

# Management of infection guidelines for primary and community services

## Aims of these guidelines

- To encourage the rational and cost-effective use of antibiotics;
- To minimise the emergence of bacterial resistance in the community
- To minimise infections caused by MRSA and C. difficile by avoiding use of quinolones, cephalosporins, co-amoxiclav and clindamycin;
- To provide a simple, best guess approach to the treatment of common infections.

## Principles of treatment

1. This guidance is based on the best available evidence but its application must be modified by professional judgement and any knowledge of previous culture results eg flucloxacillin is very rarely a good choice in patients colonised with MRSA. A dose and duration of treatment is suggested. In severe or recurrent cases consider a larger dose or longer course.
2. Prescribe an antibiotic only when there is likely to be a clear clinical benefit. Do not prescribe an antibiotic for viral sore throat, simple coughs and colds. Limit prescribing over the telephone to exceptional cases.
3. Consider for empiric treatment: Does the patient have a bacterial infection? Is an antibiotic treatment necessary? Have relevant specimens been collected? Is the patient allergic to any antibiotics?

4. Do not use penicillin, amoxicillin, co-amoxiclav or flucloxacillin or piperacillin/tazobactam in patients who are allergic to penicillin. Previous anaphylaxis following penicillin: do not use any of the above or cephalosporins.
5. Do not use tetracycline or doxycycline in children under 12 years, pregnant women or patients with a history of tetracycline allergy. Doxycycline can be given with food/dairy products but NOT with antacids.
6. Once microbiology results available: treat according to culture results and sensitivity.
7. Doses are for oral administration in the main and for adults unless otherwise stated. Please refer to BNF for further information.
8. Where a 'best guess' therapy has failed or special circumstances exist, microbiological advice can be obtained from: Dr Bendall, Dr Chakrabarti or Dr Evans or at the Department of Clinical Microbiology (during normal working hours) Tel: 01872 254900 or out of hours via RCHT Switchboard Tel: 01872 250000

Antimicrobial prescribing guide webpage:

<http://intra.cornwall.nhs.uk/Intranet/AZServices/A/AntimicrobialPrescribing/Introduction.aspx>

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Illness	Drug option	Dose	Duration	Comments
<b>Upper respiratory tract infections</b> Consider delayed antibiotic prescriptions				
Otitis media (child doses)	Amoxicillin	1-11 months: 125mg TDS increased if necessary up to 30 mg/kg every 8 hours 1-4 yrs: 250mg TDS increased if necessary up to 30 mg/kg every 8 hours. 5-11 yrs: 500mg TDS increased if necessary up to 30 mg/kg (max. 1 g) every 8 hours 12-17 years, 500 mg every 8 hours, in severe infection 1 g every 8 hours	5 days	Many are viral. OM resolves in 60% in 24 hours without antibiotics. Complications unlikely if temp <38.5°C or patient not vomiting. Ibuprofen or paracetamol used as pain relief is adequate in most cases. Consider antibiotics if not settled in 48-72 hours.
	Clarithromycin If allergic to penicillin.	Child 1 month-11 yrs - all doses twice daily: Body weight up to 8kg: 7.5mg/kg Body weight 8-11kg: 62.5mg Body weight 12-19kg: 125mg Body weight 20-29kg: 187.5mg Body weight 30-40kg: 250mg  Child 12-17 years: 250mg-500mg BD	3 days	
	Co-Amoxiclav for treatment failure.	<1yr old: 0.25mL/kg of 125/31mg TDS; 1-5 yrs: 5mL of 125/31mg TDS; 6-11 yrs: 5mL of 250/62mg TDS; 12-17 yrs: 375mg TDS (increase to 625mg TDS in severe infection). Double dose in severe infection	7 days	
Acute diffuse Otitis externa	Acetic acid 2% ear spray (EarCalm)	One spray TDS (maximum one spray every two to three hours)	7 days maximum	Oral antibiotics are NOT recommended for otitis externa; complications need specialist advice, eg facial swelling/cellulitis. If there is obstruction of the ear canal, consider need for microsuction (may need referral to ENT/ Aural care). If pain cannot be controlled consider early urgent referral to ENT/ Aural care service. Patients prescribed antibiotic/steroid drops can expect their symptoms to last for approximately six days after treatment has begun. If they have symptoms beyond the first week they should continue the drops until their symptoms resolve (and possibly for a few days after) for a maximum of a further seven days and consideration should be given to referral for microsuction. Patients with symptoms beyond two weeks should be considered treatment failures and alternative management initiated.
	Sofradex, Gentisone HC, flumetasone–clioquinol (Locorten–Vioform) ear drops, Otimize ear spray.		7 days (minimum) - 14 days (maximum)	
	Use of ciprofloxacin eye drops for otitis externa is unlicensed but may be used with specialist ENT input.			
Influenza treatment	Refer to Public Health England: <a href="http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/">www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/</a>			
Pharyngitis / sore throat / tonsillitis	Penicillin V	500mg QDS	10 days	Avoid antibiotics as 90% will resolve in 7 days without and pain will only be reduced by 16 hours with antibiotics. The poor sensitivity and specificity of the previous sore throat grading criteria (CENTOR) have led to these being replaced with the FeverPAIN criteria: <ul style="list-style-type: none"> <li>• <b>F</b>ever in the previous 24 hours (measured or subjective)</li> <li>• <b>P</b>urulence on the tonsillar bed</li> <li>• <b>A</b>ttending promptly, i.e. within 3 days of symptom onset</li> <li>• <b>I</b>nflamed tonsils</li> <li>• <b>N</b>o cough/coryza</li> </ul> <b>Score 0-1:</b> 13-18% streptococci, no antibiotics indicated; 2-3: 34-40% likelihood of streptococci, use 3 day back-up prescription; 4 or more: 62-65% likelihood of streptococci, use immediate antibiotic treatment if severe or 48hr back-up prescription Online tool: <a href="https://ctu1.phc.ox.ac.uk/feverpain/index.php">https://ctu1.phc.ox.ac.uk/feverpain/index.php</a>
	Clarithromycin If allergic to penicillin.	500mg BD	5 days	

