NHS Milton Keynes Clinical Commissioning Group

Empirical Guidance on the Management of Infection in Primary Care in adults

Based on Guidance issued by Public Health England and endorsed by the British Infection Association and Royal College of General Practitioners.

Principles of treatment

1. This guidance is to provide a simple, best guess approach to the treatment of common infections but professional judgment should be used and patients should be involved in the decision making process.
2. Prescribe an antibiotic only when there is likely to be a clear clinical benefit to minimise the emergence of bacterial resistance in the community.
3. Antibiotics should be reviewed based on culture results.
4. A dose and duration of treatment for adults is suggested but may need modification for age, weight, height and renal function, always check for hypersensitivity history. In severe or recurrent or complicated cases send samples for microbiology and consider a larger dose or longer course. All treatments are oral or topical unless specified. Please refer to BNF for further dosing and interaction information.
5. There is a lower threshold for antibiotics in immunocompromised or those with multiple morbidities; consider culture and seek advice.
6. Consider a no, or delayed, antibiotic strategy for acute sore throat, common cold, acute cough and acute sinusitis.
7. Limit prescribing over the telephone to exceptional cases
8. Use simple generic antibiotics if possible. Avoid broad spectrum antibiotics (e.g. co-amoxiclav, quinolones and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase the risk of *Clostridium difficile*, MRSA, ESBLs and other resistant organisms.
9. Avoid widespread use of topical antibiotics (especially those agents available as systemic preparations (eg fusidic acid)
10. Please refer to BNF for update on antibiotics in pregnancy and in breast feeding, take specimens to guide treatment , AVOID tetracycline's, quinolones or high dose metronidazole (2g) unless specialist advice. Short term use of nitrofurantoin is not expected to cause fetal problems. Trimethoprim is also unlikely to cause problems unless poor dietary intake or taking another folate antagonist e.g. antiepileptic.
11. Where a "best guess" therapy has failed or special circumstances exist, microbiological advice can be obtained on 01908 243106/3404
12. Penicillin allergy: please take proper history and distinguish between anaphylaxis, just rash and intolerance. Important to inform patients and include in any letter to other healthcare workers.

Illness	Comments	Drug	Dose	Tx duration
Upper Respiratory Tract Infections: Consider delayed antibiotic Prescriptions and Patient Information Leaflet				
Influenza	**Annual vaccination is essential for all those at risk of influenza.** For otherwise healthy adults, the use of antivirals is **not** recommended. Treat "at risk" patients only when influenza is circulating in the community, within 48 hours of start of symptoms. At risk: pregnant (including up to two weeks post-partum), those 65 years or over, chronic respiratory disease including asthma & COPD, significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus, chronic neurological, renal or liver disease. Patients over 13 years use oseltamivir 75mg oral capsule BD unless pregnant or there is resistance to oseltamivir, then use zanamivir 10mg (2 inhalations by diskhaler) and seek advice. For patients 13 years and under – seek further advice from the HPA Antivirals may be used for post-exposure prophylaxis during localized outbreaks in at risk people living in long-term residential or nursing homes on advice from the Public Health England. (see NICE Influenza http://guidance.nice.org.uk/TA158)			
