

Summary table – Infections in primary care

Principles of treatment:
1. This guidance is based on the best available evidence, but use professional judgement and involve patients in management decisions.
2. This guidance should not be used in isolation; it should be supported with patient information about safety netting, delayed/back-up antibiotics, self-care, infection severity and usual duration, clinical staff education, and audits. Materials are available on the RCGP TARGET website.
3. Prescribe an antibiotic only when there is likely to be clear clinical benefit, giving alternative, non-antibiotic self-care advice, where appropriate.
4. Consider a 'no' or 'delayed/back-up' antibiotic strategy for acute self-limiting upper respiratory tract infections and mild UTI symptoms.
5. In severe infection, or immunocompromised, it is important to initiate antibiotics as soon as possible, particularly if sepsis is suspected. If patient is not at moderate to high risk for sepsis, give information about symptom monitoring, and how to access medical care if they are concerned.
6. Where an empirical therapy has failed or special circumstances exist, microbiological advice can be obtained from ☎01908 995 782/779
7. Limit prescribing over the telephone to exceptional cases.
8. Use simple, generic antibiotics if possible. Avoid broad spectrum antibiotics (eg co-amoxiclav, quinolones and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase the risk of <i>Clostridium difficile</i> , MRSA and resistant UTIs.
9. Always check for antibiotic allergies. A dose and duration of treatment for adults is usually suggested, but may need modification for age, weight, renal function, or if immunocompromised. In severe or recurrent cases, consider a larger dose or longer course.
10. Child doses are provided when appropriate, and can be accessed through the ☺ symbol.
11. Refer to the BNF for further dosing and interaction information (eg the interaction between macrolides and statins), and check for hypersensitivity.
12. Have a lower threshold for antibiotics in immunocompromised, or in those with multiple morbidities; consider culture/specimens, and seek advice.
13. Avoid widespread use of topical antibiotics, especially in those agents also available systemically; in most cases, topical use should be limited.
14. In pregnancy, take specimens to inform treatment. Where possible, avoid tetracyclines, aminoglycosides, quinolones, azithromycin (except in chlamydial infection), clarithromycin, and high dose metronidazole (2g stat), unless the benefits outweigh the risks. Penicillins, cephalosporins, and erythromycin are safe in pregnancy. Short-term use of nitrofurantoin is not expected to cause foetal problems (theoretical risk of neonatal haemolysis). Trimethoprim is also unlikely to cause problems unless poor dietary folate intake, or taking another folate antagonist.
15. Please see Children's BNF for doses in children.

ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE	DURATION OF TREATMENT
UPPER RESPIRATORY TRACT INFECTIONS				
Influenza Influenza prophylaxis Last updated Feb 19	Annual vaccination is essential for all those "at risk" of influenza. Antivirals are not recommended for healthy adults: Treat "at risk" patients with five days oseltamivir 75mg BD, when influenza is circulating in the community, and ideally within 48 hours of onset (36 hours for zanamivir treatment in children); or in a care home where influenza is likely. At risk: pregnant (including up to two weeks post-partum); children under six months; adults 65 years or older; chronic respiratory disease (including COPD and asthma); significant cardiovascular disease (not hypertension); severe immunosuppression; diabetes mellitus; chronic neurological, renal or liver disease; morbid obesity (BMI>40). See the PHE Influenza guidance for the treatment of patients under 13 years of age. In severe immunosuppression, or oseltamivir resistance, use zanamivir 10mg BD (two inhalations by diskhaler for up to 10 days) and seek advice.			
