Public Health England

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NHS

North Central London
Joint Formulary Committee

Management and treatment of common infections in North Central London

Antibiotic guidance for primary care

Groups / Individuals who have overseen the development of this guidance:	Consultant Microbiologists • Dr Indran Balakrishnan, RFL • Prof Peter Wilson, UCLH • Dr Michael Kelsey, WH Antimicrobial Pharmacists • Marisa Lanzman, RFL • Preet Panesar, UCLH • Ai-Nee Lim, WH Primary care • Amalin Dutt, Head of Medicines Management, Islington CCG • Suzanne Lever, Pharmacist, Barnet CCG
Groups which were consulted and have given approval:	NCL Clinical Commissioning Groups
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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:
    a. Royal Free Hospital: 020 3758 2000 ext 33973 or 07770 678696; out of hours on-call Microbiologist via 020 3758 2000
    b. Barnet Chase Farm: 020 3758 2000 ext 64384; out of hours on-call Microbiologist via 020 3758 2000
    c. University College London Hospitals: 020 3456 7890 ext 79515; out of hours on-call Microbiologist via 020 3456 7890
    d. North Middlesex Hospital: 020 887 2000 bleep 225 or 020 887 2472; out of hours on-call Consultant Microbiologist via 020 887 2000
    e. Whittington Hospital: 0207 288 5085/5780; out of hours on-call Microbiologist via hospital switchboard on 0207 272 3070
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 *Clostridium difficile*, 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. This guidance is developed alongside the NHS England Antibiotic Quality Premium. The required performance in 2017/19 is: a 10% reduction (or greater) in the number of *E. coli* blood stream infections across the whole health economy; a 10% reduction (or greater) in the trimethoprim:nitrofurantoin prescribing ratio for UTI in primary care, and a 10% reduction (or greater) in the number of trimethoprim items prescribed to patients aged 70 years or greater; sustained reduction of inappropriate prescribing in primary care.

ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE (click on ☺ for child doses)	DURATION OF TREATMENT
UPPER RESPIRATORY TRACT INFECTIONS				
Influenza PHE Influenza **Influenza prophylaxis** NICE Influenza	**Uncomplicated influenza**: Influenza presenting with fever, coryza, generalised symptoms (headache, malaise, myalgia, arthralgia) and sometimes gastrointestinal symptoms, but without any features of complicated influenza. **Complicated influenza:** Influenza requiring hospital admission and/or with symptoms and signs of lower respiratory tract infection (hypoxaemia, dyspnoea, lung infiltrate), central nervous system involvement and/or a significant exacerbation of an underlying medical condition. See PHE Influenza guidance for advice on suitable treatment for each patient group. Dosage in adults for treatment of uncomplicated influenza are oseltamivir 75mg PO BD for 5 days, or zanamivir 10mg INH BD for 5 days (dose adjustment for obesity, renal dysfunction and use in children are provided in the PHE Influenza guidance)			
Acute sore throat NICE NG84	Refer to NICE guidance https://www.nice.org.uk/guidance/ng84/resources/visual-summary-pdf-4723226606			
Scarlet fever *(GAS)* PHE Scarlet fever	**Prompt treatment** with appropriate antibiotics significantly reduces the risk of complications.[1D] Observe immunocompromised individuals (diabetes; women in the puerperal period; chickenpox) as they are at increased risk of developing invasive infection.[1D]	*First line (mild)*: analgesia[2D] Phenoxymethylpenicillin[2D] *Penicillin allergy:* clarithromycin[1D]	 500mg QDS[1D] ☺ 500mg BD[1D] ☺	 10 days[3A+,4A+,5A+] 5 days[1D,5A+]
Acute otitis media *(child doses)* NICE NG91	Refer to NICE guidance https://www.nice.org.uk/guidance/ng91/resources/visual-summary-pdf-4787282702			
Acute otitis externa CKS Otitis externa	**First line:** analgesia for pain relief,[1D,2D] and apply localised heat (eg a warm flannel).[2D] **Second line:** topical acetic acid or topical antibiotic +/- steroid: similar cure at 7 days.[2D,3A+,4B-] **If cellulitis or disease extends outside ear canal**, or systemic signs of infection, start oral flucloxacillin and refer to exclude malignant otitis externa.[1D]	*First line:* analgesia and localised heat *Second line:* topical acetic acid 2%[2D,4B-] Topical neomycin sulphate with corticosteroid[2D,5A-] *Alternative topical antibiotic + steroid If perforated tympanic membrane*: Topical ciprofloxacin 0.3% with dexamethasone 0.1% *If cellulitis:* flucloxacillin[6B+]	 1 spray TDS[5A-] ☺ 3 drops TDS[5A-] ☺ 4 drops BD ☺ 500mg QDS[2D] ☺	 7 days[5A-] 7 days (min) to 14 days (max)[3A+] 7 days 7 days[2D]

