

## Chapter 5: Infections

**The infections chapter of the GMMMG Formulary is NOT an antibiotic prescribing guide and is not intended to guide treatment choice.**

Links to local antimicrobial guidelines should be followed – [see page 2](#).

Please refer to local guidelines for appropriate and cost-effective options for treating commonly encountered infections in your local health economy.

For prescribing within secondary care, please refer to relevant acute trust guidelines.







In view of the increasing problems of antibiotic resistance and the cost of inappropriate prescribing, CCG and acute trust guidelines are reviewed regularly and should be referred to when making treatment choices.

The infections chapter only contains drugs and formulations included in the 'Infection' chapter of the BNF. It does not include topical preparations which can be found in the 'Skin' chapter.

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- [5.1 Antibacterial drugs](#)
- [5.2 Antifungal drugs](#)
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### Key

	<b>Red drug</b> see <a href="#">GMMMG RAG list</a> <i>Click on the symbols to access this list</i>
	<b>Amber drug</b> see <a href="#">GMMMG RAG list</a> <i>Click on the symbols to access this list</i>
	<b>Green drug</b> see <a href="#">GMMMG RAG list</a> <i>Click on the symbols to access this list</i>
	<b>If a medicine is unlicensed this should be highlighted in the template as follows</b> <b>Drug name U</b>
	<b>Not Recommended</b>
	<b>Over the Counter</b> In line with NHS England guidance, GM do not routinely support prescribing for conditions which are self-limiting or amenable to self-care. For further details see <a href="#">GM commissioning statement</a> .
<b>Order of Drug Choice</b>	Where there is no preferred 1 <sup>st</sup> line agent provided, the drug choice appears in alphabetical order.

<b>BNF chapter</b>	<b>5 Infections</b>
<b>Section</b>	<b>5.1 Antibacterial drugs</b>
<p>Please follow the <a href="#">GMMMG Greater Manchester Antimicrobial Guidelines</a></p> <p>The aims of this guidance are to</p> <ul style="list-style-type: none"> <li>• to provide a simple, empirical approach to the treatment of common infections</li> <li>• to promote the safe and effective use of antibiotics</li> <li>• to minimise the emergence of bacterial resistance in the community</li> </ul>	
<p><b>Additional information:</b></p> <p><a href="#">NICE NG50: Cirrhosis in over 16s: assessment and management</a></p> <p><a href="#">NICE NG51: Sepsis: recognition, diagnosis and early management</a></p> <p><a href="#">NICE NG95: Lyme disease</a></p> <p><a href="#">NICE NG79: Sinusitis (acute): antimicrobial prescribing</a></p> <p><a href="#">NICE NG91: Otitis media (acute): antimicrobial prescribing</a></p>	

## Antimicrobial resistance

Public Health England has published an online bulletin providing information on antimicrobial resistance (AMR). It sets out effective methods to avoid unnecessary prescribing of antibiotics and provides advice for healthcare professionals:



<https://www.gov.uk/government/publications/health-matters-antimicrobial-resistance>

NICE has issued guidance that covers the effective use of antimicrobials (including antibiotics) in children, young people and adults. It aims to change prescribing practice to help slow the emergence of antimicrobial resistance and ensure that antimicrobials remain an effective treatment for infection.

[NICE \(Aug 2015\) Antimicrobial stewardship: systems and processes for effective antimicrobial medicine use NG15](#)

<b>BNF chapter</b>	<b>5 Infections</b>	
<b>Section</b>	<b>5.1 Antibacterial drugs</b>	
<b>Subsection</b>	<b>5.1.4 Aminoglycosides</b>	
	<b>Tobramycin</b>	
	<p><a href="#">NICE TA276: Cystic fibrosis (pseudomonas lung infection)</a></p> <p><a href="#">MHRA DSU: Aminoglycosides (gentamicin, amikacin, tobramycin, and neomycin): increased risk of deafness in patients with mitochondrial mutations, Jan 2021</a></p>	
<b>Nebulised</b>	<p>Tobi® nebuliser solution 300mg/5ml ampoules</p> <p>Bramitob® nebuliser solution 300mg/4ml ampoules</p>	<p><b>R</b> for new patients presenting to the service only</p>