Illness	Drug option	Dose	Duration	Comments
Sinusitis acute or chronic	<a href="#">Doxycycline</a>	200mg stat then 100mg once daily	7 days	Many cases are viral and antibiotics are generally not required. Reserve for severe or symptoms >10 days.
	<b>OR</b> <a href="#">Amoxicillin</a>	500mg TDS (1g TDS if severe)	7 days	
	<b>OR</b> <a href="#">Penicillin V</a>	500mg QDS	7 days	
	Co-Amoxiclav for treatment failure.	625mg TDS	7 days	
	<b>OR</b> Clarithromycin if allergic to penicillin	500mg BD	7 days	

## Lower respiratory tract infections

Quinolones eg Ciprofloxacin are NOT good first choice antibiotics in respiratory infections as they have poor activity against pneumococci. However, they do have use in PROVEN pseudomonal infections – for example in patients with cystic fibrosis or bronchiectasis.

Acute bronchitis	<a href="#">Doxycycline</a>	200mg stat then 100mg once daily	5 days	Antibiotics provide little benefit if NO co-morbidity. Consider 7 day delayed antibiotics with advice. Symptom resolution can take 3 weeks. Consider immediate antibiotics if >80yr and ONE of: hospitalisation in past year, oral steroids, diabetic, congestive heart failure OR >65yrs with 2 of above. Consider CRP test if antibiotic being considered. If CRP<20mg/L no antibiotics, 20-100mg/L delayed antibiotics, CRP>100mg/L immediate antibiotics.
	<b>OR</b> <a href="#">Amoxicillin</a>	500mg TDS	5 days	
Acute exacerbation of COPD	<a href="#">Doxycycline</a>	200mg stat then 100mg once daily	5 days	Many cases are viral – consider whether antibiotics are needed. Antibiotics not indicated in absence of purulent/mucopurulent sputum. Use of rotational antibiotics in COPD is very rarely indicated. Standby antibiotics may be offered to patients who suffer frequent exacerbations with severe COPD who have been counselled on how to use these 'as needed' antibiotics (doxycycline or amoxicillin or clarithromycin).
	<b>OR</b> <a href="#">Amoxicillin</a>	500mg TDS	5 days	
	<b>OR</b> <a href="#">Clarithromycin</a>	500mg BD	5 days	
Bronchiectasis exacerbation	High dose antibiotics, as advised by the specialist, generally for 2- 4 weeks and taken until the patient's improvement has plateaued as measured by improvement in sputum volume and purulence.			
Community-acquired pneumonia	<b>CAP treatment in the community:</b> Consider an initial dose of IV <a href="#">benzylpenicillin</a> .			Use CRB65 score to guide mortality risk and place of care. Each CRB65 parameter scores 1: <b>Confusion</b> -Abbreviated Mental test (AMT) score <8; <b>Respiratory rate</b> >30/min; <b>BP</b> systolic<90 or diastolic<60; Age>65. <b>Score 3-4: urgent hospital admission; score 1-2 intermediate risk:</b> consider hospital assessment; <b>score 0</b> low risk: consider home based care. <b>Always give safety-net advice</b> and likely duration of symptoms.  Mycoplasma is rare in over 65s. Consider legionella in travellers. Do not use doxycycline in children or pregnant women.
	<b>For non-severe CAP:</b> <a href="#">Amoxicillin</a>	500mg TDS	5 days	
	<b>OR</b> <a href="#">Doxycycline</a>	200 mg stat then 100 mg once daily	5 days	
	<b>OR</b> <a href="#">Clarithromycin</a>	500mg BD	5 days	
Severe CAP in a community hospital setting	<a href="#">Piperacillin/tazobactam</a> <b>PLUS</b> <a href="#">Clarithromycin</a>	4.5 g IV TDS 500 mg BD orally or by infusion if oral route not available.	7 days	Switch to oral treatment when appropriate, as for non-severe CAP.
	Levofloxacin IV for penicillin allergy.	500mg	12 hourly	
	<b>THEN</b> Levofloxacin orally	500mg once daily	7 days	