Based on PHE version published: November 2017

Sinusitis (acute) NICE NG79	Refer to NICE guidance https://www.nice.org.uk/guidance/ng79/resources/visual-summary-pdf-4656316717			
LOWER RESPIRATORY TRACT INFECTIONS				
Note: Low doses of penicillins are more likely to select for resistance.[1D] ***Do not*** *use quinolones (ciprofloxacin, ofloxacin) first line as there is poor pneumococcal activity.*[2B-] *Reserve all quinolones (including levofloxacin) for proven resistant organisms.*[1D]				
Acute cough & bronchitis NICE RTIs	Antibiotics have little benefit if no co-morbidity.[1A+,2A-] **Second line:** 7 day delayed antibiotic,[3D] safety net, and advise that symptoms can last 3 weeks.[3D] **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,[3D] or >65 years with two of the above.[3D] **Consider CRP** if antibiotic is being considered.[4A-] No antibiotics if CRP<20mg/L and symptoms for >24 hours; delayed antibiotics if 20-100mg/L; immediate antibiotics if >100mg/L.[5D]	*First line:* self-care[1A+] and safety netting advice[3D] *Second line:* amoxicillin[3D,6D] *Penicillin allergy:* doxycycline[3D,6D]	 500mg TDS[3D,6D] ☺ 200mg stat then 100mg OD[3D,6D]	 5 days[3D,6D] 5 days[3D,6D]
Acute exacerbation of COPD NICE COPD GOLD COPD	Treat with antibiotics[1A+,2A-] if purulent sputum **and** increased shortness of breath **and/or** increased sputum volume.[1A+,3D,4D] Risk factors for antibiotic resistance:[5A+] severe COPD (MRC>3);[6B+] co-morbidity; frequent exacerbations;[3D] antibiotics in the last 3 months.[4D]	amoxicillin[4D] *OR* doxycycline[4D] *OR* clarithromycin[7A+] *If at risk of resistance:* co-amoxiclav[4D]	500mg TDS[8A-] ☺ 200mg stat then 100mg OD[8A-] 500mg BD[7A+] ☺ 500/125mg TDS[4D] ☺	5 days[7A+] 5 days[7A+]
Community-acquired pneumonia NICE Pneumonia	Use CRB65 score to guide mortality risk, place of care, and antibiotics.[1D] Each CRB65 parameter scores one: **C**onfusion (AMT≤8 or new disorientation in person, place or time); **R**espiratory rate ≥30/min; **B**P systolic <90, or diastolic ≤60; age ≥**65**. **Score 0:** low risk, consider home-based care; **1-2:** intermediate risk, consider hospital assessment; **3-4:** urgent hospital admission.[1D] **Give safety-net advice**[1D] and likely duration of different symptoms, eg cough 6 weeks.[1D] Mycoplasma infection is rare in over 65s.[2A+,3C]	**CRB65=0:** amoxicillin[1D,4D] *OR* clarithromycin[2A+,4D,5A+] *OR* doxycycline[2A+,4D] **CRB65=1-2 and at home** (clinically assess need for dual therapy for atypicals): amoxicillin[1D,4D] *AND* clarithromycin[2A+,4D,5A+] *OR* doxycycline alone[4D]	500mg TDS[5A+] ☺ 500mg BD[5A+] ☺ 200mg stat then 100mg OD[6A-] 500mg TDS[5A+] ☺ 500mg BD[5A+] ☺ 200mg stat then 100mg OD[6A-]	5 days; review at 3 days;[1D] 7-10 if poor response[1D] 7-10 days[1D]
Bronchiectasis	Responsible Respiratory Prescribing Group guidelines (approved by NHS Camden, Islington and Haringey) https://www.ncl-mon.nhs.uk/wp-content/uploads/Guidelines/5_RRP_Bronchiectasis_Guidelines_for_Primary_Care_Management.pdf • This document is currently under review – as some of the content may be out of date, it should be viewed as an archive document for information only			
URINARY TRACT INFECTIONS				
Note: As antibiotic resistance and Escherichia coli bacteraemia in the community is increasing, use nitrofurantoin first line,[1D] *always give safety net and self-care advice, and consider risks for resistance.*[2D] *Give TARGET UTI leaflet,*[3D] *and refer to the PHE UTI guidance for diagnostic information.*[4D]				
