ANTIBIOTICS FORMULARY /GUIDANCE

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UNLESS OTHERWISE STATED, PLEASE REFER TO LATEST 'BNF FOR CHILDREN' FOR PRESCRIBING INFORMATION IN CHILDREN

ANTIBIOTICS FORMULARY /GUIDANCE

Purpose

To support the appropriate prescribing of antibiotics in primary care.

Disclaimer

Whilst every effort has been made to ensure the accuracy of this guideline, the authors cannot accept any responsibility for any errors or omissions. The prescriber should be aware of any side effects, drug interactions or patient specific contra-indications as detailed in the current British National Formulary or the Summary of Product Characteristics.

Aims

- To provide a simple, safe, effective, economical empirical and evidence based approach to the treatment of common infections
- To minimise the emergence of bacterial resistance in the community

Principles of Treatment

1. This guidance is based on the best available evidence but professional judgment should be used and patients should be involved in the decision.
2. It is important to initiate antibiotics as soon as possible for severe infections.
3. A dose and duration of treatment for adults is usually suggested, but may need modification for age, weight and renal function. In severe or recurrent cases consider a larger dose or longer course.
4. Lower threshold for antibiotics in immunocompromised or those with multiple morbidities; consider culture and seek advice.
5. Prescribing of antibiotics should only occur where consideration has been given to the origin of infection, there is a clear clinical need/benefit and the presence of viral infection such as sore throat, coughs and colds, viral conjunctivitis has been excluded.

6. **Antibiotics should not be prescribed during a telephone consultation apart from in exceptional circumstances.**
7. Consider a no, or delayed, antibiotic strategy for acute self-limiting upper respiratory tract infections, see Public Health England leaflet below ; 'Treating your infections' which can be used to aid this process
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 risk of *Clostridium difficile* infection (CDI), MRSA and resistant UTIs.
9. Avoid widespread use of topical antibiotics (especially those agents also available as systemic preparations, e.g. fusidic acid).
10. In pregnancy **AVOID** prescribing tetracyclines, quinolones, and high dose metronidazole. If trimethoprim is prescribed in the first trimester, supplementation with folic acid 5mg is recommended and trimethoprim should not be prescribed to women who are folate deficient, taking a folate antagonist or have taken trimethoprim within the last year. Short term use of nitrofurantoin (avoid in 3rd trimester as there is a theoretical risk of neonatal haemolysis) is not expected to cause foetal problems. The manufacturer of clarithromycin advises against its use in pregnancy, particularly in the first trimester, unless the potential benefit outweighs the risk

Summary of local recommendations for antibiotic usage

Where an oral antibiotic is required, BBCCG & TCCG recommends the following list of first line antibiotics to treat the majority of bacterial infections in general practice.

RECOMMENDED FIRST LINE ANTIBIOITICS	
Amoxicillin	Nitrofurantoin
Clarithromycin	Oxytetracycline
Doxycycline	Penicillin V
Erythromycin	Tetracycline
Flucloxacillin	Trimethoprim
Metronidazole	

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NHS Basildon and Brentwood Clinical Commissioning Group

NHS Thurrock Clinical Commissioning Group

Crystal Mark 20454 Clarity approved by Plain English Campaign

Treating your infection

Your doctor or nurse recommends that you self-care ☐ **Back-up antibiotic prescription issue** ☐