Illness	Drug option	Dose	Duration	Comments
Hospital acquired pneumonia in a community hospital setting	Non severe: <b>Amoxicillin</b> <b>PLUS Doxycycline</b>	500mg TDS 200mg stat then 100mg once daily orally	5 days	
	Severe: <b>Piperacillin/tazobactam</b>	4.5 g IV TDS and then treat according to sensitivities	7 days	
	<b>ADD</b> Clarithromycin where legionella is suspected	500 mg BD orally or by infusion if oral route not available and contact microbiology.		
	Levofloxacin IV for penicillin allergy.	500mg	12 hourly	
	<b>THEN</b> Levofloxacin orally	500mg once daily.	7 days	
Aspiration pneumonia in a community hospital setting	<b>Amoxicillin</b> - community acquired non-severe aspiration pneumonia <b>PLUS Metronidazole</b>	500mg TDS 400mg TDS	5 days	Contact Microbiology if MRSA status is positive.
	Metronidazole If history of penicillin allergy <b>PLUS EITHER</b> Clarithromycin <b>OR</b> Doxycycline	400mg TDS 500mg BD 200mg stat then 100mg daily	5 days	
	Piperacillin/tazobactam - hospital acquired severe aspiration pneumonia.	4.5 g IV TDS	5 days	

## Meningitis

Suspected meningococcal disease	<b>IV Benzylpenicillin</b>	Adults and children 10 yrs and over: 1200 mg. 1 - 9 yr: 600 mg <1 yr: 300 mg		Transfer all patients to hospital immediately. Only give benzylpenicillin / cefotaxime IF time before admission and non-blanching rash.
	<b>OR</b> IM if a vein cannot be found			
	Cefotaxime if history of penicillin allergy ( <b>not</b> anaphylaxis)	1g IV/IM stat < 12 years 50mg/kg IV/IM stat		

Prevention of secondary cases of meningitis  
Only prescribe following advice from Health Protection Unit: 9 am – 5 pm: 0300 3038162  
Out of hours: Contact on-call doctor / nurse for the Health Protection Unit via RCHT switchboard: 01872 250000

## Urinary tract infections

**Amoxicillin resistance is common, therefore ONLY use if culture confirms susceptibility. In the elderly (>65 years), do not treat asymptomatic bacteriuria; it occurs in 25% of women and 10% of men and is not associated with increased morbidity. In the presence of a catheter, antibiotics will not eradicate bacteriuria; only treat if systemically unwell or pyelonephritis likely. As E coli bacteraemia in the community is increasing ALWAYS safety net and consider risks for resistance.**

