoskeletal, cardiac and nervous systems. Warnings include stopping treatment at first signs of serious adverse reaction (such as tendonitis), prescribing with special caution in people over 60 years and avoiding co-administration with a corticosteroid (December 2020).

- When a patient re-presents with symptoms that are persisting or worsening, seek local microbiology advice for further management, treatment and culture recommendations
- Where special circumstances exist, microbiological advice can be obtained from your local microbiology team.



Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p>Dosages in Children: Details of drug dosage and administration can be found in the <a href="#">BNFc</a></p>			
<p><b>Upper Respiratory Tract Infections</b></p>			
<p><b>Treatment of influenza (adults)</b>  <a href="#">PHE Influenza</a>,  <a href="#">UKTIS</a>  <a href="#">NICE</a>  <a href="#">CKS</a></p>	<p><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 <b>within 48 hours</b> 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 <b>within 48 hours</b> of onset of symptoms.</p> <p>*<b>At risk:</b> pregnant (including up to two weeks post-partum); 65 years or over; chronic respiratory disease (including COPD and asthma); severe immunosuppression; diabetes mellitus; chronic cardiac, neurological, renal or liver disease; Haemoglobinopathies; Asplenia or dysfunction of the spleen; severe obesity (BMI &gt; 40).</p> <p><b>Oseltamivir 75 mg BD for 5 days</b> (For immunosuppressed patients, use <b>10 days</b>)</p> <p>Information for use in pregnancy, please click <a href="#">here</a>. If there is resistance to oseltamivir, use 5 days <b>zanamivir 10 mg (2 inhalations by diskhaler) BD</b> and seek advice.</p>		
<p><b>Prophylaxis of influenza</b></p>	<p>See NICE Influenza prophylaxis guidance (<a href="#">TA158</a>). Patients under 13 years, see <a href="#">PHE Influenza</a>.</p>		

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Scarlet fever (Group A <i>Streptococcus</i>)</b> <a href="#">PHE</a> <a href="#">CKS</a>	Prompt treatment with appropriate antibiotics significantly reduces the risk of complications. Optimise analgesia and give safety netting advice. Notify the local health protection team promptly if a diagnosis of scarlet fever is suspected.		
	<b>Adults:</b> Phenoxyethylpenicillin	500 mg QDS or 1 g BD	10 days
	<b>Children:</b> Phenoxyethylpenicillin	see <a href="#">BNFc</a> for dosing	
	<i>If penicillin allergy:</i> <b>Adults:</b> Azithromycin	500 mg OD	5 days
	<b>OR</b>		
	Clarithromycin	250–500 mg BD	10 days
	<b>Children – birth to 6 months:</b> Clarithromycin	see <a href="#">BNFc</a> for dosing	10 days
	<b>Children – 6 months and over:</b> Azithromycin	see <a href="#">BNFc</a> for dosing	5 days
<b>OR</b>			
Clarithromycin	see <a href="#">BNFc</a> for dosing	10 days	
<b>Pregnant or postpartum (within 28 days of childbirth):</b> Erythromycin	250–500 mg QDS or 500 mg – 1g BD	10 days	

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment												
<p><b>Sore throat test and treat service may be available for certain health boards, please refer to local participating community pharmacy.</b></p> <p><b>Avoid antibiotics</b> as 90% resolve in 7 days without, and pain only reduced by 16 hours.</p> <ul style="list-style-type: none"> <li>• Antibiotics to prevent quinsy – numbers needed to treat (NNT) &gt; 4,000</li> <li>• Antibiotics to prevent otitis media – NNT 200</li> </ul> <p>Advise paracetamol, or ibuprofen (if suitable). Medicated lozenges may help pain in adults.</p> <p>Assess and manage children &lt; 5 years old who present with fever as outlined in <a href="#">NICE guideline (NG143) Fever in under 5s: assessment and initial management</a>.</p>															
<table border="1"> <thead> <tr> <th data-bbox="465 520 1328 552">FeverPAIN criteria (score 1 point each)</th> <th data-bbox="1328 520 2069 552">Centor criteria (score 1 point each)</th> </tr> </thead> <tbody> <tr> <td data-bbox="465 552 1328 584">Fever (during previous 24 hours)</td> <td data-bbox="1328 552 2069 584">Tonsillar exudate</td> </tr> <tr> <td data-bbox="465 584 1328 616">Purulence (pus on tonsils)</td> <td data-bbox="1328 584 2069 616">Tender anterior cervical lymphadenopathy or lymphadenitis</td> </tr> <tr> <td data-bbox="465 616 1328 647">Attend rapidly (&lt;3 days after onset of symptoms)</td> <td data-bbox="1328 616 2069 647">History of fever (over 38°C)</td> </tr> <tr> <td data-bbox="465 647 1328 679">Severely Inflamed tonsils</td> <td data-bbox="1328 647 2069 679">Absence of cough</td> </tr> <tr> <td data-bbox="465 679 1328 711">No cough or coryza (inflammation of mucus membranes in the nose)</td> <td data-bbox="1328 679 2069 711"></td> </tr> </tbody> </table>				FeverPAIN criteria (score 1 point each)	Centor criteria (score 1 point each)	Fever (during previous 24 hours)	Tonsillar exudate	Purulence (pus on tonsils)	Tender anterior cervical lymphadenopathy or lymphadenitis	Attend rapidly (<3 days after onset of symptoms)	History of fever (over 38°C)	Severely Inflamed tonsils	Absence of cough	No cough or coryza (inflammation of mucus membranes in the nose)	
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<p><b>Acute sore throat</b>  <a href="#">NICE CKS</a> (2024)  <a href="#">NICE NG84</a> (2023)  <a href="#">NICE DG38</a> (2021)  <a href="#">ESCMID</a> (2012)</p>	<p><b>FeverPAIN 0–1 or Centor 0–2:</b></p>	<p>When no antibiotic is prescribed, please consider using the <a href="#">‘TARGET Treating your Infection’</a> leaflet (RCGP), available in multiple languages.</p>													
	<p>No antibiotic</p>														
	<p><b>FeverPAIN 2–3:</b>                      No antibiotic                      (Back-up delayed antibiotic prescription can be issued if appropriate – please see prescribing options below)</p>														
<p><b>FeverPAIN 4–5 or Centor 3–4:</b> Consider back-up/delayed prescription (to be used if symptoms don't improve within 3-5 days) or immediate prescription for antibiotics</p>															
<p><i>First line:</i> Phenoxymethylpenicillin</p>		<p>500 mg QDS or 1 g BD                      (See <a href="#">BNFc</a> for dosing in children)</p>	<p>5 days.                      If patient is immunocompromised, confirmed Group A <i>Streptococcus</i> infection or has a problematic recurrence of infection: 10 days.</p>												
<p><i>Penicillin allergy:</i> Clarithromycin</p>		<p>250–500 mg BD                      (See <a href="#">BNFc</a> for dosing in children)</p>	<p>5 days</p>												
<p><i>Penicillin allergy and pregnant:</i> Erythromycin</p>		<p>250–500 mg QDS or 500 mg – 1g BD</p>	<p>5 days</p>												

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p><b>Acute otitis media (in children)</b>  <a href="#">NICE NG91</a> (2022)</p>	<p>Otitis media can be caused by viruses and bacteria. It is difficult to distinguish and both are often present at the same time.</p> <p><b>Optimise analgesia: Paracetamol or ibuprofen</b> should be used regularly for pain at the right dose (for age or weight) and at the right time; and <b>maximum doses</b> for severe pain. Consider eardrops containing an anaesthetic and an analgesic for pain.</p> <p>For children and young people who may be less likely to benefit from antibiotics, <b>consider NO antibiotic</b> taking account of:</p> <ul style="list-style-type: none"> <li>• <b>Otitis media is mostly self-limiting.</b> Most get better within 3 days without antibiotics, but it can last for up to 1 week.</li> <li>• <b>Antibiotics make little difference to symptoms.</b></li> <li>• <b>Antibiotics make little difference to the rates of common complications</b> like recurrence of infection, hearing loss (which is usually temporary) and perforated eardrum.</li> <li>• <b>Mastoiditis is rare with or without antibiotics.</b> Antibiotics to prevent mastoiditis NNT &gt; 4000.</li> </ul> <p>For children <b>more</b> likely to benefit from antibiotics (i.e. <b>&lt; 2 years with infection in both ears OR children of any age with otorrhoea</b>), <b>consider no antibiotic prescription, back-up delayed antibiotics, or immediate antibiotics.</b></p> <p>For children who are <b>systemically very unwell</b>, have symptoms or <b>signs of a more serious illness</b>, or are at <b>high risk of serious complications</b> because of pre-existing comorbidity, <b>offer immediate antibiotics.</b> Pre-existing comorbidity include:</p> <ul style="list-style-type: none"> <li>• Significant heart, lung, renal, liver or neuromuscular disease</li> <li>• Immunosuppression</li> <li>• Cystic fibrosis</li> <li>• Young children who were born prematurely.</li> </ul> <p><b>Safety netting:</b></p> <ul style="list-style-type: none"> <li>• <b>No antibiotic</b> – Seek medical help if symptoms worsen rapidly or significantly, do not start to improve after 3 days, or child becomes systemically very unwell.</li> <li>• <b>Back-up delayed antibiotic</b> – Advise to use if symptoms do not start to improve within 3 days, or if they worsen rapidly or significantly at any time. Seek medical help if symptoms worsen rapidly or significantly, or child becomes systemically very unwell.</li> <li>• <b>Immediate antibiotic</b> – Seek medical help if symptoms worsen rapidly or significantly, or child becomes systemically very unwell.</li> </ul> <p style="text-align: right;"><b>Section continued overleaf.</b></p>		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<b>Acute otitis media (in children) (continued)</b> <a href="#">NICE NG91</a> (2022)	<b>If NO immediate antibiotic required, offer analgesia for pain relief and consider the use of eardrops below:</b>			
	Phenazone 40mg/g with lidocaine 10mg/g  <b>Use only if all apply:</b> <ul style="list-style-type: none"> <li>• Immediate oral antibiotic is not given</li> <li>• No eardrum perforation</li> <li>• No otorrhoea</li> </ul>	Apply 4 drops two or three times a day	Up to 7 days	
	Consider using the ' <a href="#">When Should I Worry?</a> ' booklet or a ' <a href="#">TARGET Treating your Infection</a> ' leaflet (RCGP), available in multiple languages.			
	<b>If an antibiotic required:</b>			
	<b>First line</b>	Amoxicillin	See <a href="#">BNFc</a>	5–7 days
		<i>Penicillin allergy:</i> Clarithromycin	See <a href="#">BNFc</a>	5–7 days
<b>Second line</b> (If symptoms worsening on first line option taken for at least 2–3 days)	Co-amoxiclav	See <a href="#">BNFc</a>	5–7 days	
	<i>Pencillin allergy:</i> Consult local microbiologist			
<b>Acute otitis externa</b> <a href="#">NICE CKS</a> (2018)	<b>First line:</b> Use aural toilet (if available) and manage pain with analgesia and apply localised heat (such as a warm flannel). Cure rates similar at 7 days for topical acetic acid or antibiotic +/- steroid. <b>If cellulitis or disease extending outside ear canal,</b> or systemic signs of infection or condition not improving, start oral antibiotics for cellulitis (flucloxacillin 500 mg QDS or clarithromycin 500 mg BD for 7 days) and refer to exclude malignant otitis externa.			
	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 minimum, up to 14 days maximum.	
	*See <a href="#">Medicines and Healthcare products Regulatory Agency (MHRA)</a> warning concerning topical aminoglycosides and increased risk of deafness in patients with mitochondrial mutations.			

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<b>Acute rhinosinusitis</b> <a href="#">NICE CKS</a> (2021) <a href="#">NICE NG79</a> (2017)	<b>Avoid antibiotics</b> as 80% resolve in 14 days without, and they only offer marginal benefit after 7 days.			
	<b>Use adequate analgesia.</b>			
	<b>Symptoms for 10 days or less:</b> No antibiotic	When an antibiotic is not prescribed, please consider using the ' <a href="#">TARGET Treating your Infection</a> ' leaflet (RCGP), available in multiple languages.		
	<b>Symptoms with no improvement for &gt; 10 days:</b> No antibiotic. (Back-up delayed antibiotic prescription can be issued if appropriate – please see prescribing options below.) Consider 7-day delayed or immediate antibiotic when purulent nasal discharge.			
	<b>First line if symptoms for &gt; 10 days and delayed or immediate antibiotics are indicated:</b>			
	Amoxicillin	500 mg TDS (1 g TDS if severe)	5 days	
	<i>Penicillin allergy:</i>  Doxycycline (if > 12 years old)	200 mg stat then 100 mg OD	5 days	
	<b>OR</b> Clarithromycin (children < 12 years old)	500 mg BD (See <a href="#">BNFc</a> )		
	<b>OR</b> Erythromycin (preferred if pregnant)	250–500 mg QDS		
	<b>Tetracyclines should not be given to children under 12 years old as deposition of tetracyclines in growing bone and teeth (by binding to calcium) causes staining and occasionally dental hypoplasia.</b>			
<b>Systemically very unwell, symptoms and signs of a more serious illness or condition, or high risk of complications:</b> Immediate antibiotic (please see prescribing options below).	Refer to hospital if: <ul style="list-style-type: none"> <li>• Severe systemic infection</li> <li>• Intraorbital or periorbital complications</li> <li>• Intracranial complication</li> </ul>			
<b>First line if systemically very unwell, symptoms and signs of a more serious illness or condition, or high risk of complications OR Second line (worsening symptoms on first choice taken for at least 2 to 3 days):</b>				
Co-amoxiclav	625 mg TDS	5 days		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p><b>Dosages in Children:</b> Details of drug dosage and administration can be found in the <a href="#">BNFc</a></p>			
<p><b>Lower Respiratory Tract Infections</b>  <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.</p>			
<p><b>Acute cough, bronchitis</b>  <a href="#">NICE CKS</a> (2023)  <a href="#">NICE NG120</a> (2022)</p>	<p><b>Antibiotics are of little benefit if there is no co-morbidity.</b></p> <ul style="list-style-type: none"> <li><i>First line:</i> self-care and safety netting advice.</li> <li><i>Second line:</i> Consider a back-up delayed antibiotic prescription with safety netting advice and advise that symptom resolution can take 3 weeks.</li> </ul> <p><b>Offer immediate antibiotics</b> for people with an acute cough who are identified as systemically very unwell (ideally at a face-to-face clinical examination)</p> <p><b>Consider immediate or back-up antibiotics</b> for patients at higher risk of complications (ideally at a face-to-face clinical examination). Higher risk of complications if they:</p> <ul style="list-style-type: none"> <li>have a pre-existing comorbidity, such as significant heart, lung, renal, liver or neuromuscular disease, immunosuppression or cystic fibrosis</li> <li>are young children who were born prematurely</li> <li>are ≥ 65 years with TWO or more of the following criteria, or ≥ 80 years with ONE or more of the following criteria: <ul style="list-style-type: none"> <li>hospitalisation in previous year</li> <li>type 1 or type 2 diabetes</li> <li>history of congestive heart failure</li> <li>current use of oral corticosteroids.</li> </ul> </li> </ul> <p><b>If available, consider C-reactive protein (CRP)</b> if antibiotic is being considered:</p> <ul style="list-style-type: none"> <li>No antibiotics if CRP &lt; 20 mg/L and symptoms for &gt; 24 hours</li> <li>Delayed antibiotics if 20–100 mg/L</li> <li>Immediate antibiotics if &gt; 100 mg/L.</li> </ul>		
	No antibiotic	When an antibiotic is not prescribed, please consider using the ' <a href="#">TARGET Treating your Infection</a> ' leaflet (RCGP), available in multiple languages.	
	Amoxicillin	500 mg TDS	5 days
	<i>Penicillin allergy:</i> Doxycycline	200 mg stat then 100 mg OD	5 days