Pharyngitis/ Sore throat/ Tonsillitis	**Majority of sore throats are viral; Avoid antibiotics as 90% resolve in 7 days without and pain is only reduced by 16 hours.** Patients with 3 or 4 Centor criteria (Fever, purulent tonsils, cervical adenopathy, absence of cough) have a 40% chance of Group A Beta Haemolytic Streptococci (GABHS) infection and will benefit more from antibiotics, for these patients, consider offering a 2 or 3 day delayed prescription or immediate prescription (NICE Clinical Guideline 69) You need to treat 200 patients to prevent one case of otitis media or over 4000 patients to prevent one case of quinsy (Peterson et al. *BMJ* 2007;**335**:982-4. Spinks A et al. *Cochrane Database of systematic reviews* 2006)			
	Treatment for 10 days with penicillin. Under treatment may lead to treatment failure or increased bacterial resistance. Amoxicillin should be avoided due to high risk of rash if Epstein Barr virus.	Penicillin V *Only if penicillin allergic:* Clarithromycin	500mg QDS **or 1g BD** (QDS if severe) 250mg - 500mg BD	10 days 5 days
Acute Otitis Media (Child doses)	Use ibuprofen or paracetamol to optimal effect. **Illness resolves in 66% in 24 hours and antibiotics have no effect.** Antibiotics do not reduce pain in first 24 hours, subsequent attacks, perforation or deafness. Consider 2 or 3 day delayed or immediate antibiotic if: • <2 years AND bilateral AOM (NNT4) or bulging membrane and 4 or more marked symptoms • Any age group with otorrhoea (NNT3) You need to treat >4000 patients to prevent 1 case of mastoiditis (Thompson et al *Pediatrics* 2009;**123(2)**:424-30)	Amoxicillin *If penicillin allergic:* Erythromycin (Haemophilus is an extracellular pathogen, thus macrolides such as erythromycin which concentrate intracellularly, are less effective treatment).	1 month to 1 year 125mg TDS 1-5 years 250mg TDS 5-18 years 500mg TDS <2yrs: 125mg QDS 2-8yrs: 250mg QDS >8yrs:250-500mg QDS	5 days 5 days 5 days 5 days
Acute Otitis Externa	**First use aural toilet (if available) and analgesia.** Cure rates similar at 7 days for topical acetic acid or antibiotic +/- steroid, therefore use as second line therapy if symptoms persist after 7 days. Oral antibiotics are not as effective and should only be given if cellulitis or disease extending outside ear canal, then start oral antibiotics for cellulitis **or** refer.	Acetic Acid 2% (Earcalm spray®) *2nd Line:* Neomycin sulphate with corticosteroid Eg Betnesol-N®, Otomize®, Otosporin®	1 spray tds (available OTC) 3 drops TDS	7 days 7 days min to 14 days max
Acute Sinusitis	**Avoid antibiotics as many are viral, optimize analgesia.** 80% resolve in 14 days without antibiotics and they only offer marginal benefit after 7 days (NNT15). Consider 7 day delayed or immediate antibiotics if purulent nasal discharge (NNT8), fever>38, maxillary toothache or raised ESR. Anaerobes are more common in persistent rhinosinusitis, therefore in chronic infection, use an agent with anti-anaerobic activity e.g. co-amoxiclav.	Amoxicillin Or Doxycycline Or Penicillin V Co-amoxiclav or Penicillin allergy: Ciprofloxacin **WITH** metronidazole	500mg TDS (1g if severe) 200mg stat/100mg OD 500mg QDS 625mg TDS 250-500mg BD 400mg TDS	7 days 7 days 7 days 7 days 7 days 7 days

Illness	Comments	Drug	Dose	Tx duration
Lower Respiratory Tract Infections				