Acute sore throat Last updated Jan 2018	Avoid antibiotics as 82% of cases resolve in 7 days, and pain is only reduced by 16 hours. Use FeverPAIN Score: F ever in last 24 hours; P urulence; A ttend rapidly under three days; severely Inflamed tonsils; N o cough or coryza. Score 0-1: 13-18% streptococci - no antibiotic. 2-3: 34-40% streptococci – No or 3 day delayed antibiotic. 4-5: 62-65% streptococci - if severe, immediate antibiotic or 48-hour delayed antibiotic. Advise paracetamol, self-care, and safety net. Complications are rare: antibiotics to prevent quinsy NNT>4000; otitis media NNT200. 10 days penicillin has lower relapse than five days in patients under 18 years of age.	<i>Fever pain 0-1:</i> self-care <i>Fever pain 2-3:</i> delayed prescription of phenoxymethylpenicillin <i>Penicillin allergy:</i> clarithromycin <i>Penicillin allergy in pregnancy:</i> erythromycin	500mg QDS (if severe) OR 1g BD (less severe) 250mg BD OR 500mg BD 250-500mg QDS or 500mg-1g BD	5-10 days 5 days 5 days
Scarlet fever (GAS) Last updated Oct 2018	Prompt treatment with appropriate antibiotics significantly reduces the risk of complications. Vulnerable individuals (immunocompromised, the comorbid or those with skin disease) are at increased risk of developing complications.	<i>First line (mild):</i> analgesia Phenoxymethylpenicillin <i>Penicillin allergy:</i> clarithromycin	500mg QDS 250-500mg BD	10 days 5 days
Acute otitis media (child doses) Last updated Feb 2018	Optimise analgesia and target antibiotics: AOM resolves in 60% of cases in 24 hours without antibiotics. Antibiotics reduce pain only at two days (NNT15), and do not prevent deafness. Consider 2 or 3 day delayed; or immediate antibiotics for pain relief if: <2 years AND bilateral AOM (NNT4), bulging membrane, or symptom score >8 for: fever; tugging ears; crying; irritability; difficulty sleeping; less playful; eating less (0 = no symptoms; 1 = a little; 2 = a lot) All ages with otorrhoea NNT3 Antibiotics to prevent mastoiditis NNT>4000.	Amoxicillin <i>Penicillin allergy:</i> erythromycin (preferred if pregnant) OR clarithromycin	Neonate: 30mg/kg TDS 1-11 months: 125mg TDS 1-4 years: 250mg TDS >5 years: 500mg TDS <2 years: 125mg QDS 2-7 years: 250mg QDS >8 years: 250-500mg QDS 1 month-11 years: 7.5mg/kg-250mg BD (weight dosing) 12-18 years: 250mg BD	5 – 7 days 5 – 7 days 5 - 7 days

ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE	DURATION OF TREATMENT
Acute otitis externa Last updated Nov 2017	First line: analgesia for pain relief, and apply localised heat (eg a warm flannel). Second line: topical acetic acid or topical antibiotic +/- steroid: similar cure at 7 days. If cellulitis or disease extends outside ear canal, or systemic signs of infection, start oral flucloxacillin and refer to exclude malignant otitis externa.	Second line: topical acetic acid 2% Topical neomycin sulphate with corticosteroid <i>If cellulitis:</i> flucloxacillin	1 spray TDS 3 drops TDS 250mg QDS <i>If severe:</i> 500mg QDS	7 days 7 days (min) to 14 days (max) 7 days 7 days
Sinusitis (acute) Last updated Oct 2017	Symptoms <10 days: do not offer antibiotics as most resolve in 14 days without, and antibiotics only offer marginal benefit after 7 days (NNT15). Symptoms >10 days: no antibiotic, or back-up antibiotic if several of: purulent nasal discharge; severe localised unilateral pain; fever; marked deterioration after initial milder phase. Systemically very unwell or more serious signs and symptoms: immediate antibiotic. Suspected complications: eg sepsis, intraorbital or intracranial, refer to secondary care. Self-care: paracetamol/ibuprofen for pain/fever. Consider high-dose nasal steroid if >12 years. Nasal decongestants or saline may help some.	No antibiotics: self-care First line for delayed: phenoxymethylpenicillin Penicillin allergy or intolerance: doxycycline OR clarithromycin OR Erythromycin if pregnant Very unwell or high risk of complications co-amoxiclav	500mg QDS 200mg stat then 100mg OD 500mg BD 250-500mg QDS 500/125mg TDS	5 days 5 days
LOWER RESPIRATORY TRACT INFECTIONS				
<i>Note: Low doses of penicillins are more likely to select for resistance. Do not use quinolones (ciprofloxacin, ofloxacin) first line as there is poor pneumococcal activity. Reserve all quinolones (including levofloxacin) for proven resistant organisms.</i>				
Acute cough & bronchitis Last updated Feb 2019	Antibiotics have little benefit if no co-morbidity. Second line: 7 day delayed antibiotic, safety net, and advise that symptoms can last 3 weeks. Consider immediate antibiotics if >80 years of age and one of: hospitalisation in past year; taking oral steroids; insulin-dependent diabetic; congestive heart failure; serious neurological disorder/stroke, or >65 years with two of the above. Consider CRP if antibiotic is being considered. No antibiotics if CRP<20mg/L and symptoms for >24 hours; delayed antibiotics if 20-100mg/L; immediate antibiotics if >100mg/L.	First line: self-care and safety netting advice First line antibiotic doxycycline Alternative choice: amoxicillin Penicillin allergy: doxycycline	200mg stat then 100mg OD for 4 days 500mg TDS 200mg stat then 100mg OD for 4 days	5 days in total 5 days 5 days in total