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment						
<p><b>Acute infective exacerbation of chronic obstructive pulmonary disease (COPD)</b>  <a href="#">NICE NG114</a> (2018)  <a href="#">GOLD</a> (2020)  <a href="#">RHIG</a> (2020)</p>	<p><b>Assessment</b></p> <ul style="list-style-type: none"> <li>Send sputum for culture in cases of recurrent or severe exacerbation</li> <li>Consider chest radiograph in cases of severe exacerbation, or the patient is presenting with chest signs, or they fail to improve.</li> </ul> <p><b>Antibiotics are not required</b> for exacerbation <b>without</b> increased sputum purulence</p> <p><b>Consider the need for an antibiotic taking into account:</b></p> <ul style="list-style-type: none"> <li>Severity of symptoms (particularly increased breathlessness; sputum colour changes and increased volume or thickness beyond normal)</li> <li>Risk of complications</li> <li>Previous sputum culture and susceptibility results</li> <li>Risk of antimicrobial resistance and current antibiotic prophylaxis (treatment should be with an antibiotic from a different class).</li> <li>If CRP testing available (see table below)</li> </ul> <table border="1" data-bbox="869 762 1686 866"> <tr> <td>CRP &lt; 20</td> <td>Antibiotics unlikely to be helpful</td> </tr> <tr> <td>CRP 20–40</td> <td>Consider antibiotics</td> </tr> <tr> <td>CRP &gt; 40</td> <td>Prescribe antibiotics</td> </tr> </table>			CRP < 20	Antibiotics unlikely to be helpful	CRP 20–40	Consider antibiotics	CRP > 40	Prescribe antibiotics
	CRP < 20	Antibiotics unlikely to be helpful							
	CRP 20–40	Consider antibiotics							
	CRP > 40	Prescribe antibiotics							
	Doxycycline	200 mg stat then 100 mg OD	5 days in total						
	<i>If doxycycline unsuitable:</i>								
	Clarithromycin	500 mg BD	5 days						
	<b>OR</b>								
Amoxicillin	500 mg TDS								
<i>If patient exposed to antibiotics in the past 3 months or at higher risk of treatment failure:</i>									
Co-trimoxazole	960 mg BD	5 days							
<b>OR</b>									
Co-amoxiclav	625 mg TDS								



Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<p><b>Community-acquired pneumonia in adults – Treatment in the community</b>  <a href="#">NICE NG138</a> (2019)  <a href="#">RHIG</a> (2021)  <a href="#">BTS</a> (2009)</p>	<p>Use CRB65 score to help guide mortality risk, place of care and antibiotics. Each feature scores 1:</p> <ul style="list-style-type: none"> <li>• <b>Confusion</b> (Abbreviated Mental Test score &lt; 8 – <i>Age, time, address for recall at end of test, year, place, identification of 2 persons, DOB, year of World War 1, present monarch, count backwards 20–1</i>)</li> <li>• <b>Respiratory rate</b> ≥ 30/min</li> <li>• <b>BP</b> systolic &lt; 90 mmHg or diastolic ≤ 60 mmHg</li> <li>• <b>Age</b> ≥ <b>65 years old</b></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></p> <ul style="list-style-type: none"> <li>• Clinically assess need for dual therapy to cover atypical infections if high CRB65 score. However, <i>Mycoplasma</i> infection is rare in over 65s.</li> <li>• Give safety net advice and likely duration of different symptoms, such as cough 6 weeks.</li> <li>• If recent influenza infection, consider need for anti-staphylococcal cover e.g. doxycycline monotherapy or addition of flucloxacillin to standard treatment.</li> <li>• If failure of first-line agents, patients should be reassessed for on-going signs of infections before further treatment is prescribed.</li> <li>• <a href="#">British HIV Association</a> recommend testing for HIV in adult patients presenting with community acquired pneumonia.</li> </ul>			
	<b>CRB65 score = 0:</b>			
	<b>First line</b>	Amoxicillin	500 mg TDS	5 days.
	<b>Second line</b> (failure first line treatment/penicillin allergy/atypical pathogen suspected)	Doxycycline <b>OR</b> Clarithromycin	200 mg stat then 100 mg OD  500 mg BD	Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course length is needed or the person is not clinically stable.
	<b>Third line</b> (previous treatment failure)	Co-trimoxazole	960 mg BD	
	<b>CRB65 score = 1 and at home:</b>			
	<b>First line</b>	Amoxicillin <b>PLUS</b> Clarithromycin	500 mg TDS  500 mg BD	5 days.  Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course length is needed or the person is not clinically stable.
	<b>Second line</b> (penicillin allergy or if underlying lung disease)	Doxycycline	200 mg stat then 100 mg OD	
	<b>Third line</b> (underlying lung disease and failed second line treatment)	Co-trimoxazole	960 mg BD	

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<b>Community-acquired pneumonia in children – Treatment in the community</b> <a href="#">BTS (2011)</a> <a href="#">NICE CKS (2022)</a> <a href="#">NICE NG138 (2019)</a>	All children with a clear clinical diagnosis of pneumonia should receive antibiotics, as bacterial and viral pneumonia cannot reliably be distinguished from each other.			
	Children aged < 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 in this decision.			
	<b>First line:</b>	Amoxicillin	See <a href="#">BNFc</a>	5 days
	<b>Penicillin allergy:</b>	Clarithromycin	See <a href="#">BNFc</a>	5 days
<b>Post-influenza:</b>	Co-amoxiclav	See <a href="#">BNFc</a>	5 days Stop antibiotic treatment after 5 days unless microbiological results suggest a longer course length is needed or the person is not clinically stable.	

Infection	Formulary choice	Dose	Reconstitution	Duration of
<b>Dosages in Children: Details of drug dosage and administration can be found in the <a href="#">BNFc</a></b>				
<b>Meningitis</b> Clinically suspected meningitis is a notifiable disease – Please contact the Health Protection Team. NICE (NG143) <i>Fever in under 5s: assessment and initial management (2019)</i>				
<b>Suspected meningococcal disease</b> <a href="#">PHE (2019)</a>	<b>Transfer all patients to hospital immediately.</b> If time before admission, and non-blanching rash, give intravenous (IV) benzylpenicillin or IV cefotaxime, unless definite history of anaphylaxis; rash is <b>not</b> a contraindication.			
	Intramuscular (IM) or IV benzylpenicillin	<b>Age:</b> ≥ 10 years: 1200 mg 1–9 years: 600 mg < 1 year: 300 mg	<b>IM</b> – Reconstitute with Water for Injection (WFI) – 1.6–2 ml for each 600 mg vial  <b>IV</b> – 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%. Administer slowly over 5 minutes.	Stat dose (give IM if vein cannot be found)
	<b>OR</b>		<b>IM</b> – Reconstitute with WFI – 2 ml for each 500 mg vial, 4 ml for each 1 g vial. Doses over 1 g should be divided between more than one site.  <b>IV</b> – Reconstitute with WFI – 2 ml for each 500 mg vial, 4 ml for each 1 g vial. Administer over at least 3 minutes.	
IM or IV cefotaxime	<b>Age:</b> Adult: 2 g Child 16-17 years: 2 g for 1 dose Child 1 month -15 years: 50 mg/kg (max. per dose 2 g) for 1 dose Neonate: 50 mg/kg for 1 dose.			
Prevention of secondary cases of meningitis. Only prescribe following advice from Public Health doctor.				
<b>Out of Hospital Sepsis</b> <a href="#">NICE NG51 (2017)</a>	Refer all people with suspected sepsis outside acute hospital settings for emergency medical care by the most appropriate means of transport (usually 999 ambulance). Administer antibiotics to patients with high risk criteria in pre-hospital settings in locations where transfer time is more than 1 hour.			
	IM or IV cefotaxime	<b>Age:</b> Adult: 2 g Child 16-17 years: 2 g for 1 dose Child 1 month -15 years: 50 mg/kg (max. per dose 2 g) for 1 dose Neonate: 50 mg/kg for 1 dose.	<b>IM</b> – Reconstitute with WFI – 2 ml for each 500 mg vial, 4 ml for each 1 g vial. Doses over 1 g should be divided between more than one site.  <b>IV</b> – Reconstitute with WFI – 2 ml for each 500 mg vial, 4 ml for each 1 g vial. Administer over at least 3 minutes.	Stat dose (give IM if vein cannot be found)

Infection	Formulary Choice	Adult Dose (unless otherwise specified)	Duration of Treatment
<p><b>Dosages in Children:</b> Details of drug dosage and administration can be found in the <a href="#">BNFc</a></p>			
<p><b>Urinary Tract Infection (UTI)</b>            Ensure appropriate dosing—adjusted for age, body weight, renal and hepatic function—and consider potential drug interactions and adverse drug reactions. See Summary of Product Characteristics (SPC) or BNF for further details.</p>			
<p><b>Lower UTI in adults</b>  <a href="#">PHE</a> (2020)  <a href="#">EAU</a> (2021)  <a href="#">SIGN 160</a> (2020)  <a href="#">NICE CG139</a> (2017)  <a href="#">NICE QS90</a> (2015)  <a href="#">NICE CKS women</a> (2021)  <a href="#">NICE CKS men</a> (2018)  <a href="#">PHW</a> (2021)</p>	<p>Advise paracetamol or ibuprofen for pain.</p> <p><b>Do not treat asymptomatic bacteriuria except in pregnancy</b>, or in exceptional circumstances after consultation with a relevant specialist team (e.g. urology, renal transplant teams etc.); it is common in adults <math>\geq 65</math> years but is not associated with increased morbidity.</p> <p><b>Do not dipstick in patients <math>\geq 65</math> years of age.</b> Diagnosis should be made on assessment of symptoms. If a dipstick is performed in a patient <math>\geq 65</math> years old, a negative result may exclude a UTI, but a positive result has <b>no</b> value and does not suggest the presence of a UTI.</p> <p><b>Catheter in situ: antibiotics will not eradicate asymptomatic bacteriuria;</b> 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 (<a href="#">NICE [CG139] Healthcare-associated infections: prevention and control in primary and community care</a>). Where implemented, ensure all patients with an indwelling catheter have a catheter passport completed.</p> <p><b>Men:</b> If symptoms mild / non-specific, use negative dipstick to <b>exclude UTI</b>. If infection is indicated, consider prostatitis and send pre-treatment mid-stream sample of urine (MSU). <b>Nitrofurantoin is not recommended for men with suspected prostate involvement</b> because it is unlikely to reach therapeutic levels in the prostate.</p> <p><b>N.B Nitrofurantoin</b>, pivmecillinam and fosfomycin are not appropriate for the treatment of upper UTI/pyelonephritis. <a href="#">MHRA Guidance</a> on Nitrofurantoin risks of pulmonary and hepatic adverse drug reactions.</p> <p><b>Non-pregnant women:</b> offer a back-up delayed antibiotic (to use if no improvement in 48 hours or symptoms worsen at any time) or immediate antibiotic.</p> <p><b>Pregnant women and children:</b> offer an immediate antibiotic.</p> <p><b>Treat according to sensitivities on recent MSU results if available, otherwise treat empirically.</b> Resistance to many agents is increasing, particularly in the elderly (<math>\geq 65</math> years). <b>If high risk of resistance, send urine for microscopy, culture and sensitivity (MC&amp;S).</b></p> <p><b>Risk factors for resistance:</b> Care home resident, recurrent UTI, hospitalization for <math>&gt; 7</math> days in the last 6 months, unresolving urinary symptoms, recent travel to areas of high antimicrobial resistance (outside northern Europe &amp; Australasia), previous resistant UTI.</p> <p><b>Complicated infection:</b> all males, females with renal impairment, abnormal urinary tract, poorly controlled diabetes or immunosuppression.</p>		

