



Suffolk Antibiotic Formulary for use in Primary Care and A&E

Autumn 2017 - Autumn 2019

An electronic version of this formulary is available on West Suffolk CCG and Ipswich and East Suffolk CCG medicines management webpages
Produced by: West Suffolk Clinical Commissioning Group and Ipswich and East Suffolk Clinical Commissioning Group

Contents

Key changes for this edition	3
Safety issues	5
A PRIME	6
Upper Respiratory Tract Infections	7
Lower Respiratory Tract Infections	9
Urinary Tract Infections	11
Genital Tract Infections	16
Gastro-intestinal Tract Infections	18
Other infections	22
Primary care guidance for <i>Clostridium difficile</i> infection (CDI) testing	28
Primary care guidance for MRSA screening and decolonisation	29
Off-label and unlicensed medicines	30
Abbreviations	30
Bibliography	31

Principles of treatment

1. This formulary is based on the best available evidence, however professional judgement and patient choice should also be considered when making a treatment decision. It is important to initiate antibiotics as soon as possible in severe infection.
2. Antibiotics should only be prescribed when there is likely to be a clear clinical benefit.
3. Always refer to current/previous microbiology culture and sensitivity results when/where available before making antibiotic choices.
4. Dose and duration of antibiotic treatment for adults are suggested throughout this formulary; however they may need to be modified for age, weight and renal function. In severe or recurrent cases of infection, consider prescribing a larger dose or a longer course of treatment. Please refer to the current edition of the *BNF* or *BNF for Children* for further dosing information.
5. The threshold for antibiotics in immuno-compromised patients and in those with multiple morbidities should be lowered; consider culture and seek advice.
6. Consider a no (or delayed) antibiotic strategy for acute infections which tend to be self-limiting.
7. Avoid prescribing over the telephone.
8. Prescribe simple generic antibiotics when possible.
9. Avoid prescribing broad-spectrum antibiotics (e.g. co-amoxiclav, quinolones and cephalosporins) when narrow-spectrum antibiotics remain effective. Broad-spectrum antibiotics increase the risk of *Clostridium difficile*, MRSA and resistant UTIs; they should be avoided in patients with a history of *Clostridium difficile* infection or colonisation.
10. Avoid widespread use of topical antibiotics (especially those agents that are also available as systemic preparations, e.g. fusidic acid).
11. In pregnancy, if possible, AVOID **tetracyclines, quinolones, aminoglycosides, azithromycin, clarithromycin and high dose metronidazole (e.g. doses $\geq 2\text{g stat}$)** unless the benefits outweigh the risks. Short-term use of **nitrofurantoin** is not expected to cause foetal problems, but should be AVOIDED in 3rd trimester due to the potential risk of neonatal haemolysis. **Trimethoprim** is also unlikely to cause problems unless poor dietary folate intake, or taking another folate antagonist.
12. Where a 'best guess' therapy has failed, or special circumstances exist, advice from a consultant microbiologist should be obtained.

Key changes for this edition

Section	Change description
Principles of treatment	Point 11 - clarithromycin and azithromycin added as antibiotics to be avoided in pregnancy (if possible) as per May 2017 Public Health England guidance
Safety issues	Warnings relating to trimethoprim, nitrofurantoin, theophylline and statins now placed under individual drug entries in the formulary
Urine sensitivity results	Guidance updated regarding use of dipstick
Mean duration of illness	Item removed
Tonsillitis	Addition of diagnostic criteria
Sinusitis, acute	Clarithromycin removed as option in penicillin allergy Co-amoxiclav added as option for the treatment for persistent symptoms
Otitis media, acute or recurrent	Clarithromycin dose updated
Otitis externa	For moderate to severe cases, addition of betamethasone 1mg with neomycin 5mg/mL ear drop as first line and flumetasone 0.02% with clioquinol 1%/mL ear drops as second line
Acute bronchitis with bacterial infection	Amoxicillin dose updated; co-amoxiclav removed as option; and clarithromycin removed as option in penicillin allergy
Community acquired pneumonia	Duration of treatment options updated; doxycycline removed as add-on treatment in penicillin allergy; addition of CRB65 score to guide mortality risk, place of care and antibiotics
UTI, simple (female patient) UTI, simple (male patient)	Nitrofurantoin M/R first line; trimethoprim second line due to increased resistance to trimethoprim
UTI in pregnancy	Nitrofurantoin M/R first line (avoid in 3rd trimester of pregnancy due to potential risk of neonatal haemolysis)
UTI, lower in children	Cefalexin now second line treatment; nitrofurantoin deleted
UTI, upper in children	Addition of cefixime as second line treatment
UTI, lower and upper in children	Children < 3 months should be referred urgently for assessment
UTI, long-term suppressive treatment	Addition of Hiprex® as a treatment option
Pyelonephritis	Co-amoxiclav duration of treatment now 7 days
Prostatitis, acute	Ofloxacin deleted as it offers no advantage over ciprofloxacin; ciprofloxacin now first line; trimethoprim second line

Key changes for this edition *continued*

Section	Change description
Epididymo-orchitis	Ciprofloxacin removed as treatment option; ofloxacin now first line; doxycycline added as second line; supplementary information added
Pelvic inflammatory disease	Treatment option added for high risk of gonorrhoea
Chlamydia trachomatis	Note added regarding off-label use of azithromycin 1g 'stat' oral dose in pregnancy and breastfeeding
Campylobacter, Salmonella and Shigella	Now combined as one entry
Traveller's diarrhoea	Additional information provided regarding stool samples for ova, cysts and parasites investigation
<i>C. difficile</i> toxin Positive diarrhoea	Additional information provided regarding diagnostic criteria Addition of vancomycin for severe/recurrent infection
Bites, human	Metronidazole dose updated
Bites, cat or dog	New section
Bites, other animals	New section
Cellulitis	IV treatment information updated Doxycycline added as treatment option
Meningitis or meningococcal sepsis, suspected	Addition of cefotaxime injection as treatment option
Wounds, badly soiled	Addition of supplementary information
Primary care guidance for <i>Clostridium difficile</i> infection (CDI) testing	New section
Primary care guidance for MRSA screening and decolonisation	New section