Acute exacerbation of COPD Last updated Dec 2018	Treat with antibiotics if purulent sputum and increased shortness of breath and/or increased sputum volume. Risk factors for antibiotic resistance: severe COPD (MRC>3); co-morbidity; frequent exacerbations; antibiotics in the last 3 months.	amoxicillin OR doxycycline OR clarithromycin <i>If at risk of resistance:</i> co-amoxiclav OR levofloxacin	500mg TDS 200mg stat then 100mg OD 500mg BD 500/125mg TDS 500mg OD	5 days 5 days 5 days
Community-acquired pneumonia Last updated Sept 2019	Assess severity in adults based on clinical judgement guided by mortality risk score (CRB65 or CURB65). See the NICE guideline on pneumonia for full details: low severity – CRB65 0 or CURB65 0 or 1 moderate severity – CRB65 1 or 2 or CURB65 2 high severity – CRB65 3 or 4 or CURB65 3 to 5. 1 point for each parameter: confusion, (urea >7 mmol/l), respiratory rate ≥30/min, low systolic (<90 mm Hg) or diastolic (≤60 mm Hg) blood pressure, age ≥65. Assess severity in children based on clinical judgement. Offer an antibiotic. Start treatment as soon as possible after diagnosis, within 4 hours (within 1 hour if sepsis suspected and person meets any high-risk criteria – see the NICE guideline on sepsis). When choosing an antibiotic, take account of severity, risk of complications, local antimicrobial resistance and surveillance data, recent antibiotic use and microbiological results. * Stop antibiotics after 5 days unless microbiological results suggest a longer course is needed or the person is not clinically stable. For detailed information click on the visual summary. See also the NICE guideline on pneumonia.	First choice (low severity in adults or non-severe in children): amoxicillin Or Clarithromycin Or Erythromycin (pregnancy) First choice (moderate severity in adults): amoxicillin AND (if atypical pathogens suspected) Clarithromycin Or Erythromycin (pregnancy) First choice (high severity in adults or severe in children AND (if atypical pathogens suspected) Co-amoxiclav Clarithromycin Or Erythromycin (pregnancy)	500mg TDS Higher doses may be used – see BNF) 500mg BD 500mg QDS 500mg TDS 500mg BD 500mg QDS 500/125mg TDS 500mg BD 500mg QDS	5 days 5 days 5 days
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ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE	DURATION OF TREATMENT
Acute prostatitis Last updated Oct 2018	Advise analgesia Send MSU for culture and start antibiotics. Review antibiotic after 14 days and either stop or continue for another 14 days if needed, based on history, symptoms, clinical exam and urine / blood tests.	Ciprofloxacin ¹ OR ofloxacin OR Trimethoprim if unable to take quinolone <i>Second choice after discussion with specialist:</i> levofloxacin	500mg BD 200mg BD 200mg BD 500mg OD	14 days then review
Acute pyelonephritis (upper urinary tract) Last updated Oct 2018	If admission not needed, send MSU for culture and susceptibility testing, and start antibiotics. If no response within 24 hours, seek advice. If ESBL risk , and on advice from a microbiologist, consider IV antibiotic via OPAT. When considering antibiotic, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use which may have led to bacterial resistance and local antimicrobial resistance data. Review choice of antibiotic when culture results are available.	Co-amoxiclav or Trimethoprim or Ciprofloxacin Cefalexin <i>Pregnant women first choice: Cefalexin</i> <i>Children and young people first choice; Cefalexin or co-amoxiclav only if culture results available</i>	500/125mg TDS 200mg BD 500mg BD 500mg BD or TDS or QDS for severe infections 500mg BD or TDS TDS or QDS for severe infections See Children's BNF	7 - 10 days 14 days 7 days 7 - 10 days
Recurrent UTI in non-pregnant women (2 in 6 months or ≥3 in a year) Last updated Oct 2018	First line: advise simple measures, including hydration; ibuprofen for symptom relief. Cranberry products work for some women. Second line: stand-by or post-coital antibiotics. Third line: antibiotic prophylaxis. Consider methenamine if no renal/hepatic impairment.	First choice antibiotic prophylaxis: trimethoprim (avoid in pregnancy) OR nitrofurantoin (avoid at term) - if eGFR ≥45 ml/minute Second choice antibiotic prophylaxis: amoxicillin OR cefalexin	200mg single dose when exposed to a trigger or 100mg at night 100mg single dose when exposed to a trigger or 50-100mg at night 500mg single dose when exposed to a trigger or 250mg at night 500mg single dose when exposed to a trigger or 125mg at night	3-6 months, then review recurrence rate and need 6 months
MENINGITIS				