Your infection	Usually lasts	How to treat yourself better for these infections, now and next time	When should you get help: Contact your GP practice or contact NHS 111 (England), NHS 24 (Scotland dial 111), or NHS Direct (Wales dial 0845 4647)
☐ Middle-ear infection	4 days	• Have plenty of rest. • Drink enough fluids to avoid feeling thirsty. • Ask your local pharmacist to recommend medicines to help your symptoms or pain (or both). • Fever is a sign the body is fighting the infection and usually gets better by itself in most cases. You can use paracetamol (or ibuprofen) if you or your child are uncomfortable as a result of a fever. • Other things you can do suggested by GP or nurse:	**1. to 8. are possible signs of serious illness and should be assessed urgently. Phone for advice if you are not sure how urgent the symptoms are.** 1. If you develop a severe headache and are sick. 2. If your skin is very cold or has a strange colour, or you develop an unusual rash. 3. If you feel confused or have slurred speech or are very drowsy. 4. If you have difficulty breathing. Signs can include: o breathing quickly o turning blue around the lips and the skin below the mouth o skin between or above the ribs getting sucked or pulled in with every breath. 5. If you develop chest pain. 6. If you have difficulty swallowing or are drooling. 7. If you cough up blood. 8. If you are feeling a lot worse. **Less serious signs that can usually wait until the next available GP appointment:** 9. If you are not improving by the time given in the 'Usually lasts' column. 10. In children with middle-ear infection: if fluid is coming out of their ears or if they have new deafness. 11. Other ....
☐ Sore throat	7 days		
☐ Common cold	10 days		
☐ Sinusitis	18 days		
☐ Cough or bronchitis	21 days		
☐ Other infection:	..... days		

Back-up antibiotic prescription to be collected after ☐ **days only if you do not feel better or you feel worse.**

Collect from: ☐ **GP reception** ☐ **GP or nurse** ☐ **Pharmacy**

- Colds, most coughs, sinusitis, ear infections, sore throats, and other infections often get better without antibiotics, as your body can usually fight these infections on its own.
- The more we use antibiotics, the greater the chance that bacteria will become resistant to them so that they no longer work on our infections.
- Antibiotics can cause side effects such as rashes, thrush, stomach pains, diarrhoea, reactions to sunlight, other symptoms, or being sick if you drink alcohol with metronidazole.

Never share antibiotics and always return any unused antibiotics to a pharmacy for safe disposal

Public Health England | Royal College of General Practitioners | The British Society for Antimicrobial Chemotherapy | NHS Scotland | Royal College of Nursing | Royal Pharmaceutical Society | Infection Prevention Society | British Infection Association

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
UPPER RESPIRATORY TRACT INFECTIONS: CONSIDER DELAYED ANTIBIOTIC PRESCRIPTIONS					
Acute sore throat	Penicillin V	1g BD for 10 days. 500mg QDS for 10 days (when severe)	Clarithromycin (If allergic to Penicillin)	250-500mg BD for 5 days	Evidence suggests that antibiotics are clinically useful in less than 1% of cases. Note that all patients taking simvastatin should be advised to stop taking whilst receiving a course of clarithromycin. Patients with 3 or 4 Centor criteria (history of fever, purulent or enlarged tonsils, cervical adenopathy, and absence of cough) or history of otitis media may benefit from antibiotics. Prescribe an antibiotic for those with features of marked systemic upset, an increased risk of serious complications and patients with valvular heart disease
Do not routinely prescribe antibiotics for sore throats. Consider a delayed prescribing strategy. Majority of infections are viral, antibiotics are not indicated and resolve within 1 week.					

Acute Otitis Media in CHILDREN	Amoxicillin	**FOR 5 DAYS** **Consult current BNF for Children for doses.**	Clarithromycin (if penicillin allergic).	**FOR 5 DAYS** **Consult current BNF for Children for doses.**	**Do not routinely prescribe antibiotics. For acute attacks with no systemic features.** Optimise analgesia: Paracetamol & Ibuprofen Avoid antibiotics as 60% are better in 24 hours without: they only reduce pain at 2 days and do not prevent deafness Consider 2 or 3-day delayed or immediate antibiotics for pain relief if: < 2yrs with bilateral AOM All ages with otorrhoea.