Note: Avoid tetracyclines in pregnancy. Low doses of penicillins are more likely to select out resistance. The quinolones (ciprofloxacin and ofloxacin) should not be used 1st line as they have poor activity against pneumococci. Reserve all quinolones including levofloxacin for PROVEN resistant organisms. *Bronchiectasis infective exacerbations: please see Map of Medicine.*				
Acute cough, Bronchitis	Antibiotics have marginal benefits in healthy adults. Reserve use for patients with co-morbidities, consider 7-14 day delayed antibiotic (from symptom onset) with advice, i.e. patient leaflet, and explain symptom resolution can take 3 weeks. Consider immediate antibiotics if >80 years and one of: hospitalization in last year, oral steroids, diabetic, congestive heart failure OR >65 with two of above.	Amoxicillin Or Doxycycline	500mg TDS 200mg stat/100mg OD	5 days 5 days
Acute exacerbation of COPD	Small but significant benefit to antibiotic use. Use promptly if increased dyspnoea and increased purulent sputum and/or increased sputum volume.	Amoxicillin Or Doxycycline Or Clarithromycin	500mg TDS 200mg stat/100mg OD 500mg BD	5 days 5 days 5 days
	If clinical failure to 1st line antibiotics or resistance factors eg: severe COPD, frequent exacerbations, 1st line antibiotics in last 3 months, co-morbid disease	If failure to 1st line or resistance factors: Co-amoxiclav	 625mg TDS	 5 days
Community acquired pneumonia - treatment in the community	Use CRB65 score to help guide therapy. Each scores 1: **C**onfusion (AMT<8); **R**espiratory rate >30/min; **B**P systolic <90 or diastolic ≤ 60; **65** (age over 65) Score 0: suitable for home treatment Score 1-2: hospital assessment or admission **Score 3-4: URGENT hospital admission** Mycoplasma is rare in over 65's Add Flucloxacillin for 14-21 days for suspected infection with staphylococci (in influenza or measles)	If CRB65=0: Amoxicillin Alternative: Doxycycline Or Clarithromycin	 500mg TDS 200mg stat/100mg OD 500mg BD	 7 days 7 days 7 days
		If CRB65=1 and at home, also cover for atypical organisms: Amoxicillin **AND** Clarithromycin Or Doxycycline alone	 500mg TDS 500mg BD 200mg stat/100mg OD	 7- 10 days 7- 10 days
Urinary Tract Infections				
Note: People >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 and treatment may cause harm; only treat if systemically unwell or pyelonephritis likely. *Do not use prophylactic antibiotics for catheter changes unless history of catheter –change associated UTII/ sepsis. Amoxicillin should not be used empirically as resistance is over 50% locally.*				
Uncomplicated UTI in women i.e. no fever or flank pain or catheter in adults: **UTI in men:**	In women with severe or with 3 or more symptoms treat. In women with mild or 2 or less symptoms, use urine dipstick to exclude UTI. (-ve nitrite, leucocyte and blood gives 76% negative predictive value.) In women <65, cloudy urine, or +ve dipstick (nitrite **with** either blood or leucocytes has 92% positive predictive value), indicates treatment. Consider prostatitis if recurrent UTI or if febrile UTI. Always send PRE-TREATMENT MSUs for all men. If symptoms are mild/non-specific, use negative nitrite and leucocytes to EXCLUDE UTI.	Trimethoprim or Nitrofurantoin if GFR over 45ml/min (ESBLs may be sensitive)	200mg BD 50mg QDS Or 100mg m/r BD	3 days in women of all ages 7 days in men
		2nd Line depends on susceptibility of organism isolated. Multi-resistant bacteria producing ESBLs are increasing, perform urine cultures in treatment failures. Pivmecillinam / or fosfomycin may be recommended if no history of penicillin allergy. **Avoid cephalosporins and quinolones, especially in the over 60s.** Seek advice from the Microbiology Laboratory.		