Uncomplicated UTI ie no fever or flank pain	<b>Nitrofurantoin</b> (modified-release capsules) if GFR >45ml/min. If GFR 30-45ml/min: only use if resistance testing indicates no alternative.	100mg BD  Suspension – expensive +++. Capsules CANNOT be opened and the tablets should NOT be crushed as they are irritant.	Females - 3 days Males - 7 days	Signs and symptoms of UTI: dysuria, urgency, frequency, polyuria, suprapubic tenderness, fever, flank or back pain. Treat women with severe/or ≥3 symptoms. Do not treat women with mild/or ≤2 symptoms AND urine NOT cloudy (97% negative predictive value) unless other risk factors for infection. If cloudy urine use dipstick to guide treatment - nitrite plus blood or leucocytes has 92% positive predictive value. Consider a back-up/delayed antibiotic option where appropriate. Risk factors for increased resistance include: care home resident, recurrent UTI, hospitalisation>7 days in the last 6 months, unresolving urinary symptoms, recent travel to a country with increased antimicrobial resistance (outside Northern Europe & Australasia), previous UTI known to be resistant to trimethoprim, cephalosporins or quinolones.
	<b>Trimethoprim</b> if low risk of resistance - see comments box.	200mg BD  Suspension available.		
	<b>Pivmecillinam</b> (type of penicillin – do NOT use if history of penicillin allergy)	200mg TDS Unlicensed use: manufacturers advise tablets can be crushed and dissolved in a neutral (eg water or tea not fruit juice) rather than acidic liquid but may have a bitter taste.		

Illness	Drug option	Dose	Duration	Comments
Uncomplicated UTI ie no fever or flank pain continued	Treatment failure: depends on susceptibility of organism isolated. For infections due to resistant coliforms including ESBL, oral options are very limited. Fosfomycin is an option where sensitivity report indicates susceptibility. Available from community pharmacy. Prescribe as MONURIL.			
Acute pyelonephritis	Ciprofloxacin	500mg BD	7 days	Ciprofloxacin until sensitivity results are available, then treat according to sensitivity results. If no organism isolated continue Ciprofloxacin. If no response within 24 hrs consider referral.
Catheter associated bacteriuria	If asymptomatic, no antibiotics. Don't swab catheters.			
Lower UTI in patients with an indwelling catheter	Do not treat asymptomatic bacteriuria. Considerable clinical judgement is required to diagnose UTI in patients with an indwelling urinary catheter, and urinalysis of catheterised patients is <b>NOT</b> recommended to diagnose UTI. Treatment may be indicated if there are signs of local infection eg suprapubic pain. If symptoms are severe (eg confusion, tachypnoea, tachycardia, hypotension, reduced urine output), admit to hospital as intravenous antibiotics may be required. Check that the catheter is correctly positioned and not blocked. Where there is symptomatic UTI, commence antibiotic and arrange to renew catheter if it has been in place for more than a week. The need for an indwelling catheter should be reviewed. If there is fever, or loin pain, or both, manage as upper UTI (acute pyelonephritis). Otherwise, treat for lower UTI: Relieve symptoms with paracetamol or ibuprofen. Send urine for culture and microscopy before starting antibiotic treatment. If symptoms are moderate or severe, empirically prescribe <b>trimethoprim or pivmecillinam for 7 days</b> . Follow up after 48 hours (or according to the clinical situation) to check response to treatment and the result of urine culture.			
Prophylaxis for recurrent UTI in women	<ul style="list-style-type: none"> <li>• Three or more in 12 months; positive MSU or dipstick with positive history. Long term antibiotics are associated with various risks.</li> <li>• If abdominal ultrasound abnormal refer to urology. If abdominal ultrasound normal, offer lifestyle advice, consider topical oestrogens for atrophic vaginitis.</li> <li>• Consider use of standby antibiotics which may reduce recurrence. Least favoured option is to offer 6 month trial of low-dose continuous antibiotic treatment: Trimethoprim 100 mg every night, or Nitrofurantoin (immediate-release capsules) 50–100 mg every night. Stop after 6 months and evaluate.</li> <li>• For breakthrough infection, change antibiotics according to sensitivities, treat for 7 days maximum (7 days in men, 5 days in women) and then continue prophylaxis.</li> </ul>			
Staph aureus in urine	Staph aureus (MRSA or MSSA) is not a urinary pathogen unless renal or prostatic abscess present. Staph aureus is usually present in urine as a contaminant or colonising a catheter. It is rarely due to deep infection, Staph aureus bacteraemia or endocarditis. Discuss with Clinical Microbiology if treatment is thought necessary.			
UTI in pregnancy	Nitrofurantoin MR	100 mg BD	7 days	Send MSU for culture. Avoid Nitrofurantoin in third trimester. Avoid Trimethoprim in first trimester.
	Trimethoprim if Nitrofurantoin unsuitable	200 mg BD		
	Cefalexin	500mg BD		
<b>Gastro-intestinal tract infections</b>				
Acute Cholecystitis	Co-amoxiclav for mild cases.	625mg TDS	10 days	
	Ciprofloxacin - if penicillin allergic <b>AND</b> Metronidazole	500mg BD 400mg TDS	10 days	
Clostridium difficile	Not severe: WCC<15x10 <sup>9</sup> /L, albumin>25g/L): oral <b>Metronidazole</b> 400mg TDS for 14 days. If unresolved after 4 days switch to oral <b>Vancomycin</b> 125mg QDS for 14 days. Refer to hospital if diarrhoea is still present after toxin result reported and any of the following symptoms are present: fever, dehydration, sepsis, severe abdominal pain, abdominal distension or vomiting.			Stop current antibiotics and PPIs if possible.
	Severe: Underlying inflammatory bowel disease or passing >8 stools in 24 hours with WCC>15x10 <sup>9</sup> /L, albumin<25g/L, temperature >38.5°C refer to hospital.			
	Recurrent: Discuss with Microbiology.			
Diverticulitis	Co-amoxiclav	625mg TDS	at least 7 days	Prescribe paracetamol for pain. Recommend clear liquids only. Gradually reintroduce solid food as symptoms improve over 2–3 days. Review within 48 hours, or sooner if symptoms deteriorate. Arrange admission if symptoms persist or deteriorate.
	<b>OR</b> Ciprofloxacin if penicillin allergic <b>AND</b> Metronidazole	500mg BD 400mg TDS		