UTI in adults (lower) PHE UTI Diagnosis TARGET UTI RCGP UTI SIGN UTI NHS Scotland UTI	**All patients first line antibiotic:** nitrofurantoin if GFR >45mls/min.[1A+,2A+] If GFR 30-45, only use if no alternative.[2A+,3D] **Women < 65 years:** If severe or ≥3 symptoms treat with antibiotic.[4D,5B-] If mild or ≤2 symptoms:[4D] pain relief,[6A-,7A-,8B-] and consider delayed antibiotic.[9B-,10A+] If urine not cloudy, 97% NPV of no UTI.[11A-] If urine cloudy, use dipstick to guide treatment:[4D,11A-] nitrite, leukocytes, blood all negative 76% NPV;[11A-] nitrite plus blood or leukocytes 92% PPV of UTI.[11A-] **Men <65 years:** consider prostatitis and send MSU,[4D,12D] or if symptoms mild or non-specific, use negative dipstick to exclude UTI.[12D] **>65 years:**[13A-] treat if fever ≥38°C, or 1.5°C above base twice in 12 hours, and >1 other symptom.[14B-] **If treatment failure:** always perform culture.[4D]	***First line:*** nitrofurantoin[15A-] (do not use if suspect upper UTI)[15A-] *If low risk of resistance:*[16B+] trimethoprim[17D,18A+] ***If first line unsuitable:***[2A+] pivmecillinam[19B+,20D,21A+] *If organism susceptible:* amoxicillin[22A+,23A+] *If high resistance risk:* fosfomycin[16B+,24A+,25B-,26B-]	100mg m/r BD, *OR* 50mg i/r QDS[27A-] (BD dose increases compliance)[28D] 200mg BD[23A+] 400mg stat then 200mg TDS[29B+,30B+] 500mg TDS[23A+] Women and men: 3g stat[26B-] Men: a second 3g stat on day 3 (unlicensed)[26B-]	Women: 3 days[23A+,31B-,32B-,33B+,34B+,35A-,36A+] Men: 7 days[37B+,38A-]
		Low risk of resistance: younger women with acute UTI and no risk.[31B-,38C] **Risk factors for increased resistance include:** care home resident;[13A-,14B-] recurrent UTI; hospitalisation for >7 days in the last 6 months; unresolving urinary symptoms; recent travel to a country with increased resistance; previous UTI resistant to trimethoprim, cephalosporins, or quinolones.[39C,40B+,41D] **If risk of resistance:** send urine for culture and susceptibilities; safety net.[26B-]		
UTI in patients with catheters: antibiotics will not eradicate asymptomatic bacteriuria,[1D,2D,3A-] only treat if systemically unwell or pyelonephritis likely.[2D] Do not use prophylactic antibiotics for catheter change unless there is a history of catheter-change-associated UTI or trauma.[4D,5A+] Take sample if new onset of delirium, or one or more symptoms of UTI.[3A-,6B-,7D]				
UTI in pregnancy SIGN UTI	Send MSU for culture;[1D] start antibiotics in all with significant positive urine culture, even if asymptomatic.[1D] **First line:** nitrofurantoin, unless last trimester.[2A-,3D] **Second line:** trimethoprim; avoid if low folate status,[2A-,4D,5D] or on folate antagonist.[4D,5D] **Alternative:** cephalosporins.[6C]	*First line*: nitrofurantoin (avoid in last trimester)[2A-,3D,7A+] *Second line*: trimethoprim[2A-,4D,7A+] *(avoid in first trimester)*[5D] *Alternative*: cefalexin[4D,8D]	100mg m/r BD[2A-,9C] *OR* 50mg i/r QDS[2A-,9C] 200mg BD (off-label)[7A+] 500mg BD[9C]	7 days[10D]
Acute prostatitis	Send MSU for culture and start antibiotics.[1D] 4 week course may prevent chronic prostatitis.[1D,2D] Quinolones achieve high prostate concentrations.[2D]	Ciprofloxacin[1D,3D] *OR* ofloxacin[1D,3D] *Second line:* trimethoprim[1D]	500mg BD[1D] 200mg BD[1D] 200mg BD[1D]	28 days[1D,2D]
UTI in children NICE UTI in under 16s	**Child <3 months:** refer urgently for assessment.[1D] **Child ≥3 months:** use positive nitrite to guide antibiotic use;[1A-] send pre-treatment MSU.[1D] **Imaging:** refer if child <6 months, or recurrent or atypical UTI.[1D]	**Lower UTI:** nitrofurantoin (tabs/caps [not liquid])[1A-] *OR* trimethoprim (tabs/liquid)[1A-] ☺☺ *Second line:* cefalexin (tabs/caps/liquid)[1D] ☺ *If organism susceptible:* amoxicillin (caps/liquid)[1A-] ☺		3 days[1A+]
		Upper UTI: refer to paediatrics to: obtain a urine sample for culture;[1D] assess for signs of systemic infection;[1D] consider systemic antimicrobials.[1D]		