Safety issues

Drug	Warning		
Warfarin	<ul style="list-style-type: none"> Experience in anticoagulant clinics suggests that INR is possibly altered when warfarin is given with the majority of antibiotics; please check for interactions, consider management options and advise the patient accordingly Patients should be advised to have their INR checked 3-4 days after starting an antibiotic or a new medicine and follow the advice given by the anticoagulant clinic 		
Trimethoprim	Advised dosage schedule in patients with reduced kidney function e.g. elderly		
	Creatinine Clearance (mL/sec)	Plasma creatinine (micromol/L)	Dosage advised
	Over 0.45	Men <250 Women <175	Normal
	0.25 - 0.45	Men 250-600 Women 175-400	Normal for 3 days, then half the normal dose
Under 0.25	Men >600 Women >400	Half the normal dose	

Urine sensitivity results

The results from microbiology are not listed in order of preference; please scroll through all of the options and choose the appropriate antibiotic according to the guidance in this formulary. NB: Mid-stream urine (MSU) must be sent for culture in children, pregnancy, complicated UTIs and treatment failure.

Please note, dipstick testing is not an effective method for detecting urinary tract infections in catheterised adults and antibiotics are not effective for treating asymptomatic bacteriuria in adults with catheters.

General information

CHILDREN: For details of drug dosage and administration in children please refer to the current edition of the *BNF for Children*

CHOICE: Antibiotics are listed in order of preference within the treatment tables

DOSES: The upper end of the dosage range is used to ensure adequate treatment and to prevent emergence of resistance

PROPHYLAXIS: For guidance on antibiotic prophylaxis please consult the current edition of the *BNF* or *BNF for Children*

A PRIME

The following acronym is a useful safety check when prescribing antimicrobials, to avoid being **A PRIME** example of the pitfalls of antimicrobial prescribing:

A	Allergy	Be aware of the potential of antimicrobials to cause allergy (e.g. penicillins, co-trimoxazole)
P	Pregnancy or paediatric	In pregnancy, if possible, AVOID tetracyclines, aminoglycosides, quinolones, azithromycin, clarithromycin and high-dose metronidazole (e.g. doses $\geq 2\text{g}$). In children under 12 years AVOID tetracyclines.
R	Renal function	A number of antibiotics require dose adjustment in renal impairment - consult the current edition of the <i>BNF</i> or <i>BNF for Children</i> for guidance.
I	Interactions	Be aware of antibiotic interactions, particularly with oral contraceptives, warfarin, statins, theophylline and immunosuppressants. Interactions with other medicines are most notable with macrolides and quinolones.
M	Methotrexate	Deaths have occurred as a result of trimethoprim interacting with methotrexate. Remember that medicines may be issued from the hospital and may not appear on a GP record unless correspondence is checked.
E	Effective choice	Two factors to consider: <ol style="list-style-type: none">1. The patient - consider the points detailed above2. Known or likely causative organism

Upper Respiratory Tract Infections

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Tonsillitis	Tonsillitis is commonly viral and rarely needs treatment with an antibiotic. If bacterial tonsillitis is suspected then send a swab for culture. 90% of cases resolve in 7 days without antibiotics. Amoxicillin and other broad-spectrum penicillins should NOT be used for the blind treatment of a sore throat. Regular analgesia is more likely to help with symptoms.			
	Antibiotics may be helpful if 3 or 4 of the following criteria are met:			
	<ul style="list-style-type: none"> • Presence of tonsillar exudate • Tender anterior cervical lymphadenopathy or lymphadenitis • History of fever • No cough 			
	No antibiotic			
	Phenoxyethylpenicillin (Penicillin V)	500mg QDS	Oral	10 days
Sinusitis, acute <12 weeks duration	Many sinusitis infections are viral. Symptomatic benefit of antibiotics is small and 80% of cases resolve in 14 days without antibiotics. Antibiotics should only be considered if the infection is severe or if symptoms have lasted for >7 days.			
	No antibiotic			
	Amoxicillin	500mg - 1g TDS	Oral	7 days
Sinusitis, chronic or recurrent >12 weeks duration	Penicillin allergy:			
	Clarithromycin	250mg - 500mg BD	Oral	5 days
	<p>Pregnant and penicillin allergy:</p> <p>Erythromycin 500mg QDS Oral 5 days</p>			
Sinusitis, acute <12 weeks duration	Penicillin allergy:			
	<p>Penicillin allergy:</p> <p>Clarithromycin 250mg - 500mg BD Oral 5 days</p> <p>⚠ Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</p> <p>⚠ Increased risk of myopathy with statins; avoid concomitant use</p>			
	Pregnant and penicillin allergy:			
	Erythromycin 500mg QDS Oral 5 days			
Sinusitis, acute <12 weeks duration	Many sinusitis infections are viral. Symptomatic benefit of antibiotics is small and 80% of cases resolve in 14 days without antibiotics. Antibiotics should only be considered if the infection is severe or if symptoms have lasted for >7 days.			
	No antibiotic			
	Amoxicillin	500mg - 1g TDS	Oral	7 days
	Penicillin allergy:			
Sinusitis, chronic or recurrent >12 weeks duration	Penicillin allergy:			
	Doxycycline	200mg on first day then 100mg daily	Oral	7 days
	For persistent symptoms:			
Sinusitis, chronic or recurrent >12 weeks duration	For persistent symptoms:			
	Co-amoxiclav (contains amoxicillin)	500/125mg TDS	Oral	7 days
⚠ Associated with greater incidence of C. difficile infections				
Sinusitis, chronic or recurrent >12 weeks duration	Inform the patient of the natural course of chronic sinusitis and that it may last for several months; referral is not usually required unless the episodes are frequent. Recommend use of analgesics/antipyretics when required. Consider if a short-course of an antibiotic is appropriate; if required, treat as acute.			