<b>Inhaled</b>	Tobi Podhaler® dry powder inhalation capsules 28mg	<b>R</b> for cystic fibrosis patients
<p><b>Additional notes</b></p> <p>Tobramycin dry powder for inhalation (DPI) is an option for treating chronic pulmonary infection caused by <i>Pseudomonas aeruginosa</i> in people with cystic fibrosis only if colistimethate sodium is contraindicated, is not tolerated, or has not produced an adequate clinical response and the manufacturer provides tobramycin DPI with the discount agreed as part of the patient access scheme to primary, secondary and tertiary care in the NHS.</p>		
<b>Subsection</b>	<b>5.1.7 Some other antibacterials</b>	
	<b>Vancomycin</b> Capsules 125mg	<b>G<sub>n</sub></b> For treating severe or recurrent <i>Clostridium difficile</i> only
	<b>Linezolid</b>	<b>R</b>
	<b>Polymixins</b> (colistimethate)	<a href="#">NICE TA276: Cystic fibrosis (pseudomonas lung infection)</a>
<b>Do Not Prescribe</b>	<b>Bezlotoxumab</b> For prevention of recurrence of <i>Clostridium difficile</i> infection in adults at high risk of recurrence.  Not recommended for routine commissioning. IFR required.	<b>Criterion 2 (see RAG list)</b>
<b>Nebulised</b>	<b>Colistimethate</b> injection for nebulisation Promixin® powder for nebuliser solution	<b>R</b> for new cystic fibrosis patients presenting to the service only  <b>A</b> for existing cystic fibrosis patients only awaiting repatriation  <b>A</b> when nebulised for non-cystic fibrosis patients
<b>Inhaled</b>	<b>Colistimethate sodium</b> Colobreathe ® 125mg dry powder inhalation capsules	<b>R</b> when inhaled for cystic fibrosis patients
<p><b>Additional notes</b></p> <p>Colistimethate sodium dry powder inhalation is an option for treating chronic pulmonary infection caused by <i>P. aeruginosa</i> in people with cystic fibrosis only if they do not tolerate it in its nebulised form and the manufacturer provides colistimethate sodium DPI with the discount agreed as part of the patient access scheme to primary, secondary and tertiary care in the NHS.</p>		
	<b>Rifaximin</b> Tablets 550mg	<b>G<sub>n</sub></b> Following specialist initiation  <a href="#">NICE TA337: Rifaximin for preventing episodes of overt hepatic encephalopathy, March 2015</a>

<b>Subsection</b>	<b>5.1.9 Antituberculosis drugs</b>	 Following specialist initiation
<p><b>Additional notes</b></p> <p>All TB treatment must be prescribed by a specialist in treating TB infection. All treatment is therefore provided by the specialist centre until patient is stable then RAG status is green.</p> <p>Treatment of drug resistant TB is commissioned by NHSE.</p>		
<b>Subsection</b>	<b>5.1.10 Antileprotic drugs</b>	
<b>First choice</b>	<p><b>Dapsone</b></p> <p>Tablets 50mg, 100mg</p>	 Following specialist initiation for leprosy and dermatitis herpetiformis

<b>Chapter</b>	<b>5 Infections</b>	
<b>Section</b>	<b>5.2 Antifungal drugs</b>	
<b>Subsection</b>	<b>5.2.1. Triazole antifungals</b>	
<b>First choice</b>	<b>Fluconazole</b> Capsules 50mg, 150mg, 200mg	
<b>Alternatives</b>	<b>Itraconazole</b> Capsules 100mg	
<b>Additional notes</b>		
Following reports of heart failure, caution is advised when prescribing itraconazole to patients at high risk of heart failure.		
	<b>Posaconazole</b>	<b>R</b> <a href="#">MHRA DSU: Posaconazole (Noxafil): tablets and oral suspension are not directly interchangeable</a>
	<b>Voriconazole</b>	<b>R</b> <a href="#">MHRA DSU: Voriconazole - reminder of risk of liver toxicity, phototoxicity and squamous cell carcinoma, May 2014</a>
<b>Do Not Prescribe</b>	<b>Ketoconazole</b> For oral administration	<u>Criterion 1 (see RAG list)</u>
<b>Subsection</b>	<b>5.2.2 Imidazole antifungals</b>	
<b>Subsection</b>	<b>5.2.3 Polyene antifungals</b>	
<b>Subsection</b>	<b>5.2.4 Echinocandin antifungals</b>	
	<b>Caspofungin</b> IV infusion	<b>R</b>
	<b>Micafungin</b> IV infusion	<b>R</b>
<b>Subsection</b>	<b>5.2.5 Other antifungals</b>	
	<b>Terbinafine</b> Tablets 250mg	