Illness	Drug option	Dose	Duration	Comments
Eradication of Helicobacter pylori	<b>Omeprazole</b> <b>PLUS Clarithromycin</b> <b>PLUS Amoxicillin</b>	20mg BD capsules 500mg BD 1g BD	7 days	Eradication is beneficial in DU, GU, but NOT in GORD. In non-ulcer dyspepsia, 8% of patients benefit. Triple treatment attains >85% eradication. Do not use clarithromycin or metronidazole if used in the past year for any infection.  When managing symptomatic relapse in DU/GU: Retest (using breath test) for Helicobacter if symptomatic.  When managing symptomatic relapse in non-ulcer dyspepsia: Do not retest, treat as functional dyspepsia.  Seek advice from Gastroenterology if eradication of H pylori is not successful with second-line treatment.
	If penicillin allergic, Omeprazole <b>PLUS Clarithromycin</b> <b>PLUS Metronidazole</b>	20mg BD capsules 250mg BD 400mg BD		
	For those who still have symptoms after first-line eradication: Omeprazole <b>PLUS Amoxicillin</b> <b>PLUS EITHER Clarithromycin</b> <b>OR Metronidazole</b> - whichever was not used first-line.	20mg BD capsules  1g BD 500mg BD 400mg BD		
Gastroenteritis	Antibiotic therapy is not usually indicated. Campylobacter infections form 12% of GP consultations for gastroenteritis. Antibiotics should be reserved for pregnant, immuno-suppressed, non responsive or unwell patients. All suspected cases of food poisoning should be notified to the local authority. Seek advice on exclusion of patients from work from the Health Protection Unit: 0300 3038162.			
Giardiasis	<b>Metronidazole</b>	2g daily	3 days	Avoid using the 2g dose in pregnancy.
	In pregnancy: Metronidazole	400mg TDS	5 days	
Roundworm	<b>Mebendazole</b>	100mg BD	3 days	
Threadworm	<b>Mebendazole</b>	Child 6 months—18 years 100 mg	Single dose	Treat all household contacts at the same time PLUS advise hygiene measures. If reinfection occurs, second dose may be needed after 2 weeks (off-label if <2 years).

## Genital tract infections

- For sexually transmitted infections treated with antibiotics, the patient should be advised to abstain from sexual intercourse until they and their partner(s) have completed the treatment. GPs should consider referral for treatment, follow-up and contact tracing.
- In cases of recurrent thrush in males consider treating partner(s). There is no indication to treat male partners of women with recurrent candidal infection. Please discuss all cases of proven or suspected gonorrhoea with GU medicine due to increasing antibiotic resistance.