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
Acute Otitis Media	Amoxicillin	250mg-500mg TDS for 5 days	Clarithromycin (If allergic to Penicillin)	250-500mg BD for 5 days	Evidence suggests that antibiotics are unlikely to be beneficial unless patient has systemic symptoms. E.g. fever, vomiting.
Acute Otitis Externa	Acetic acid 2%	1 spray TDS for 7 days	Betnesol -N® Otomize®	2-3 drops TDS or QDS Apply 1 metered spray 3 times daily	**EarCalm®** (acetic acid 2%) can be bought OTC **Cure rates similar at 7 days for topical acetic acid (EarCalm) or antibiotic +/- steroid** .If cellulitis or disease extending outside ear canal, start oral antibiotics, refer
Influenza For prophylaxis, and patients under 13 years see PHE-Influenza	Oseltamivir unless pregnant	75mg BD for 5 days	Zanamivir (if there is resistance to oseltamivir)	10mg BD (2 inhalations by diskhaler) for 5 days	**Annual vaccination is essential for all those at risk of influenza**. For otherwise healthy adults antivirals not recommended. **Treat 'at risk' patients**, ONLY within 48 hours of onset & when influenza is circulating in the community or in a care home where influenza is likely. **At risk:** pregnant (including up to two weeks post-partum), 65 years or over, chronic respiratory disease (including COPD and asthma) significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus, chronic neurological, renal or liver disease

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
Acute Rhinosinusitis	Amoxicillin	500mg TDS, 1g if severe for 7 days	Doxycycline Clarithromycin (If allergic to Penicillin) For persistent symptoms: Co-amoxiclav	200mg stat / 100mg OD for 7 days 500mg BD for 7 days 625mg TDS for 7 days	Avoid doxycycline in children under 12 and pregnant women **Avoid antibiotics as** 80% resolve in 14 days without, and they only offer marginal benefit after 7 days **Use adequate analgesia** Consider 7-day delayed or immediate antibiotic when purulent nasal discharge In persistent infection use an agent with anti-anaerobic activity e.g. co-amoxiclav
Do not routinely prescribe antibiotics for sinusitis and advise use of adequate analgesia. Only prescribe antibiotics for those at high risk of complications or when acute bacterial sinusitis is suspected.					
Suspected meningococcal disease	IV or IM benzylpenicillin **OR** IV or IM Ceftriaxone	Age 10+ years: 1200mg Age 12+ years: 1gram **Consult current BNF for Children for doses**			**Transfer all patients to hospital immediately**. If time before hospital admission, and non-blanching rash, give IV benzylpenicillin or ceftriaxone, unless definite history of hypersensitivity (Give IM if vein cannot be found)

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
LOWER RESPIRATORY TRACT INFECTIONS *Low doses of penicillins are more likely to select out resistance. Do **not** use quinolone (ciprofloxacin, ofloxacin, levofloxacin) first line due to poor pneumococcal* Note: *activity. Reserve all quinolones (including levofloxacin) for proven resistant organisms.*					
Acute cough, bronchitis	Amoxicillin	500mg TDS for 5 days	Doxycycline Clarithromycin (If allergic to Penicillin)	200mg stat / 100mg OD for 5 days 500mg BD for 7 days	Avoid doxycycline in children under 12 and pregnant women. Consider 7-14 day delayed antibiotic with symptomatic advice using leaflets explaining the nature of the illness and why antibiotics are not necessary may be helpful.
Antibiotics for acute bronchitis should be reserved for patients where there is a risk of serious harm from even a modest deterioration in their chronic condition. The benefits of antibiotics are marginal in otherwise healthy adults. Consider immediate antibiotics if > 80 years and ONE of: hospitalisation in last year, oral steroids, diabetic, congestive heart failure OR > 65 years with 2 of above.					
Acute Exacerbation of COPD	Amoxicillin or Doxycycline	500mg TDS for 5 days 200mg stat / 100mg OD for 5 days	Doxycycline	200mg stat, then 100mg OD for 5 days	Avoid doxycycline in children under 12, pregnant and breastfeeding women. Treat exacerbations promptly with antibiotics if purulent sputum and increased shortness of breath and/or increased sputum volume. Risk factors for antibiotic resistant organisms include co-morbid disease, severe COPD, frequent exacerbations, antibiotics in last 3 months