<b>Do Not Prescribe</b>	<b>Fungal nail infections</b> Nail lacquers, paints and softening products  See <a href="#">commissioning statement</a> for exceptions	In line with NHS England guidance, GM do not routinely support prescribing for conditions which are self-limiting or amenable to self-care. For further details see <a href="#">GM commissioning statement</a> .
<b>Chapter</b>	<b>5 Infections</b>	
<b>Section</b>	<b>5.3 Antiviral drugs</b>	
<b>COVID-19</b>		
<p><a href="#">NG191: COVID-19 rapid guideline: managing COVID-19</a></p> <p><a href="#">MHRA DSU: COVID-19 antivirals: reporting to the UK COVID-19 Antivirals Pregnancy Registry, Feb 2022</a>: As the safety of COVID-19 antivirals in pregnancy has not been established, please report any pregnancies which occur during use of an antiviral, including paternal use, to the <a href="#">UK COVID-19 Antivirals Pregnancy Registry</a>.</p>		
	<p><b>Molnupiravir</b> (Lagevrio®▼) Capsules 200mg</p>	<p><b>R</b> <a href="#">Interim clinical commissioning policy: Remdesivir and molnupiravir for non-hospitalised patients with COVID-19</a></p>
	<p><b>Nirmatrelvir / ritonavir</b> (Paxlovid®▼) Tablets 150 mg/100 mg</p>	<p><b>R</b> <a href="#">NICE TA878: Casirivimab plus imdevimab, nirmatrelvir plus ritonavir, sotrovimab and tocilizumab for treating COVID-19</a></p>
	<p><b>Remdesivir</b> (Veklury®▼) Powder for concentrate for solution for infusion 100mg</p>	<p><b>R</b> <a href="#">Interim clinical commissioning policy: Remdesivir and molnupiravir for non-hospitalised patients with COVID-19</a></p>
	<p><b>Sotrovimab</b> (Xevudy®▼) Concentrate for solution for infusion 500mg</p>	<p><b>R</b> <a href="#">NICE TA878: Casirivimab plus imdevimab, nirmatrelvir plus ritonavir, sotrovimab and tocilizumab for treating COVID-19</a></p>
	<p><b>Tocilizumab</b> Solution for injection, concentrate for solution for infusion</p>	<p><b>R</b> <a href="#">NICE TA878: Casirivimab plus imdevimab, nirmatrelvir plus ritonavir, sotrovimab and tocilizumab for treating COVID-19</a></p>
<b>Subsection</b>	<p><b>5.3.1 HIV infection</b></p> <p><b>R</b> Only prescribed by a specialist experienced in the management of HIV infection</p>	

<b>Subsection</b>	<b>5.3.2 Herpes virus infections</b>	
	<b>5.3.2.1 Herpes simplex and varicella-zoster infection</b>	
<b>First choice</b>	<b>Aciclovir</b> Tablets 200mg, 400mg, 800mg Cream 5% 2g – see Skin chapter Eye ointment 3% 4.5g – see Eye chapter	
<b>Alternatives</b>	<b>Valaciclovir</b> Tablets 250mg, 500mg	
<b>Do Not Prescribe</b>	<b>Infrequent cold sores of the lip</b> Aciclovir cream, Zovirax cold sore cream  See <a href="#">commissioning statement</a> for exceptions	In line with NHS England guidance, GM do not routinely support prescribing for conditions which are self-limiting or amenable to self-care. For further details see <a href="#">GM commissioning statement</a> .
	<b>5.3.2.2 Cytomegalovirus</b>	<b>R</b>
	<b>Letermovir</b> Tablets 240mg (Prevymis®)	<b>R</b> <a href="#">NICE TA591: Letermovir for preventing cytomegalovirus disease after a stem cell transplant</a>
	<b>Maribavir</b> Film-coated tablets 200mg	<b>R</b> <a href="#">NICE TA860: Maribavir for treating refractory cytomegalovirus infection after transplant</a>
<b>Subsection</b>	<b>5.3.3 Viral hepatitis</b>	<b>R</b>
	<b>5.3.3.1 Chronic hepatitis B</b>	
	<b>Adefovir dipivoxil</b> Tablets 10mg	<b>R</b> <a href="#">NICE TA96: Adefovir dipivoxil and peginterferon alfa-2a for the treatment of chronic hepatitis B</a>
	<b>5.3.3.2 Chronic hepatitis C</b>	
<a href="#">NICE TA75: Interferon alfa (pegylated and non-pegylated) and ribavirin for the treatment of chronic hepatitis C,</a> <a href="#">NICE TA106: Peginterferon alfa and ribavirin for the treatment of mild chronic hepatitis C,</a> <a href="#">NICE TA200: hepatitis C - peginterferon alfa and ribavirin</a> <a href="#">MHRA: Direct-acting antiviral interferon-free regimens to treat chronic hepatitis C: risk of hepatitis B reactivation</a>		

