NHS
South West London
Clinical Commissioning Group
Croydon

Antimicrobial prescribing guidance – managing common infections in Primary Care

Based on NICE & PHE guidance, and locally adapted for use in Croydon

Aims

1. To support non-medical prescribers and GPs in making appropriate decisions about antimicrobial prescribing.
2. To promote the safe, effective and economic use of antibiotics.
3. To minimise the emergence of bacterial resistance and risk of *Clostridioides difficile* (formerly *Clostridium difficile*) in the community.

Principles of Treatment:

1. This guidance is based on the best available evidence but 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, 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. If person is systemically unwell with symptoms or signs of serious illness, or is at high risk of complications: give immediate antibiotic. Always consider possibility of sepsis, and refer to hospital if severe systemic infection.
5. Use a lower threshold for antibiotics in immunocompromised, or in those with multiple morbidities; consider culture/specimens, and seek advice.
6. 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.
7. Where an empirical therapy has failed or special circumstances exist, microbiological advice can be obtained from **Consultant Microbiologist**, Croydon University Hospital (CUH) T**: 020 8401 3421/3383** (9am-5pm). For the out-of-hour service, please contact CUH switchboard on 020 8401 3000.
8. Limit prescribing over the telephone to exceptional cases.
9. Use simple, generic antibiotics if possible. Avoid broad spectrum antibiotics (for example co-amoxiclav, quinolones and cephalosporins) when narrow spectrum antibiotics remain effective, as they increase the risk of *Clostridiodes difficile*, MRSA and resistant UTIs
10. Avoid widespread use of topical antibiotics, especially in those agents also available systemically (for example fusidic acid); in most cases, topical use should be limited.
11. Always check for **antibiotic allergies**. Clearly document allergies on the clinical system and where possible a description of the reaction.
12. **Avoid cephalosporins** where possible **in patient > 65years.**
13. A dose and duration of treatment for adults is usually suggested, but may need modification for age, weight and renal function. Child doses are provided when appropriate and can be accessed through the BNF for children symbol. In severe or recurrent cases consider a larger dose or longer course. Please refer to BNF for further dosing and interaction information (e.g. interaction between macrolides and statins) if needed and check for hypersensitivity.
14. Avoid use of quinolones unless benefits outweigh the risk as new 2018 evidence indicates that they may be rarely associated with long lasting disabling neuro-muscular and skeletal side effects.
15. Take microbiological specimens to inform treatment where appropriate and possible.
16. In pregnancy where possible avoid tetracyclines, aminoglycosides, quinolones, high dose metronidazole (2 g) unless benefit outweighs risks.
17. Refer to the BNF for further dosing and interaction information (for example the interaction between macrolides and statins), and check for hypersensitivity. In most cases when a short course of macrolide is prescribed concurrently with statins, the statin therapy should be withheld for the duration of the course of treatment. If concurrent administration is unavoidable, then a lower dose of statin should be considered.

- **Cross-sensitivity with other beta-lactam antibacterial:** About 0.5–6.5% of penicillin-sensitive patients will also be allergic to the cephalosporins. Patients with a history of immediate hypersensitivity to penicillin and other beta-lactams should not receive a cephalosporin. Cephalosporins should be used with caution in patients with sensitivity to penicillin and other beta-lactams.
- The most important side-effect of the penicillins is hypersensitivity which causes rashes and anaphylaxis and can be fatal. Allergic reactions to penicillins occur in 1–10% of exposed individuals; anaphylactic reactions occur in less than 0.05% of treated patients. Patients with a history of atopic allergy (e.g. asthma, eczema, hay fever) are at a higher risk of anaphylactic reactions to penicillins. Individuals with a history of anaphylaxis, urticaria, or rash immediately after penicillin administration are at risk of immediate hypersensitivity to a penicillin; these individuals should not receive a penicillin.
- Individuals with a history of a minor rash (i.e. non-confluent, non-pruritic rash restricted to a small area of the body) or a rash that occurs more than 72 hours after penicillin administration are probably not allergic to penicillin and in these individuals a penicillin should not be withheld unnecessarily for serious infections; the possibility of an allergic reaction should, however, be borne in mind. Other beta-lactam antibiotics (including cephalosporins) can be used in these patients.