Upper Respiratory Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Otitis media, acute or recurrent	The benefits of antibiotics for otitis media are regularly questioned. Consider not prescribing an antibiotic in acute diagnosis; recommend analgesia for the first three days and consider a delayed prescription. 60% of cases resolve in 24 hours without antibiotics.			
	No antibiotic			
	Amoxicillin	500mg-1g TDS	Oral	5 days
	Penicillin allergy: Clarithromycin	500mg BD	Oral	5 days
	<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>			
Otitis externa	If infection is recurrent, or if treatment fails, take a swab for culture.			
	Mild cases:			
	2% Acetic acid ear spray	One spray into the affected ear at least three times a day	Ear	7 days
	<i>Can be purchased as EarCalm Spray® over-the-counter</i>			
	Moderate to severe cases (or where acetic acid has failed)			
First line				
Betamethasone 1mg with neomycin 5mg/mL ear drop	2-3 drops TDS	Ear	7-14 days	
⚠ <i>Avoid in patients with a perforated tympanic membrane</i>				
Second line				
Flumetasone 0.02% with clioquinol 1%/mL ear drops	2-3 drops BD	Ear	7-10 days	
If <i>Staphylococcus aureus</i> or <i>B. haemolytic streptococcus</i> , consider systemic treatment based on the culture results.				

Lower Respiratory Tract Infections

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Acute bronchitis, uncomplicated	Commonly viral - antibiotics are not normally indicated.			
	No antibiotic			
Acute bronchitis with bacterial infection	Indicated by the presence of purulent sputum, crackles and raised temperature.			
	Amoxicillin	500mg TDS	Oral	5 days
	Penicillin allergy: Doxycycline	200mg on first day then 100mg daily	Oral	5 days
Community acquired pneumonia	<p>Use CRB65 score to guide mortality risk, place of care and antibiotics. Each CRB65 parameter scores 1: Confusion (AMT<8); Respiratory rate >30/min; BP systolic <90 or diastolic ≤60; Age >65. Score 3-4: urgent hospital admission; Score 1-2: intermediate risk - consider hospital assessment; Score 0: low risk - consider home based care. Review at 48 hours. Patients with unresponsive pneumonia, including post-influenza (which could be due to <i>S. aureus</i> or other atypical organism), should be referred to hospital.</p>			
	CRB65 score = 0 Amoxicillin	500mg-1g TDS	Oral	7-10 days
	Alternative (if penicillin allergy)			
	OR			
	Add on (if CRB65 score: 1-2) Clarithromycin	500mg BD	Oral	7-10 days
<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i> ⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>				
CRB65 score: 3-4 Urgent hospital admission				

Lower Respiratory Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Chronic obstructive pulmonary disease (COPD) with infective exacerbations	30% of cases are viral - use antibiotics if purulent sputum AND increased dyspnoea AND/OR increased sputum volume. There is insufficient evidence to recommend prophylactic antibiotics.			
	Amoxicillin	500mg TDS	Oral	5 days
	Penicillin allergy: Doxycycline	200mg on first day then 100mg daily	Oral	5 days
	OR Clarithromycin	500mg BD	Oral	5 days
	<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>			
Bronchiectasis, infective exacerbation	Before prescribing an antibiotic, send expectorated sputum sample (after deep coughing) for culture and sensitivity testing (even if patient is taking long-term antibiotics). Do not await results of culture before prescribing an antibiotic. Previous microbiology cultures (if available) should guide antibiotic choice; when previous cultures are not available prescribe an antibiotic from the options listed below. Review response to empirical treatment when sputum results are available. If patient responding well, continue prescribed antibiotic. If poor response, prescribe a different antibiotic based on the culture results.			
	Amoxicillin	500mg TDS	Oral	10-14 days
	Penicillin allergy: Clarithromycin	500mg BD	Oral	10-14 days
	<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>			

Urinary Tract Infections

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
<ul style="list-style-type: none"> Urinary tract infections are generally self-limiting; on average, antibiotics shorten the duration of symptoms by about a day If symptoms are mild and the patient is not catheterised, dipstick test the urine to guide treatment decisions; consider not prescribing an antibiotic, especially if the urine dipstick test is negative for nitrites, leucocyte esterase and blood If symptoms are moderate to severe, offer to prescribe an antibiotic; do not dipstick test the urine as the decision to offer an antibiotic is not influenced by urine dipstick test results Asymptomatic bacteriuria in patients aged over 65 or those with indwelling catheters should not be treated 				
Indwelling catheter (Urethral and suprapubic)	<p>Bacterial colonisation is inevitable in long-term catheterised patients; urethral catheters should be changed only when clinically necessary or according to the manufacturer's current recommendations. With regard to the formation of struvite (encrustation), some patients develop this problem routinely and good practice would be to record the lifespan of 3 consecutive catheters and base the optimum time to change the catheter on this. Bladder instillations or washouts must not be used to prevent catheter-associated infection. Ensure the patient remains well hydrated.</p> <ul style="list-style-type: none"> Only if patient is systemically unwell take a CSU for culture and consider treatment Please ensure urine specimens are labelled correctly i.e. CSU or MSU; USING A DIPSTICK IS NOT APPROPRIATE Antibiotic use for suppression of recurrent infection in this group is not supported as it encourages multi-drug resistant organisms 			
UTI, simple (female [not pregnant] and male patients) No fever or flank pain	If recurrent or increased resistance risk, MSU must be sent for culture.			
	First line Nitrofurantoin	100mg m/r BD	Oral	3 days (Female) 7 days (Male)
<p>⚠ Contraindicated in glucose 6-phosphate dehydrogenase (G6PD) deficiency (due to the definite risk of haemolysis), and in acute porphyria</p> <p>⚠ Avoid in patients with renal impairment (eGFR <45mL/minute/1.73m²)</p>				
	Second line Trimethoprim	200mg BD	Oral	3 days (Female) 7 days (Male)
<p>⚠ Avoid prescribing for patients taking methotrexate due to increased risk of haematological toxicity</p> <p>⚠ See page 5 for advised dosage schedule in patients with reduced kidney function</p>				
UTI, multi-drug resistant Gram-negative bacteria	<p>Adjunctive treatment with pivmecillinam (oral), ertapenem (intravenous infusion), or fosfomycin (oral) may be required in certain circumstances - review susceptibility results and contact microbiology for advice on antibiotic choice, dose and duration if required. Information on these medicines is available from the <i>BNF</i>. Administration of ertapenem by intravenous infusion in the community setting can be requested from the Community Intervention Service (telephone 0300 123 2425).</p> <p>Note: Intravenous ertapenem for the treatment of UTIs caused by multi-drug resistant Gram-negative bacteria is an 'off-label' use. See page 30 for further information.</p>			