## Primary Care Antimicrobial Guidelines

<b>Patient &lt; 65 years and <u>no</u> risk factors for resistance</b>	Nitrofurantoin (if estimated Glomerular Filtration Rate [eGFR] ≥ 45 ml/minute) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.		100 mg m/r BD	<b>Uncomplicated</b> - 3 days <b>Complicated</b> - 7 days
	<b>OR</b>  Trimethoprim		200 mg BD	
<b>Patient ≥ 65 years or risk factors for resistance</b>	<b>First line:</b>	Nitrofurantoin (if eGFR ≥ 45 ml/minute) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.	100 mg m/r BD	<b>Uncomplicated</b> - 3 days <b>Complicated</b> - 7 days
		<b>OR</b>  Trimethoprim (only if recent MSU shows sensitivities)		
	<b>Second line:</b>	Pivmecillinam. (Warning: β-lactam, do not use if allergic to penicillin).	400 mg TDS (N.B. High dose recommended due to increased risk of resistance)	<b>Uncomplicated</b> - 3 days <b>Complicated</b> - 7 days
		<b>OR</b>  Fosfomycin		
				<b>Women:</b> 3 g PO stat (plus additional 3 g dose 3 days later if complicated UTI) <b>Men:</b> 3 g PO stat plus 3 g dose 3 days later (Prescribing in men and complicated UTIs are both off-label)

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<b>Acute pyelonephritis (upper UTI)</b> <a href="#">NICE CKS</a> (2023)	<p>If admission not needed, send MSU for MC&amp;S and start antibiotics. <a href="#">Re-assess</a> the person if symptoms worsen at any time, or do not start to improve within 48 hours of taking the antibiotic.</p> <p><b>Refer pregnant women with pyelonephritis to secondary care for IV antibiotics.</b></p> <p><b>Treat according to sensitivities on recent MSU results if available, otherwise treat empirically.</b></p>		
	<b>First Line:</b>		
	Cefalexin	1 g TDS	7–10 days
	<b>OR</b>		
	Trimethoprim (if susceptible)	200 mg BD	14 days
	<b>OR</b>		
	Co-amoxiclav (if susceptible)	625 mg TDS	7–10 days
<b>Second Line:</b>			
Ciprofloxacin (Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. PIL <a href="#">English</a> – <a href="#">Welsh</a> )	500 mg BD	7 days	
<b>Acute pyelonephritis in pregnancy</b> <a href="#">NICE CKS</a> (2021)	<p>Referring or seeking specialist advice for people with acute pyelonephritis if they are pregnant is recommended.</p> <p>If admission not needed or patient reluctant for admission, send MSU for culture and sensitivities and start antibiotics.</p> <p>If no response within 24 hours, admit.</p> <p>Advise patient to seek medical help if symptoms worsen at any time or do not start to improve within 48 hours of taking the antibiotic, or become systemically very unwell.</p>		
	Cefalexin	1 g TDS	7–10 days

<b>Catheter-associated UTI</b> <a href="#">NICE NG113</a> (2018)	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 ( <a href="#">NICE [CG139] Healthcare-associated infections: prevention and control in primary and community care</a> ). Where implemented ensure all patients with an indwelling catheter have a catheter passport completed.		
	<b>If signs and symptoms of pyelonephritis (upper UTI), treat as per pyelonephritis.</b>		
	Ensure catheter is correctly positioned, drains correctly and is not blocked. Consider removing or changing the catheter if it has been in place for more than 7 days. Do not perform urine dipsticks. Most people with a urinary catheter will have bacteria present in the bladder/urine without an infection.		
	<b>Treat according to sensitivities on recent MSU results if available, otherwise treat empirically.</b> Resistance to many agents is increasing, particularly in the elderly ( $\geq 65$ years old).		
	<b>Non-pregnant women and men, no upper UTI symptoms, first line:</b>		
	Nitrofurantoin (if eGFR $\geq 45$ ml/minute) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.	100 mg m/r BD	7 days
	<b>OR</b>		
	Trimethoprim	200 mg BD	7 days
	<b>OR</b>		
	Amoxicillin (if susceptible)	500 mg TDS	7 days
<b>Non-pregnant women and men, no upper UTI symptoms, second line:</b>			
Pivmecillinam (Warning: $\beta$ -lactam, do not use if allergic to penicillin).	400 mg TDS (N.B. High dose recommended due to increased risk of resistance)	7 days	
<b>Pregnant women, no upper UTI symptoms:</b>			
Cefalexin	500 mg BD or TDS (up to 1 g TDS for severe infections).	7–10 days	

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<p>Send MSU for culture and start antibiotics.</p> <p>Short-term use of <a href="#">nitrofurantoin in pregnancy</a> is unlikely to cause problems to the foetus. Avoid at term and close to, or during, labour or delivery due to risk of neonatal haemolysis. This includes patients with threatened pre-term labour.</p> <p><b>Treatment of asymptomatic bacteriuria in pregnant women:</b> base choice on recent urine MC&amp;S results. If group B <i>Streptococcal</i> bacteriuria is identified, ensure antenatal services are made aware as intrapartum antibiotic prophylaxis will be required in addition to treatment at the time of diagnosis.</p>				
<p><b>Lower UTI in pregnancy</b> <a href="#">NICE CKS</a> (2021)</p>	<p><b>First line:</b></p>	<p>Nitrofurantoin (if eGFR ≥ 45 ml/minute. Avoid at term – may produce neonatal haemolysis) (<a href="#">patient information on use in pregnancy</a>) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.</p> <p><b>OR</b></p> <p>Amoxicillin (if susceptible MC&amp;S results) (<a href="#">patient information on use in pregnancy</a>)</p>	<p>100 mg m/r BD</p>	<p>7 days</p>
	<p><b>Second line:</b></p>	<p>Cefalexin (<a href="#">patient information on use in pregnancy</a>)</p>	<p>500 mg TDS</p>	
		<p>Cefalexin (<a href="#">patient information on use in pregnancy</a>)</p>	<p>500 mg BD</p>	



Infection	Formulary Choice	Adult Dose (unless otherwise specified)	Duration of Treatment	
<b>Acute prostatitis</b> <a href="#">NICE CKS</a> (2024) <a href="#">NICE NG110</a> (2018)	Send MSU for culture and start antibiotics. A 4-week course may prevent chronic prostatitis. <b>Fluoroquinolone antibiotics must now only be prescribed when other commonly recommended antibiotics are inappropriate.</b> Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. Fluoroquinolones achieve higher prostate levels. See previous <a href="#">MHRA advice</a> for restrictions and precautions for using fluoroquinolones due to very rare reports of disabling and potentially long-lasting or irreversible side effects affecting musculoskeletal, cardiac and nervous systems. Warnings include stopping treatment at first signs of serious adverse reaction (such as tendonitis), prescribing with special caution in people over 60 years and avoiding co-administration with a corticosteroid (December 2020).			
	<b>First line:</b>	Co-trimoxazole (if no previous history of Trimethoprim resistance)	960 mg BD	14 days, then review
	<b>Second line:</b>	Ciprofloxacin (Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. PIL <a href="#">English</a> – <a href="#">Welsh</a> ).	500 mg BD	
<b>OR</b> Ofloxacin (Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. PIL <a href="#">English</a> – <a href="#">Welsh</a> ).		200 mg BD		

Infection	Formulary Choice	Adult Dose (unless otherwise specified)	Duration of Treatment
<p><b>Recurrent UTI</b>  <a href="#">AWMSG</a> (2022)  <a href="#">EAU</a> (2021)  <a href="#">SIGN</a> (2020)  <a href="#">NICE</a> (2018)</p>	<p><b>N.B. Children with recurrent UTIs should be referred to a paediatric or urology specialist for advice.</b></p> <p><b>Non-antibiotic strategies, self-care measures and behavioural techniques</b> are all effective and should be attempted first before initiating antimicrobial prophylaxis. Any urological risk factor must be identified and treated. Significant residual urine should be treated optimally.</p> <p>Advise patients with recurrent UTI about behavioral and personal hygiene measures and self-care treatments that may help to reduce the risk of UTI:</p> <ul style="list-style-type: none"> <li>• Ensure adequate hydration to promote more frequent urination of pale coloured urine. Encourage water, decaffeinated drinks and avoid fizzy drinks</li> <li>• Encourage urge-initiated voiding and post-coital voiding.</li> <li>• Avoid delay of habitual and post-coital urination</li> <li>• Avoid constipation</li> <li>• Avoid douching and occlusive underwear.</li> <li>• Wipe from front to back after defaecation</li> <li>• Consider alternative to spermicide-containing contraceptives.</li> </ul> <p>There is conflicting evidence for methenamine hippurate, D-mannose and cranberry juice for preventing recurrent UTIs. See full guidelines for further details:  <a href="#">Management of Recurrent Symptomatic Urinary Tract Infection in Adult Women</a></p> <p>If an antibiotic strategy is required:</p> <ul style="list-style-type: none"> <li>• Check urinary cultures for any recent resistance to inform choice of prophylactic antibiotic.</li> <li>• Consider stat dose if a trigger has been identified, or short courses (rescue antibiotics) as an alternative to regular daily prophylaxis.</li> <li>• If 3–6 months prophylaxis is chosen, <b>treatment will require monitoring</b>. In particular: pulmonary toxicity and hepatotoxicity for nitrofurantoin; blood dyscrasias and hyperkalaemia for trimethoprim. This advice is included in the full guideline provided above. <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.</li> </ul> <p style="text-align: right;"><b>Section continued overleaf</b></p>		

Infection	Formulary Choice	Adult Dose (unless otherwise specified)	Duration of Treatment		
<b>Recurrent UTI (continued)</b> <a href="#">AWMSG</a> (2022) <a href="#">EAU</a> (2021) <a href="#">SIGN</a> (2020) <a href="#">NICE</a> (2018)	<b>If a trigger is identified:</b>				
	<b>First line:</b>	Nitrofurantoin (if eGFR ≥ 45 ml/minute) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.	100 mg stat	Single dose when exposed to a trigger	
	<b>OR</b>		Trimethoprim		200 mg stat
	<b>Second line:</b>	Cefalexin	500 mg stat		
	<b>If rescue antibiotic course required</b> (treat as ‘lower UTI for patients with risk factors for resistance’ and consider recent MC&S results) – <b>N.B.</b> this should be issued as an acute prescription:				
	<b>First line:</b>	Nitrofurantoin (if eGFR ≥ 45 ml/minute) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks.	100 mg m/r BD	<b>Uncomplicated:</b> 3 days <b>Complicated:</b> 7 days	
	<b>OR</b>		Trimethoprim can be used if a recent MSU shows sensitivity		200 mg BD
	<b>Second line:</b>	Pivmecillinam (Warning: β-lactam, do not use if allergic to penicillin)	400 mg TDS (N.B: high dose recommended due to increased risk of resistance)		
	<b>Second line:</b>	Fosfomycin	3 g sachet	<b>Women:</b> 3 g PO stat (plus additional 3 g dose 3 days later if complicated UTI) <b>Men:</b> 3 g PO stat plus 3 g dose 3 days later (Prescribing in men and complicated UTIs are both off-label)	
	<b>If regular prophylaxis is required:</b>				
<b>First line:</b>	Nitrofurantoin (if eGFR ≥ 45 ml/minute) <a href="#">MHRA Guidance</a> on Nitrofurantoin risks	50–100 mg nocte	<b>Review after 3 months. Maximum duration 6 months.</b> No evidence of additional benefit when continued beyond 6 months.		
<b>OR</b>		Trimethoprim		100 mg nocte	
<b>Second line:</b>	Cefalexin	125 mg nocte			

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Infection	Formulary Choice	Adult Dose (unless otherwise specified)	Duration of Treatment
<b>Lower UTI in children</b> <a href="#">PHE</a> (2021) <a href="#">NICE CKS</a> (2019) <a href="#">NICE CG54</a> (2018)	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 guide antibiotic use. Imaging: only refer if child < 6 months, or recurrent or atypical UTI.		
	<b>First line:</b> Trimethoprim <b>OR</b> Nitrofurantoin (if eGFR ≥ 45 ml/minute) <b>(Note high cost of liquid formulation - £452.09 per bottle, at the time of writing. Tablets should not be crushed.)</b> <a href="#">MHRA Guidance</a> on Nitrofurantoin risks	See <a href="#">BNFc</a>	3 days
	<b>Second line:</b> Cefalexin (consider if trimethoprim not appropriate and liquid preparation required) <b>OR</b> Amoxicillin (If susceptible MC&S results)		
<b>Upper UTI in children</b> <a href="#">NICE CG54</a> (2018)			
Refer all cases to a paediatrician for further investigation. 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 guide antibiotic use. Imaging: only refer if child < 6 months, recurrent or atypical UTI.			
Co-amoxiclav (if susceptible)		See <a href="#">BNFc</a>	7 - 10 days
<b>OR</b>			
Cefalexin			

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Dosages in Children: Details of drug dosage and administration can be found in the <a href="#">BNFc</a></b>			
<b>Gastro-intestinal Tract Infections</b>			
<b>Oral candidiasis (adults)</b> <a href="#">NICE CKS</a> (2021)	Antifungal agents absorbed from the gastrointestinal tract (e.g. fluconazole) prevent oral candidiasis in patients receiving treatment for cancer.		
	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.		
	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.		
	For advice on treating oral thrush in HIV patients, please <a href="#">see NICE CKS</a> .		
	Miconazole 24mg/ml oral gel BEWARE INTERACTIONS: although an oral gel, absorption can occur, leading to potential significant increases in INR in patients receiving warfarin.	2.5 ml QDS (hold in mouth after food)	7 days; continue treatment for 7 days after symptoms resolve.
	<b>If miconazole unsuitable or no response after 7 days of miconazole:</b>		
Nystatin (100 000units/ml) suspension	1 ml QDS	7 days; continue treatment for 2 days after symptoms resolve.	
<b>For severe or extensive candidiasis:</b>			
Fluconazole	50 mg OD (If HIV or immunocompromised, use 100 mg OD)	7 days. Extend to 14 days if infection has not completely resolved.	
<b>Oral candidiasis (immune-competent children)</b> <a href="#">NICE CKS</a> (2021)	Miconazole 24 mg/ml oral gel (off label if < 4 months)	See <a href="#">BNFc</a>	7 days; continue treatment for 7 days after symptoms resolve.
	<b>If miconazole unsuitable or no response after 7 days of miconazole:</b>		
	Nystatin (100,000 units/ml) suspension (off-label in neonates)	See <a href="#">BNFc</a>	7 days; continue treatment for 2 days after symptoms resolve.