NICE National Institute for Health and Care Excellence
Public Health England
BIA British Infection Association
BSAC British Society for Antimicrobial Chemotherapy
RCGP Royal College of General Practitioners
Royal College of Nursing

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Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
MENINGITIS					
Suspected meningococcal disease	**Transfer all patients to hospital immediately.** If time before hospital admission, and non-blanching rash, give IV benzylpenicillin or cefotaxime Do not give IV antibiotics if there is a definite history of anaphylaxis with penicillin. A history of a rash following antibiotics is not a contraindication in this indication.	First Line IV or IM: Benzylpenicillin STAT (Penicillin based antibiotic) If Penicillin Allergy: IV or IM: Cefotaxime STAT	**Adults:** & Child over 10 years 1.2 g **Children:** Under 1 years: 300mg 1 - 9 years: 600mg **Adults:** & Child over 12 years 1g **Children:** Under 12 years: 50mg/kg (max 3g)	STAT dose (Give IM if vein cannot be found)	NICE CG102, updated Feb 2015 Nov 2017
Prevention of secondary case of meningitis: Only prescribe following advice from your local health protection specialist/consultant. PHE South London Health Protection Team: ☎: **0344 326 2052** (same number 9am- 5pm, and Out of hours for health professionals only), 🖷: phe.slhpt@nhs.net; slhpt.oncall@phe.gov.uk					
UPPER RESPIRATORY TRACT INFECTIONS					
Influenza	**Annual vaccination is essential for all those at risk of influenza.** Antivirals are not recommended for healthy adults. **Treat at risk** patients with **5 days oseltamivir 75mg BD,** when influenza is circulating in the community, and ideally within 48 hours of onset (36 hours for zanamivir treatment in children), or in a care home where influenza is likely. **At risk:** pregnant (and up to 2 weeks post-partum); children under 6 months; adults 65 years or older; chronic respiratory disease (including COPD and asthma); significant cardiovascular disease (not hypertension); severe immunosuppression; chronic neurological, renal or liver disease; diabetes mellitus; morbid obesity (BMI>40). See the PHE Influenza guidance for the treatment of patients under 13 years. In **severe immunosuppression**, or oseltamivir resistance, use **zanamivir 10mg BD (2 inhalations by diskhaler for up to 10 days)** and seek advice.				UKTIS pregnancy PHE Influenza guidance PHE website Nov 2018
Scarlet fever (Group A Streptococcal, GAS infection)	**Prompt treatment with appropriate antibiotics significantly reduces the risk of complications**. Optimise analgesia and give **safety netting advice** Vulnerable individuals [immunocompromised, those with co-morbidities (e.g. diabetes mellitus), injecting drug users, women in the puerperal period or individuals with skin lesions such as chickenpox or wounds] are at increased risk of developing complications. Consider arranging admission for urgent assessment and treatment of people who: • Have pre-existing valvular heart disease • Are significantly immunocompromised • Have a suspected severe complication of scarlet fever such as streptococcal toxic shock syndrome, acute rheumatic fever or streptococcal glomerulonephritis Advise exclusion from nursery/school/work for at least 24 hours after the commencement of appropriate antibiotic treatment **Scarlet fever is a notifiable disease**. If there is any suspicion of infection because of clinical features, a notification form should be completed and sent to the local Public Health England (PHE) centre within 3 days	First Line Oral: Phenoxymethylpenicillin (Penicillin based antibiotic) If Penicillin Allergy: Oral: Clarithromycin (Adults and Children) **OR** Oral: Erythromycin – **pregnancy**	**Adults:** 500mg QDS **Children:** Neonates: 12.5 mg/kg (max 65.2mg) QDS Child 1–11 mths: 62.5 mg QDS Child 1–5 years: 125 mg QDS Child 6–11 years: 250 mg QDS Child 12–17 years 250–500 mg QDS **Adults:** 250 - 500mg BD **Children:** under 12 years Under 8kg: 7.5mg/kg BD 8 - 11kg: 62.5mg BD 12 - 19kg: 125mg BD 20 - 29kg: 187.5mg BD 30 - 40kg: 250mg BD 12-17 yrs: 250 – 500mg BD **Adults:** 250mg to 500mg QDS **or** 500mg to 1000mg BD	10 days 10 days 5 days 5 days 5 days	PHE: Notifiable diseases and causative organisms: how to report CKS Scarlet Fever Oct 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