Recurrent UTI in women ≥3 infections /year **Urinary Catheter related infections**	Cranberry products, post coital or stand by antibiotics may reduce recurrence. Nightly prophylaxis is effective, but increases adverse effects and resistance. Cranberry products may interact with warfarin. Please see local guidance, breakthrough acute UTIs may indicate change in therapy according to culture results. Only treat if systemically unwell or pyelonephritis likely, send urine for culture as per local guidance, please mark sample as CSU.	Nitrofurantoin Or Trimethoprim Trimethoprim or Nitrofurantoin- (ESBLs may be sensitive)	50-100mg ON 100mg ON 200mg BD 50mg QDS	Stat post coital (off label) 7 days
UTI in pregnancy (refer to BNF for contra-indications)	Send MSU for culture and start empirical antibiotics. Short term use of Nitrofurantoin in pregnancy is unlikely to cause problems to the foetus. Avoid Trimethoprim if low folate status or taking folate antagonist (e.g. antiepileptic or proguanil). And avoid Nitrofurantoin at term – may produce neonatal haemolysis. If pregnant or penicillin allergy, please state on request form. Cefalexin use is not contra-indicated in pregnancy; however there is a small risk of C *difficile* infection. May require a test of cure 7 days after completion of treatment.	Nitrofurantoin Or Amoxicillin (if sensitive) Second line Trimethoprim; give folate if first trimester Alternative: Cefalexin	50mg QDS or 100mg m/r BD 500mg BD 200mg BD (off label) 500mg TDS	7 days 7 days 7 days 7 days

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UTI in Children Reference: NICE Guidelines CG54 Aug 2007	Refer all children <3months old on basis of positive nitrite to specialist for urgent assessment In all children 3 months or over, send MSU for culture and susceptibility, use positive nitrite to start antibiotics. Only refer children for subsequent imaging if <6 months old, or with atypical or recurrent UTI. **Pyelonephritis**: Consider referral to paediatric specialist. Send urine for culture.	**Lower UTI:** Trimethoprim or Nitrofurantoin *2nd Line* Cefalexin **Upper UTI:** Co-amoxiclav or as recommended by lab based on MC+S	 See BNF for Children for dosage 	Lower UTI 3 days Upper UTI 7-10 days
Acute Pyelonephritis (Adult)	Consider admission, send MSU for culture and sensitivities and start antibiotics. Review culture results immediately and change antibiotics appropriately. If no response within 24 hours admit.	Ciprofloxacin Or Co-amoxiclav	500mg BD 625mg TDS	 7 days
Acute prostatitis	Send MSU for culture and start antibiotics. 4 weeks treatment may prevent chronic infection. Quinolones are more effective due to greater penetration into prostate.	Ciprofloxacin Or Ofloxacin Or Trimethoprim	500mg BD 200mg BD 200mg BD	28 days 28 days 28 days
Genital Tract Infections – Contact UKTIS for information on foetal risks if patient is pregnant 0844 8920909				
***Note:** Refer patients with risk factors for STIs (<25 years, no condom use, recent (<12 month) or frequent change of sexual partner, previous STI, symptomatic partner) to REACH sexual health services 0300 3038273 or Brook 0808 8021234 for screening and advice.*				
Vaginal Candidiasis	All topical and oral azoles give 75% cure. In pregnancy, avoid oral azole, use intravaginal product	Clotrimazole Or Clotrimazole 10% Or Fluconazole Pregnancy: Clotrimazole Or Miconazole 2% cream	500mg pessary 5g vaginal cream 150mg orally 100mg ON 5g intravaginally BD	Stat Stat Stat 6 nights 7 days
Bacterial Vaginosis	A 7 day course of oral metronidazole is slightly more effective than 2g stat. Avoid 2g stat dose in pregnancy and breast feeding. Topical treatment gives similar cure rates but is more expensive. Treating partners does not reduce relapse.	Metronidazole Or Metronidazole 0.75% vaginal gel Or Clindamycin 2% Cream	400mg BD or 2g 5g applicatorful at night 5g applicatorful at night	7 days Stat 5 days 7 days
Chlamydia trachomatis/ Urethritis	Treat patient & refer to Sexual Health for follow up and contact tracing. In pregnancy or breastfeeding, azithromycin is most effective, but use is "off-label". Tetracyclines are contraindicated in pregnancy. Due to lower cure rate in pregnancy, test for cure 6 weeks after treatment.	Azithromycin (off label in pregnancy) Or Doxycycline *2nd line* Erythromycin Or Amoxicillin	1g 100mg BD 500mg QDS 500mg TDS	stat 7 days 7 days 7 days