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
Community Acquired Pneumonia – treatment in the community	If CBR65=0 Amoxicillin If CBR65=1 & AT HOME Doxycycline alone	500mg-1g TDS for 7 days 200 stat, then 100mg OD for 7-10 days	Doxycycline AND Clarithromycin If CBR65=1 & AT HOME Amoxicillin AND Clarithromycin	200mg stat, then 100mg OD 500mg BD for 7-10 days 500mg TDS 500mg BD for 7-10 days	Use CRB65 score to help guide and review: Each scores 1: **- Confusion (AMT<8);** **- Respiratory rate >30/min;** **- BP systolic <90 or diastolic ≤ 60;** Score 0: suitable for home treatment; Score 1-2: hospital assessment or admission **Score 3-4: urgent hospital admission** Give immediate IM benzylpenicillin or amoxicillin 1G po if delayed admission/life threatening Mycoplasma infection is rare in over 65s
URINARY TRACT INFECTIONS. *Refer to HPA UTI guidance for diagnosis information and advice on when to perform a urine dipstick test. This can be found here* *People > 65 years: do not treat asymptomatic bacteriuria; it is common but is not associated with increased morbidity* *Catheter in situ: antibiotics will not eradicate asymptomatic bacteriuria; only treat if systemically unwell or pyelonephritis likely* *Do not use prophylactic antibiotics for catheter changes unless history of catheter-change-associated UTI*					

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
UTI in men and women (no fever or flank pain) **Perform culture in all treatment failures**	Nitrofurantoin	100mg MR BD or or 50mg QDS for 3 days for women; for 7 days in men	***If low risk of resistance*** *(younger women with acute UTI and no resistance risks)* Trimethoprim	200mg BD for 3 days in women; for 7 days in men	**Nitrofurantoin is contraindicated** if eGFR is <45ml/minute /1.73m2 **Trimethoprim is not suitable for patients on methotrexate due to the risk of methotrexate toxicity.**

<table>
<tr><td colspan="6">THIRD CHOICE</td></tr>
<tr><td colspan="6">Consider pivmecillinam if:
1. Nitrofurantoin is unsuitable (i.e. If eGFR<45mls/min or resistance), AND
2. Trimethoprim is unsuitable (i.e. if there is high risk of resistance)</td></tr>
<tr><td colspan="4">Pivmecillinam 400mg stat then 200mg TDS
Women for 3 days
Men for 7 days</td><td colspan="2">Pivmecillinam is contraindicated in hypersensitivity to penicillins and/or cephalosporins</td></tr>
<tr><td colspan="6">Consider fosfomycin if all of the following apply:
1. Nitrofurantoin is unsuitable (i.e. If eGFR<45mls/min or resistance), AND
2. Trimethoprim is unsuitable (i.e. if there is high risk of resistance), AND
3. Hypersensitivity to penicillins and/or cephalosporins , AND
4. In culture sensitive cases</td></tr>
<tr><td colspan="6">Fosfomycin 3g (Monuril®)
Women: 3g stat
Men: 3g stat , 2nd 3g dose 3 days later (unlicensed)</td></tr>
<tr><td colspan="6">Risk factors for increased resistance include: care home resident, recurrent UTI (2 in 6 months; >3 in 12 months), hospitalisation for >7days in the last 6 months, unresolving urinary symptoms, recent travel to a country with increased resistance, previous UTI resistant to trimethoprim, cephalosporins, or quinolones</td></tr>
<tr><td>UTI in pregnancy</td><td>Nitrofurantoin

Amoxicillin (If susceptible)</td><td>100 mg MR BD for 7 days

500mg TDS for 7 days</td><td>Trimethoprim (Give folate if in 1st trimester)

Third Choice
Cefalexin</td><td>200 mg BD for 7 days (off label use)

500mg BD for 7 days</td><td>Send MSU for culture & sensitivity and start empirical antibiotics
Short-term use of nitrofurantoin in pregnancy is unlikely to cause problems to the foetus
Avoid trimethoprim if low folate status3 or on folate antagonist (e.g. antiepileptic or proguanil)
Second line agents should be dependent upon cultures and sensitivities</td></tr>
</table>