Acute epididymo-orchitis	<b>Ofloxacin</b>	200mg BD	14 days	Check sexual history. Send both first pass urine for CT and MSU for UTI. If gonorrhoea suspected [for example a significant urethral discharge], refer to GU.
Acute prostatitis	<b>Ciprofloxacin</b>	500mg BD	One month then review	Send MSU for culture and start antibiotic.
	<b>Trimethoprim</b> if sensitive	200mg BD	One month then review	
Bacterial vaginosis	<b>Metronidazole</b>	400mg BD	7 days	Pregnant patients should not use an applicator for the local treatments.
	<b>OR Metronidazole</b>	0.75% vaginal gel 5g applicatorful at night	5 days	
	<b>OR Clindamycin</b>	2% cream 5g applicatorful at night	7 days	
Candidiasis	<b>Fluconazole</b> (except in pregnancy) <b>AND clotrimazole</b>	150mg stat orally  1% cream (with or without hydrocortisone) if co-existing vulvitis.		Persistent cases require longer courses (see BASHH guidelines <a href="http://www.bashh.org">www.bashh.org</a> ).  Other oral therapy options may be used instead of topical therapy eg Itraconazole 200mg orally as two doses eight hours apart, BUT avoid oral therapy if risk of pregnancy.
	<b>Clotrimazole</b>	10% 5g vaginal cream as stat dose		
	<b>OR Clotrimazole</b>	500mg pessary pv as stat dose		

Illness	Drug option	Dose	Duration	Comments
Chlamydia trachomatis	Doxycycline	100mg BD	7 days	Tetracyclines are contra-indicated in pregnancy. Ideally, refer to GU Clinic for treatment, follow up and contact tracing. A test of cure six weeks after treatment is recommended in pregnancy, where compliance is suspect, if symptoms persist or if 'contact tracing' was not felt to have been reliable. It is also recommended if the infection was in a non-genital site or if using Erythromycin or Azithromycin.  Azithromycin is not licensed for use in pregnancy in UK, but is widely used after discussion of options and risk/benefit with the patient.  Consider possibility of LGV if Chlamydia positive proctitis - discuss with GU medicine). A test of cure is recommended for non-genital infection.
	Azithromycin	1g stat		
	Erythromycin EC - If pregnancy risk	500mg BD	14 days	
	Doxycycline - rectal infection.	100mg BD	7 days	
Chronic genital herpes simplex	Recurrent episodes are self limiting and seldom need drug treatment, but if needed to manage future attacks use either episodic antiviral treatment if attacks are infrequent (eg less than six attacks per year) or consider self-initiated treatment so antiviral medication can be started early in the next attack.			
	Aciclovir for self initiated treatment	400mg TDS	5 days	
	Suppressive antiviral treatment (eg oral aciclovir 400 mg BD for 6–12 months) if attacks are frequent (eg six or more attacks per year), causing psychological distress, or adverse emotional/social/relationship effects: After 6-12 months, stop treatment for a trial period. If attacks are still considered problematic, restart suppressive treatment. If attacks are not considered problematic (off treatment), control future attacks with episodic antiviral treatment (if needed). If the person has breakthrough attacks on suppressive treatment at any stage seek specialist advice.			
Pelvic Inflammatory Disease	Metronidazole <b>PLUS</b> Doxycycline - when pregnancy has been excluded	400mg BD 100mg BD	14 days - reduce to 7 days if nausea is a problem	Chlamydia is the commonest cause, but consider possibility of N.gonorrhoeae as well.
	Ceftriaxone - if N.gonorrhoeae suspected: <b>WITH</b> Azithromycin <b>PLUS</b> Metronidazole <b>PLUS</b> Doxycycline	500mg diluted in 2ml of 1% lidocaine given by deep IM injection STAT single oral dose of 1g to be taken simultaneously 400mg BD 100mg BD	14 days - reduce to 7 days if nausea is a problem	Please discuss all suspected gonococcal PID with GU medicine.  If risk of pregnancy, seek specialist advice.
Postnatal infections (e.g. endometritis, postepisiotomy infections of the perineum)	Co-amoxiclav	625mg TDS	5 to 7 days	Seek specialist advice from Obstetrics if patients have significant systemic symptoms or if symptoms fail to improve after 7 days. Consider endometritis if there is new/ changed and offensive discharge within 10 days post-partum. Co-amoxiclav, cefalexin and metronidazole are all present in breast milk but are safe to use in breast-feeding mothers. Breast-fed infants of mothers taking these antibiotics should be observed for diarrhoea or rashes.
	<b>OR</b> Cefalexin if allergic to penicillin <b>PLUS</b> Metronidazole	500mg BD 400mg TDS		
Primary genital herpes simplex	Aciclovir	400mg TDS	5-10 days	Take viral swab prior to commencing therapy otherwise opportunity for diagnosis will be lost.
		Consider increasing to 400mg five times a day in the immunocompromised or if absorption impaired	5-10 days	Adjunct treatment: Saline bathing, regular analgesia, lidocaine 5% ointment prn OR Hydrogel dressing, antifungals
Trichomoniasis	Metronidazole	400mg BD	7 days	Treat partners simultaneously. Refer to GUM for contact tracing.
	<b>OR</b> Metronidazole	2g as single stat dose		Pregnant/breastfeeding patients should avoid the 2g stat dose.