Suspected Epididymitis/ orchitis	Could be due to STD infections or enteric pathogens. Appropriate samples need to be taken –MSU, samples for Chlamydia & Gonococcus if appropriate. Refer to sexual health if due to STDs or under 35 years of age	Doxycycline or Metronidazole Treatment will be based on causative organisms, age & sexual history Ciprofloxacin in older age group	100mg BD 400mg BD 500mg BD	14 days 14days 10 days
Acute prostatitis	Send MSU for culture and start antibiotics. 4 weeks treatment may prevent chronic infection. Quinolones are more effective due to greater penetration into prostate.	Ciprofloxacin Or Ofloxacin Or trimethoprim	500mg BD 200mg BD 200mg BD	28 days 28 days 28 days
Trichomoniasis	Refer to Sexual Health. Treat partners simultaneously. In pregnancy or breastfeeding, avoid 2g single dose metronidazole. Topical clotrimazole gives symptomatic relief (not cure), consider if metronidazole declined.	Metronidazole Clotrimazole	400mg BD or 2g single dose 100mg pessary at night	5 -7 days Stat 6 nights
Pelvic Inflammatory Disease (PID)	Essential to test for N. gonorrhoea (increasing antibiotic resistance), chlamydia and other organisms. Refer patient to Sexual Health for follow up and contact tracing. If severe disease or if high risk of gonorrhoea eg partner has it, sex abroad, severe symptoms, multiple partners refer for IM Ceftriaxone.	Metronidazole PLUS Doxycycline	400mg BD 100mg BD	14 days 14 days
Gonococcal infection	Uncomplicated infection only, for complicated cases seek expert advice Consider co-infection with Chlamydia & Gonococcus Patients need to be referred to Sexual Health for full STD screen and follow up.	Ceftriaxone plus azithromycin	500mg deep IM 1g orally	Stat dose Stat dose

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Skin / Soft Tissue Infections				
Panton-Valentine Leukocidin (PVL) is a toxin produced by 2% of *Staph. Aureus* (positive in MRSA & MSSA). It is associated with persistent recurrent pustules and carbuncles or cellulitis. Send swabs for bacterial culture with request for PVL detection in these clinical scenarios. On rare occasions it causes severe invasive infections, even in fit people. Risk factors include: close contact environments, contact sport, sharing equipment, poor hygiene, travel and compromised skin integrity.				
MRSA infection/ colonisation	Contact CHS Infection Control Team for advice on decolonization strategy. If active infection confirmed by laboratory, use sensitivities to guide treatment. If severe infection or no response to appropriate monotherapy from sensitivities after 48 hours, seek advice from microbiology.			
Impetigo	For extensive, severe or bullous impetigo use oral antibiotics. As resistance is increasing reserve topical antibiotics for very localised lesions. Reserve mupirocin for confirmed MRSA only.	1st line Flucloxacillin Or if penicillin allergic: Clarithromycin TOPICAL: *Fusidic acid* *Mupirocin* ***MRSA only***	 Oral 500mg QDS Oral 250 - 500mg BD *Topically TDS* *Topically TDS*	 7 days 7 days *5 days* *5 days*
Eczema	Using antibiotics or adding them to steroids in eczema encourages resistance and does not improve healing unless there are visible signs of infection. In infected eczema use treatment as in impetigo. See local guidance on Infected Eczema.			
Cellulitis	If patient afebrile and healthy other than cellulitis, flucloxacillin may be used as single drug treatment. If wound has been exposed to non-chlorinated water, (river, lake or sea) discuss with microbiologist. If febrile and ill, admit for IV treatment. In facial cellulitis only, use co-amoxiclav to cover *Haemophilus influenzae* from buccal microbes.	Flucloxacillin *If penicillin allergic:* Clarithromycin or Clindamycin - **STOP IF DIARRHOEA OCCURS** Co-amoxiclav	500mg QDS 500mg BD 300-450mg QDS 625mg TDS	All for 7 days, if slow response continue for a further 7 days.
Leg Ulcers	Bacteria will always be present. **Antibiotics do not improve healing unless active infection.** Send properly taken culture swabs **prior** to empirical therapy. Antibiotics are only indicated if there is evidence of clinical cellulitis; increased pain; enlarging ulcer, purulent exudate, foul odour or pyrexia. Treat as cellulitis above, refer to tissue viability team.			