## All Wales Medicines Strategy Group

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Infectious diarrhoea</b> <a href="#">NICE CKS</a> (2024)	Refer previously healthy children with acute painful or bloody diarrhoea to exclude <i>E. coli</i> 0157 infection. <b>Antibiotics are contraindicated 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. ingestion of undercooked meat and abdominal pain) consider clarithromycin 250–500 mg BD for 5–7 days if treated early (within 3 days). If giardia is confirmed or suspected, consider metronidazole 2 g OD for 3 days or 400 mg TDS for 5 days (see <a href="#">BNFc</a> for children’s dosing).		
<b>Travellers’ diarrhoea</b> <a href="#">NICE CKS</a> (2023)	<b>Prophylaxis is rarely, if ever, indicated. Standby antibiotics are <u>not recommended</u>.</b> <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: azithromycin 500 mg OD for 1–3 days (private prescription), contact the <a href="#">National Travel Health Network and Centre</a> for further advice. Empirical antibiotics are not generally indicated. Specific treatment should be directed by the results of stool sampling.		
<b>Threadworm</b> <a href="#">NICE CKS</a> (2023)	Treat all household contacts at the same time PLUS advise hygiene measures for 2 weeks (hand hygiene, wear pants at night, morning shower including peri-anal area) PLUS wash sleepwear and bed linen, dust and vacuum on day one.		
	<b>First line &gt; 6 months old:</b>		
	Mebendazole (off label if < 2 years old)	100 mg	1 dose; repeat in 2 weeks if persistent.
	<b>First line &lt; 6 months old, breastfeeding or in pregnant women (especially during first 12 weeks of pregnancy):</b>		
	6 weeks hygiene only and add perianal wet wiping or washes 3-hourly. If no improvement following hygiene measures, recontact health professional and seek further advice.		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Acute diverticulitis</b> <a href="#">NICE</a> (2019)	People with mild, uncomplicated diverticulitis can be managed at home with paracetamol, clear fluids and antibiotics. For people who are systemically well following clinical assessment, consider a no antibiotic prescribing strategy and advise the person to re-present if symptoms persist or worsen.		
	Cefalexin <b>PLUS</b>	500 mg TDS (up to 1.5g TDS for severe infections)	5 days
	Metronidazole <b>OR</b>	400 mg TDS	
	Co-amoxiclav (Please note increasing resistance rates. Advise patient to re-present if symptoms persist or worsen). <b>OR</b>	625 mg TDS	
	Co-trimoxazole <b>PLUS</b>	960 mg BD	
Metronidazole	400 mg TDS		
<b>Biliary infection (cholecystitis/ cholangitis)</b> <a href="#">NICE CKS</a> (2021)	Urgent referral to secondary care is recommended for all cases of cholecystitis to assess the need for cholecystectomy. Please note high mortality rate (up to 10%) associated with Acute Cholecystitis. If for any reason you are unable to comply with this advice, recommendation for antibiotic treatment for mild cases is outlined below. Biliary colic with no associated infection does <b>not</b> require antibiotics.		
	Cefalexin <b>PLUS</b>	500 mg TDS (up to 1.5g TDS for severe infections)	5–7 days
	Metronidazole <b>OR</b>	400 mg TDS	
	Co-amoxiclav (Please note increasing resistance rates. Advise patient to re-present if symptoms persist or worsen). <b>OR</b>	625 mg TDS	
	Co-trimoxazole <b>PLUS</b>	960 mg BD	
Metronidazole	400 mg TDS		

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Infection	Antibiotic and PPI choices and adult doses (Refer to <a href="#">BNFc</a> for paediatric doses)		Duration of treatment	
<b>Eradication of <i>Helicobacter pylori</i></b> <a href="#">NICE CG184</a> (2019)	<ul style="list-style-type: none"> <li>Always test for <i>H. pylori</i> before giving antibiotics.</li> <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 H<sub>2</sub>-receptor antagonist.</li> <li><b>Always use ONE proton pump inhibitor (PPI) PLUS TWO antibiotics.</b></li> <li><b>PPI options include: Omeprazole 20 mg BD or Lansoprazole 30 mg BD.</b></li> </ul>			
	Omeprazole 20 mg BD <b>OR</b> Lansoprazole 30 mg BD	<b>PLUS</b>	<b>Antibiotic:</b>	First line: 7 days MALToma: 14 days
			<b>First line:</b>	
			Amoxicillin 1 g BD <b>AND</b> Clarithromycin 500 mg BD <b>OR</b> Metronidazole 400 mg BD	
			<b>First line (penicillin allergy):</b>	
			Clarithromycin 500 mg BD <b>AND</b> Metronidazole 400 mg BD	
			<b>Second line:</b>	
			Amoxicillin 1 g BD <b>AND</b> Clarithromycin 500 mg BD <b>OR</b> Metronidazole 400 mg BD (which ever was not used first line)	
			<b>If penicillin allergy AND previous clarithromycin use (in addition to PPI):</b>	
			Bismuth subsalicylate 525 mg QDS (NB: Long-term supply issue with Bismuth subsalicylate) <b>AND</b> Metronidazole 400 mg BD <b>AND</b> Tetracycline 500 mg QDS	
<b>Relapse and previous metronidazole and clarithromycin:</b>				
Amoxicillin 1 g BD <b>AND</b> Tetracycline 500 mg QDS <b>OR if tetracycline cannot be used</b> , levofloxacin* 250 mg BD *(Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. PIL <a href="#">English</a> – <a href="#">Welsh</a> ).				
<b>Third line (with advice from specialist):</b>				
Bismuth subsalicylate 525 mg QDS (NB: Long-term supply issue with Bismuth subsalicylate) <b>AND TWO</b> antibiotics not yet tried <b>OR</b> rifabutin 150 mg BD <b>OR</b> furazolidone 200 mg BD	10 days			



Infection	Recommendations														
<p><b><i>Clostridioides difficile</i> infection (CDI)</b>  <a href="#">DH&amp;SC &amp; PHE (2019)</a>  <a href="#">NICE NG199 (2021)</a></p>	<ul style="list-style-type: none"> <li>In adults, treat with oral antibiotics as in table below, and consider seeking advice from Microbiology or Infectious Diseases.</li> <li><b>Patients should only be treated if symptomatic.</b></li> <li>In children under 18 years of age, discuss with Microbiology, Paediatric Infectious Diseases or Gastroenterology.</li> <li>Review current medicines with the aim of de-escalating or stopping all unnecessary antibiotics, gastric acid suppressing agents, gut motility agents, opiates and laxatives.</li> <li>Advise patient to manage fluid loss with regular fluids, prevent the spread of infection by regular handwashing with soap and water, and seek medical help if symptoms worsen rapidly or significantly at any time. Consider the use of oral electrolyte solutions.</li> <li>If <b>severe</b> symptoms or signs* discuss case with Microbiology and consider hospital referral.</li> </ul> <p>* <b>Admit if:</b> Temperature &gt; 38.5°C; white cell count &gt; 15, serum creatinine &gt; 50% above baseline, or signs/symptoms of severe colitis</p> <p><b>Interpreting <i>C. difficile</i> tests</b></p> <p>Currently there are three laboratory tests for <i>C. difficile</i> in use across Wales; glutamate dehydrogenase (GDH), toxin production and PCR. Please refer to your local health board laboratory guidance for information on testing and diagnosis of <i>C. difficile</i> infection. Routine clearance samples should <b>not</b> be sent. Samples from previously positive patients will not routinely be retested within 28 days. Clearance samples may still be positive due to <b>colonisation</b> with <i>C. difficile</i>, 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.</p> <table border="1" data-bbox="459 933 1998 1364"> <thead> <tr> <th>Treatment in adults 18 years and over</th> <th>Antibiotic, dosage and course length</th> </tr> </thead> <tbody> <tr> <td>First-line antibiotic for a mild or moderate CDI</td> <td>Vancomycin 125 mg orally four times a day for 10 days</td> </tr> <tr> <td>Severe CDI</td> <td>Discuss with microbiology and consider hospital referral</td> </tr> <tr> <td>Second-line antibiotic for a first episode of mild or moderate CDI if vancomycin is ineffective</td> <td>Fidaxomicin 200 mg orally twice a day for 10 days</td> </tr> <tr> <td>Antibiotics for CDI if first and second line antibiotics are ineffective</td> <td>Seek specialist advice</td> </tr> <tr> <td>Antibiotic for a further episode of CDI <i>within</i> 12 weeks of symptom resolution (relapse)</td> <td>Fidaxomicin 200 mg orally twice a day for 10 days</td> </tr> <tr> <td>Antibiotic for a further episode of CDI <i>after</i> 12 weeks of symptom resolution (recurrence)</td> <td>Vancomycin 125mg orally four times a day for 10 days or Fidaxomicin 200mg orally twice a day for 10 days</td> </tr> </tbody> </table>	Treatment in adults 18 years and over	Antibiotic, dosage and course length	First-line antibiotic for a mild or moderate CDI	Vancomycin 125 mg orally four times a day for 10 days	Severe CDI	Discuss with microbiology and consider hospital referral	Second-line antibiotic for a first episode of mild or moderate CDI if vancomycin is ineffective	Fidaxomicin 200 mg orally twice a day for 10 days	Antibiotics for CDI if first and second line antibiotics are ineffective	Seek specialist advice	Antibiotic for a further episode of CDI <i>within</i> 12 weeks of symptom resolution (relapse)	Fidaxomicin 200 mg orally twice a day for 10 days	Antibiotic for a further episode of CDI <i>after</i> 12 weeks of symptom resolution (recurrence)	Vancomycin 125mg orally four times a day for 10 days or Fidaxomicin 200mg orally twice a day for 10 days
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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p>Dosages in Children: Details of drug dosage and administration can be found in the <a href="#">BNFc</a></p>			
<p><b>Antibiotic Prophylaxis in Asplenia</b></p>			
<p><b>Antibiotic prophylaxis in asplenia</b></p>	<p>Individuals with an absent or dysfunctional spleen are at increased risk of severe infection, particularly those caused by encapsulated bacteria. These patients should be fully vaccinated, according to national schedule. Additional vaccination against pneumococcal infection is recommended to minimise risk of overwhelming infection as well as an annual influenza vaccination. For full details refer to Department of Health, <a href="#">The Green Book</a>.</p> <p>Long-term prophylaxis should be offered to the following high-risk groups:</p> <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> <p>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.</p>		
	Phenoxyethylpenicillin	250 mg BD	Lifelong
	<p><b>Penicillin allergy:</b> Erythromycin</p>	500 mg BD	Lifelong

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Dosages in Children:</b> Details of drug dosage and administration can be found in the <a href="#">BNFc</a>			
<b>Genital Tract Infections</b> Contact UK Teratology Information Service ( <a href="#">UKTIS</a> ) for information on foetal risks if patient is pregnant. Sexually Transmitted Infection (STI) screening – People with risk factors should be screened for chlamydia, gonorrhoea, <a href="#">HIV</a> , syphilis. Refer individual and partners to Sexual Health service. Risk factors: <25 years, no condom use, recent (< 12 month) / frequent change of partner, symptomatic partner.			
<b>Uncomplicated chlamydia trachomatis/urethritis</b> <a href="#">BASHH</a> (2018) <a href="#">PHE</a> (2016) <a href="#">NICE CKS</a> (2021)	Opportunistically screen all aged 15 – 25 years. Treat partners and refer to Sexual Health service.		
	Doxycycline	100 mg BD	7 days
	<b>OR</b>		
	Azithromycin	1 g STAT followed by 500 mg OD for 2 days	3 days
	<b>Pregnant or breastfeeding:</b>		
	Azithromycin	1 g STAT following by 500 mg OD for 2 days	3 days
	<b>OR</b>		
Erythromycin	500 mg QDS	7 days	
<b>OR</b>			
Amoxicillin	500 mg TDS	7 days	
<b>Non-specific / non-gonococcal urethritis – first episode</b> <a href="#">BASHH</a> (2018) <a href="#">NICE CKS</a> (2024)	Patients should abstain from sexual intercourse until 14 days after start of treatment and symptoms have resolved. Treat partners and refer to Sexual Health service.		
	<b>First line:</b>		
	Doxycycline	100 mg BD	7 days
	<b>Second line:</b>		
	Azithromycin	1 g STAT then 500mg OD for 2 days	3 days
<b>Third line:</b>			
Levofloxacin (Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. PIL <a href="#">English</a> – <a href="#">Welsh</a> ).	500 mg OD	7 days	