Illness	Drug option	Dose	Duration	Comments
<b>Skin / soft tissue infections</b>				
Animal / human bites	Co-Amoxiclav	625 mg TDS	7 days	Thorough irrigation is important. Assess, as appropriate, risk of tetanus, HIV, hepatitis B&C, rabies. Prophylaxis should be given after bites.
	Doxycycline if allergic to penicillin <b>PLUS</b> Metronidazole	200mg stat THEN 100mg OD 400mg TDS		
Cellulitis	Flucloxacillin	500mg QDS	7 days - If slow response continue for a further 7 days	The ERON classification system can help guide admission and treatment decisions. Class I: patient afebrile and healthy other than cellulitis, use oral flucloxacillin Class II: febrile & ill, or comorbidity, seek advice from Acute Care at Home Team to prevent hospital admission or admit for IV treatment if appropriate Class III: toxic appearance – admit. If river or sea exposure, discuss with Microbiology. If associated with MRSA, follow MRSA advice below as <b>flucloxacillin is not effective</b> against MRSA. In penicillin allergy, or if not improving contact Microbiology.
	<b>OR</b> Clarithromycin	500mg BD	10 to 14 days	
	Co-Amoxiclav for Facial cellulitis	625mg TDS		
Cellulitis (managed in hospital)	Flucloxacillin	1g IV 6 hourly	7-10 days with clinical review	If not improving, discuss with Microbiology.
	<b>THEN</b> Flucloxacillin orally	500mg QDS		
	Clarithromycin IV for penicillin allergy	500mg BD		
	<b>THEN</b> Clarithromycin orally	500mg BD	3 doses	
	Teicoplanin for MRSA/infected cannula sites:	400mg IV BD		
	<b>THEN</b>	400mg once a day		
Dermatophyte infection of nails	Terbinafine	250mg daily	6-12 weeks or for 3-6 months for toenails	Take nail clippings. Drug therapy should only be initiated if infection is confirmed by microscopy and / or culture and treatment is actually required. Seek specialist advice for persistent dermatophyte infections or children with nail infections. Terbinafine persists in nail keratin for up to 9 months after the end of treatment. Therefore benefits may continue after the course is completed.
	Pulsed or continuous Itraconazole may also be effective.			
Dermatophyte infection of the skin	Terbinafine (topical 1%)	Applied daily/twice daily	1 week	Take skin scrapings for culture. Treatment: 1 week topical terbinafine is as effective as 4 weeks topical azole. If intractable consider oral itraconazole. Discuss scalp infections with specialist.
	Topical undecenoic acid	Applied daily/twice daily	4-6 weeks	
	<b>OR</b> azole 1%			
Impetigo	Flucloxacillin	500mg QDS	7 days	Oral therapy is preferred.
	<b>OR</b> Clarithromycin	500mg BD		
	Fusidic acid for minor, very localised infections only	Topically QDS	5 days	
Infective lactation mastitis	If there is an infected nipple fissure or symptoms have not improved after 12–24 hours despite effective milk removal:			
	Flucloxacillin	500 mg QDS	10–14 days	
	<b>OR</b> erythromycin if allergic to penicillin	250–500 mg QDS		
	<b>OR</b> clarithromycin	500 mg twice a day		
Leg ulcers	Routine swabs are not recommended. Antibiotics are only indicated if cellulitis or systemic symptoms are present.			