Acute pyelonephritis	If admission not needed, send MSU for culture and susceptibility testing,[1D] and start antibiotics.[1D] If no response within 24 hours, seek advice.[1D,2D] **If ESBL risk**,[3A+] and on advice from a microbiologist, consider IV antibiotic via OPAT.[4D]	First line: Ciprofloxacin[2D,5A-,6D] Second line: co-amoxiclav[2D,5A-]	500mg BD[2D,5A-,6D] 500/125mg TDS[2D]	7 days[2D,5A-,7A+] 7 days[5A-,7A+]
Recurrent UTI in non-pregnant women *(2 in 6 months or ≥3 in a year)* TARGET UTI	**First line:** advise simple measures,[1D] including hydration;[1D,2D,3D] ibuprofen for symptom relief.[4A-,5A-] Cranberry products work for some women.[6D,7A+,8A+] **Second line:** stand-by[1D] or post-coital antibiotics (single dose).[9A+] **Third line:** antibiotic prophylaxis.[1D,9A+,10D] Consider methenamine if no renal/hepatic impairment.[11A+]	**Antibiotic prophylaxis:** *First line:* nitrofurantoin[9A+] *Second line:* trimethoprim[9A+] *Third line:* Methenamine hippurate[11A+] *OR* cefalexin	 50-100mg IR[9A+] 100mg[9A+] 1g BD[11A+] 125mg ON (off-label use; prescribe 250mg TABLETS with a tablet cutter)	 3-6 months,[1D] then review recurrence rate and need[1D,9A+] 6 months[1D,11A+] 3-6 months,[1D] then review recurrence rate and need[1D,9A+]
MENINGITIS				
Suspected meningococcal disease NICE Meningitis	**Transfer all patients to hospital immediately.**[1D] If time before hospital admission,[2D,3A+] and non-blanching rash,[2D,4D] give IV benzylpenicillin[1D,2D,4D] or IV cefotaxime.[2D] Do not give IV antibiotics if there is a definite history of anaphylaxis;[1D] rash is not a contraindication.[1D]	IV or IM benzylpenicillin[1D,2D] OR IV or IM cefotaxime[2D]	Child <1 year: 300mg[5D] Child 1-9 years: 600mg[5D] Adult/child 10+ years: 1.2g[5D] Child <12 years: 50mg/kg[5D] Adult/child 12+ years: 1g[5D]	Stat dose;[1D] give IM, if vein cannot be accessed[1D]
Prevention of secondary case of meningitis: Only prescribe following advice from your local health protection specialist/consultant. North East and North Central London Health Protection team: 9am-5pm : 020 3837 7084; Out of hours: 020 7191 1860				
GASTROINTESTINAL TRACT INFECTIONS				
Oral candidiasis CKS Candida	**Topical azoles** are more effective than topical nystatin.[1A+] Oral candidiasis is rare in immunocompetent adults;[2D] consider undiagnosed risk factors, including HIV.[2D] Use 50mg fluconazole if extensive/severe candidiasis;[3D,4D] if HIV or immunocompromised, use 100mg fluconazole.[3D,4D]	Miconazole oral gel[1A+,4D,5A-] *If not tolerated:* nystatin suspension[2D,6D,7A-] Fluconazole capsules[6D,7A-]	2.5ml of 24mg/ml QDS (hold in mouth after food)[4D] ☺ 1ml; 100,000 units/mL QDS (half in each side)[2D,4D,7A-] ☺ 50mg/100mg OD[3D,6D,8A-] ☺	7 days;[4D,6D] coninue nystatin 2d & miconazole 7d after resolved[4D] 7-14 days[6D,7A-,8A-]
Helicobacter pylori NICE GORD and dyspepsia PHE *H. pylori*	Follow PHE *H. pylori* guidance			
Infectious diarrhoea PHE Diarrhoea	Refer previously healthy children with acute painful or bloody diarrhoea, to exclude *E. coli* 0157 infection.[1D] **Antibiotic therapy is not usually indicated unless patient is systemically unwell.**[2D] If systemically unwell and campylobacter suspected (eg undercooked meat and abdominal pain),[3D] consider clarithromycin 500mg BD for 5-7 days, if treated early (within 3 days).[3D,4A+]			
Clostridium difficile PHE *Clostridium difficile*	Stop unneccesary antibiotics,[1D,2D] PPIs,[3B-] and antiperistaltic agents.[2D] Mild cases (<4 episodes of diarrhoea/day) may respond without metronidazole;[2D] 70% respond to metronidazole in 5 days; 92% respond to metronidazole in 14 days.[4B-] **If severe (T>38.5, or WCC>15, rising creatinine, or signs/symptoms of severe colitis):**[2D] treat with oral vancomycin,[1D,2D,5A-] review progress closely,[1D,2D] and consider hospital referral.[2D]	*First episode non-severe:* Metronidazole *Second episode/severe:* oral vancomycin *Recurrent disease (discuss with a specialist before starting treatment):* oral vancomycin or combination therapy or fidaxomicin [≥3 recurrence]	400 mg TDS[1D,2D] ☺ 125mg QDS[1D,2D,5A-] ☺	10-14 days[1D,4B-] 10-14 days[1D,2D]
Traveller's diarrhoea	Prophylaxis rarely, if ever, indicated.[1D] Consider **stand-by** antimicrobial only for patients at high risk of severe illness,[2D] or visiting remote or high risk areas.[1D,2D], or for whom travellers diarrhoea would be major inconvenience (eg short term business travellers)	*Stand-by:* azithromycin[1D,3A+] (private prescription) *Prophylaxis/treatment:* bismuth subsalicylate[1D,4A-]	500mg OD[1D,2D,3A+] 2 tablets QDS[1D,2D]	1-3 days[1D,2D,3A+] 2 days[1D,2D,4A-]
Threadworm CKS Threadworm	Treat all household contacts at the same time.[1D] Advise hygiene measures for two weeks[1D] (hand hygiene;[2D] pants at night; morning shower, including perianal area).[1D,2D] Wash sleepwear, bed linen, and dust and vacuum.[1D] Child <6 months, add perianal wet wiping or washes three hourly.[1D]	*Child >6 months and adults:* mebendazole[1D,3B-] *Child <6 months or pregnancy (at least in 1st trimester):* only hygiene measure for 6 weeks[1D]	100mg stat[3B-]	Stat dose to entire household. For index case repeat after 2 weeks if persistent