Suspected meningococcal disease Last updated Feb 2019	Transfer all patients to hospital immediately. If time before hospital admission, ² and non-blanching rash, ³ give IV benzylpenicillin ⁴ . Do not give IV antibiotics if there is a definite history of anaphylaxis; rash is not a contraindication.	IV or IM benzylpenicillin ⁵	Child <1 year: 300mg Child 1-9 years: 600mg Adult/child 10+ years: 1.2g	Stat dose; give IM, if vein cannot be accessed
Prevention of secondary case of meningitis: Only prescribe following advice from your local health protection specialist/consultant: (0300 303 8537) (9am-5pm) Out of hours contact the on-call Public Health doctor via 01603 481 272				
GASTROINTESTINAL TRACT INFECTIONS				
Acute diverticulitis	People with mild, uncomplicated diverticulitis can be managed at home with paracetamol, clear fluids, and oral antibiotics	Co-amoxiclav Penicillin allergy Ciprofloxacin and metronidazole	500/125mg TDS 500mg BD 400mg TDS	7 days 7 days
Infectious diarrhoea Refer previously healthy children with acute painful or bloody diarrhoea, to exclude <i>E. coli</i> 0157 infection. Antibiotic therapy is not usually indicated unless patient is systemically unwell. If systemically unwell and campylobacter suspected (eg undercooked meat and abdominal pain), consider clarithromycin 250-500mg BD for 5-7 days, if treated early (within 3 days).				
Oral candidiasis Last updated Oct 2018	Topical azoles are more effective than topical nystatin. Oral candidiasis is rare in immunocompetent adults; consider undiagnosed risk factors, including HIV. Use 50mg fluconazole if extensive/severe candidiasis; if HIV or immunocompromised, use 100mg fluconazole. ⁶	Miconazole oral gel <i>If not tolerated:</i> nystatin suspension Fluconazole capsules	2.5ml of 24mg/ml QDS (hold in mouth after food) 1ml; 100,000 units/mL QDS (half in each side) 50mg/100mg OD	7 days continue nystatin for 2 days & azole for 7 days after resolved 7-14 days
Clostridium difficile Last updated Oct 2018	Stop unnecessary antibiotics, ⁷ PPIs, and antiperistaltic agents. Mild cases (<4 episodes of diarrhoea/day) may respond without metronidazole; 70% respond to metronidazole in 5 days; 92% respond to metronidazole in 14 days. If severe (T>38.5, or WCC>15, rising creatinine, or signs/symptoms of severe colitis): treat with oral vancomycin, review progress closely, ⁸ and consider hospital referral.	First episode: metronidazole ⁹ Severe/type O27/recurrent: oral vancomycin ¹⁰ Recurrent or second line: fidaxomicin ¹¹	400mg TDS 125mg QDS 200mg BD ¹²	10-14 days 10-14 days, then taper 10 days ¹³

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Traveller's diarrhoea Last updated Oct 2018	Prophylaxis rarely, if ever, indicated. Consider stand-by antimicrobial only for patients at high risk of severe illness, or visiting high risk areas.	<i>Stand-by:</i> azithromycin ¹ <i>Prophylaxis/treatment:</i> bismuth subsalicylate ²	500mg OD ¹ 2 tablets QDS ²	1-3 days 2 days
ERADICATION OF H. PYLORI <i>See PHE quick reference guide for diagnostic advice: PHE H. pylori</i> Last updated Feb 2019	For full guidance please see Public Health England: Test and treat for <i>Helicobacter pylori</i> (HP) in dyspepsia: Quick reference guide for primary care https://www.gov.uk/government/publications/helicobacter-pylori-diagnosis-and-treatment <ul style="list-style-type: none"> Treat all positives, if known DU, GU, or low grade MALToma. NNT in non-ulcer dyspepsia = 14 Do not offer eradication for GORD Check antibiotic history as each additional course of clarithromycin, metronidazole or quinolone increases resistance risk. Do not use clarithromycin, metronidazole or quinolone if used in the past year for any infection. Stress the importance of compliance PPI medication: lansoprazole 30mg BD, omeprazole 20-40mg BD, pantoprazole 40mg BD, esomeprazole 20mg BD If diarrhoea develops, consider <i>Clostridium difficile</i> and review need for treatment. Only offer third-line eradication on advice from a specialist 	Always use PPI (lansoprazole 30mg BD) First line and first relapse and no penicillin allergy PPI PLUS 2 antibiotics Amoxicillin 1000mg BD PLUS Clarithromycin 500BD OR Metronidazole 400mg BD Penicillin allergy: use PPI PLUS clarithromycin PLUS metronidazole ONGOING SYMPTOMS – seek expert advice		
Threadworm Lat updated Nov 2017	Treat all household contacts at the same time. Advise hygiene measures for two weeks (hand hygiene; pants at night; morning shower, including perianal area). Wash sleepwear, bed linen, and dust and vacuum. Child <6 months, add perianal wet wiping or washes three hourly.	<i>Child >6 months:</i> mebendazole ¹ <i>Child <6 months or pregnancy (at least in 1st trimester):</i> only hygiene measure for 6 weeks	100mg stat	Stat dose; repeat in 2 weeks if persistent
GENITAL TRACT INFECTIONS				
STI screening Last updated Nov 2017	People with risk factors should be screened for chlamydia, gonorrhoea, HIV, and syphilis. Refer individual and partners to GUM. Risk factors: <25 years; no condom use; recent/frequent change of partner; symptomatic partner; area of high HIV.			