UTI in children See BNF for children for dosage	*Lower UTI (Cystitis):* Trimethoprim *or* Nitrofurantoin if susceptible, or Amoxicillin *Upper UTI* (Pyelonephritis): Co-amoxiclav	*Lower UTI* 3 days *Upper UTI* 7-10days			Child <3 mths: refer urgently for assessment Child ≥ 3 months: use positive nitrite to start antibiotics. **Send pre-treatment MSU for all**. Imaging: only refer if child <6 months or atypical UTI Male children treat and refer

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
Acute pyelonephritis	Ciprofloxacin, if no risk of C.diff	500 mg BD for 7 days	Co-amoxiclav	500/125 mg TDS for 14 days	If admission not needed, send MSU for culture & sensitivities and start antibiotics If no response within 24 hours, admit Second line agents should be dependent upon cultures and sensitivities. **NB patient at increased risk of Clostridium difficile (C.diff) infection. If patient develops diarrhoea and C.diff infection is suspected, please send sample and treat**
Acute Prostatitis	Ciprofloxacin	500mg BD for 28 days	Trimethoprim	200mg BD for 28 days	Send MSU for culture and start antibiotics 4-wk course may prevent chronic prostatitis Quinolones achieve higher prostate levels **NB patient at increased risk of Clostridium difficile (C.diff) infection. If patient develops diarrhoea and C.diff infection is suspected, please send sample and treat**

GASTRO-INTESTINAL TRACT INFECTIONS

Eradication of *Helicobacter pylori*	PPI **WITH** Amoxicillin (AM) **PLUS** Clarithromycin (C) **OR** Metronidazole (MTZ)	BD 1g BD 500mg BD 400mg BD Treatment for 7 days.	Treat all positives in known DU, GU or low grade MALToma. Do not offer eradication for GORD. Do not use clarithromycin, metronidazole or quinolone if used in past year for any infection. **Penicillin allergy:** Use PPI plus clarithromycin & MZ; If previous clarithromycin use PPI + bismuthate + metronidazole + tetracycline. In relapse see NICE **Relapse and previous MZ & C:** Use PPI PLUS amoxicillin, PLUS either tetracycline or levofloxacin Retest for H. pylori post DU/GU or relapse after second line therapy: using breath or stool test OR consider endoscopy for culture and susceptibility		
Infection	**First Choice**	**BNF Dosage / Length of Treatment**	**Second Choice**	**BNF Dosage/ Length of Treatment**	**Comments**
Gastro-enteritis	**Antibiotics are not recommended for adults with diarrhoea of unknown pathology**. Evidence from 3 small randomised controlled trials (RCTs) suggests they have minimal benefits, there is a risk of serious adverse effects associated with their use and their use promotes the development of resistant bacteria. Fluid replacements is essential and check travel, food, hospital and antibiotic history as *C. difficile* is increasing. Please send stool specimens from suspected cases of food poisoning and post antibiotic use and notify Public Health England after seeking advice from a public health doctor if an outbreak is suspected.				
Clostridium difficile Infection (CDI)	Metronidazole **(1st episode)**	400mg or 500mg TDS for 10 to 14 days	Vancomycin **(2nd episode or if severe or if type 027 confirmed)**	125mg QDS for 10 to 14 days	When prescribing an antibiotic for any indication in patients who have had a previous Clostridium difficile infection, **advice should be sought from a microbiologist to avoid any potential relapse**. Stop all antibiotics unless it is absolutely essential that they are continued in which case the patient should be carefully monitored for deterioration (consider hospital admission in these circumstances)

					and review need for PPI therapy
CDI recurrence	Vancomycin	125mg QDS for 10 to 14 days	**Discuss management with a consultant microbiologist for advice on sending specimens and treatment options.** Sending repeat specimens within 28 days of a positive test are not helpful due to ongoing presence of toxins in the gut. Recurrent disease occurs in about 20% of patients treated initially with either metronidazole or vancomycin. The same antibiotic that was used initially can be used to treat the first recurrence.		
Diverticulitis (acute)	Co-amoxiclav 625mg TDS	625mg for 7 days	In penicillin allergy Metronidazole **PLUS** Ciprofloxacin	400mg TDS 500mg BD for 7 days	