GENITAL TRACT INFECTIONS				
STI screening	People with risk factors should be screened for chlamydia, gonorrhoea, HIV, and syphilis.[1D] Refer individual and partners to GUM.[1D] **Risk factors:** <25 years; no condom use; recent/frequent change of partner; symptomatic partner; area of high HIV.[2B-]			
Chlamydia trachomatis SIGN Chlamydia	Opportunistically screen all patients aged 16-24 years.[1B-] Treat partners and refer to GUM.[2D,3A+] Repeat test for cure in all at three months.[1B-,4B-] **Pregnancy/breastfeeding:** azithromycin is most effective.[5A+,6D,7A+,8A+,9D] As lower cure rate in pregnancy, test for cure at least three weeks after end of treatment.[1B-,3A+]	*First line:* azithromycin[2D,3A+,5A+,7A+,8A+] *OR* doxycycline[2D,3A+,5A+] *Pregnancy/breastfeeding:* azithromycin[3A+,7A+,8A+,9D] *OR* erythromycin[3A+,6D,7A+,8A+] *OR* amoxicillin[6D,7A+,8A+]	1g[2D,3A+,5A+,7A+] 100mg BD[2D,3A+,5A+] 1g[2D,3A+,5A+,7A+] 500mg BD[3A+]OR 500mg QDS[3A+] 500mg TDS[7A+,8A+]	Stat[2D,3A+,5A+,7A+,8A+] 7 days[2D,3A+,5A+] Stat[2D,3A+,5A+,7A+,8A+] 14 days[3A+] 7 days[3A+] 7 days[7A+,8A+]
Undifferentiated urethritis	Antibiotic resistance is now very high.[1D,2D] Use IM ceftriaxone[2D] and oral azithromycin;[1D,3D] refer to GUM.[4B-]Test of cure is essential.[3D]	*First line:* Azithromycin *PLUS* Ceftriaxone[1D]	1g[2D,3A+,5A+,7A+] 500mg IM[1D,2D]	Stat[2D,3A+,5A+,7A+,8A+] Stat[3B-]
Epididymitis	Usually due to Gram-negative enteric bacteria in men over 35 years with low risk of STI.[1A+,2D] If under 35 years or STI risk, refer to GUM.[1A+,2D]	Doxycycline[1A+,2D,3A+] *OR* ofloxacin[1A+,2D] *OR* ciprofloxacin[1A+,2D,3A+]	100mg BD[1A+,2D,3A+] 200mg BD[1A+,2D] 500mg BD[1A+,2D,3A+]	10-14 days[1A+,2D] 14 days[1A+,2D] 10 days[1A+,2D,3A+]
Vaginal candidiasis BASHH Vulvovaginal candidiasis	All topical and oral azoles give over 70% cure.[1A+,2A+] **Pregnancy:** avoid oral azoles,[1A+,3D] and use intravaginal treatment for 7 days.[4A+] **Recurrent (>4 episodes per year):**[5D] 150mg oral fluconazole every 72 hours for three doses induction,[1A+] followed by one dose once a week for six months maintenance.[1A+,5D]	Clotrimazole[1A+,5D] *OR* miconazole[1A+] *OR* oral fluconazole (not in pregnancy)[1A+,3D] *Recurrent:* fluconazole (induction/maintenance)[1A+]	500mg pessary[1A+] *OR* 5g 10% cream[1A+] 5g 20mg/g vaginal cream [1A+] 150mg[1A+,3D] 150mg every 72 hours *THEN* 150mg once a week[1A+,3D,5D]	} Stat[1A+] 14 nights[1A+] Stat[1A+,3D] 3 doses[1A+] 6 months[1A+,5D]
Bacterial vaginosis BASHH Bacterial vaginosis	Oral metronidazole is as effective as topical treatment,[1A+] and is cheaper.[2D] Seven days results in fewer relapses than 2g stat at four weeks.[1A+,2D] **Pregnant/breastfeeding:** avoid 2g dose.[3A+,4D] Treating partners does not reduce relapse.[5A+]	Oral metronidazole[1A+,3A+] *OR* metronidazole 0.75% vaginal gel[1A+,2D,3A+] *OR* dequalinium vaginal tablet *OR* clindamycin 2% cream	400mg BD[1A+,3A+] 2g[1A+,2D] 5g applicator at night[1A+,2D,3A+] 10mg at night 5g applicator at night[1A+,2D,3A+]	7 days[1A+] Stat[2D] 5 nights[1A+,2D,3A+] 6 nights 5 nights[1A+,2D,3A+]
Genital herpes BASHH Anogenital herpes	**Advise:** saline bathing,[1A+] analgesia,[1A+] or topical lidocaine for pain,[1A+] and discuss transmission.[1A+] **First episode:** treat within five days if new lesions or systemic symptoms,[1A+,2D] and refer to GUM.[2D] **Recurrent:** self-care if mild,[2D] or immediate short course antiviral treatment,[1A+,2D] or suppressive therapy if more than six episodes per year.[1A+,2D]	*First line:* oral aciclovir[1A+,2D,3A+,4A+] *OR* valaciclovir[1A+,3A+,4A+] *OR* famciclovir[1A+,4A+]	400mg TDS[1A+,3A+] 800mg TDS (if recurrent)[1A+] 500mg BD[1A+] 250mg TDS[1A+] 1g BD (if recurrent)[1A+]	5 days[1A+] 2 days[1A+] 5 days[1A+] 5 days[1A+] 1 day[1A+]
Gonorrhoea	Antibiotic resistance is now very high.[1D,2D] Use IM ceftriaxone[2D] and oral azithromycin;[1D,3D] refer to GUM.[4B-]Test of cure is essential.[3D]	Ceftriaxone[1D,2D,3D,4B-] *PLUS* oral azithromycin[1D,3D,4B-]	500mg IM[1D,2D] 1g[1D]	Stat[3B-] Stat[3B-]
Trichomoniasis BASHH Trichomoniasis	Oral treatment needed as extravaginal infection common.[1D] Treat partners,[1D] and refer to GUM for other STIs.[1D] **Pregnancy/breastfeeding:** avoid 2g single dose metronidazole;[2A+,3D] clotrimazole for symptom relief (not cure) if metronidazole declined.[2A+,4A-,5D]	Metronidazole[1A+,2A+,3D,6A+] *Pregnancy for symptoms:* clotrimazole[2A+,4A-,5D]	400mg BD[1A+,6A+] 2g (more adverse effects)[6A+] 100mg pessary at night[5D]	5-7 days[1A+] Stat[1A+,6A+] 6 nights[5D]
Pelvic inflammatory disease BASHH PID	Refer women and sexual contacts to GUM.[1A+] Always send samples for gonorrhoea and chlamydia.[1A+] If gonorrhoea likely (partner has it; sex abroad; severe symptoms),[2A-] use regimen with ceftriaxone, as resistance to quinolones is high.[1A+,2A-,3C,4C] Mycoplasma genitalium is under discussion as a possible cause of PID but diagnostic tests are not widely available in the NHS and may only be available in referral centres. The importance of M. Genitalium is currently under review by BASHH.	metronidazole *PLUS* doxycycline *PLUS* ceftriaxone[1A+] ***Low risk of GC*** Metronidazole *PLUS* ofloxacin [1A+] ***Low risk of GC (high activity against M. genitalium)*** Moxifloxacin[1A+]	400mg BD[1A+] 100mg BD[1A+] 500mg IM[1A+] 400mg BD[1A+] 400mg BD[1A+] 400mg OD[1A+]	14 days[1A+] 14 days[1A+] Stat[1A+] 14 days[1A+] 14 days[1A+] 14 days[1A+]
SKIN AND SOFT TISSUE INFECTIONS				
Note: Refer to RCGP Skin Infections online training.[1D] For MRSA, discuss therapy with microbiologist.[1D]				
Impetigo PHE Impetigo	Reserve topical antibiotics for very localised lesions to reduce risk of bacteria becoming resistant.[1D,2B+] Only use mupirocin if caused by MRSA.[1D,3A+] **Extensive, severe, or bullous:** oral antibiotics[4D].	Topical fusidic acid[2D,3A+] *MRSA:* topical mupirocin[3A+] Oral flucloxacillin[1D,3A+] Oral clarithromycin[1D,4D]	Thinly TDS[4D] ☺ 2% ointment TDS[3A+] ☺ 250-500mg QDS[3A+] ☺ 250-500mg BD[4D] ☺	5 days[1D,2D] 5 days[1D,2D,3A+] 7 days[3A+] 7 days[4D]
Cold sores CKS Cold sores	**Most resolve** after 5 days without treatment.[1A-,2A-] Topical antivirals applied prodromally can reduce duration by 12-18 hours.[1A-,2A-,3A-] **If frequent, severe, and predictable triggers:** consider oral prophylaxis:[4D,5A+] aciclovir 400mg, twice daily, for 5-7 days.[5A+,6A+]			