[MHRA: Direct-acting antivirals to treat chronic hepatitis C: risk of interaction with vitamin K antagonists and changes in INR](#)

[MHRA DSU: Direct-acting antivirals for chronic hepatitis C: risk of hypoglycaemia in patients with diabetes \(December 2018\)](#)

	<p><b>Boceprevir▼</b> Capsules 200mg</p>	<p><b>R</b> <a href="#">NICE TA253: Hepatitis C (genotype 1) boceprevir</a></p>
	<p><b>Elbasvir–grazoprevir▼</b> 50mg/100mg film-coated tablets</p>	<p><b>R</b> <a href="#">NICE TA413: Elbasvir–grazoprevir for treating chronic hepatitis C</a></p>
	<p><b>Glecaprevir–pibrentasvir▼</b> 100mg/40mg film-coated tablets</p>	<p><b>R</b> <a href="#">NICE TA499: Glecaprevir–pibrentasvir for treating chronic hepatitis C</a></p>
	<p><b>Sofosbuvir▼</b> Tablets 400mg</p>	<p><b>R</b> <a href="#">NICE TA330: Sofosbuvir for treating chronic hepatitis C</a> <a href="#">MHRA DSU: Sofosbuvir with daclatasvir; sofosbuvir with ledipasvir: risks of severe bradycardia and heart block when taken with amiodarone, May 2015</a></p>
	<p><b>Sofosbuvir–velpatasvir▼</b> Tablets 400mg/100mg</p>	<p><b>R</b> <a href="#">TA430: Sofosbuvir–velpatasvir for treating chronic hepatitis C</a></p>
	<p><b>Sofosbuvir–velpatasvir–voxilaprevir▼</b> 400mg/100mg/100mg film-coated tablets</p>	<p><b>R</b> <a href="#">NICE TA507: Sofosbuvir–velpatasvir–voxilaprevir for treating chronic hepatitis C</a></p>
	<p><b>Telaprevir▼</b> Tablets 375mg</p>	<p><b>R</b> <a href="#">NICE TA252: hepatitis C (genotype 1) telaprevir</a></p>
	<b>Chronic hepatitis D</b>	
	<p><b>Bulvertide</b> Powder for solution for injection: 2mg</p>	<p><b>R</b> <a href="#">NICE TA896: Bulvertide for treating chronic hepatitis D</a></p>
<b>Subsection</b>	<b>5.3.4 Influenza</b>	
<b>First choice</b>	<b>Oseltamivir</b>	



	<p>Capsules 30mg, 45mg, 75mg</p> <p>Suspension 6mg/1ml</p>	<p>Suspension only for children under 1 year of age</p>
<b>Alternatives</b>	<p><b>Zanamivir</b></p> <p>Dry powder for inhalation 5mg blister</p> <p>Solution for infusion 10mg/ml</p>	<p><b>R</b></p>
<p><b>Additional Notes:</b></p> <p>Influenza vaccination remains the first line preventative treatment for influenza. Vaccination programmes should be promoted to all at risk patients, and programmes should be initiated in residential settings as a priority. For more information see <a href="#">Public Health England</a>.</p> <p><a href="#">NICE TA158: Oseltamivir, amantadine (review) and zanamivir for the prophylaxis of influenza, Sep 2008</a></p> <p><a href="#">NICE TA168: amantadine, oseltamivir and zanamivir for the treatment of influenza, Feb 2009</a></p> <p>NICE guidance for the use of antivirals for seasonal influenza does not apply in an influenza pandemic; other guidelines will be issued.</p>		
<b>Subsection</b>	<b>5.3.5 Respiratory syncytial virus</b>	
	<p><b>Ribavirin</b></p> <p>Tablets 200mg</p>	<p><b>R</b></p>