Chlamydia trachomatis/urethritis Last updated July 2019	Opportunistically screen all patients aged 16-24 years. Treat partners and refer to GUM. Repeat test for cure in all at three months. Pregnancy/breastfeeding: azithromycin is most effective. As lower cure rate in pregnancy, test for cure at least three weeks after end of treatment.	First line Doxycycline ¹ <i>Second line / Pregnancy/breastfeeding:</i> azithromycin	100mg BD 1g stat then 500mg OD for 2 days	7 days
Epididymitis Last updated Nov 2017	Usually due to Gram-negative enteric bacteria in men over 35 years with low risk of STI. If under 35 years or STI risk, refer to GUM.	Doxycycline ¹ OR ofloxacin ² OR ciprofloxacin	100mg BD ¹ 200mg BD ² 500mg BD	10-14 days 14 days 10 days
Vaginal candidiasis Last updated Oct 2018	All topical and oral azoles give over 70% cure. Pregnancy: avoid oral azoles, and use intravaginal treatment for 7 days. Recurrent (>4 episodes per year): 150mg oral fluconazole every 72 hours for three doses induction, followed by one dose once a week for six months maintenance. ¹	Clotrimazole ¹ OR oral fluconazole ² <i>Recurrent:</i> fluconazole (induction/maintenance)	500mg pessary OR 100mg pessary 150mg ² 150mg every 72 hours THEN 150mg once a week ²	Stat 6 nights Stat 3 doses 6 months
Bacterial vaginosis Last updated Nov 2017	Oral metronidazole is as effective as topical treatment, and is cheaper. Seven days results in fewer relapses than 2g stat at four weeks. ¹ Pregnant/breastfeeding: avoid 2g dose. Treating partners does not reduce relapse.	Oral metronidazole ¹ OR metronidazole 0.75% vaginal gel ² OR clindamycin 2% cream ³	400mg BD ¹ 2g ² 5g applicator at night ³ 5g applicator at night ³	7 days Stat 5 nights 7 nights ³
Genital herpes Last updated Nov 2017	Advise: saline bathing, analgesia, or topical lidocaine for pain, and discuss transmission. First episode: treat within five days if new lesions or systemic symptoms, and refer to GUM. Recurrent: self-care if mild, or immediate short course antiviral treatment, or suppressive therapy if more than six episodes per year.	<i>First line:</i> oral aciclovir OR valaciclovir OR famciclovir ¹	400mg TDS ¹ 800mg TDS (if recurrent) 500mg BD 250mg TDS 1g BD (if recurrent)	5 days 2 days 5 days 5 days 1 day

ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE	DURATION OF TREATMENT
Gonorrhoea Last updated Feb 2019	Antibiotic resistance is now very high. Use IM ceftriaxone and oral azithromycin refer to GUM. Test of cure is essential.	Ceftriaxone Or Ciprofloxacin if known to be sensitive	1000mg IM 500mg stat	Stat
Trichomoniasis Last updated Nov 2017	Oral treatment needed as extravaginal infection common. Treat partners, and refer to GUM for other STIs. Pregnancy/breastfeeding: avoid 2g single dose metronidazole; clotrimazole for symptom relief (not cure) if metronidazole declined.	Metronidazole <i>Pregnancy for symptoms:</i> clotrimazole	400mg BD 2g (more adverse effects) 100mg pessary at night	5-7 days Stat 6 nights
Pelvic inflammatory disease Last updated Feb 2019	Refer women and sexual contacts to GUM. Raised CRP supports diagnosis, absent pus cells in HVS smear good negative predictive value. Exclude ectopic, appendicitis, endometriosis, UTI, irritable bowel, complicated ovarian cyst, functional pain. Moxifloxacin has greater activity against likely pathogens, but always test for gonorrhoea, chlamydia, and M. genitalium. If M. genitalium tests positive use moxifloxacin	Ceftriaxone PLUS Metronidazole PLUS doxycycline Moxifloxacin (first line for M. genitalium associated PID)	1000mg IM 400mg BD 100mg BD 400mg OD	Stat } 14 days 14 days
SKIN AND SOFT TISSUE INFECTIONS				
<i>Note: Refer to RCGP Skin Infections online training. For MRSA, discuss therapy with microbiologist.</i>				
Impetigo Last updated Nov 2017	Reserve topical antibiotics for very localised lesions to reduce risk of bacteria becoming resistant. Only use mupirocin if caused by MRSA. Extensive, severe, or bullous: oral antibiotics.	Topical fusidic acid MRSA: topical mupirocin Oral flucloxacillin Oral clarithromycin	Thinly TDS 2% ointment TDS 250-500mg QDS 250-500mg BD	5 days 5 days 7 days 7 days