Acute sore throat	Advise paracetamol, or if preferred and suitable, ibuprofen for pain. Medicated lozenges may help pain in adults. Sore throats caused by streptococcal bacteria are more likely to benefit from antibiotics. FeverPAIN or Centor criteria are clinical scoring tools that can help to identify the people in whom this is more likely. **FeverPAIN criteria** • **F**ever (during previous 24 hours) • **P**urulence (pus on tonsils) • **A**ttend rapidly (within 3 days after onset) • **I**nflamed tonsils (severe) • **N**o cough or coryza Each of the FeverPAIN criteria score 1 point. Higher scores suggest more severe symptoms and likely bacterial (streptococcal) cause. FeverPAIN 0-1 / Centor 0-2: no antibiotic FeverPAIN 2-3: no / back-up antibiotic FeverPAIN 4-5 / Centor 3-4: immediate / back-up antibiotic **Systemically very unwell** or **high risk of complications**: immediate antibiotic **Consider hospital admission for**: suspected epiglottitis, breathing difficulty, clinical dehydration, Peri-tonsillar abscess or cellulitis, parapharyngeal abscess, retropharyngeal abscess, or Lemierre syndrome (as there is a risk of airway compromise or rupture of the abscess).	First Line Oral: Phenoxymethylpenicillin (Penicillin based antibiotic) **Avoid broad-spectrum penicillins** (e.g. amoxicillin) for the blind treatment of sore throat. Maculopapular rashes occur commonly with ampicillin and amoxicillin but are not usually related to true penicillin allergy. They almost always occur in people with glandular fever which is caused by the Epstein-Barr virus	**Adults:** 500mg QDS **or** 1g BD (can be increased up to 1g QDS, in severe infections) **Children**: BNF for children	5 - 10 days 5 - 10 days	NICE Sore throat (acute): antimicrobial prescribing - Visual summary NICE NG84, Jan 2018 Jan 2018
		If Penicillin Allergy: Oral: Clarithromycin (Adults and Children) **OR** Oral: Erythromycin – **pregnancy** Macrolides have a broader spectrum of activity than phenoxymethylpenicillin and therefore more likely to drive the emergence of bacterial resistance. Cochrane review by Altamimi et al, 2012 demonstrates that a short-course (5 days) of clarithromycin is as efficacious as 10-day-penicillin for sore throat and GABHS eradication)	**Adults:** 250 - 500mg BD **Adults:** 250mg to 500mg QDS **or** 500mg to 1000mg BD **Children**: BNF for children	5 days 5 days 5 days	
Acute Otitis Externa	**In the first instance avoid antibiotic,** analgesia for pain relief, self-care advice and apply localised heat (such as a warm flannel). **Subsequently** consider topical acetic acid or a topical antibiotic with or without a topical corticosteroid topical antibiotic +/- steroid: similar cure at 7 days. If cellulitis or disease extends outside ear canal, or systemic signs of infection, start treatment for cellulitis and refer to exclude malignant otitis externa.	OTC for adults Ear Spray: **Acetic acid 2%, (EarCalm® spray)** Which acts as an antifungal and antibacterial in the external ear canal **OR** First Line Ear drops: Betamethasone sodium phosphate 0.1%, Neomycin sulfate 0.5% **(Betnesol-N ear/eye/nose drops)**	**Adults & Children** 12 years +: 2 drops TDS and after swimming / showering / bathing. Maximum dosage frequency one spray every 2 - 3 hours. **Adults & Children:** 2-3 drops TDS - QDS	7 days Max. as excessive use may result in fungal infections 7 – 14 days	PHE context references and rationale Oct 2018 CKS Otitis externa Nov 2017
		Second Line Ear Spray: Neomycin sulfate 0.5%, Acetic acid glacial 2%, Dexamethasone 0.1% (**Otomize® Ear spray**)	**Adults & Children** 2 years +: 1 spray TDS	7 -14 days	