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Epididymo-orchitis</b> <a href="#">BASHH (2020)</a> <a href="#">NICE CKS (2024)</a>	Usually due to Gram-negative enteric bacteria in men over 35 years old with low risk of STI. If under 35 years old or STI risk, refer to Genitourinary Medicine (GUM) for additional IM ceftriaxone treatment. Use of an oral cephalosporin instead of IM preparations is not recommended due to increasing resistance.		
	<b>If over 35 years with low risk STI:</b>		
	Co-trimoxazole	960 mg BD	10 days
	<b>OR</b>		
Co-amoxiclav	625 mg TDS		
<b>Bacterial vaginosis</b> <a href="#">BASHH (2012)</a> <a href="#">NICE CKS (2018)</a>	Oral metronidazole is as effective as topical treatment and is cheaper. Less relapse with 7 days' treatment than 2 g stat at 4 weeks. Treating partners does not reduce relapse.		
	Oral metronidazole	400 mg BD <i>or</i> 2 g	7 days  stat
	<b>OR</b>		
	Metronidazole 0.75% vaginal gel	5 g applicatorful at night	5 nights
	<b>OR</b>		
	Clindamycin 2% cream	5 g applicatorful at night	7 nights
	<b>Pregnant or breastfeeding:</b>		
	Oral metronidazole	400 mg BD	7 days
	<b>OR</b>		
	Metronidazole 0.75% vaginal gel	5 g applicatorful at night	5 nights
<b>OR</b>			
Clindamycin 2% cream	5 g applicatorful at night	7 nights	

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Vaginal candidiasis</b> <a href="#">BASHH</a> (2019) <a href="#">NICE CKS</a> (2022)	All topical and oral azoles give 80% cure. <b>Pregnancy and breastfeeding:</b> Avoid oral azoles and use intravaginal treatment for 7 days. When inserting the pessary, the use of the applicator should be avoided due to the risk of mechanical trauma. <b>Recurrent:</b> At least four episodes per 12 months with two episodes confirmed by microscopy or culture when symptomatic (at least one must be culture).		
	<b>First line:</b>		
	Fluconazole	150 mg orally	stat
	<b>Second line (if oral imidazole contraindicated):</b>		
	Clotrimazole	500 mg pessary <i>or</i> 10% cream 5 g intravaginally	stat
	<b>Alternative regimens:</b>		
	Clotrimazole	100 mg pessary at night	6 nights
		<i>or</i> 200 mg pessary at night	3 nights
	<b>Pregnant:</b>		
	Clotrimazole	500 mg pessary intravaginally	7 days
	<b>OR</b>		
Miconazole 2% cream (discontinued) <sup>2</sup>	5 g intravaginally nocte	7 days	
<b>Recurrent:</b>			
Fluconazole (induction/maintenance)	150 mg every 72 hours	3 doses	
	THEN 150 mg once a week	6 months	

<sup>2</sup> Discontinued July 2023, supplies may still be in circulation.

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Trichomoniasis</b> <a href="#">BASHH</a> (2014) <a href="#">NICE CKS</a> (2021)	Treat partners and refer to Sexual Health service. <b>Pregnancy or breastfeeding:</b> Avoid 2 g single dose metronidazole. Consider clotrimazole for symptom relief (not cure) if metronidazole declined. When inserting the pessary the use of the applicator should be avoided due to the risk of mechanical trauma.		
	Metronidazole	400 mg BD or 2 g	5–7 days  stat
	<b>Pregnant or breastfeeding:</b>		
	Metronidazole	400 mg BD	5–7 days
	<b>OR</b> Clotrimazole (see note above)	100 mg pessary at night	6 nights
<b>Pelvic inflammatory disease</b> <a href="#">BASHH</a> (2019) <a href="#">NICE CKS</a> (2024)	Refer patient and contacts to Sexual Health service. Always culture for gonorrhoea and chlamydia and test for <i>Mycoplasma genitalium</i> . 28% of gonorrhoea isolates are now resistant to quinolones, therefore if gonorrhoea likely (partner has it, severe symptoms, sex abroad) use ceftriaxone regimen or refer to Sexual Health service. Use of an oral cephalosporin instead of IM preparations is <b>not</b> recommended due to increasing resistance. <b>Exclude:</b> ectopic, appendicitis, endometriosis, UTI, irritable bowel, complicated ovarian cyst, functional pain.		
	<b>First Line:</b>		
	Ceftriaxone	1 g IM	stat
	<b>PLUS</b> Metronidazole	400 mg BD	14 days
	<b>PLUS</b> Doxycycline	100 mg BD	14 days
	<b>Second Line:</b>		
Metronidazole	400 mg BD	14 days	
<b>PLUS</b> Ofloxacin (Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice. PIL <a href="#">English</a> – <a href="#">Welsh</a> ).	400 mg BD	14 days	

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p><b>Genital herpes</b>  <a href="#">BASHH</a> (2014)  <a href="#">NICE CKS</a> (2017)</p>	<p>Advise saline bathing, analgesia, or topical anaesthetic agents; e.g. 5% lidocaine ointment may be beneficial for pain, although may rarely cause sensitisation.                      Take dry swab for confirmation of diagnosis by PCR and refer to Sexual Health service.                      If pregnant, refer to Sexual Health service.                      First episode: treat within 5 days of the start of the episode, while new lesions are still forming, or if systemic symptoms and refer to GUM.                      Recurrent episodes: usually self-limiting and generally cause mild symptoms. Consider referral to GUM. Treat with self-care, immediate short course antiviral treatment, or suppressive therapy if more than 6 episodes per year.</p>		
	<p>Aciclovir</p>	<p>400mg TDS                       or                       If recurrent:                      800mg TDS</p>	<p>5 days                        2 days</p>

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
Dosages in Children: Details of drug dosage and administration can be found in the <a href="#">BNFc</a>			
<b>Skin Infections</b>			
<b>Impetigo</b> <a href="#">NICE CKS</a> (2020) <a href="#">NICE NG153</a> (2020)	<ul style="list-style-type: none"> <li>For extensive, severe, or bullous impetigo, use oral antibiotics.</li> <li>Do not offer combination treatment with a topical and oral antibiotic to treat impetigo.</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> <li>Treatment duration can be increased to 7 days based on clinical judgement, depending on the severity and number of lesions</li> <li>Advise patient on good hygiene measures to prevent spread of impetigo – see <a href="#">NICE CKS</a> for details.</li> </ul>		
	<b>First line:</b>		
	Hydrogen peroxide 1% cream	Apply BD –TDS	5 days
	Flucloxacillin	500 mg QDS	5 days
	<b>Penicillin allergy:</b>		
	Clarithromycin	250–500 mg BD	5 days
	<b>Localised lesions:</b>		
	Fusidic acid 2% cream	TDS	5 days
<b>Localised MRSA-positive lesions:</b>			
Mupirocin 2% ointment	TDS	5 days	



Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Rosacea</b> <a href="#">NICE CKS</a> (2021)	Provide advice on self-management: <ul style="list-style-type: none"> <li>• Avoid trigger factors wherever possible.</li> <li>• A diary may be helpful to identify stimuli and triggers that may exacerbate rosacea.</li> <li>• Use effective sun protection and avoid use of sunbeds.</li> <li>• High-factor sunscreen with protection against ultraviolet A and B (for example Uvistat® or Sensense®) can be prescribed (these are classified as 'borderline substances' and the prescription must be endorsed by the Advisory Committee on Borderline Substances).</li> <li>• Ultraviolet protection sunglasses may be helpful for people with features of ocular rosacea.</li> <li>• Regular use of non-oily emollients if the skin is dry.</li> <li>• The use of gentle soap-free over-the-counter cleansers.</li> <li>• The possible use of yellow- or green-tinted cosmetics to help camouflage skin erythema.</li> <li>• For persistent erythema, consider prescribing topical brimonidine 0.5% gel once-daily on an 'as needed' basis, for temporary relief of symptoms. Brimonidine may reduce erythema within 30 minutes, reaching peak action at 3–6 hours, after which the effect diminishes and erythema returns to baseline.</li> <li>• Arrange to review the person following first-line treatment(s), to assess the clinical response, need for maintenance therapy, alternative treatment, or referral.</li> <li>• Recurrent symptoms: For infrequent recurrences a course of treatment can be repeated as below.</li> </ul>		
	<b>Mild-to-moderate papules and/or pustules:</b>		
	<b>First line:</b>		Review at 8 – 12 weeks.
	Topical ivermectin <i>(N.B not appropriate in pregnancy/breastfeeding)</i>	OD	If there is clinical improvement, continue maintenance treatment with topical preparations as needed, ideally until the skin is clear. Courses may be repeated as necessary. If there is little or no clinical improvement, consider prescribing a combination of topical preparation together with oral antibiotics (as below).  <b>Note:</b> do <b>not</b> use combination topical and oral antibiotic therapy as dual therapy
	<b>Alternatives (i.e. for pregnant/breastfeeding women):</b>		
	Metronidazole 0.75% gel or cream	BD	
	<b>OR</b>		
Azelaic acid 15%	BD		
<b>Section continued overleaf.</b>			

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Rosacea (continued)</b> <a href="#">NICE CKS</a> (2021)	<b>Moderate-to severe papules and/or pustules:</b> Prescribe a combination of topical (as above) plus oral antibiotics		
	<b>First line:</b>		Review therapy from 8 weeks onwards, maximum duration 16 weeks.  Therapy should then be stepped down to topical monotherapy. If there is little or no improvement, consider arranging dermatology referral, depending on clinical judgement. Consider dermatology referral if relapsing symptoms occur once oral antibiotic therapy is stopped
	Oxytetracycline	500 mg BD	
	<b>If compliance is an issue:</b>		
	Doxycycline (Unlicensed use)	100 mg OD	
	<b>OR</b>		
	Doxycycline m/r (Licensed – N.B: significantly more expensive at time of writing [September 2021])	40 mg OD	
<b>If tetracycline contraindicated (e.g. in pregnancy):</b>			
Erythromycin [Unlicensed]	500 mg BD		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p><b>Acne vulgaris</b>  <a href="#">NICE CKS</a> (2021)  <a href="#">NICE NG198</a>                      (2021)</p>	<ul style="list-style-type: none"> <li>Minocycline is not recommended.</li> <li>Do not use monotherapy with a topical antibiotic, monotherapy with an oral antibiotic or a combination of a topical antibiotic and an oral antibiotic.</li> <li><b>Some people may not require treatment with topical or oral antibiotics, please refer to <a href="#">NICE NG198</a> guidelines for all treatment recommendations.</b></li> <li>When choosing a first line treatment option take into account the severity of the acne, the person's preferences, and discuss the advantages and disadvantages of the various treatment options. When discussing treatment choices with a person with childbearing potential, cover that topical retinoids and oral tetracyclines are contraindicated during pregnancy and when planning a pregnancy and that they will need to use effective contraception, or choose an alternative treatment to these options.</li> <li>Discuss the importance of completing the course of treatment as positive effects can take 6 to 8 weeks to become noticeable.</li> <li>Consider referring people to a consultant dermatologist-led team if their acne of any severity, or acne-related scarring, is causing or contributing to persistent psychological distress or a mental health disorder.</li> <li>If a person receiving treatment for acne wishes to use hormonal contraception, consider using the combined oral contraceptive pill in preference to the progestogen-only pill.</li> <li>For people with polycystic ovary syndrome and acne, treat their acne using a first-line treatment options below. If the chosen first-line treatment is not effective, consider adding ethinylestradiol with cyproterone acetate (co-cyprindiol) or an alternative combined oral contraceptive pill to their treatment.</li> <li>Only continue a treatment option that includes an antibiotic (topical or oral) for more than 6 months in exceptional circumstances. Review at 3-monthly intervals, and stop the antibiotic as soon as possible. Topical or oral antibiotics are not recommended for maintenance treatment.</li> <li>Oral antibiotics only recommended for <a href="#">moderate to severe acne</a>.</li> </ul>		
	<b>Any acne severity:</b>		
	Fixed combination of topical tretinoin (0.025%) with topical clindamycin (1%)	Apply once daily in the evening	12 weeks then review. If acne fails to respond adequately consider alternative topical treatment choice.
	<b>Mild to moderate acne:</b>		
Fixed combination of topical benzoyl peroxide (3% or 5%) with topical clindamycin (1%)	Apply once daily in the evening	12 weeks then review. If acne fails to respond adequately consider alternative topical treatment choice. If acne fails to respond adequately to 2 different 12 week courses of treatment options, consider referral to dermatology.	
<b>Section continued overleaf.</b>			