<b>Chapter</b>	<b>5 Infections</b>	
<b>Section</b>	<b>5.4 Antiprotozoal drugs</b>	
<b>Subsection</b>	<b>5.4.1 Antimalarials</b>	
	<b>Malaria prophylaxis</b>	
<p><b>Drugs for malaria prophylaxis are not prescribable on the NHS. See <a href="#">GMMMG Travel Abroad Policy</a></b></p>		
<p><b>Additional Notes:</b>          Chloroquine and proguanil are available over the counter (OTC) whereas mefloquine and Malarone® require a private prescription.          Refer to BNF or MIMS for telephone numbers for up to date advice on recommended products.  <a href="#">MHRA DSU: Hydroxychloroquine, chloroquine: increased risk of cardiovascular events when used with macrolide antibiotics; reminder of psychiatric reactions, Feb 2022</a></p>		
<p><b>Grey drugs</b> Items which are listed as Grey are deemed not suitable for routine prescribing but may be suitable for a defined patient population</p>	<p><b>Travel vaccines</b>            Hepatitis B,            Japanese Encephalitis,            Meningitis ACWY,            Yellow Fever,            Tick-borne encephalitis,            Rabies,            BCG</p> <p>Not to be prescribed on the NHS solely for the purposes of travel; only to be prescribed for other indications, as outlined in <a href="#">Immunisation Against Infectious Disease – the Green Book</a></p>	<p><b>G<sub>n</sub></b>  <a href="#">Criterion 3 (see RAG list)</a>   <a href="#">GM Travel Abroad policy</a></p>
	<b>Malaria treatment</b>	
	<p><b>Malarone®</b> tablets  <b>Riamet®</b> tablets</p>	Specialist initiation
<b>Subsection</b>	<b>5.4.2 Amoebicides</b>	
<b>First choice</b>	<p><b>Metronidazole</b>            tablets 200mg, 400mg</p>	
<b>Alternatives</b>	<p><b>Tinidazole</b>            tablets 500mg</p>	
<b>Subsection</b>	<b>5.4.3 Trichomonacides</b>	
	<p><b>Metronidazole</b>            tablets 400mg</p>	

<b>Subsection</b>	<b>5.4.4 Antigiardial drugs</b>	
	<b>Metronidazole</b> tablets 400mg	
<b>Subsection</b>	<b>5.4.5 Leishmaniacides</b> <b>5.4.6 Trypanocides</b> <b>5.4.7 Drugs for toxoplasmosis</b> <b>5.4.8 Drugs for pneumocystis pneumonia</b>	Not used in primary care – refer to specialist
<b>Chapter</b>	<b>5 Infections</b>	
<b>Section</b>	<b>5.5 Antihelminthics</b>	
<b>Subsection</b>	<b>5.5.1 Drugs for threadworms</b>	
<b>Do Not Prescribe</b>	<b>Mebendazole</b>  See <a href="#">commissioning statement</a> for exceptions	In line with NHS England guidance, GM do not routinely support prescribing for conditions which are self-limiting or amenable to self-care. For further details see <a href="#">GM commissioning statement</a> .
<b>Subsection</b>	<b>5.5.2 Ascaricides (roundworm)</b>	
<b>Subsection</b>	<b>5.5.4 Drugs for hookworms</b>	
	<b>Mebendazole</b> Tablets (chewable) 100mg	
<b>Subsections</b>	<b>5.5.3 Drugs for tapeworm infections</b> <b>5.5.5 Schistosomicides</b> <b>5.5.6 Filaricides</b> <b>5.5.7 Drugs for cutaneous larva migrans</b> <b>5.5.8 Drugs for strongyloidiasis</b>	Unlicensed drugs.  Can be prescribed by secondary care on a named patient basis following advice from microbiologist.