	Review antibiotics after culture results Refer for specialist opinion if severe infection	Flucloxacillin or Clarithromycin	500mg QDS 500mg BD	7 days 7 days
Animal Bite	Surgical toilet most important. Assess tetanus and rabies risk. Antibiotic prophylaxis advised for: cat bite/ puncture wound; bite involving hand, foot, face, joint, tendon, ligament, or in immunocompromised, diabetic, elderly, asplenic or cirrhotic patients. Macrolides are not recommended for animal bites because they do not adequately cover pasturella. Seek specialist advice for children under the age of 12 years (doxycycline contraindicated).	1st line animal & human prophylaxis & treatment: Co-amoxiclav ***If penicillin allergic:*** Metronidazole PLUS Doxycycline (Animal/human) **Or** Clarithromycin (Human)	 375-625mg TDS 200-400mg TDS 100mg BD 250-500mg BD	Review at 24 & 48 hrs 7 days 7 days 7 days 7 days
Human Bite	Thorough irrigation is important. Antibiotic prophylaxis advised. Assess HIV/Hepatitis B&C and tetanus risk.			
Scabies	Treat whole body from ear/chin down and under nails. If under 2/elderly, also include scalp, face and ears. Treat all household and sexual contacts within 24 hours.	Permethrin If allergy: Malathion	5% cream 0.5% aqueous liquid	Both: 2 applications 1 week apart
Dermatophyte infection of proximal fingernail or toenail For Children seek specialist advice	Take nail clippings: start therapy ONLY if infection is confirmed by laboratory, (only 50% cases of nail dystrophy are fungal). Seek specialist advice in children. Use 5% amorolfine nail lacquer for superficial infection. Idiosyncratic liver reactions occur rarely with terbinafine. It is more effective than the azoles. Itraconazole is also active against yeasts eg candida and non-dermatophyte moulds.	5% Amorolfine nail lacquer Terbinafine *2nd line :* Itraconazole	1-2x weekly Fingers Toes 250mg OD Fingers Toes 200mg BD Fingers Toes	6 months 12 months 6-12 wks 3-6 months 7days/ month 2 courses 3 courses
Dermatophyte infection of the skin	Terbinafine is fungicidal, therefore shorter treatment time than with a fungistatic imidazole. If candida possible, use imidazole. If intractable: send skin scrapings. If infection confirmed, use oral terbinafine/itraconazole. Discuss scalp infections with specialist. Community Dermatology Service 01908 500092	Topical 1% terbinafine Topical imidazole or *for athletes foot only* Topical undecanoates ((Mycota®)	BD BD BD	1-2 weeks 4-6 weeks (i.e. 1-2 weeks after healing)

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Illness	Comments	Drug	Dose	Tx duration
Varicella zoster / chickenpox & Herpes zoster / shingles	Pregnant / immunocompromised / neonate seek URGENT specialist advice for VZIG and antiviral treatment. **Chicken pox**: If >14yrs, immunocompromised, or severe pain, or dense/oral rash, or secondary household case, or on steroids or smoker, consider aciclovir if treatment started <24 hours of onset of rash. **Herpes zoster/shingles:** Always treat if ophthalmic shingles and refer to ophthalmology. **Non-ophthalmic shingles** – treat if >50 yrs old AND <72 hours of onset of rash, (as post-herpetic neuralgia rare in <50 yrs), or Ramsey Hunt or eczema associated. **Chickenpox direct contacts –** If pregnant / immunocompromised / neonate seek advice urgently. Local link for varicella zoster gammaglobulin (VZIG) use: http://nww.mkhospital.nhs.uk/pathfinder/files/Pathology/Guidelines/PATH-GL-19.pdf	Only if indicated: Aciclovir *2nd line* for shingles if compliance is a problem as 10 times the cost: Valaciclovir	800mg 5x /day 1g TDS	7 days 7 days
Cold sores	Cold sores resolve after 7-10 days without treatment. Topical antivirals applied prodromally reduce duration by 12-24 hours.			