Cold sores Last updated Nov 2017	Consider self care. Most resolve after 5 days without treatment. Topical antivirals applied prodromally can reduce duration by 12-18 hours. If frequent, severe, and predictable triggers: consider oral prophylaxis: aciclovir 400mg, twice daily, for 5-7 days.			
PVL-SA Last updated Nov 2017	Panton-Valentine leukocidin (PVL) is a toxin produced by 20.8-46% of <i>S. aureus</i> from boils/abscesses. PVL strains are rare in healthy people, but severe. Suppression therapy should only be started after primary infection has resolved, as ineffective if lesions are still leaking. Risk factors for PVL: recurrent skin infections; invasive infections; MSM; if there is more than one case in a home or close community (school children; military personnel; nursing home residents; household contacts).			
Eczema Last updated Nov 2017	No visible signs of infection: antibiotic use (alone or with steroids) encourages resistance and does not improve healing. With visible signs of infection: use oral flucloxacillin or clarithromycin, or topical treatment (as in impetigo).			
Acne Last updated Nov 2017	Mild (open and closed comedones) or moderate (inflammatory lesions): First line: self-care (wash with mild soap; do not scrub; avoid make-up). Second line: topical retinoid or benzoyl peroxide. Third-line: add topical antibiotic; or consider addition of oral antibiotic. Severe (nodules and cysts): add oral antibiotic (for 3 months max) and refer.	<i>First line:</i> self-care <i>Second line:</i> topical retinoid OR benzoyl peroxide <i>Third-line:</i> topical clindamycin <i>If treatment failure/severe:</i> oral lymecycline OR oral doxycycline	Thinly OD 5% cream OD-BD 1% cream, thinly BD 400mg OD 100mg OD	6-8 weeks 6-8 weeks 12 weeks 8-12 weeks 6-12 weeks
Cellulitis and erysipelas Last updated Sept 2019	Class I: patient afebrile and healthy other than cellulitis, use oral flucloxacillin alone. If river or sea water exposure: seek advice. Class II: patient febrile and ill, or comorbidity, admit for intravenous treatment, or use OPAT. Class III: if toxic appearance, admit. Erysipelas: often facial and unilateral Use flucloxacillin for non-facial erysipelas.	Flucloxacillin <i>Penicillin allergy:</i> clarithromycin <i>Penicillin allergy and taking statins:</i> doxycycline <i>Facial (non-dental):</i> co-amoxiclav	500mg QDS 500mg BD 200mg stat then 100mg OD 500/125mg TDS	} 5- 7 days; if slow response, continue for a further 7 days 7 days
Leg ulcer Last updated Feb 2019	Ulcers are always colonised. Antibiotics do not improve healing unless active infection (purulent exudate/odour; increased pain; cellulitis; pyrexia).	Flucloxacillin OR clarithromycin Non-healing: antimicrobial reactive oxygen gel may reduce bacterial load.	500mg QDS 500mg BD	} As for cellulitis
Bites: Last updated July 2019	Human: thorough irrigation is important. Antibiotic prophylaxis is advised. Assess risk of tetanus, rabies, HIV, and hepatitis B and C. Cat: always give prophylaxis. Dog: give prophylaxis if: puncture wound; bite to hand, foot, face, joint, tendon, or ligament; immunocompromised, cirrhotic, asplenic, or presence of prosthetic valve/joint. Penicillin allergy: Review all at 24 and 48 hours, as not all pathogens are covered.	<i>Prophylaxis/treatment all:</i> co-amoxiclav <i>Human penicillin allergy:</i> metronidazole AND clarithromycin <i>Animal penicillin allergy:</i> metronidazole AND doxycycline	375-625mg TDS 400mg TDS 250-500mg BD 400mg TDS 100mg BD	} 7 days

ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE	
Dermatophyte infection: skin Last updated Feb 2019	Most cases: terbinafine is fungicidal; treatment time shorter than with fungistatic imidazoles. If candida possible, use imidazole. If intractable, or scalp: send skin scrapings. If infection confirmed: use oral terbinafine or itraconazole. Scalp: oral therapy, and discuss with specialist.	Topical terbinafine OR topical imidazole <i>For athlete's foot:</i> topical undecenoates (eg Mycota®)	1% OD-BD 1% OD-BD OD-BD	1-4 weeks 4-6 weeks 4-6 weeks