GENITAL TRACT INFECTIONS

STI screening	**People with risk factors should be screened for chlamydia, gonorrhoea, HIV, syphilis. Refer individual and partners to GUM service. Risk factors: <25yr, no condom use, recent (<12mth)/frequent change of partner, symptomatic partner, area of high HIV.**

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
Chlamydia trachomatis / urethritis	Doxycycline *Pregnant or breastfeeding:* Azithromycin	100mg BD for 7 days 1g (off-label use), stat	Azithromycin	1g as a single dose	Opportunistically screen all aged 15-25yrs Treat partners and refer to GUM service **Pregnancy or breastfeeding: azithromycin is the most effective option** Due to lower cure rate in pregnancy, test for cure 6 weeks after treatment Avoid doxycycline in Pregnancy & breastfeeding. Sexual partner will require concurrent treatment.
For suspected epididymitis	Doxycycline	100mg BD for 14days	Ofloxacin	400mg BD for 14 days	

in men (>35 years, low risk of STI)					For suspected epididymitis in men over 35 years with high risk of STI refer GUM
Vaginal Candidiasis	Clotrimazole	500mg pessary stat **OR** 10% cream stat **OR** 100mg pessary for 6 days	Fluconazole (in resistant cases only)	150mg oral capsule stat	All topical and oral azoles give 75% cure **Pregnancy**: avoid oral azole, use intravaginal for 6 days
Bacterial Vaginosis	Metronidazole	400mg BD for 7 days or 2g as a single dose.	Metronidazole 0.75% vaginal gel	One 5g applicatorful at night for 5 nights	Oral metronidazole (MTZ) is as effective as topical treatment but is cheaper. Less relapse with 7 day than 2g stat at 4 weeks. **Pregnant/breastfeeding:** avoid 2g stat. Treating partners does not reduce relapse

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
Trichomoniasis	Metronidazole	2g as a single dose or 400mg BD for 5 days			Avoid metronidazole in first trimester of pregnancy. Also avoid 2g dose in pregnancy. Sexual partner will require concurrent treatment
Acute Pelvic Inflammatory Disease	Ceftriaxone **PLUS** Doxycycline **PLUS** Metronidazole	500mg IM stat 100mg BD 400mg BD for 14days	Levofloxacin **PLUS** Metronidazole	500mg OD + 400mg BD for 14 days	Refer woman and contacts to GUM service. Always culture for gonorrhoea and chlamydia. 28% of gonorrhoea isolates now resistant to quinolones. If gonorrhoea likely (partner has it, severe symptoms, sex abroad) avoid ofloxacin regimen or refer to GUM.
SKIN & SOFT TISSUE INFECTIONS					
Impetigo	Flucloxacillin	500mg QDS for 7 days	Clarithromycin (If Penicillin allergic)	250-500mg BD for 7 days	**For extensive, severe, or bullous impetigo, use oral antibiotics** Reserve topical antibiotics for very localised

See BNF for children for dosage			Topical fusidic acid. **MRSA only** Mupirocin	TDS for 5 days TDS for 5 days	lesions to reduce the risk of resistance Reserve mupirocin for MRSA
Eczema	If no visible signs of infection use of antibiotics (alone or with steroids) encourages resistance and does not improve healing. In eczema with visible signs of infection, use treatment as in impetigo				
Cellulitis **Facial**	Flucloxacillin Co-amoxiclav	500mg QDS for 7 days. 500/125mg TDS for 7 days.	Clarithromycin (If Penicillin allergic)	500mg BD for 7 days	**Class I:** patient afebrile and healthy other than cellulitis, use oral flucloxacillin alone. **Class II:** febrile & ill, or comorbidity, admit for intravenous treatment, or use OPAT (outpatient parenteral antimicrobial therapy) if available. **Class III:** toxic appearance: admit. 1 If river or sea water exposure, discuss with specialist
Infection	**First Choice**	**BNF Dosage / Length of Treatment**	**Second Choice**	**BNF Dosage/ Length of Treatment**	**Comments**
Acne vulgaris	Benzoyl Peroxide (Check current BNF for available strengths and preparations)	OD or BD for at least 6 months	Oxytetracycline OR Lymecycline (if unresponsive or intolerant to Oxytetracycline) OR Erythromycin (if unresponsive or intolerant to tetracyclines)	500mg BD 408mg OD 500mg BD	6 months 2 months 6 months Discontinue when further improvement is unlikely.
Leg ulcers	**Active infection if cellulitis/increased pain/pyrexia/purulent exudate/odour**				**Ulcers are always colonized. Antibiotics do not improve healing unless active infection.** If active infection, send pre-treatment swab. Review antibiotics after culture results
	Flucloxacillin	500mg QDS for 7 days. If slow response	Clarithromycin (If Penicillin allergic)	500mg BD for 7 days. If slow response	