Gastro-Intestinal Tract Infections				
Oral Candidiasis	Antifungal agents absorbed from the gastrointestinal tract prevent oral candidiasis in patients receiving treatment for cancer.	Drugs fully absorbed (fluconazole, ketoconazole and itraconazole), however only fluconazole on the formulary for unrestricted use. Drugs partially absorbed (miconazole and clotrimazole) are effective compared with placebo or no treatment. **See BNF for licensed dosage**		
Eradication of *Helicobacter pylori* **Managing symptomatic relapse**	Beneficial in DU, GU and low grade MALTOMA but not in GORD. In NUD, NNT is 14 for symptom relief. Consider test and treat in persistent uninvestigated dyspepsia. Do not offer eradication for GORD. Do not use clarithromycin or metronidazole if used in past year for any infection. **DU/GU** Retest for Helicobacter using breath or stool test, or consider endoscopy for culture and sensitivity. **NUD**: Do not retest, treat as functional dyspepsia with PPI or H2 receptor antagonist.	*1st Line* PPI full dose **Plus** Amoxicillin **Plus** Metronidazole OR Clarithromycin *2nd Line* PPI full dose **PLUS** Bismuthate (DE-NOL TAB) **PLUS** 2 unused antibiotics: Amoxicillin Metronidazole Tetracycline HCl	 1g BD 400mg BD 500mg BD 1g BD 400mg TDS 500mg QDS	All for 7 days 14 days in relapse or MALTOMA
Infectious Diarrhoea	Send stool samples for cultures. Consider E coli 0157 in previously healthy children/adults with acute painful or bloody diarrhoea and refer if clinically indicated. Antibiotic therapy not indicated unless patient systemically unwell /immunocompromised or antibiotic associated colitis, suggestive of *Clostridium difficile* (see below) infection. If campylobacter suspected (eg undercooked meat and abdominal pain), consider oral Clarithromycin 250-500mg BD for 5-7 days if indicated			
Clostridium difficile	Send stool samples in suspected *C difficile* cases. In suspected/confirmed CDI stop unnecessary antibiotics and/or PPIs to re-establish normal flora. Do not use antiperistaltics due to risk of toxic megacolon. Review and discontinue any constipating i.e. opioid component of current analgesia/antitussives if possible. 70% respond to metronidazole in 5 days; 92% in 14 days. Severe if temp>38.5, WCC>15, rising creatinine or signs/symptoms of severe colitis, need hospital admission. Ensure patient is adequately re-hydrated. Cases who relapse may require tapering dose of antibiotic – discuss with Consultant Microbiologist and CHS IPC Team	1st episode Metronidazole 2nd episode/severe Vancomycin Worsening symptoms/relapse	400mg TDS (oral) 125mg qds discuss with Consultant Microbiologist/ CHS IPC Team	10-14 days 10-14 days Longer courses for recurrent infections
Traveller's Diarrhoea	Only consider standby for people travelling to remote areas and for people in whom an episode of infective diarrhoea could be dangerous. If appropriate a PRIVATE prescription for Ciprofloxacin 500mg BD for 3 days can be supplied. In areas of high ciprofloxacin resistance (Asia), consider prophylactic bismuth subsalicylate (Pepto Bismol) 2 tablets QDS or for 2 days as treatment, this can be brought OTC. Patients developing diarrhoea should be advised to see a local doctor if no improvement or symptoms get worsen"			
Threadworms	Treat household contacts at the same time. On day 1: wash sleepwear, bed linen, vacuum and dust throughout house. Advise morning shower/baths, hand hygiene and wearing pants in bed for 2 weeks. Patient <3 months, extra hygiene precautions for 6 weeks.	> 6 months Mebendazole (Off label if <2 years) Or Piperazine/senna sachet (use in children >3 months)	100mg 3-12 months - 2.5ml (<3 months, no antimicrobial treatment)	Stat Stat - repeat after 2 weeks

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Meningitis				
Suspected Meningococcal Disease Notifiable Disease	**Transfer all patients to hospital immediately**. If time before admission, and non-blanching rash, administer benzylpenicillin or cefotaxime, unless definite history of anaphylaxis, NOT intolerance/allergy. Ideally IV but IM if vein cannot be found.	IV or IM Benzylpenicillin OR IV or IM Cefotaxime	**Adult & child 10 yrs & over - 1200mg** Child 1 – 9 years - 600mg Child < 1 year - 300mg Age 12+ years -1g Child<12 years - 50mg/kg	