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Acne vulgaris (continued)</b> <a href="#">NICE CKS</a> (2021) <a href="#">NICE NG198</a> (2021)	<b>Moderate to severe acne:</b>		
	Fixed combination of topical adapalene (0.1% or 0.3%) with topical benzoyl peroxide (2.5%)	Apply once daily in the evening	12 weeks then review. If the acne has completely cleared, consider stopping the antibiotic but continuing the topical treatment. If their acne has improved but not completely cleared, consider continuing the oral antibiotic, alongside the topical treatment, for up to 12 more weeks. If acne fails to respond adequately consider referral to dermatology.
	<b>OR</b> Azelaic acid (15% or 20%)	Apply twice daily	
	<b>PLUS</b> Doxycycline	100 mg OD	
	<b>OR</b> Lymecycline	408 mg OD	
<b>OR</b> Erythromycin (If tetracycline contraindication)	500 mg BD		
<b>Eczema</b> <a href="#">NICE NG190</a> (2021) <a href="#">NICE CKS</a> (2021)	<ul style="list-style-type: none"> <li>For secondary bacterial infection of eczema in people who are not systemically unwell: Do not routinely offer either a topical or oral antibiotic.</li> <li>If no visible signs of infection, use of antibiotics (alone or with steroids) encourages resistance and does not improve healing. If visible signs of infection:               <ul style="list-style-type: none"> <li>consider the extent and severity of symptoms or signs (a topical antibiotic may be more appropriate if the infection is localised and not severe; an oral antibiotic may be more appropriate if the infection is widespread or severe).</li> <li>consider previous use of topical antibiotics because antimicrobial resistance can develop rapidly with extended or repeated use.</li> </ul> </li> <li>Patients should continue treatments such as emollients and topical corticosteroids.</li> <li>Make patients aware that it can take time for secondary bacterial infection of eczema to resolve, and full resolution is not expected until after the antibiotic course is completed.</li> </ul>		
	<b>First-choice topical if a topical antibiotic is appropriate:</b>		
	Fusidic acid 2%	Apply TDS	5–7 days
	<b>First-choice oral if an oral antibiotic is appropriate:</b>		
	Flucloxacillin	500 mg QDS	5–7 days
	<b>Penicillin allergy:</b>		
	Clarithromycin	250 mg–500 mg BD	5–7 days
	<b>Penicillin allergy and pregnant:</b>		
	Erythromycin	250 mg–500 mg QDS	5–7 days
	<b>If MRSA suspected or confirmed: Contact microbiology consultant</b>		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Panton-Valentine Leukocidin (PVL)</b>	<ul style="list-style-type: none"> <li>• Panton-Valentine Leukocidin (PVL) is a toxin produced by 2% of <i>Staphylococcus 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 – for details see <a href="#">British Association of Dermatologists patient information leaflet</a>.</li> <li>• To prevent transmission of PVL: change towels every day and do not share them; change bed sheets frequently; keep house very clean especially sink and bath; do not visit gym or swimming pool until infections have healed; cover infected areas with dressings; wash hands frequently with liquid soap.</li> <li>• Once primary infection has resolved, PVL eradication can be achieved in line with local MRSA decolonisation guidelines.</li> <li>• Discuss with Consultant Microbiologist to ensure adequate treatment and eradication.</li> </ul>		
<b>Cellulitis and Erysipelas</b> <a href="#">NICE CKS</a> (2021) <a href="#">NICE NG141</a> (2019)	<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>• <b>Erysipelas:</b> often facial and unilateral. Use flucloxacillin for non-facial erysipelas.</li> <li>• Infection around the eyes or the nose (the triangle from the bridge of the nose to the corners of the mouth, or immediately around the eyes including periorbital cellulitis) is of more concern because of risk of a serious intracranial complication.</li> </ul> <p>For active <b>MRSA infection</b>: use antibiotic sensitivities to guide treatment; if severe infection or no response to monotherapy after 24–48 hours, seek advice from Consultant Microbiologist on combination therapy.</p>		
	Flucloxacillin	500 mg–1 g QDS Use higher doses in obesity (BMI > 30 kg/m <sup>2</sup> ) or severe infections.	5–7 days – If slow response continue for a further 7 days.
	Penicillin allergy		
	Clarithromycin	500 mg BD	5–7 days If slow response continue for a further 7 days.
	<b>OR</b>		
	Doxycycline	200 mg stat, then 100 mg OD	
	<b>OR</b>		
	Erythromycin (if pregnant)	500 mg QDS	
<b>Section continued overleaf.</b>			

## All Wales Medicines Strategy Group

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Cellulitis and Erysipelas (continued)</b> <a href="#">NICE CKS</a> (2021) <a href="#">NICE NG141</a> (2019)	<b>MRSA known or suspected (check recent cultures and adapt therapy as needed):</b>		
	Doxycycline	200 mg stat, then 100 mg BD	5–7 days If slow response continue for a further 7 days.
	<b>OR</b>		
	Co-trimoxazole	960 mg BD	
	<b>Facial (inside the triangle treat as below – if outside of the triangle treat as above):</b>		
	Co-amoxiclav	625 mg TDS	7 days
	<b>OR (if penicillin allergic)</b>		
	Clarithromycin	500 mg BD	
<b>PLUS</b>			
Metronidazole	400 mg TDS		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Cellulitis in patients with lymphoedema</b>  <a href="#">Lymphoedema Wales (2022) – Note: currently only accessible to staff within NHS Wales</a>	<p><b>All patients with lymphoedema/chronic oedema and cellulitis should be referred to the Lymphoedema Service. Please refer to <a href="#">Cellulitis Pathway for People with Lymphoedema or Chronic Oedema in NHS</a> (Note: this is currently only available for staff within NHS Wales) for further information.</b></p> <p>Be aware that skin can take some time to return to what is normal for the patient                      Consider steroid emollient if signs of inflammation after antimicrobial treatment                      Consider cellulitis prophylaxis in patients with &gt; 2 episodes of cellulitis in the past 12 months affecting limbs only.</p>		
	<b>First line:</b>		
	Flucloxacillin	500 mg–1 g QDS	7–14 days.
	<b>Penicillin allergy:</b>		
	Clarithromycin	500 mg BD	7–14 days
	<b>No improvement in cellulitis after initial course of antibiotics (wound or previous MRSA consider swab):</b>		
Clindamycin	300–450 mg QDS	7–14 days	
<b>Prophylaxis for recurrent cellulitis in lymphoedema</b>  <a href="#">Lymphoedema Wales (2022) – Note: currently only accessible to staff within NHS Wales</a>	<p><b>All patients with lymphoedema/chronic oedema and cellulitis should be referred to the Lymphoedema Service. Criteria for Lymphoedema prophylaxis:</b></p> <ul style="list-style-type: none"> <li>• At least 2 episodes of cellulitis in the past 12 months affecting limbs only</li> <li>• Patient has been referred to local Lymphoedema Service</li> <li>• All obvious causes for recurring cellulitis have been addressed first e.g. wounds, chronic skin conditions etc.</li> <li>• MRSA eradicated (dependent on swab results)</li> <li>• Patient is counselled in prophylaxis and consents to treatment.</li> </ul>		
	<b>First line:</b>		
	Phenoxyethylpenicillin	250 mg BD (if BMI > 33 increase to 500 mg BD)	Review at 3 months for progress. Discontinue at 6 months if no further cellulitis episodes.
	<b>Penicillin Allergic:</b>		
Clarithromycin	250 mg OD	Review at 3 months for progress. Discontinue at 6 months if no further cellulitis episodes.	

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Leg ulcer</b> <a href="#">NICE CKS</a> (2021) <a href="#">NICE NG152</a> (2020)	<ul style="list-style-type: none"> <li>• <b>Leg ulcers are always colonised. Antibiotics do not improve healing unless <a href="#">active infection</a> is present.</b></li> <li>• There is no evidence to support regular application of topical antimicrobials or antiseptics.</li> <li>• There is insufficient evidence of proven benefit from <a href="#">silver dressings or iodine preparations</a> in patients with leg ulcers. Do not prescribe routinely.</li> <li>• Do not take a sample for microbiological testing at initial presentation. If the infection is worsening or not improving as expected, consider microbiological testing. A superficial swab is not sufficient. Physically clean the ulcer with sterile saline to remove debris from the wound bed. The best specimens for culture are curettage or tissue biopsy from the base of the ulcer after cleaning and debridement.</li> <li>• Review antibiotics after culture results.</li> <li>• For active <b>MRSA infection</b>: use antibiotic sensitivities to guide treatment; if severe infection or no response to monotherapy after 24–48 hours, seek advice from Consultant Microbiologist on combination therapy.</li> <li>• <b>Duration of antibiotics</b>: 7 days, but if insufficient improvement, but some improvement noted, duration can be increased to 14 days maximum. If no improvement noted try an alternative agent.</li> </ul>		
	<b>Active infection:</b>		
	Flucloxacillin	500 mg – 1 g QDS Use higher doses in obesity (BMI >30 kg/m <sup>2</sup> ) or severe infections.	7 days, note advice above
	<b>Penicillin allergy:</b>		
	Clarithromycin	500 mg BD	7 days, note advice above
	<b>MRSA known or suspected:</b>		
	Doxycycline  <b>OR</b> Co-trimoxazole	200 mg stat, then 100 mg BD	7 days, note advice above



Infection	Recommendations
<p><b>Insect bites and stings</b></p>	<ul style="list-style-type: none"> <li>• A rapid-onset inflammatory skin response after an insect bite/sting—redness, itchiness, or pain and swelling—is more likely to be an inflammatory or allergic reaction rather than an infection.</li> <li>• Skin redness and itching after bites and stings are common and can last up to 10 days.</li> <li>• Do <b>not</b> offer antibiotics if there are no symptoms or signs of infection.</li> <li>• Secondary bacterial infection is rare and most insect bites/stings will <b>not</b> need antimicrobial treatment.</li> <li>• If there are signs and symptoms of acute <b>localised</b> infection with a well-defined, raised margin, see All Wales primary care guidance on <a href="#">cellulitis and erysipelas</a> for recommended antibiotic choice.</li> <li>• Consider whether the bite may be a tick bite and check whether erythema migrans is present in line with All Wales primary care guidance on management of <a href="#">Lyme disease</a>.</li> <li>• Refer people to hospital if they have symptoms or signs suggesting a more serious illness or condition, such as a systemic allergic reaction (see NICE Clinical Guideline 134 <a href="#">Anaphylaxis: assessment and referral after emergency treatment</a>).</li> <li>• Consider referral or seeking specialist advice for people if:             <ul style="list-style-type: none"> <li>○ they are systemically unwell</li> <li>○ they are severely immunocompromised, and have symptoms or signs of an infection</li> <li>○ they have had a previous systemic allergic reaction to the same type of bite or sting</li> <li>○ the bite or sting is in the mouth or throat, or around the eyes</li> <li>○ it has been caused by an unusual or exotic insect</li> <li>○ they have fever or persisting lesions associated with a bite or sting that occurred while travelling outside the UK.</li> </ul> </li> </ul>

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment																
<p><b>Bites (human/cat/dog)</b>  <a href="#">NICE CKS (2020)</a>  <a href="#">NICE NG184 (2020)</a></p>	<p>Increased risk of wound becoming infected due to:</p> <ul style="list-style-type: none"> <li>Nature of the bite (deep, contaminated wounds; puncture or crush wounds; significant tissue destruction)</li> <li>Site of injury (e.g. hands, feet, face or genitals; areas of poor perfusion or lymphatic return; or near a prosthetic joint or implant)</li> <li>Wound penetrating bone, joints, tendons, or vascular structures</li> <li>Delayed presentation (&gt; 8 hours)</li> <li>Associated medical conditions (e.g. diabetes mellitus, asplenia, immunocompromised status, chronic liver disease, prosthetic heart valve or joint)</li> <li>Patient age (neonates, infants and elderly patients are at higher risk of infection).</li> </ul> <p><b>Do not offer antibiotic prophylaxis to people with a human/cat/dog bite that has not broken the skin.</b></p> <ul style="list-style-type: none"> <li><b>Human:</b> <ul style="list-style-type: none"> <li>Thorough irrigation is important.</li> <li>Assess risk of tetanus, HIV and Hepatitis B and C.</li> </ul> </li> <li><b>Cat / Dog:</b> <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><b>Bat:</b> Urgent treatment required. All patients should be referred to A&amp;E and Public Health Wales Health protection team or the duty virologist (University Hospital of Wales) contacted. Please see <a href="#">PHE guidance (for advice on Rabies)</a> and refer to patients to <a href="#">PHE PIL</a>.</li> </ul> <p><b>When to offer antibiotics:</b>            Offer an antibiotic (see the recommendations on choice of antibiotic) for people with a human or animal bite if there are symptoms or signs of infection, such as increased pain, inflammation, fever, discharge or an unpleasant smell.</p> <table border="1" data-bbox="376 1082 1995 1382"> <thead> <tr> <th>Type of bite</th> <th>Bite has not broken the skin</th> <th>Bite has broken the skin but not drawn blood</th> <th>Bite has broken the skin and drawn blood</th> </tr> </thead> <tbody> <tr> <td>Human bite</td> <td>Do not offer antibiotics.</td> <td>Consider antibiotics if it is in a high-risk area* or if the person is high risk**.</td> <td>Offer antibiotics.</td> </tr> <tr> <td>Cat bite</td> <td>Do not offer antibiotics.</td> <td>Consider antibiotics if the wound could be deep.</td> <td>Offer antibiotics.</td> </tr> <tr> <td>Dog or other traditional pet bites</td> <td>Do not offer antibiotics.</td> <td>Do not offer antibiotics.</td> <td>Offer antibiotics if it has caused considerable, deep tissue damage or is visibly contaminated. Consider antibiotics if it is in a high-risk area* or person at high risk**.</td> </tr> </tbody> </table> <p>* High-risk area = hands, feet, face, genitals, skin overlying cartilaginous structures or an area of poor circulation.            ** High-risk Person = those at risk of serious wound infection (e.g immunosuppression, asplenia, decompensated liver disease, diabetes).</p>			Type of bite	Bite has not broken the skin	Bite has broken the skin but not drawn blood	Bite has broken the skin and drawn blood	Human bite	Do not offer antibiotics.	Consider antibiotics if it is in a high-risk area* or if the person is high risk**.	Offer antibiotics.	Cat bite	Do not offer antibiotics.	Consider antibiotics if the wound could be deep.	Offer antibiotics.	Dog or other traditional pet bites	Do not offer antibiotics.	Do not offer antibiotics.	Offer antibiotics if it has caused considerable, deep tissue damage or is visibly contaminated. Consider antibiotics if it is in a high-risk area* or person at high risk**.
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Section continued overleaf