Urinary Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
UTI, in PREGNANCY	MSU must be sent for culture. Treatment should be delayed if possible until culture results are available. If urgent empirical treatment is required then consider prescribing an antibiotic from the options below; patients should be reviewed after 48 hours (or according to the clinical situation) to check response to treatment and the results of the urine culture. Repeat MSU for culture 1 to 2 weeks after end of treatment.			
	First line Nitrofurantoin	100mg m/r BD	Oral	7 days
	<p>⚠ Contraindicated in glucose 6-phosphate dehydrogenase (G6PD) deficiency (due to the definite risk of haemolysis), and in acute porphyria</p> <p>⚠ Avoid in 3rd trimester of pregnancy due to potential risk of neonatal haemolysis</p> <p>⚠ Avoid in patients with renal impairment (eGFR <45mL/minute/1.73m²)</p>			
	Second line Trimethoprim	200mg BD	Oral	7 days
<p>⚠ 'Off-label' use (see page 30 for further information)</p> <p>⚠ Avoid in 1st trimester of pregnancy due to teratogenic risk (trimethoprim is a folate antagonist)</p> <p>⚠ Avoid if woman folate deficient, taking folate antagonist (e.g. antiepileptic or proguanil), or treated with trimethoprim in the past year</p> <p>⚠ See page 5 for advised dosage schedule in patients with reduced kidney function</p>				
Third line Cefalexin	500mg BD	Oral	7 days	
⚠ Associated with greater incidence of <i>C. difficile</i> infections				

Urinary Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
UTI, lower in CHILDREN	⚠ Age < 3 months: refer urgently for assessment.			
	First line			
	Trimethoprim	Age 3-5 months: 4mg/kg BD (max. 200mg/dose) or 25mg BD	Oral	3 days
		Age 6 months-5 years: 4mg/kg BD (max. 200mg/dose) or 50mg BD	Oral	3 days
		Age 6-11 years: 4mg/kg BD (max. 200mg/dose) or 100mg BD	Oral	3 days
		Age 12-17 years: 200mg BD	Oral	3 days
	⚠ Avoid prescribing for patients taking methotrexate due to increased risk of haematological toxicity			
	⚠ See page 5 for advised dosage schedule in patients with reduced kidney function			
	Second line			
	Cefalexin	Age 3-11 months: 12.5mg/kg BD or 125mg BD	Oral	3 days
	Age 1-4 years: 12.5mg/kg BD or 125mg TDS	Oral	3 days	
	Age 5-11 years: 12.5mg/kg BD or 250mg TDS	Oral	3 days	
	Age 12-17 years: 500mg BD-TDS	Oral	3 days	
⚠ Associated with greater incidence of <i>C. difficile</i> infections				

Urinary Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment	
UTI, upper in CHILDREN	<p>⚠ <i>Age < 3 months: refer urgently for assessment.</i></p> <p>⚠ <i>Penicillin allergy AND age < 6 months: refer urgently for assessment.</i></p>				
	First line				
	Co-amoxiclav (contains amoxicillin)	Age 3-11 months: 0.5mL/kg of 125/31mg suspension TDS	Oral	7-10 days	
		Age 1-5 years: 5mL of 250/62mg suspension TDS	Oral	7-10 days	
		Age 6-11 years: 10mL of 250/62mg suspension TDS	Oral	7-10 days	
		Age 12-17 years: 250/125mg TDS	Oral	7-10 days	
	⚠ <i>Associated with greater incidence of C. difficile infections</i>				
	Second line				
	Cefixime	Age 6-11 months: 75mg daily	Oral	7-10 days	
		Age 1-4 years: 100mg daily	Oral	7-10 days	
	Age 5-9 years: 200mg daily	Oral	7-10 days		
	Age 10-17 years: 200-400mg daily	Oral	7-10 days		
⚠ <i>Associated with greater incidence of C. difficile infections</i>					

Urinary Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
UTI, long-term suppressive treatment	Antibiotic prophylaxis is not usually indicated. Hiprex (methenamine hippurate) prophylaxis and long-term treatment of chronic or recurrent lower urinary-tract infections may be useful in some patients.			
Pyelonephritis	MSU must be sent for culture. Refer if patient fails to improve significantly within 24 hours of starting antibiotic or if pyrexial with other risk factors e.g. pregnancy. There is a risk of undertreatment or underestimation of the severity of this condition. Pregnant patients should be referred to hospital.			
	Co-amoxiclav (contains amoxicillin)	500/125mg TDS	Oral	7 days
	⚠ Associated with greater incidence of <i>C. difficile</i> infections			
	Penicillin allergy and not pregnant: Ciprofloxacin	500mg BD	Oral	7 days
	⚠ Associated with greater incidence of <i>C. difficile</i> infections			
Prostatitis, acute	Antibiotic penetration of the prostate is generally very poor. Quinolones and trimethoprim are the most effective antibiotics as they have greater penetration into the prostate. Quinolones are preferred to trimethoprim as they are effective against a broader range of urinary pathogens. MSU should be sent for culture and treatment reviewed after the result.			
	Ciprofloxacin	500mg BD	Oral	28 days then review
	⚠ Associated with greater incidence of <i>C. difficile</i> infections			
	Trimethoprim	200mg BD	Oral	28 days then review
	⚠ Avoid prescribing for patients taking methotrexate due to increased risk of haematological toxicity			
	⚠ See page 5 for advised dosage schedule in patients with reduced kidney function			