		continue for a further 7 days		continue for a further 7 days	
MRSA If active infection, MRSA *confirmed* by lab results, infection not severe and admission not required:	Doxycycline alone OR Trimethoprim alone	100 mg BD for 7 days 200mg BD for 7 days	**For active MRSA infection:** Use antibiotic sensitivities to guide treatment. If severe infection or no response to monotherapy after 24-48 hours, seek advice from microbiologist on combination therapy. **High risk colonised patients (e.g. patients with catheters, chronic skin lesions) without active infection refer to Management of High Risk MRSA Colonised/Infected Adult Patients in Nursing Homes and Primary Care Settings, produced by the South Essex HCAI network group** Primary Care guidance for High risk		
Infection	**First Choice**	**BNF Dosage / Length of Treatment**	**Second Choice**	**BNF Dosage/ Length of Treatment**	**Comments**
PVL *S. aureus* HPA QRG	Panton-Valentine Leukocidin (PVL) is a toxin produced by 2% of *S. aureus*. Can rarely cause severe invasive infections in healthy people. Send swabs if recurrent boils/abscesses. At risk: close contacts in communities, poor hygiene, close contact sports, military training camps, gyms and prisons				
Human/Animal Bites	Co-amoxiclav	375mg-625mg TDS for 7 days	**If penicillin allergic:** Metronidazole **PLUS** Doxycycline (cat/dog) **OR** Metronidazole **PLUS** Clarithromycin(human) AND review at 24&48hrs	 400 mg TDS 100 mg BD 200-400 mg TDS 250-500 mg BD. All for 7 days	Human: Thorough irrigation is important Assess risk of tetanus, HIV, hepatitis B&C Antibiotic prophylaxis is advised Cat or dog: Assess risk of tetanus and rabies Give prophylaxis if cat bite/puncture wound; bite to hand, foot, face, joint, tendon, ligament: immunocompromised/ /diabetic/asplenic/cirrhotic/presence of prosthetic valve or prosthetic joint
Scabies	Permethrin	5% cream, 2 applications 1 week apart	*If allergy:* Malathion	0.5% aqueous liquid. 2 applications 1 week apart	Treat all home & sexual contacts within 24h Treat whole body from ear/chin downwards and under nails. If under 2/elderly, also face/scalp

Fungal infection – fingernail or toenail	Terbinafine	250 mg OD **Fingers:** 6 – 12 weeks **Toes:** 3 – 6 months	Itraconazole	200 mg BD for 7 days **Subsequent courses to be repeated after 21-day intervals** **Fingers:** 2 courses **Toes:** 3 courses	Take nail clippings: start therapy only if infection is confirmed by laboratory Terbinafine is more effective than azoles Liver reactions rare with oral antifungals If candida or non-dermatophyte infection confirmed, use oral itraconazole For children, seek specialist advice Limited evidence of effectiveness: Amorolfine 5% nail lacquer
Infection	**First Choice**	**BNF Dosage / Length of Treatment**	**Second Choice**	**BNF Dosage/ Length of Treatment**	**Comments**
Fungal infection – skin	Topical terbinafine	BD, 1-2 weeks	Topical imidazole or *(athlete's foot only):* topical undecanoates (Mycota®)	BD for 1-2 weeks continue for another 1-2 weeks after healing. (Max 4-6wks)	Terbinafine is fungicidal , so treatment time shorter than with fungistatic imidazoles If candida possible, use imidazole If intractable: send skin scrapings If infection confirmed, use *oral* terbinafine/itraconazole Scalp: discuss with specialist oral therapy indicated
Fungal infection-scalp (Tinea capitis)	Terbinafine	OD, 4-6 weeks	Griseofulvin	1 g once daily, 6-8 weeks. (alternatively 1 g daily in divided doses)	Therapy should be continued for at least two weeks after all signs of infection have disappeared.
	The use of a topical treatment e.g. ketoconazole shampoo is recommended at least twice weekly during the first two weeks of therapy Treatment of all family members with ketoconazole shampoo at least twice weekly for two weeks is also recommended				