Dermatophyte infection: nail Last updated Oct 2018	Take nail clippings; start therapy only if infection is confirmed. Oral terbinafine is more effective than oral azole. Liver reactions 0.1 to 1% with oral antifungals. If candida or non-dermatophyte infection is confirmed, use oral itraconazole. Topical nail lacquer is not as effective. To prevent recurrence: apply weekly 1% topical antifungal cream to entire toe area. Children: seek specialist advice.	<i>First line:</i> terbinafine <i>Second line:</i> itraconazole	250mg OD 200mg BD Stop treatment when continual, new, healthy, proximal nail growth.	Fingers: 6 weeks Toes: 12 weeks 1 week a month: Fingers: 2 courses Toes: 3 courses
Varicella zoster/ chickenpox Herpes zoster/ shingles Last updated Oct 2018	Pregnant/immunocompromised/neonate: seek urgent specialist advice. Chickenpox: consider aciclovir if: onset of rash <24 hours, and one of the following: >14 years of age; severe pain; dense/oral rash; taking steroids; smoker. Shingles: treat if >50 years (PHN rare if <50 years) and within 72 hours of rash, or if one of the following: active ophthalmic; Ramsey Hunt; eczema; non-truncal involvement; moderate or severe pain; moderate or severe rash. Shingles treatment if not within 72 hours: consider starting antiviral drug up to one week after rash onset, if high risk of severe shingles or complications (continued vesicle formation; older age; immunocompromised; severe pain).	Aciclovir <i>Second line for shingles if poor compliance:</i> <i>not for children:</i> famciclovir OR valaciclovir	800mg five times daily 250-500mg TDS OR 750mg BD 1g TDS	7 days
Mastitis Last updated Nov 2017	<i>S. aureus</i> is the most common infecting pathogen. Suspect if woman has: a painful breast; fever and/or general malaise; a tender, red breast. Breastfeeding: oral antibiotics are appropriate, where indicated. Women should continue feeding, including from the affected breast.	Flucloxacillin <i>Penicillin allergy:</i> erythromycin OR clarithromycin	500mg QDS 250-500mg QDS 500mg BD	10-14 days
Scabies Last updated Oct 2018	First choice permethrin: Treat whole body from ear/chin downwards, and under nails. Under 2 years/elderly: also treat face/scalp if using permethrin. home/sexual contacts: treat within 24 hours.	Permethrin <i>Permethrin allergy:</i> malathion	5% cream 0.5% aqueous liquid	2 applications, 1 week apart
Tick Bites (Lyme disease) Last updated Oct 2018	Prophylaxis not routinely recommended. In pregnancy, consider amoxicillin. If immunocompromised consider prophylactic doxycycline. Only give prophylaxis within 72 hrs of tick removal. Give safety net advice about erythema migrans and other possible symptoms. Treatment: Treat erythema migrans empirically; serology often negative early on. Seek advice for neuroborreliosis or other suspected Lyme disease	Prophylaxis: Doxycycline Treatment Doxycycline Or Amoxicillin	200mg 100mg BD 1g TDS	Stat 21 days 21 days
EYE INFECTIONS				
Conjunctivitis Last updated July 2019	First line: bath/clean eyelids with cotton wool dipped in sterile saline or boiled (cooled) water, to remove crusting. Treat only if severe, as most cases are viral or self-limiting. Bacterial conjunctivitis: usually unilateral and also self-limiting. It is characterised by red eye with mucopurulent, not watery discharge. 65% and 74% resolve on placebo by days 5 and 7. Third line: fusidic acid as it has less gram-negative activity.	<i>First line:</i> self-care <i>Second line:</i> chloramphenicol 0.5% eye drop OR 1% ointment <i>Third line:</i> fusidic acid 1% gel	2 hourly for 2 days; then reduce frequency to 3-4 times daily, or just at night if using eye ointment BD	48 hours after resolution