Based on PHE version published: November 2017

PVL-SA PHE PVL-SA	Panton-Valentine leukocidin (PVL) is a toxin produced by 20.8-46% of *S. aureus* from boils/abscesses.[1B+,2B+,3B-] PVL strains are rare in healthy people, but severe.[2B+] **Suppression therapy** should only be started after primary infection has resolved, as ineffective if lesions are still leaking.[4D] **Risk factors for PVL:** recurrent skin infections;[2B+] invasive infections;[2B+] MSM;[3B-] if there is more than one case in a home or close community[2B+,3B-] (school children;[3B-] millitary personell;[3B-] nursing home residents;[3B-] household contacts).[3B-] If recurrent boils, consider treating all household contacts with topical suppression therapy.			
Eczema NICE Eczema	**No visible signs of infection:** antibiotic use (alone or with steroids)[1A+] encourages resistance and does not improve healing.[1A+] **With visible signs of infection:** use oral flucloxacillin[2D] or clarithromycin,[2D] or topical treatment (as in impetigo).[2D]			
Acne CKS Acne vulgaris	**Mild (open and closed comedones)[1D] or moderate (inflammatory lesions):**[1D] **First line:** self-care[1D] (wash with mild soap; do not scrub; avoid make-up).[1D] **Second line:** topical retinoid or benzoyl peroxide.[2D] **Third-line:** add topical antibiotic,[1D,3A+] or consider addition of oral antibiotic.[1D] **Severe (nodules and cysts):**[1D] add oral antibiotic (for 3 months max)[1D,3A+] and refer.[1D,2D]	*First line:* self-care[1D] *Second line:* topical retinoid[1D,2D,3A+] *OR* benzoyl peroxide[1A-,2D,3A+,4A-] *Third-line:* topical clindamycin[3A+] *If treatment failure/severe:* oral tetracycline[1A-,3A+] *OR* oral doxycycline[3A+,4A-]	Thinly OD[3A+] ☺ 5% cream OD-BD[3A+] ☺ 1% cream, thinly BD[3A+] ☺ 500mg BD[3A+] ☺ 100mg OD[3A+] ☺	6-8 weeks[1D] 6-8 weeks[1D] 12 weeks[1A-,2D] 6-12 weeks[3A+] 6-12 weeks[3A+]
Cellulitis and erysipelas CREST Cellulitis BLS Cellulitis	**Class I:** patient afebrile and healthy other than cellulitis, use oral flucloxacillin alone.[1D,2D,3A+] **If river or sea water exposure:** seek advice.[1D] **Class II:** patient febrile and ill, or comorbidity, admit for intravenous treatment,[1D] or use OPAT.[1D] **Class III:** if toxic appearance, admit.[1D] **Erysipelas:** often facial, may be unilateral.[4B+] Use flucloxacillin for non-facial erysipelas.[1D,2D,3A+]	Flucloxacillin[1D,2D,3A+] *Penicillin allergy:* clarithromycin[1D,2D,3A+,5A+] *Penicillin allergy and taking statins:* doxycycline[2D] *Unresolving:* clindamycin[3A+] *Facial (non-dental):* co-amoxiclav[6B-]	500mg QDS[1D,2D] ☺ 500mg BD[1D,2D] ☺ 200mg stat then 100mg OD[2D] 300mg QDS[1D,2D] ☺ 500/125mg TDS[1D] ☺	7 days;[1D] if slow response, continue for a further 7 days[1D]
Leg ulcer PHE Venous leg ulcers	Ulcers are always colonised.[1C,2A+] Antibiotics do not improve healing unless active infection[2A+] (purulent exudate/odour; increased pain; cellulitis; pyrexia).[3D]	Flucloxacillin[5D] *OR* clarithromycin[5D]	500mg QDS[5D] ☺ 500mg BD[5D] ☺	As for cellulitis[5D]
Bites: CKS Bites	**Human:** thorough irrigation is important.[1A+,2D] Antibiotic prophylaxis is advised.[1A+,2D,3D] Assess risk of tetanus, rabies,[1A+] HIV, and hepatitis B and C.[3D] **Cat:** always give prophylaxis.[1A+,3D] **Dog:** give prophylaxis if: puncture wound;[1A+,3D] bite to hand, foot, face, joint, tendon, or ligament;[1A+] immunocompromised, cirrhotic, asplenic, or presence of prosthetic valve/joint.[2D,4A+] **Penicillin allergy:** Review all at 24 and 48 hours,[3D] as not all pathogens are covered.[2D,3D]	*Human or animal bite:* co-amoxiclav[2D,3D] *Penicillin allergy (human bite):* metronidazole[3D,4A+] *AND* clarithromycin[3D,4A+] *Penicillin allergy (animal bite):* metronidazole[3D,4A+] *AND* doxycycline[3D]	625mg TDS[3D] ☺ 400mg TDS[2D] ☺ 500mg BD[2D] ☺ 400mg TDS[2D] ☺ 100mg BD[2D] ☺	5 days[3D,5D]
Scabies NHS Scabies	Treat **whole** body from ear/chin downwards,[1D,2D] and under nails.[1D,2D] **Under 2 years/elderly:** also treat face/scalp.[1D,2D] **Home/sexual contacts:** treat within 24 hours.[1D]	Permethrin[1D,2D,3A+] *Permethrin allergy:* malathion[1D]	5% cream[1D,2D] ☺ 0.5% aqueous liquid[1D] ☺	2 applications, 1 week apart[1D]
Mastitis (lactating mother) CKS Mastitis and breast abscess	*S. aureus* is the most common infecting pathogen.[1D] Suspect if woman has: a painful breast;[2D] fever and/or general malaise;[2D] a tender, red breast.[2D] **Breastfeeding:** oral antibiotics are appropriate, where indicated.[2D,3A+] Women should continue feeding,[1D,2D] including from the affected breast.[2D]	Flucloxacillin[2D] *Penicillin allergy:* clarithromycin[2D] *OR* erythromycin[2D] *OR*	500mg QDS[2D] 500mg BD[2D] 500mg QDS[2D]	10 days[2D]
Dermatophyte infection: skin PHE Fungal skin and nail infections	**Most cases:** terbinafine is fungicidal;[1D] treatment time shorter than with fungistatic imidazoles.[1D,2A+,3A+] If candida possible, use imidazole.[4D] **If intractable, or scalp:** send skin scrapings.[1D] **If infection confirmed:** use oral terbinafine[1D,3A+,4D] or itraconazole.[2A+,3A+,5D] **Scalp:** oral therapy,[6D] and discuss with specialist.[1D]	Topical terbinafine[3A+,4D] *OR* clotrimazole, OR miconazole [2A+,3A+] *For athlete's foot:* topical undecenoates[2A+] (eg Mycota®)[2A+]	1% OD-BD[2A+] ☺ 1% BD[2A+] ☺ 2% BD ☺ OD-BD[2A+] ☺	1-4 weeks[3A+] 4-6 weeks[2A+,3A+]
Dermatophyte infection: nail CKS Fungal nail infection	Take nail clippings;[1D] start therapy only if infection is confirmed.[1D] Oral terbinafine is more effective than oral azole.[1D,2A+,3A+,4D] Liver reactions 0.1 to 1% with oral antifungals.[3A+] If candida or non-dermatophyte infection is confirmed, use oral itraconazole.[1D,3A+,4D] Topical nail lacquer is not as effective.[1D,5A+,6D] **To prevent recurrence:** apply weekly 1% topical antifungal cream to entire toe area.[6D] **Children:** seek specialist advice.[4D]	*First line:* terbinafine[1D,2A+,3A+,4D,6D] *Second line:* itraconazole[1D,3A+,4D,6D]	250mg OD[1D,2A+,6D] ☺ — Fingers: 6 weeks[1D,6D]; Toes: 12 weeks[1D,6D] 200mg BD[1D,4D] ☺ — 1 week a month:[1D] Fingers: 2 courses[1D] Toes: 3 courses[1D] Stop treatment when continual, new, healthy, proximal nail growth.[6D]	