Genital Tract Infections

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Epididymo-orchitis	Notify Public Health England East of England Health Protection Team if epididymo-orchitis suspected to be caused by mumps. (Telephone: Normal hours - 0300 303 8537 / 0344 225 3546; Out of hours - 01245 444417 / 01603 481221). There is no specific treatment for mumps epididymo-orchitis. Oral corticosteroids and antibiotics are not routinely recommended. If under 35 years or STI risk, refer to GUM for treatment. For men over 35 years with low risk of STI see treatment options below:			
	Ofloxacin	200mg BD	Oral	14 days
	⚠️ <i>Associated with greater incidence of C. difficile infections</i>			
	Doxycycline	100mg BD	Oral	14 days
<i>Not recommended if due to enteric organisms</i>				
Pelvic inflammatory disease	If STI suspected refer to GUM clinic for treatment, contact tracing and follow-up. In pregnancy seek advice from obstetrics or GUM. For children seek guidance from paediatrics or GUM.			
	Metronidazole	400mg BD	Oral	14 days
	PLUS			
	Ofloxacin	400mg BD	Oral	14 days
	⚠️ <i>Associated with greater incidence of C. difficile infections</i>			
	If high risk of gonorrhoea:			
	Metronidazole	400mg BD	Oral	14 days
PLUS				
Ofloxacin	400mg BD	Oral	14 days	
PLUS				
Ceftriaxone	500mg	IM	Single dose	
⚠️ <i>Ofloxacin and ceftriaxone are associated with greater incidence of C. difficile infections</i>				

Genital Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Bacterial vaginosis	If STI suspected refer to GUM for treatment, contact tracing and follow-up. In pregnancy seek advice from obstetrics or GUM.			
	Metronidazole	400mg BD	Oral	7 days
	Metronidazole 0.75% vaginal gel	5g applicatorful at night	Vaginal	5 nights
	Treatment with oral metronidazole is preferred			
	Clindamycin 2% cream	5g applicatorful at night	Vaginal	7 nights
Chlamydia trachomatis	Refer to GUM clinic for contact tracing. In pregnancy or breastfeeding azithromycin is the most effective option; it is recommended by WHO and is more effective than erythromycin and amoxicillin.			
	Azithromycin	1g	Oral	Single dose
	Off-label use (see page 30 for further information) in pregnancy and breastfeeding			
	Doxycycline	100mg BD	Oral	7 days
Vaginal candidiasis (Not pregnant)	The partner may also be the source of reinfection and, if symptomatic, should be treated with clotrimazole 1% cream 2-3 times daily until symptoms settle, or for up to 14 days. For more information on choice of treatment in children, refer to the <i>BNF for Children</i> .			
	Clotrimazole 10% vaginal cream	5g applicatorful at night	Vaginal	Single dose
	Clotrimazole pessary	500mg at night	Vaginal	Single dose
	Fluconazole capsule	150mg	Oral	Single dose
Vaginal candidiasis in PREGNANCY	In pregnancy, the lower-dose longer-treatment duration regimens are more effective than the single-dose intra-vaginal treatments.			
	Clotrimazole pessary	100mg at night	Vaginal	6 nights
	Miconazole 2% cream	5g applicatorful BD	Vaginal	7 days

Gastro-intestinal Tract Infections

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Campylobacter, Salmonella and Shigella	Usually self-limiting without antibiotic treatment. Be aware that the Shiga and Shiga-like toxins, produced by some strains of <i>S. dysenteriae</i> and <i>E. coli</i> 0157:H7, have been associated with approximately 70% of cases of haemolytic uraemic syndrome (HUS) in children. Be aware that antibiotics can increase the risk of complications in patients with Shigella. If symptoms are severe contact microbiology.			
<i>E. coli</i> 0157 colitis	Antibiotics are not normally recommended as they may increase the risk of haemolytic uraemic syndrome.			
Traveller's diarrhoea	Mostly self-limiting and will need supportive management only. Send a stool specimen if person is systemically unwell, there is blood or pus in the stool, diarrhoea is persistent or giardiasis is suspected, they have recently received antibiotics or been in hospital, the person is immunocompromised or if other pathologies are suspected (e.g. parasites). Three consecutive stool samples with appropriate clinical details/travel history are required for ova, cysts and parasites investigation.			

Gastro-intestinal Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
C. difficile toxin positive diarrhoea	<i>See page 28 for guidance on C. difficile infection testing in primary care.</i>			
	Stop offending antibiotic if possible. If patient is on gut altering medication (e.g. laxatives, proton pump inhibitors, NSAIDs and antiperistaltic agents), review and stop if possible. If antibiotics are required for another infection, seek advice from microbiology.			
	<p>Severity of C. difficile (signs may include dehydration and/or abdominal pain):</p> <p>Mild:</p> <ul style="list-style-type: none"> not associated with an increased white cell count (WCC) raised CRP typically associated with less than three episodes of loose stools (defined as loose enough to take the shape of the container used to sample it - Bristol Stool Chart type 5-7) per day <p>Moderate:</p> <ul style="list-style-type: none"> associated with an increased WCC (but less than $15 \times 10^9/L$) raised CRP typically associated with 3-5 loose stools (Bristol Stool Chart type 5-7) per day <p>Severe (the number of stools may be a less reliable indicator of severity):</p> <ul style="list-style-type: none"> associated with a WCC greater than $15 \times 10^9/L$, or acutely increased serum creatinine concentration (that is, greater than 50% increase above baseline), or temperature higher than $38.5^\circ C$, or evidence of severe colitis (abdominal or radiological signs) 			
Mild to Moderate (initial episode):	Metronidazole	400mg TDS	Oral	10-14 days
<i>If no response in 5 days seek advice from microbiology</i>				
Severe/recurrent:	Vancomycin	125mg QDS	Oral	10-14 days
<i>Review progress closely and/or consider hospital referral</i>				

Gastro-intestinal Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Giardiasis	Metronidazole	2g daily OR 400mg TDS	Oral Oral	3 days 5 days
Cryptosporidium	Treatment not readily available and not normally indicated; management is supportive. Seek specialist advice for immunocompromised patients and those in poor health.			
Acute diverticulitis	Consider antibiotics if patient shows systemic symptoms e.g. pyrexia, pain, raised CRP. Review within 48 hours or sooner if symptoms deteriorate. Arrange admission if symptoms persist or deteriorate.			
	Co-amoxiclav (contains amoxicillin)	500/125mg TDS	Oral	7 days
	⚠ Associated with greater incidence of <i>C. difficile</i> infections			
	Penicillin allergy: Metronidazole	400mg TDS	Oral	7 days
	PLUS Ciprofloxacin	500mg BD	Oral	7 days
	⚠ Associated with greater incidence of <i>C. difficile</i> infections			