Varicella zoster/ chicken pox	Aciclovir	800mg 5 times daily for 7 days			Pregnant/immunocompromised/neonate: seek urgent specialist advice **Note: for patients with severe renal impairment (CKD 4-5) dose of aciclovir must be reduced**
IF started <24h of rash & >14yrs or severe pain or dense/oral rash or 2° household case or steroids or smoker consider aciclovir					
Herpes zoster/ Shingles Treat if >50 yrs and within 72 hrs of rash (PHN rare if <50yrs); or if active ophthalmic or Ramsey Hunt or eczema.	Aciclovir	800mg 5 times daily for 7 days			**Note: for patients with severe renal impairment (CKD 4-5) dose of aciclovir must be reduced**
Cold sores	Cold sores resolve after 7–10 days without treatment. Topical antivirals applied prodomally reduce duration by 12-24hrs				

Infection	First Choice	BNF Dosage / Length of Treatment	Second Choice	BNF Dosage/ Length of Treatment	Comments
EYE INFECTIONS					
Conjunctivitis	Chloramphenicol 0.5% drops or 1% ointment	2 hourly for 2 days then 4 hourly (whilst awake) at night for 48 hours after resolution	Fusidic acid 1% w/w Viscous Eye Drops	BD for 48 hours after resolution	**Most bacterial conjunctivitis is self-limiting.** 65% resolve on placebo by day five Red eye with mucopurulent, not watery discharge. Usually unilateral but may spread Fusidic acid has less Gram-negative activity

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 dental specialist. GPs should not routinely be involved in dental treatment and, 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 telephone 111.					
Mucosal ulceration and inflammation (simple gingivitis)	Simple saline mouthwash Chlorhexidine 0.12-0.2% *(Do not use within 30 mins of toothpaste)*	½ tsp salt dissolved in glass warm water Rinse mouth for 1 minute BD with 5 ml diluted with 5-10 ml water.	Hydrogen peroxide 6%	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. 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.
Acute necrotising ulcerative gingivitis	Metronidazole	400 mg TDS for 3 days			Commence metronidazole and refer to dentist for scaling and oral hygiene advice. Use in combination with antiseptic mouthwash (Chlorhexidine or hydrogen peroxide) if pain limits oral hygiene
Infection	**First Choice**	**BNF Dosage / Length of Treatment**	**Second Choice**	**BNF Dosage/ Length of Treatment**	**Comments**
Pericoronitis	Amoxicillin	500 mg TDS for 3 days	Metronidazole	400 mg TDS for 3 days	Refer to dentist for irrigation & debridement. If persistent swelling or systemic symptoms use metronidazole. Use in combination with antiseptic mouthwash (chlorhexidine or hydrogen peroxide) if pain limits oral hygiene.

Dental abscess	**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 no response to first line drugs when referral is the preferred option**				
	Amoxicillin or Penicillin V Severe infection Metronidazole	500mg TDS 500mg – 1g QDS For up to 5 days review at day 3 400mg TDS For 5 days	True penicillin allergy: Clarithromycin	500mg BD For up to 5 days review at day 3	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, Ludwigs angina. Refer urgently for admission to protect airway, achieve surgical drainage and IV antibiotics

References:

1. PHE-Management of infection guidance for primary care. May 2017
2. Southend CCG Antibiotics Formulary April 2017
3. Guidance for the management of infection in primary care within Hertfordshire July 2015
4. BNF for Children 2016-17
5. BNF 72