Blepharitis Last updated Nov 2017	First line: lid hygiene for symptom control, including: warm compresses; lid massage and scrubs; gentle washing; avoiding cosmetics. Second line: topical antibiotics if hygiene measures are ineffective after 2 weeks. Signs of Meibomian gland dysfunction, or acne rosacea: consider oral antibiotics.	<i>First line:</i> self-care <i>Second line:</i> Chloramphenicol <i>Third line:</i> oral oxytetracycline OR oral doxycycline	1% ointment BD 500mg BD 250mg BD 100mg OD 50mg OD	6 week trial 4 weeks (initial) 8 weeks (maint) 4 weeks (initial) 8 weeks (maint)

Summary table – Suspected dental infections in primary care (outside dental setting)

Derived from the Scottish Dental Clinical Effectiveness Programme (SDCEP) 2013 Guidelines				
This guidance is not designed to be a definitive guide to oral conditions, as GPs should not be involved in dental treatment. Patients presenting to non-dental primary care services with dental problems should be directed to their regular dentist, or if this is not possible, to the NHS 111 service (in England), who will be able to provide details of how to access emergency dental care.				
ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE	DURATION OF TREATMENT
<i>Note: Antibiotics do not cure toothache. First line treatment is with paracetamol and/or ibuprofen; codeine is not effective for toothache.</i>				
Mucosal ulceration and inflammation (simple gingivitis) Last updated Nov 2017	Temporary pain and swelling relief can be attained with saline mouthwash. Use antiseptic mouthwash if more severe, and if pain limits oral hygiene to treat or prevent secondary infection. The primary cause for mucosal ulceration or inflammation (aphthous ulcers; oral lichen planus herpes simplex infection; oral cancer) needs to be evaluated and treated.	Chlorhexidine 0.12-0.2% (do not use within 30mins of toothpaste) Hydrogen peroxide 6%	1 min BD with 10mL 2-3 mins BD-TDS with 15ml in ½ glass warm water	Always spit out after use Use until lesions resolve/less pain allows for oral hygiene
Acute necrotising ulcerative gingivitis Last updated Nov 2017	Refer to dentist for scaling and hygiene advice. Antiseptic mouthwash if pain limits oral hygiene. Commence metronidazole in the presence of systemic signs and symptoms.	Chlorhexidine 0.12-0.2% OR hydrogen peroxide 6% Metronidazole	See above dosing for mucosal ulceration 400mg TDS	Until pain allows for oral hygiene 3 days
Pericoronitis Last updated Nov 2017	Refer to dentist for irrigation and debridement. If persistent swelling or systemic symptoms, use metronidazole or amoxicillin. Use antiseptic mouthwash if pain and trismus limit oral hygiene.	Metronidazole OR amoxicillin Chlorhexidine 0.2% OR hydrogen peroxide 6%	400mg TDS 500mg TDS See above dosing for mucosal ulceration	3 days 3 days Until pain allows for oral hygiene
Dental abscess Last updated Oct 2018	Regular analgesia should be the first option until a dentist can be seen for urgent drainage, as repeated courses of antibiotics for abscesses are not appropriate. Repeated antibiotics alone, without drainage, are ineffective in preventing the spread of infection. Antibiotics are only recommended if there are signs of severe infection, systemic symptoms, or a high risk of complications. Patients with severe odontogenic infections (cellulitis, plus signs of sepsis; difficulty in swallowing; impending airway obstruction) should be referred urgently for hospital admission to protect airway, for surgical drainage and for IV antibiotics. The empirical use of cephalosporins, co-amoxiclav, clarithromycin, and clindamycin do not offer any advantage for most dental patients, and should only be used if there is no response to first line drugs.	Amoxicillin OR phenoxymethylpenicillin Metronidazole <i>Penicillin allergy:</i> clarithromycin	500mg-1g TDS 500mg-1g QDS 400mg TDS 500mg BD	Up to 5 days review at 3 days
	If pus is present, refer for drainage, tooth extraction, or root canal. Send pus for investigation. If spreading infection (lymph node involvement or systemic signs, ie fever or malaise) ADD metronidazole. Use clarithromycin in true penicillin allergy and, if severe, refer to hospital.			