Gastro-intestinal Tract Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
<i>Helicobacter pylori</i>	Avoid amoxicillin-containing regimens for those with known or suspected penicillin allergy. Check for recent use of clarithromycin or metronidazole; this may promote resistance, resulting in eradication failure. For those recently treated with clarithromycin (up to 1 year), choose a regimen containing amoxicillin and metronidazole (<i>see BNF for details</i>). For those recently treated with metronidazole (up to 1 year), choose a regimen containing amoxicillin and clarithromycin. For people who require a second course of eradication therapy, refer to the <i>BNF</i> guidance. If further advice required, speak to gastroenterology.			
	Omeprazole PLUS	20mg BD	Oral	7 days
	Amoxicillin PLUS	1g BD	Oral	7 days
	Clarithromycin	500mg BD	Oral	7 days
	⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i>			
	⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i>			
	Penicillin allergy:			
	Omeprazole PLUS	20mg BD	Oral	7 days
	Metronidazole PLUS	400mg BD	Oral	7 days
	Clarithromycin	250mg BD	Oral	7 days
⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i>				
⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i>				

Other Infections

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Acne, moderate to severe	For mild to moderate acne, topical treatments are usually sufficient (see BNF for further information). Consider an oral antibiotic (combined with either a topical retinoid or benzoyl peroxide) if there is acne on the back or shoulders that is particularly extensive or difficult to reach, or if there is a significant risk of scarring or substantial pigment change. Refer all people with severe acne for specialist assessment and treatment.			
	Lymecycline	408mg once daily	Oral	Minimum of 8 weeks
	Erythromycin	500mg BD	Oral	Minimum of 8 weeks
	<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>			
Bites, human	<ul style="list-style-type: none"> • Thoroughly irrigate the wound • Assess risk of tetanus, HIV, hepatitis B and C, and act accordingly • Antibiotic prophylaxis advised for all human bite wounds under 72 hours old, even if there is no sign of infection 			
	Co-amoxiclav (contains amoxicillin)	250/125mg - 500/125mg TDS	Oral	7 days
	⚠ <i>Associated with greater incidence of C. difficile infections</i>			
	Penicillin allergy (For children less than 12 years old with penicillin allergy, seek advice from microbiology):			
	Metronidazole PLUS	400mg TDS	Oral	7 days
	Doxycycline	100mg BD	Oral	7 days
	OR			
Metronidazole PLUS	200mg - 400mg TDS	Oral	7 days	
Clarithromycin	250mg - 500mg BD	Oral	7 days	
<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>				

Other Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Bites, cat or dog	<ul style="list-style-type: none"> • Thoroughly irrigate the wound • Assess tetanus and rabies risk • Antibiotics are advised if the wound is less than 48 hours old and the risk of infection is high. Prescribe oral antibiotics for all cat bites, animal bites to the hand, foot or face, puncture wounds, wounds requiring surgical debridement, wounds involving joints, tendons, ligaments or suspected fractures, people with a prosthetic valve or joint, people at risk of serious wound infection (e.g. diabetic, cirrhotic, asplenic or immunosuppressed) and wounds that have undergone primary closure • Send cultures if wound appears to be infected • Antibiotics are not generally needed if the wound is more than 2 days old and there is no sign of local or systemic infection 			
	Co-amoxiclav (contains amoxicillin)	250/125mg - 500/125mg TDS	Oral	7 days
	<p> Associated with greater incidence of C. difficile infections</p>			
	<p>Penicillin allergy (For children less than 12 years old with penicillin allergy, seek advice from microbiology):</p>			
	Metronidazole	400mg TDS	Oral	7 days
	PLUS Doxycycline	100mg BD	Oral	7 days
Bites, other animals	<p>Seek specialist advice.</p> <p>Bat bites: Bats may carry rabies-like viruses in countries which are declared rabies-free in terrestrial animals, including the UK. Therefore exposure to bats or their secretions should be considered as a potential rabies risk wherever in the world this has occurred. A risk assessment will need to be undertaken - contact the Consultant Microbiologist who can liaise with Public Health England if required.</p>			

Other Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Cellulitis (routine swabs not required for leg ulcers)	People with mild or moderate cellulitis with no systemic illness or uncontrolled co-morbidities can usually be managed in primary care. If serious, IV treatment may be required. If patient meets the criteria for IV antibiotics under ambulatory care, refer to the Acute Medical Unit (AMU) as per the Ambulatory Emergency Care (AEC) Cellulitis pathway. If patient does not fulfill the criteria for ambulatory care, refer to hospital for inpatient care.			
	Flucloxacillin	500mg QDS	Oral	7-14 days
	Penicillin allergy or previous MRSA infection/colonisation (depending on previous sensitivity results):			
	Clarithromycin	500mg BD	Oral	7-14 days
	<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p> <p>OR</p> <p>If on statin and can't be stopped:</p>			
	Doxycycline	200mg immediately then 100mg OD	Oral	7-14 days
Cellulitis, water content	If cellulitis has arisen from wound contaminated with fresh or salt water please discuss with microbiologist.			
Cellulitis, facial	Consider admitting to hospital if patient febrile and ill.			
	Co-amoxiclav (contains amoxicillin)	500/125mg TDS	Oral	7-14 days
	⚠ <i>Associated with greater incidence of C. difficile infections</i>			

Other Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Conjunctival infections	Most conjunctivitis is viral and self-limiting. Bacterial conjunctivitis is usually unilateral and also self-limiting. It is characterised by red eye and mucopurulent (not watery) discharge. Contact lenses should not be used during treatment with topical antibiotics, or if untreated infection is present. Soft contact lenses should be avoided until at least 24 hours after treatment has been completed. Non-disposable contact lenses must be thoroughly cleaned before re-starting use. Check if patient has purchased drops from a community pharmacy. Refer if no improvement, particularly if patient wears contact lenses.			
	No antibiotic, or consider a delayed prescription			
	First line Chloramphenicol 0.5% drops <i>Available OTC for patients 2 years and older</i>	One drop 2 hourly for 2 days and then 4 hourly thereafter	Eye	Continue for 48 hours after healing; usual treatment duration 7 days
	PLUS/OR Chloramphenicol 1% ointment <i>Available OTC for patients 2 years and older</i>	Apply TDS to QDS if ointment used alone Apply OD at night if eye drops used during the day	Eye	Continue for 48 hours after healing; usual treatment duration 7 days
Second line Fusidic acid 1% gel	Apply BD	Eye	Continue for 48 hours after healing; usual treatment duration 7 days	
Dental abscess	Refer to dentist.			
Impetigo	Systematic review indicates topical and oral treatment produces similar results. As resistance is increasing, topical antibiotics should be reserved for very localised lesions. N.B. some strains of <i>Staph. aureus</i> are resistant to sodium fusidate - do not repeat topical treatment if treatment failure. National guidance states that mupirocin should be reserved for MRSA.			
	Flucloxacillin	500mg QDS	Oral	7 days
	Penicillin allergy: Clarithromycin	250mg-500mg BD	Oral	7 days
<p>⚠ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i></p> <p>⚠ <i>Increased risk of myopathy with statins; avoid concomitant use</i></p>				