Prevention of secondary case of meningitis: Only prescribe following advice from Public Health England (0300 303 8537) (9am-5pm) Out of hours contact the on-call Public Health doctor via 01603 481 272				
Conjunctivitis				
Conjunctivitis	**Most bacterial infections are self-limiting (65% resolve on placebo by day 5**). Treat if severe, symptoms usually start unilaterally with red eye and yellow-white mucopurulent (not watery) discharge. Fusidic acid has less Gram-negative activity	If severe: Chloramphenicol 0.5% drops **plus** 1% ointment. Fusidic Acid	2 hourly (2 days) reducing to 4hourly whilst awake. Nocte 1% gel BD	All for 48 hours after resolution
DENTAL INFECTIONS – derived from the Scottish Dental Clinical Effectiveness Programme 2011 SDCEP Guidelines				
This guidance is not designed to be a definitive guide to oral conditions. It is for GPs for the management of acute oral conditions pending being seen by a dentist or specialist. GPs should not routinely be involved in dental treatment, if possible, advice should be sought from the patient's dentist, who should have an answer-phone message with details of how to access treatment out-of-hours, or call 111				
Mucosal ulceration and inflammation (simple gingivitis)	• Temporary pain and swelling relief can be attained with saline mouthwash • Use antiseptic mouthwash: If more severe & 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.	Simple saline mouthwash Chlorhexidine 0.12-0.2% *(Do not use within 30 mins of toothpaste)* Hydrogen peroxide 6% *(spit out after use)*	½ tsp salt dissolved in glass warm water Rinse mouth for 1 minute BD with 5 ml diluted with 5-10 ml water. Rinse mouth for 2 mins TDS with 15ml diluted in ½ glass warm water	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene
Acute necrotising ulcerative gingivitis	Commence metronidazole and refer to dentist for scaling and oral hygiene advice Use in combination with antiseptic mouthwash if pain limits oral hygiene	Metronidazole Chlorhexidine or hydrogen peroxide	400 mg TDS see above dosing in mucosal ulceration	3 days Until oral hygiene possible
Pericoronitis	Refer to dentist for irrigation & debridement. If persistent swelling or systemic symptoms use metronidazole. Use antiseptic mouthwash if pain and trismus limit oral hygiene	Amoxicillin Metronidazole Chlorhexidine or hydrogen peroxide	500 mg TDS 400 mg TDS see above dosing in mucosal ulceration	3 days 3 days Until oral hygiene possible
Dental abscess	• Regular analgesia should be first option until a dentist can be seen for urgent drainage, as repeated courses of antibiotics for abscess are not appropriate. Repeated antibiotics alone, without drainage are ineffective in preventing spread of infection. • Antibiotics are recommended if there are signs of severe infection, systemic symptoms or high risk of complications. • Severe odontogenic infections; defined as cellulitis plus signs of sepsis, difficulty in swallowing, impending airway obstruction, Ludwig's angina. Refer urgently for admission to protect airway, achieve surgical drainage and IV antibiotics • Empirical use of cephalosporins, co-amoxiclav, clarithromycin and clindamycin do not offer any advantage for most dental patients and should only be used if no response to first line drugs.			
	If pus drain by incision, tooth extraction or via root canal. Send pus for microbiology. *If spreading infection* (lymph node involvement, or systemic signs i.e. fever or malaise) ADD metronidazole and consider hospital referral If true penicillin allergy use clarithromycin or clindamycin	Amoxicillin or *Penicillin allergy:* Clarithromycin *Severe infection add* Metronidazole *or if allergy* Clindamycin	500 mg TDS 500 mg BD 400 mg TDS 300mg QDS	Up to 5 days review at 3d 5 days 5 days

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/366683/PHE_Primary_Care_guidance_15_10_14_pivmecillinam.pdf