Varicella zoster/ chickenpox PHE Varicella **Herpes zoster/ shingles** PCDS Herpes zoster	**Pregnant/immunocompromised/neonate:** seek urgent specialist advice.[1D] **Chickenpox:** consider aciclovir[2A+,3A+,4D] if: onset of rash <24 hours,[3A+] and one of the following: >14 years of age;[4D] severe pain;[4D] dense/oral rash;[4D,5B+] taking steroids;[4D] smoker.[4D,5B+] **Shingles:** treat if >50 years[6A+,7D] (PHN rare if <50 years)[8B+] and within 72 hours of rash,[9A+] or if one of the following: active ophthalmic;[10D] Ramsey Hunt;[4D] eczema;[4D] non-truncal involvement;[7D] moderate or severe pain;[7D] moderate or severe rash.[5B+,7D] **Shingles treatment if not within 72 hours:** consider starting antiviral drug up to one week after rash onset,[11B+] if high risk of severe shingles[11B+] or complications[11B+] (continued vesicle formation;[4D] older age;[6A+,7D,11B+] immunocompromised;[4D] severe pain).[7D,11B+]	Aciclovir[3A+,6A+,9A+,12B+,13A-,14A+] *Second line for shingles if poor compliance:* valaciclovir[7D,9A+,13A-]	800mg five times daily[15A-] ☺ 1g TDS[13A-] ☺	7 days[13A-,15A-]
EYE INFECTIONS				
Conjunctivitis AAO Conjunctivitis	**First line:** bath/clean eyelids with cotton wool dipped in sterile saline or boiled (cooled) water, to remove crusting.[1D] **Treat only if severe**,[2A+] as most cases are viral[3D] or self-limiting.[2A+] **Bacterial conjunctivitis:** usually unilateral and also self-limiting.[2A+,3D] It is characterised by red eye with mucopurulent, not watery discharge.[3D] 65% and 74% resolve on placebo by days 5 and 7.[4A-,5A+] **Third line:** fusidic acid as it has less gram-negative activity.[6A-,7D]	*First line:* self-care[1D] *Second line:* chloramphenicol[1D,2A+,4A-,5A+] 0.5% eye drop[1D,2A+] *OR* 1% ointment[1D,5A+] *OR* 0.3% ofloxacin *Third line:* fusidic acid 1% gel[2A+,5A+,6A-]	2 hourly for 2 days,[1D,2A+] then QDS[1D] ☺ 3-4 times daily,[1D] or just at night if using eye drops during the day[1D] 2-4 hourly for 2 days,[1D,2A+] then QDS[1D] ☺ BD[1D,7D] ☺	48 hours after resolution (max 10-14 days)[2A+,7D] 48 hours after resolution (max 10 days) 48 hours after resolution
Blepharitis CKS Blepharitis	**First line:** lid hygiene[1D,2A+] for symptom control,[1D] including: warm compresses;[1D,2A+] lid massage and scrubs;[1D] gentle washing;[1D] avoiding cosmetics.[1D] **Second line:** topical antibiotics if hygiene measures are ineffective after 2 weeks.[1D,3A+] **Signs of Meibomian gland dysfunction,**[3D] **or acne rosacea:**[3D] seek specialist advice .[1D]	*First line:* self-care[1D] *Second line:* Chloramphenicol[1D,2A+,3A-]	1% ointment BD[2A+,3D] ☺	6 week trial[3D]