Other Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Leg ulcers, infected i.e. significant cellulitis around the ulcer, purulent discharge and patient systemically unwell	Bacteria will always be present. Antibiotics do not improve healing unless there is active infection. Culture swabs and antibiotics are only indicated if there is evidence of clinical cellulitis, increased pain, enlarging ulcer or pyrexia. If a swab is indicated, swab the base of the ulcer after cleaning; do not swab the exudate. Do not use topical antibiotics. Ensure wound care is optimised for chronic leg ulcers.			
	Flucloxacillin	500mg QDS	Oral	7-14 days
	Penicillin allergy: Clarithromycin	500mg BD	Oral	7-14 days
	⚠️ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i> ⚠️ <i>Increased risk of myopathy with statins; avoid concomitant use</i>			
Mastitis, infective	Flucloxacillin	500mg QDS	Oral	14 days*
	Penicillin allergy: Erythromycin	250mg - 500mg QDS	Oral	14 days*
	⚠️ <i>Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%</i> ⚠️ <i>Increased risk of myopathy with statins; avoid concomitant use</i>			
	*If symptoms fail to settle after 48 hours of antibiotic treatment, check that the patient has taken the antibiotic correctly and send a sample of the milk for culture. <ul style="list-style-type: none"> • If culture results are available, treat with an antibiotic the organism is sensitive to • If culture results are not available, treat empirically with oral co-amoxiclav 500/125mg, three times a day for 14 days; seek specialist advice if the woman is unable to take a penicillin-related antibiotic • Review treatment when culture results are available 			

Other Infections *continued*

Infection	Formulary Choice	Adult Dose	Route	Duration of Treatment
Meningitis or meningococcal sepsis, suspected	Transfer patient to hospital immediately. Administer a single dose of benzylpenicillin or cefotaxime injection depending on the status of penicillin allergy as below. In the case of known anaphylaxis to penicillins or cephalosporins, antibiotics should not be given until admission to the hospital.			
	No history of penicillin allergy: Benzylpenicillin	Age under 1 year: 300mg Age 1 - 9 years: 600mg Age 10 years and over: 1.2g	IV IV IV	Single dose Single dose Single dose
	<i>If unable to administer by IV injection, then administer by IM injection</i>			
	Mild penicillin allergy: Cefotaxime	Age under 12 years: 50mg/kg Age 12 years and over: 1g	IV IV	Single dose Single dose
<i>If unable to administer by IV injection, then administer by IM injection</i>				
Severe necrotising infections	Admit to hospital immediately.			
Wounds, badly soiled i.e. dirty, traumatic wounds	Carefully clean the wound using normal saline, drinking-quality water, or cooled boiled water. Consider if debridement is required. Check tetanus status: consider whether tetanus vaccine booster or human tetanus immunoglobulin is required. (For guidance see 'The Green Book' - Immunisation against infectious disease).			
	Co-amoxiclav (contains amoxicillin)	250/125mg - 500/125mg TDS	Oral	5 days
	⚠ Associated with greater incidence of C. difficile infections			
	Penicillin allergy: Metronidazole PLUS Clarithromycin	400mg TDS 250mg BD	Oral Oral	5 days 5 days
⚠ Inhibits metabolism of theophylline; consider reducing total daily dose of theophylline by up to 50%				
⚠ Increased risk of myopathy with statins; avoid concomitant use				

Primary care guidance for *Clostridium difficile* infection (CDI) testing

Risk factors	Send stool sample to Microbiology for CDI test:	Do not send stool sample to Microbiology for CDI test:
<p>Patient has taken antibiotics in the last three months AND one or more of the following:</p> <ul style="list-style-type: none"> Regularly takes medication that affects gut motility (e.g. laxatives, proton pump inhibitors, NSAIDs) Has a medical condition that may affect gut motility (IBS, Crohns disease, inflammatory colitis) Aged over 65 Recent hospital admission Regularly cares for child under 2 years of age Regularly in contact with farm animals 	<ul style="list-style-type: none"> When patient has diarrhoea (3 episodes of Bristol Stool Chart type 5-7 within a 24 hour period) that is not clearly attributed to an underlying condition (e.g. overflow) or therapy (e.g. laxatives, enteral feeding) When other causes of the diarrhoea have been excluded When risk factors are present When patient meets clinical criteria 	<ul style="list-style-type: none"> If the patient had a CDI positive sample in the last 28 days - suspect continuation of the same episode and treat on clinical presentation if symptoms reoccur (see page 19) It is NOT necessary to obtain a clearance sample because the organism will continue to be passed for several weeks after positive result; resolution of infection can be assessed on the passing of formed stools.

Actions if notified of *Clostridium difficile* positive stool sample by Microbiology

- If possible stop precipitating antibiotics
- Review all gut altering medication (e.g. laxatives, proton pump inhibitors, NSAIDs) - if possible, discontinue
- Do not prescribe antiperistaltic agent (e.g. loperamide hydrochloride)
- Assess severity to determine the treatment regime ([see page 19](#))
- Maintain regular contact with the patient to assess response to treatment

Patient advice	Microbiologist contact
<ol style="list-style-type: none"> Contact GP if symptoms are not improving or getting worse Refer patient to NHS Choices if they want more information www.nhs.uk/Conditions/Clostridium-difficile/Pages/Introduction.aspx Offer patient the '<i>Clostridium difficile</i> infection (CDI)' leaflet available on West Suffolk CCG and Ipswich and East Suffolk CCG medicines management webpages. 	<p>West Suffolk West Suffolk Hospital: 01284 712579 0900-1700hrs (Monday-Friday) / out-of-hours via switchboard</p> <p>Ipswich and East Suffolk Ipswich Hospital: 01473 703741 and 01473 703745</p>

Primary care guidance for MRSA screening and decolonisation

Why screen and decolonise?