Illness	Drug option	Dose	Duration	Comments
MRSA	Minor, localised, not systemic (majority of cases will be sensitive to Doxycycline hence good empirical choice):		7-10 days	If in doubt as to severity of infection, contact Clinical Microbiology
	<a href="#">Doxycycline</a>	100mg BD		
	<b>OR</b> Clarithromycin if reported as sensitive.	500mg BD		
MRSA Colonisation	Mupirocin nasal ointment <b>PLUS</b> Chlorhexidine 4% (Hibiscrub) <b>PLUS</b> Chlorhexidine 4% (Hibiscrub)	Apply 8 hourly Washes daily  As a shampoo	5 days and use shampoo twice during the 5 days	For patients unable to use chlorhexidine, Octenisan can be used instead for 5 days (ie daily wash and as a shampoo on two occasions). For colonised large wounds, contact Tissue Viability. MRSA infection where patient has signs of sepsis, fever, raised white cell count and CRP: refer to hospital.
Panton-Valentine Leukocidin (PVL) staphylococcal infection	Or recurrent skin infection in young adults. Seek Microbiology advice if required and/or refer to pages 39 and 40 for the diagnosis and management of PVL Staphylococcus aureus infections Quick Reference Guide: <a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/330788/PVL_guidance_in_primary_care_quick_reference_guide.pdf">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/330788/PVL_guidance_in_primary_care_quick_reference_guide.pdf</a>			
Varicella & Herpes zoster	<a href="#">Aciclovir</a>	800mg 5 times a day	7 days	Treatment is only effective if started at onset of infection (ie within 2 days of onset of rash). See BNF/BNF for children for doses for children and immunocompromised patients.
	<b>OR</b> <a href="#">Valaciclovir</a>	1g TDS		
<b>Eye infections</b>				
Acute infective conjunctivitis	<a href="#">Chloramphenicol eye drops 0.5%</a>	Every 2 hours for 48 hours then every 4 hours	5 days	Most people with infective conjunctivitis get better, without treatment, within 1–2 weeks and for most people, use of a topical ocular antibiotic makes little difference to recovery. Only when symptoms are severe or likely to become severe, providing serious causes of a red eye can be confidently excluded <b>OR</b> if schools and childcare organisations require treatment before allowing a child to return consider offering a topical ocular antibiotic.
	<b>OR</b> <a href="#">Chloramphenicol 1% eye ointment</a>	3-4 times daily		
	<a href="#">Fusidic acid 1% eye drops</a> (expensive and has less Gram-negative activity)	BD	Continued for 48 hours after eye returns to normal	
<b>Dental infections</b>				
Acute-dento-alveolar infection	<a href="#">Amoxicillin</a>	500mg TDS	up to 5 days - review at 3 days	The initial assessment of an acute dento-alveolar infection is important. Referral, rather than treatment, may be necessary if: there are indications of septicaemia, spreading cellulitis, swellings involving the floor of the mouth that may compromise the airway, difficulty in swallowing, dehydration, failure to respond to treatment. Antibiotics are an adjunct to the treatment of acute dento-alveolar infections. Patients should be reviewed after 2-3 days. Discontinue antibiotic if temperature normal and swelling resolving. Failure of resolution may require referral for specialist advice.
	<b>OR</b> <a href="#">Penicillin V</a>	500mg QDS		
	clarithromycin if penicillin allergic	500mg BD		
	<b>ADD</b> Metronidazole if a predominately anaerobic infection is suspected	400mg TDS	3 days	
Acute necrotising ulcerative gingivitis	<a href="#">Metronidazole</a>	400mg TDS	3 days	Swollen ulcerated gums, pain on chewing and swallowing +/- pyrexia usually with foul smelling breath. Active treatment including debridement needs to be delayed until the acute phase has passed. Refer to GDP/emergency dentist for advice on debridement and irrigation and oral hygiene.
Acute pericoronitis	<a href="#">Metronidazole</a> If there is pyrexia or gross local soft tissue swelling or trismus present	400mg TDS	3 days	Pain and swelling localized to the partially erupted third molar teeth, most commonly lower teeth but can affect upper third molars as well. Refer to GDP/emergency dentist as debridement and irrigation or relief of occlusion may be needed. Chlorhexidine 0.2% mouthwash 300ml is useful as a local measure.
	<b>OR</b> <a href="#">Amoxicillin</a>	500mg TDS	5 days	

Developed by the NHS Kernow Prescribing team

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1st line = Green | 2nd line = Blue