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Bites</b> (human/cat/dog) <a href="#">NICE CKS (2020)</a> <a href="#">NICE NG184 (2020)</a>	<b>Prophylaxis or treatment:</b>		3 days (prophylaxis).  5 days (treatment).  Course length can be increased to 7 days (with review) based on clinical assessment of the wound, for example, if there is significant tissue destruction or it has penetrated bone, joint, tendon or vascular structures.
	Co-amoxiclav	625 mg TDS	
	<b>Penicillin allergy:</b>		
	Metronidazole	400 mg TDS	
	<b>PLUS</b>		
	Doxycycline (cat/dog/human) (N.B. Not suitable for children < 12 years)		
<b>If child &lt; 12 years</b>			
	Co-trimoxazole	Dose as per <a href="#">BNFc</a>	
<b>Scabies</b> <a href="#">NICE CKS (2017)</a>	<ul style="list-style-type: none"> <li>• Treat all home and sexual contacts (within the past month) within 24 hours.</li> <li>• Treat whole body from ear/chin downwards, pay special attention to the areas between the fingers and toes and under nails.</li> <li>• If under 2 years old, elderly, immunosuppressed or using malation also treat face/scalp.</li> <li>• If under 2 months old, seek specialist advice.</li> <li>• The treatment should be applied to cool dry skin (not after a hot bath) and allowed to dry before the person dresses in clean clothes.</li> <li>• Permethrin should be washed off after 8 to 12 hours, and malathion after 24 hours. Body areas that are washed within 8 hours of permethrin application or 24 hours of malathion application should be treated again.</li> <li>• Mittens can be used to prevent infants putting treated hands in their mouths.</li> <li>• A second application is required one week after the first.</li> <li>• Itching may continue for up to two weeks after successful treatment of scabies, however, if itching persists for longer than 2–4 weeks after the last treatment application, advise the person to seek follow-up.</li> <li>• <b>Note:</b> pregnancy and breastfeeding are not contraindications to the use of permethrin or malathion.</li> <li>• Permethrin is not suitable in patients with an allergy to chrysanthemum.</li> </ul>		
	Permethrin	5% cream	2 applications, 1 week apart
		(One 30 g pack should be sufficient. Some adults may need to use an additional tube for full body coverage but should not use more than 2 tubes (60 g in total) at each application.)	
	<b>If allergic:</b>		
	Malathion	0.5% aqueous liquid	2 applications, 1 week apart

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Tick bites (Lyme disease)</b> <a href="#">NICE CKS</a> (2019) <a href="#">NICE NG95</a> (2018) <a href="#">RCGP</a> (2021)	<ul style="list-style-type: none"> <li>Refer to <a href="#">NICE CKS</a> or <a href="#">PHE advice</a> for prevention of tick bites.</li> <li>Prophylactic antibiotic treatment following a tick bite is not recommended.</li> <li>Give safety net advice about erythema migrans and other possible symptoms that may occur within 1 month of tick removal.</li> </ul>		
	<b>First line treatment:</b>		
	Doxycycline (not for use in children < 12 years)	100 mg BD	21 days
	<b>Alternative options:</b>		
	Amoxicillin <b>OR</b> Azithromycin	1 g TDS  500 mg OD	21 days  17 days
<b>Mastitis</b> <a href="#">NICE CKS</a> (2021)	<ul style="list-style-type: none"> <li>Refer to <a href="#">NICE CKS</a> for self-care advice to manage pain and discomfort.</li> <li><i>Staphylococcus aureus</i> is the most common infecting pathogen.</li> <li>Suspect if woman has a painful breast, fever/general malaise, a tender/red breast.</li> <li><b>Breastfeeding:</b> oral antibiotics are appropriate where indicated; women should continue feeding, including from the affected breast.</li> <li>In lactational mastitis, prescribe an oral antibiotic if the woman has a nipple fissure that is infected, symptoms have not improved (or are worsening) after 12–24 hours despite effective milk removal.</li> </ul>		
	<b>Lactational mastitis:</b>		
	Flucloxacillin	500mg QDS	
	<b>Penicillin allergy:</b>		
	Erythromycin	250–500 mg QDS	
	<b>OR</b>		
	Clarithromycin	500 mg BD	
	<b>Non-lactational mastitis:</b>		
	Co-amoxiclav	625 mg TDS	10–14 days
	<b>Penicillin allergy:</b>		
Erythromycin	250–500 mg QDS		
<b>PLUS</b>			
Metronidazole	400 mg TDS		
<b>OR</b>			
Clarithromycin	500 mg BD		
<b>PLUS</b>			
Metronidazole	400 mg TDS		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Dermatophyte infection – skin</b> <a href="#">NICE CKS – Body and groin</a> (2018) <a href="#">NICE CKS – Foot</a> (2018) <a href="#">NICE CKS – Scalp</a> (2018)	<ul style="list-style-type: none"> <li>For advice on self-care management strategies including hygiene measures and clothing, refer to <a href="#">NICE CKS</a>.</li> <li>Terbinafine is fungicidal, so treatment time is shorter than with fungistatic imidazoles.</li> <li>If Candida possible, use imidazole.</li> <li><b>If intractable:</b> send skin scrapings.</li> <li><b>If infection is confirmed,</b> use <b>oral</b> terbinafine/itraconazole. Consider co-prescribing a topical antifungal agent during initial oral antifungal treatment, to reduce the risk of transmission to other people.</li> <li><b>Scalp:</b> Ketoconazole 2% shampoo twice weekly for 2–4 weeks or an imidazole cream (in children less than 5 years of age) to be used daily for one week. If unsuccessful, refer to a specialist.</li> </ul>		
	Topical terbinafine 1%	BD	1–2 weeks
	<b>OR</b>		
	Topical imidazole	BD	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)	
<u>Self-care advice:</u> <ul style="list-style-type: none"> <li>Wear well-fitting, non-occlusive footwear that keeps the feet cool and dry. Consider replacing old footwear which could be contaminated with fungal spores.</li> <li>Maintain good foot hygiene by wearing a different pair of shoes every 2–3 days.</li> <li>Wear cotton, absorbent socks.</li> <li>Avoid scratching affected skin, as this may spread infection to other sites.</li> <li>After washing the feet, dry thoroughly, especially between the toes.</li> <li>Do not share towels, and wash them frequently, to reduce the risk of transmission.</li> <li>Wear protective footwear when using communal bathing places, locker rooms, and gymnasiums, to reduce the risk of transmission.</li> </ul>			
<b>Cold sores</b> <a href="#">NICE CKS</a> (2016)	<ul style="list-style-type: none"> <li>Cold sores resolve after 5 days <b>without</b> treatment.</li> <li>Topical antivirals applied prodromally reduce duration by 12–18hrs.</li> <li>If frequent, severe and predictable triggers or patient is immunocompromised: consider oral aciclovir 400 mg BD for 5–7 days.</li> <li>Do not routinely prescribe oral antivirals for healthy people.</li> </ul>		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p>Varicella zoster (Chicken pox) <a href="#">NICE CKS (2022)</a> <a href="#">UKHSA (2022)</a></p>	<ul style="list-style-type: none"> <li>For symptomatic relief, self-care advice and transmission reduction measures, refer to <a href="#">NICE CKS</a>.</li> <li>Pregnant/immunocompromised/neonate: <b>seek urgent specialist advice</b>.</li> <li><b>Pregnant women</b> who present within 24 hours of onset of chickenpox rash:               <ul style="list-style-type: none"> <li><b>If 20 weeks +0 gestation or beyond:</b> PO aciclovir 800 mg <b>five</b> times a day for 7 days <b>&amp; seek specialist advice</b>.</li> <li><b>If less than 20 weeks gestation:</b> <b>seek specialist advice &amp;</b> consider use of aciclovir.</li> <li>N.B. Use of aciclovir in pregnancy is not licensed and the risks and benefits of its use should be discussed with the patient. For further details, refer to <a href="#">Royal College of Obstetrics and Gynaecology guidelines</a>.</li> </ul> </li> <li><b>Pregnant women - post-exposure prophylaxis (PEP):</b> Immune naïve pregnant women who have had significant exposure to chickenpox or shingles (further details refer to <a href="#">UKHSA guidance</a>):               <ul style="list-style-type: none"> <li><b>First line PEP (all susceptible pregnant women at any stage of pregnancy)</b> – Aciclovir 800 mg <b>QDS</b> for 7 days, starting at day 7 post-exposure. Can be started up to 14 days post-exposure if necessary.</li> <li><b>Second line PEP (all susceptible pregnant women at any stage of pregnancy)</b> – Valaciclovir 1 g <b>TDS</b> for 7 days, starting at day 7 post-exposure. Can be started up to 14 days post-exposure if necessary.</li> <li><b>If the patient is unable to take oral antivirals due to intestinal malabsorption (e.g. IBD), hyperemesis or renal toxicity:</b> consider varicella zoster immunoglobulin therapy.</li> <li><b>Although aciclovir and valaciclovir are not currently licensed for post-exposure prophylaxis for chickenpox, their use in the treatment of chickenpox is well established. Clinicians are able to prescribe medicines outside the terms of the licence when it is in the best interest of the patient on the basis of available evidence.</b></li> </ul> </li> </ul> <p><b>Chicken pox (non-pregnant):</b> Consider aciclovir 800 mg <b>five</b> times a day for 7 days if onset of rash &lt; 24 hours, and 1 of the following: &gt;14 years of age; severe pain; dense/oral rash; taking steroids; smoker.</p> <p><u>Self-care advice:</u></p> <ul style="list-style-type: none"> <li>Encourage adequate fluid intake to avoid dehydration.</li> <li>Dress appropriately to avoid overheating or shivering.</li> <li>Wear smooth, cotton fabrics.</li> <li>Keep nails short to minimize damage from scratching.</li> <li>Take paracetamol if pain or fever are causing distress.</li> <li>Topical calamine lotion to alleviate itch.</li> <li>Consider chlorphenamine for treating itch associated with chickenpox for people 1 year of age or older. Avoid use in pregnancy unless considered essential by a physician.</li> </ul>		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<p><b>Herpes zoster (Shingles)</b>  <a href="#">NICE CKS</a>                      (2021)</p>	<p>Prescribe an oral antiviral treatment within 72 hours of rash onset for people with any of the following criteria:</p> <ul style="list-style-type: none"> <li>• Immunocompromised (only if the level of immunocompromise is not severe, the rash is localized, the person is not systemically unwell, and the person can be closely followed-up).</li> <li>• Non-truncal involvement (such as shingles affecting the neck, limbs, or perineum).</li> <li>• Moderate or severe pain.</li> <li>• Moderate or severe rash.</li> </ul> <p>Consider treating within 72 hours of rash onset for all people &gt; 50 years old to reduce the incidence of post-herpetic neuralgia (post-herpetic neuralgia is rare in people &lt; 50 years old), or if 1 of the following: active ophthalmic; Ramsay Hunt; eczema; non-truncal involvement; moderate or severe pain; moderate or severe rash.</p> <p>If it is not possible to initiate treatment within 72 hours, consider starting antiviral treatment up to one week after rash onset, especially if the person is at higher risk of severe shingles or complications (for example continued vesicle formation, older age, immunocompromised, or in severe pain).</p> <p>For immunocompetent children with shingles, antiviral treatment is not usually recommended.</p> <p><a href="#">British HIV Association</a> recommend testing for HIV in adult patients presenting with Herpes zoster infection.</p> <p><u>Self-care advice:</u></p> <ul style="list-style-type: none"> <li>• Wash hands often.</li> <li>• Wear loose-fitting clothes to reduce irritation.</li> <li>• Cover lesions that are not under clothes while the rash is still weeping.</li> <li>• Avoid use of topical creams and adhesive dressings, as they can cause irritation and delay rash healing.</li> <li>• Keep the rash clean and dry to reduce the risk of bacterial superinfection. They should seek medical advice if there is an increase in temperature, as this may indicate bacterial infection.</li> </ul> <p><b>If treatment indicated (in line with the above), see prescribing options below.</b></p>		
			<p><b>Section continued overleaf.</b></p>

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<b>Herpes zoster (Shingles) (continued)</b> <a href="#">NICE CKS</a> (2021)	<b>Immunocompetent adults</b>			
	<b>First line:</b>	Aciclovir	800 mg five times a day	7 days
	<b>Second line:</b> (if compliance an issue – N.B: these agents are significantly more expensive at time of writing [Sep 2021])	Famciclovir	500 mg TDS	
		<b>OR</b>		
		Valaciclovir	1 g TDS	
	<b>Immunocompromised adults</b> (if they are not systemically unwell and the rash is localised)			
	<b>First line:</b>	Aciclovir	800 mg five times a day	7 days. Continue for 2 days after the lesions have crusted.
	<b>Second line:</b> (if compliance an issue – N.B: these agents are significantly more expensive at the time of writing [Nov 2021])	Famciclovir	500 mg TDS	10 days. Continue for 2 days after the lesions have crusted.
<b>OR</b>				
	Valaciclovir	1 g TDS	7 days. Continue for 2 days after the lesions have crusted.	



Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<p><b>Dermatophyte infection – nail</b> <a href="#">NICE CKS</a> (2018)</p>	<ul style="list-style-type: none"> <li>For advice on self-care management strategies e.g. suitable footwear and hygiene measures, see <a href="#">NICE CKS</a>.</li> <li>Antifungal treatment is not required if appearance of nail does not trouble the patient, infection is asymptomatic, and patient has no co-morbid conditions that may increase the risk of complications.</li> <li>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.</li> <li><b>Start therapy only if infection is confirmed by laboratory.</b></li> <li>False-negative rates are high. Repeat the test if the result is negative, and there is high clinical suspicion that the nail is infected.</li> <li>Terbinafine is more effective than azoles.</li> <li>Liver reactions are rare with oral antifungals.</li> <li>If <i>Candida</i> or non-dermatophyte infection confirmed, use oral itraconazole. Topical nail lacquer is not as effective.</li> <li>For children, seek specialist advice.</li> <li>To prevent recurrence: apply weekly 1% topical antifungal cream to entire toe area.</li> </ul> <p>If dermatophyte or <i>Candida</i> nail infection is confirmed, advise on the option of topical antifungal treatment in adults if there is:</p> <ul style="list-style-type: none"> <li>Up to 50% involvement of the distal nail plate without nail matrix involvement.</li> <li>Up to two affected nails.</li> <li>Early, mild distal or lateral onychomycosis.</li> <li>Superficial white onychomycosis.</li> </ul> <p><b>Topical treatment:</b> Amorolfine 5% nail lacquer (this can be bought over the counter) applied once or twice weekly to the affected nail(s) after gentle nail filing. Duration of treatment: 6 months for fingernails and 9–12 months for toenails.</p>			
	<b>If self-care measures alone and/or topical treatment is not successful or appropriate:</b>			
	<b>First line:</b>	Terbinafine	250 mg OD	<b>Finger nail(s):</b> 6 weeks
<b>Second line:</b>	Itraconazole	200 mg BD	<b>Pulsed course:</b> 7 days then repeat after 21 days	
			<b>Finger nail(s):</b> 2 pulsed courses as above	<b>Toe nail(s):</b> At least 3 pulsed courses as above

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Dosages in Children: Details of drug dosage and administration can be found in the <a href="#">BNFc</a></b>			
<b>Eye Infections</b>			
<b>Conjunctivitis</b> <a href="#">NICE CKS</a> (2022)	<ul style="list-style-type: none"> <li>Only treat if severe, as most cases are 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 is a narrow spectrum agent which has poor Gram-negative activity. Send a swab for MC&amp;S before starting treatment.</li> <li>Consider screening for <i>Chlamydia</i> in neonatal conjunctivitis.</li> <li>Chloramphenicol eye drops can be safely administered to children aged 0 to 2 years where antibiotic eye drop treatment is indicated. See <a href="#">MHRA</a> advice.</li> </ul>		
	<b>If severe:</b>		
	Chloramphenicol 0.5% drop	Apply 1 drop 2 hourly for 2 days, then 4 times daily.	Continue treatment until 48 hours after symptom resolution; re-assess if symptoms not resolved within 7 days of starting treatment
	<b>OR</b>		
	Chloramphenicol 1% ointment	Apply 4 times daily for 2 days, then twice daily.	
	<b>If there is no response to chloramphenicol send a swab for MC&amp;S</b>		
<b>Second line (Send a swab for MC&amp;S before prescribing fusidic acid):</b>			
Fusidic acid 1% gel	BD	Continue treatment until 48 hours after symptom resolution; re-assess if symptoms not resolved within 7 days of starting treatment	
<b>Ophthalmia neonatorum</b>	<b>Medical emergency: seek advice from specialist in neonatal infection.</b>		

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Blepharitis</b> <a href="#">NICE CKS – Blepharitis</a> (2019) <a href="#">NICE CKS – Rosacea</a> (2021)	<b>Blepharitis is a chronic, intermittent condition which requires ongoing maintenance treatment – a cure is generally not possible.</b>		
	<b>First line:</b>		
	Symptoms can usually be controlled with self-care measures such as eyelid hygiene and warm compresses. <ul style="list-style-type: none"> <li>• The eyelid can be cleansed by wetting a cloth or cotton bud with cleanser (for example, baby shampoo diluted 1:10 with warm water) and gently wiping along the lid margins to clear any lid debris.</li> <li>• Eyelids should be cleaned twice daily initially, then once daily as symptoms improve.</li> <li>• In addition, a warm compress (a clean cloth warmed with hot water) should be applied to closed eyelids for 5–10 minutes once or twice daily — compresses should not be too hot as this may burn the skin.</li> <li>• Eyelid hygiene should be continued even when symptoms are well controlled to minimise number and severity of relapses.</li> </ul>		
	<b>Second line (If hygiene measures are ineffective after 2 weeks):</b>		
	Chloramphenicol 1% ointment	BD	7 days then review and repeat if necessary. If not resolving, discuss with optometrist.
	<b>Signs of Meibomian gland dysfunction or acne rosacea:</b>		
Seek optometrist advice and consider starting oral antibiotics.			
Doxycycline	40 mg m/r OD for 8–12 weeks.		
<b>Ophthalmic shingles</b>	If there is concern about ophthalmic shingles please refer to shingles guidance in the ‘Skin infections’ section and seek advice from an optometrist or ophthalmologist.		

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Dosages in Children:</b> Details of drug dosage and administration can be found in the <a href="#">BNFc</a>			
<b>Dental Infections</b> Derived from the Scottish Dental Clinical Effectiveness Programme (SDCEP) <a href="#">Drug Prescribing for Dentistry Guidelines (2016)</a> , and subsequent updates (June 2017 and June 2021). 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 the person being seen by a dentist or dental specialist. GPs should not routinely be involved in dental treatment. Patients presenting to non-dental primary care services with dental problems should be directed to their regular dentist, or if this is not possible, to the NHS 111 service.			
<b>Note:</b> Antibiotics do not cure toothache. First line treatment is with paracetamol and/or ibuprofen. Codeine is not effective for toothache.			
<b>Mucosal ulceration and inflammation (simple gingivitis)</b> <a href="#">SDCEP</a> (2021)	<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	Half a teaspoon of salt dissolved in a glass of warm water.	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.
	<b>Antiseptic mouthwash (if more severe and pain limits oral hygiene):</b>		
	Chlorhexidine mouthwash 0.2% <i>(Do not use within 30 minutes of toothpaste).</i>	Rinse mouth for 1 minute BD with 10 ml (may be diluted with 5–10 ml water).	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.
<b>OR</b>			
Hydrogen peroxide mouthwash 6%	Rinse mouth for 2 minutes TDS with 15 ml diluted in half a glass of warm water.	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.	

Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment	
<b>Acute necrotising ulcerative gingivitis</b> <a href="#">SDCEP</a> (2021)	<ul style="list-style-type: none"> <li>Refer to dentist for scaling and oral hygiene advice.</li> <li>In most cases, treatment with local measures will be sufficient. Prescribe hydrogen peroxide 6% or chlorhexidine 0.2% mouthwash.</li> <li>Recommend optimal analgesia.</li> <li>Commence antibiotics if systemic signs and symptoms. Use in combination with antiseptic mouthwash.</li> </ul>			
	<b>Antiseptic mouthwash:</b>			
	Chlorhexidine mouthwash 0.2% <i>(Do not use within 30 minutes of toothpaste).</i>	Rinse mouth for 1 minute BD with 10 ml (may be diluted with 5–10 ml water).	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.	
	<b>OR</b>			
	Hydrogen peroxide mouthwash 6%	Rinse mouth for 2 minutes TDS with 15 ml diluted in half a glass of warm water.	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene.	
	<b>If antibiotics indicated:</b>			
<b>First line:</b>	Metronidazole	400 mg TDS	3 days	
<b>Second line:</b>	Amoxicillin	500 mg TDS	3 days	
<b>Pericoronitis (inflammation around partially erupted teeth)</b> <a href="#">SDCEP</a> (2021)	<ul style="list-style-type: none"> <li>Refer to dentist for irrigation and debridement.</li> <li>In most cases treatment with local measures will be sufficient.</li> <li>Recommend optimal analgesia.</li> <li>Antibiotics are only recommended as an adjunct to local measures where there is evidence of systemic spread (elevated temperature), severe generalised swelling, cellulitis or severe localised swelling and trismus.</li> </ul>			
	<b>Antiseptic mouthwash:</b>			
	Chlorhexidine mouthwash 0.2% <i>(Do not use within 30 minutes of toothpaste).</i>	Rinse mouth for 1 minute BD with 10 ml (may be diluted with 5–10 ml water).	Always spit out after use. Use until less pain allows oral hygiene.	
	<b>If antibiotics indicated:</b>			
	<b>First line:</b>	Metronidazole	400 mg TDS	3 days
	<b>Second line:</b>	Amoxicillin	500 mg TDS	3 days

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Infection	Formulary choice	Adult dose (unless otherwise specified)	Duration of treatment
<b>Dental abscess</b> <a href="#">SDCEP</a> (2021)	<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; or Ludwig's angina), should be referred urgently for hospital 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 pus 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><b>True penicillin allergy:</b> use clarithromycin and if severe infection, refer to hospital.</li> <li><b>If spreading infection</b> (lymph node involvement, or systemic signs i.e. fever or malaise): ADD metronidazole</li> </ul>		
	Amoxicillin	500 mg – 1 g TDS	Up to 5 days. Review at 3 days.
	<b>OR</b>		
	Phenoxyethylpenicillin	500 mg – 1 g QDS	Up to 5 days. Review at 3 days.
	<b>Penicillin allergy:</b>		
	Clarithromycin	500 mg BD	Up to 5 days. Review at 3 days.
	<b>Severe infection (see notes above):</b>		
	<b>ADD</b> Metronidazole	400 mg TDS	5 days
	<b>OR</b> (if allergy to metronidazole)		
Clindamycin monotherapy	300 mg QDS	5 days	

## Glossary

<b>AWMSG</b>	All Wales Medicines Strategy Group
<b>BASHH</b>	British Association for Sexual Health and HIV
<b>BD</b>	Twice-daily
<b>BNF</b>	British National Formulary
<b>BNFc</b>	British National Formulary for children
<b>BP</b>	Blood pressure
<b>BTS</b>	British Thoracic Society
<b>BMI</b>	Body Mass Index
<b>CEPP</b>	Clinical Effectiveness Prescribing Programme
<b>CKS</b>	Clinical Knowledge Summaries
<b>COPD</b>	Chronic obstructive pulmonary disease
<b>CRP</b>	C-Reactive Protein
<b>DH&amp;SC</b>	Department of Health and Social Care (UK Government)
<b>EAU</b>	European Association of Urology
<b>ESCMID</b>	European Society for Clinical Microbiology and Infectious Diseases
<b>eGFR</b>	Estimated glomerular filtration rate
<b>GOLD</b>	Global Initiative for Chronic Obstructive Lung Disease
<b>GUM</b>	Genito-urinary medicine
<b>IM</b>	Intramuscular
<b>IV</b>	Intravenous
<b>MC&amp;S</b>	Microscopy, culture and sensitivities
<b>MHRA</b>	Medicines and Healthcare products Regulatory Agency
<b>M/R</b>	Modified-release
<b>MRSA</b>	Methicillin-resistant <i>Staphylococcus aureus</i>
<b>MSU</b>	Mid-stream sample of urine
<b>NICE</b>	National Institute for Health and Care Excellence
<b>NNT</b>	Number Needed to Treat
<b>OD</b>	Once-daily
<b>PVL</b>	Panton-Valentine Leukocidin
<b>PO</b>	By mouth (per os)
<b>PHE</b>	Public Health England
<b>PIL</b>	Patient Information Leaflet
<b>PHW</b>	Public Health Wales
<b>QDS</b>	Four times daily
<b>RCGP</b>	Royal College of General Practitioners
<b>RHIG</b>	Respiratory Health Implementation Group
<b>SIGN</b>	Scottish Intercollegiate Guidelines Network
<b>SPC</b>	Summary of Product Characteristics
<b>SPIRA</b>	Server for Prescribing Information Reporting and Analysis
<b>TDS</b>	Three times daily
<b>TARGET</b>	Treat Antibiotics Responsibly, Guidance, Education and Tools
<b>UKTIS</b>	United Kingdom Teratology Information Service
<b>UKHSA</b>	United Kingdom Health Security Agency
<b>UTI</b>	Urinary tract infection
<b>WFI</b>	Water for injection

## Updates

Date of update publication	Details of update
March 2022	Original guidelines document published.
June 2022	Updated the following sections: <ul style="list-style-type: none"> <li>• Acute otitis media (in children)</li> <li>• Varicella zoster (Chicken pox)</li> </ul>
September 2022	Updated link to Lymphoedema Wales guidance in the following sections: <ul style="list-style-type: none"> <li>• Cellulitis in patients with lymphoedema</li> <li>• Prophylaxis for recurrent cellulitis in lymphoedema.</li> </ul>
December 2022	Updated the following sections: <ul style="list-style-type: none"> <li>• Blepharitis</li> <li>• Community-acquired pneumonia in children - Treatment in the community</li> <li>• Vaginal candidiasis in pregnancy</li> </ul>
February 2023	Updated the 'Lower UTI in children' section to note that nitrofurantoin tablets should not be crushed.
April 2023	Updated layout of 'Acute rhinosinusitis' section and included additional guidance from NICE NG79.
May 2023	Updated paediatric doses for Cefotaxime in 'Suspected meningococcal disease' to reflect BNFC changes.
July 2023	Updated to add extra treatment options to Scarlet fever section for treatment in cases of penicillin allergy, as per updated NICE CKS. Miconazole vaginal cream treatment footnote added due to discontinuation of preparation.
September 2023	Updated paediatric doses for Cefotaxime in 'Out of hospital sepsis' to reflect BNFC changes.
January 2024	Updated quinolone statements in light of MHRA advice to 'Consider updated (January 2024) prescribing restrictions and safety issues – see <a href="#">MHRA</a> advice'.
March 2024	Updated the following sections following the MHRA warning on quinolone use (January 2024): <ul style="list-style-type: none"> <li>• Principles of treatment (page 5) – meningitis prophylaxis</li> <li>• Acute pyelonephritis (upper UTI)</li> <li>• Acute prostatitis</li> <li>• Eradication of <i>Helicobacter pylori</i></li> <li>• Non-specific / non-gonococcal urethritis – first episode</li> <li>• Epididymo-orchitis</li> <li>• Pelvic inflammatory disease</li> </ul> <p>Further updates also made to the following sections</p> <ul style="list-style-type: none"> <li>• Conjunctivitis (amended duration of treatment to align with NICE CKS)</li> </ul>



Date of update publication	Details of update
	<ul style="list-style-type: none"> <li>• Threadworms (added clarity around the use of mebendazole in pregnancy and breastfeeding)</li> <li>• MHRA reminder of the risk of pulmonary and hepatic adverse drug reactions added where nitrofurantoin is mentioned as a treatment option.</li> </ul>
August 2024	<ul style="list-style-type: none"> <li>• Acute cough, bronchitis updated to align with NICE guidance.</li> <li>• Ophthalmic shingles, updated to include optometrist and ophthalmology following feedback from Optometry Wales.</li> <li>• Acute sore throat updated to align with NICE guidance.</li> <li>• Travellers' diarrhoea updated to reflect changes to NICE CKS.</li> <li>• Infectious diarrhoea updated as tinidazole no longer available in the UK.</li> </ul>