- To reduce the risk of the patient developing an infection and the risk of the patient transmitting MRSA to others
- To minimize prevalence and clinical impact and prevent occurrence in a MRSA-free area
- Severely immune-compromised patients are at increased risk of acquiring MRSA infection and of having worse outcomes

Potential screening and decolonisation scenarios

Scenario 1

Pre-op screening for elective surgery

- Usually undertaken by the hospital at out-patient clinic
- If nose and/or groin is positive, the hospital will inform primary care
- For non-Suffolk hospitals, ask hospital if they have preferred decolonisation regime. If not, then follow guidance in the box below. **Suffolk hospitals should provide decolonisation regime**
- Ask hospital to send copies of screening results for your records

Scenario 2

Non-healing or infected wound

- When obtaining a swab from a non-healing or infected wound, consider undertaking nose and groin screening at the same time
- If wound is colonised/infected with MRSA then consider following decolonisation regime below as wound treatment may be compromised if nose/groin remains colonised

Scenario 3

Post-discharge from hospital

- If a patient has been screened on admission to hospital and discharged before positive results are known, the hospital will inform primary care
- Assess risk to patient and their contacts. For example recent cardio-vascular surgery/exfoliating skin
- If risk to themselves or others, ask hospital if they have preferred decolonisation regime. If not, then follow guidance in the box below
- Ask hospital to send copies of screening results for your records

Scenario 4

Household contact/full-time carer of very immune-compromised patient

- Primary care may be asked by the hospital to screen and decolonise (if positive) the close household contacts/full-time carer of a very immune-compromised patient. For example recipient of recent organ transplant.
- Discuss actions with requesting hospital
- Or follow guidance below

Screening	Treatment regime			Advice for patients
<ol style="list-style-type: none"> 1. Wipe swab around anterior nares for 5 seconds. One swab for both nostrils can be used. 2. Swab groin or perineum. One swab can be used for both sides of groin. 3. Swab any skin lesions or wounds. One swab for each site. 4. Rescreen 48 hours after last application of decolonisation treatment. 5. Swab same areas as before. 6. If remains positive, repeat decolonisation regime one more time. 7. If remains positive after second application, refer to microbiologist. 	Site	Preparation	Frequency	<ol style="list-style-type: none"> 1. Guide on 'How to apply decolonising treatment' can be found on West Suffolk CCG and Ipswich and East Suffolk CCG medicines management webpages. 2. Emphasise contact time of treatment. 3. Offer patient 'Advice for those affected by MRSA outside of hospital' leaflet available on West Suffolk CCG and Ipswich and East Suffolk CCG medicines management webpages.
	Nasal (mupirocin resistant)	Naseptin (contraindicated in pregnancy)	10 days QDS	
		If patient has a nut or soya allergy , then prescribe Octenidine gel	5 days BD	
	Nasal (mupirocin sensitive)	Mupirocin nasal 2% ointment	5 days BD	
	Body and hair (body wash)	Octenisan® (Octenidine dihydrochloride 0.3%) OR Hibiscrub (Chlorhexidine Gluconate 4.0% 4.0/100ml)	Minimum 5 days OD	
Wounds/skin lesions	Review need for topical and/or systemic treatment in line with sensitivities/discussion with microbiologist			

Off-label and unlicensed medicines

'**Off-label**' use refers to the use of a medicine outside the terms of its marketing authorisation (product licence), while an **unlicensed medicine** does not have a marketing authorisation. Further information on the prescribing of 'off-label' and unlicensed medicines is available from the MHRA at the following link:

<http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON087990>

Abbreviations

<i>C. difficile</i>	<i>Clostridium difficile</i>
CRP	C-Reactive protein
CSU	Catheter stream urine
eGFR	Estimated glomerular filtration rate
GUM	Genito-urinary medicine
IM	Intramuscular injection
IV	Intravenous injection
MSU	Mid-stream urine
PPIs	Proton pump inhibitors
STI	Sexually transmitted infection
UTI	Urinary tract infection
WBC	White blood cell count
WHO	World Health Organisation

Bibliography

BMJ Group and the Royal Pharmaceutical Society of Great Britain (2017) *British National Formulary April 2017*.

Available at: <https://www.medicinescomplete.com/mc/bnfl/current/>

(Accessed: 11 April, 2017).

BMJ Group and the Royal Pharmaceutical Society of Great Britain (2017) *British National Formulary for Children April 2017*.

Available at: <https://www.medicinescomplete.com/mc/bnfc/current/>

(Accessed: 11 April, 2017).

Department of Health (2012) *Updated guidance on the diagnosis and report of Clostridium difficile*.

Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215135/dh_133016.pdf

(Accessed: 20 December, 2016).

Health Protection Agency and Association of Medical Microbiologists (2009) *Meticillin resistant Staphylococcus aureus (MRSA) screening and suppression: quick reference guide for primary care - for consultation and local adaptation*.

Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/330793/MRSA_screening_and_suppression_primary_care_guidance.pdf

(Accessed: 20 December, 2016).

National Institute for Health and Care Excellence (2017) *Clinical Knowledge Summaries*.

Available at: <https://cks.nice.org.uk/#?char=A>

(Accessed: 11 April, 2017).

Public Health England (2017) *Management of infection guidance for primary care for consultation and local adaptation*.

Available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612743/Managing_common_infections.pdf

<https://www.england.nhs.uk/south/wp-content/uploads/sites/6/2014/06/PHE-Primary-Care-Guidance-for-Gateway-2.pdf>

(Accessed: 19 May, 2017).

Prepared by the Medicines Management Teams and the Infection Prevention and Control Commissioning Lead of the West Suffolk and the Ipswich and East Suffolk Clinical Commissioning Groups, in collaboration with local GPs and specialists from the West Suffolk NHS Foundation Trust and the Ipswich Hospital NHS Trust