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 provided details of how to access emergency dental care.

ILLNESS	GOOD PRACTICE POINTS	TREATMENT	ADULT DOSE (☺ = child doses)	DURATION OF TREATMENT
Note: Antibiotics do not cure toothache.[1D] First line treatment is with paracetamol[1D] and/or ibuprofen;[1D] codeine is not effective for toothache.[1D]				
Mucosal ulceration and inflammation (simple gingivitis) SDCEP Dental problems	Temporary pain and swelling relief can be attained with saline mouthwash.[1D] Use antiseptic mouthwash if more severe,[1D] and if pain limits oral hygiene to treat or prevent secondary infection.[1D,2A-] The primary cause for mucosal ulceration or inflammation (aphthous ulcers;[1D] oral lichen planus;[1D] herpes simplex infection;[1D] oral cancer)[1D] needs to be evaluated and treated.[1D]	Saline mouthwash[1D] Chlorhexidine 0.2%[1D, 2A-,3A+,4A+] (do not use within 30mins of toothpaste)[1D] Hydrogen peroxide 6%[5A-] (spit out after use)[1D]	½ tsp salt in warm water[1D] ☺ 1 min BD with 10mL[1D] ☺ 2-3 mins BD-TDS with 15ml in ½ glass warm water[1D] ☺	Always spit out after use[1D] Use until lesions resolve[1D]/less pain allows for oral hygiene[1D]
Acute necrotising ulcerative gingivitis	Refer to dentist for scaling and hygiene advice.[1D,2D] Antiseptic mouthwash if pain limits oral hygiene.[1D] Commence metronidazole in the presence of systemic signs and symptoms.[1D,2D,3B-,4B+,5A-]	Chlorhexidine 0.2%[1D] *OR* hydrogen peroxide 6%[1D] Metronidazole[1D,3B-,4B+,5A-]	See above dosing for mucosal ulceration[6D] 400mg TDS[1D,2D] ☺	Until pain allows for oral hygiene[6D] 3 days[1D,2D]
Pericoronitis SDCEP Dental problems	Refer to dentist for irrigation and debridement.[1D] If persistent swelling or systemic symptoms,[1D] use metronidazole[1D,2A+,3B+] or amoxicillin.[1D,3B+] Use antiseptic mouthwash if pain and trismus limit oral hygiene.[1D]	Metronidazole[1D,2A+,3B+] *OR* amoxicillin[1D,3B+] Chlorhexidine 0.2%[1D] *OR* hydrogen peroxide 6%[1D]	400mg TDS[1D] ☺ 500mg TDS[1D] ☺ See above dosing for mucosal ulceration[1D]	3 days[1D,2A+] 3 days[1D] Until pain allows for oral hygiene[1D]
Dental abscess SDCEP Dental problems	Regular analgesia should be the first option[1A+] until a dentist can be seen for urgent drainage,[1A+,2B-,3A+] as repeated courses of antibiotics for abscesses are not appropriate.[1A+,4A+] Repeated antibiotics alone, without drainage, are ineffective in preventing the spread of infection.[1A+,5C] Antibiotics are only recommended if there are signs of severe infection,[3A+] systemic symptoms,[1A+,2B-,4A+] or a high risk of complications.[1A+] Patients with severe odontogenic infections (cellulitis,[1A+,3A+] plus signs of sepsis;[3A+,4A+] difficulty in swallowing;[6D] impending airway obstruction)[6D] should be referred urgently for hospital admission to protect airway,[6D] for surgical drainage[3A+] and for IV antibiotics.[3A+] The empirical use of cephalosporins,[6D] co-amoxiclav,[6D] clarithromycin,[6D] and clindamycin[6D] do not offer any advantage for most dental patients,[6D] and should only be used if there is no response to first line drugs.[6D]			
	If pus is present, refer for drainage,[1A+,2B-] tooth extraction,[2B-] or root canal.[2B-] Send pus for investigation.[1A+] If spreading infection[1A+] (lymph node involvement[1A+,4A+] or systemic signs,[1A+,2B-,4A+] ie fever[1A+] or malaise)[4A+] *ADD* metronidazole.[6D,7B+] Use clarithromycin in true penicillin allergy[6D] and, if severe, refer to hospital.[3A+,6D]	Amoxicillin[6D,8B+,9C,10B+] Metronidazole[6D,8B+,9C] *Penicillin allergy:* clarithromycin[6D]	500mg-1g TDS[6D] ☺ 400mg TDS[6D] ☺ 500mg BD[6D] ☺	Up to 5 days;[6D,10B+] review at 3 days[9C,10B+]

Based on PHE version published: November 2017