<table>
<tr><th>Infection</th><th>Comments</th><th>Medications</th><th>ADULT dose
for child's doses click on BNF for children</th><th>Duration of treatment</th><th>References & Useful links</th></tr>
<tr>
<td>Acute Otitis Media (AOM)</td>
<td>
Optimise analgesia and avoid antibiotics

Those with otorrhoea, or those aged less than 2 years with bilateral infection are more likely to benefit from antibiotics
<table>
<tr><td>Systemically very unwell or high risk of complications:</td><td>Immediate antibiotic</td></tr>
<tr><td>Otorrhoea or under 2 years with infection in both ears:</td><td>• No antibiotics or
• Back-up antibiotics or
• Immediate antibiotic</td></tr>
<tr><td>Otherwise:</td><td>• No antibiotic or
• Back-up antibiotic</td></tr>
</table>
</td>
<td>First Line
Oral: Amoxicillin
(Penicillin based antibiotic)</td>
<td>Adults: 500mg TDS

Children:
Neonate 7-28 days 30mg/kg TDS
Child 1 – 11 months 125mg TDS
Child 1 – 4 years 250mg TDS
Child above 5 years 500mg TDS</td>
<td>5 - 7 days

5 - 7 days</td>
<td rowspan="4">NICE Otitis Media (acute) antimicrobial prescribing - Visual Summary

NICE NG91, Mar 2018

Mar 2018</td>
</tr>
<tr>
<td></td>
<td>If Penicillin Allergy:
Oral: Clarithromycin
(Adults and Children)

OR Oral: Erythromycin – pregnancy</td>
<td>Adults: 250mg BD

Children
1 -11yrs:
Neonates 7.5 mg/kg BD
Child up to 8kg 7.5 mg/kg BD
Child 8 – 11kg 62.5mg BD
Child 12 – 19kg 125mg BD
Child 20 – 29 kg 187.5 mg BD
Child 30 – 40 kg 250mg BD
12 yrs + 250mg BD

Adults: 250mg to 500mg QDS or
500mg to 1000mg BD</td>
<td>5 – 7 days

5 – 7 days

5 – 7 days</td>
</tr>
<tr>
<td></td>
<td>Second Line
Worsening symptoms on first choice taken for at least 2 - 3 days
Oral: Co-amoxiclav
(Penicillin based antibiotic)</td>
<td>Adults: 250/125 mg TDS or
500/125 mg TDS in severe infections

Children:
1-11 mths 0.25 ml/kg of 125/31 TDS
1 - 5 yrs 5ml of 125/31 susp TDS
6 -11 yrs 5ml of 250/62 susp TDS
12 - 17 yrs 250/125 mg TDS or
500/125 mg TDS</td>
<td>5 – 7 days

5 – 7 days</td>
</tr>
<tr>
<td></td>
<td>Second line in penicillin allergic – Consult local microbiologist</td>
<td></td>
<td></td>
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</table>

<table>
<tr><th>Infection</th><th>Comments</th><th>Medications</th><th>ADULT dose
for child's doses click on BNF for children</th><th>Duration of treatment</th><th>References & Useful links</th></tr>
<tr><td rowspan="3">Acute Sinusitis (Rhinosinusitis)</td><td rowspan="3">Self-care (OTC)
• Consider paracetamol or ibuprofen for pain or fever
• Little evidence that nasal saline or nasal decongestants help, but people may want to try them

Antibiotics make little difference to how long symptoms last or the number of people whose symptoms improve:

<table><tr><td>Systemically very unwell or high risk of complications:</td><td>Immediate antibiotic</td></tr><tr><td>Symptoms with no improvement for more than 10 days</td><td>No antibiotics or
Back-up antibiotics depending on likelihood of bacterial cause.
Consider high-dose nasal corticosteroid (if over 12 years).</td></tr><tr><td>Symptoms for 10 days or less</td><td>No antibiotic</td></tr></table>
Bacterial cause may be more likely if several of the following are present: symptoms for more than 10 days, discoloured or purulent nasal discharge, severe localised unilateral pain (particularly pain over teeth and jaw), fever, marked deterioration after an initial milder phase</td><td>First Line
Oral: Phenoxymethylpenicillin
(Penicillin based antibiotic)</td><td>Adults: 500mg QDS

Children: BNF for children</td><td>5 days</td><td rowspan="3">NICE Sinusitis (acute) - Visual Summary

NICE NG79, Oct 2017

Oct 2017</td></tr>
<tr><td>If Penicillin Allergy:
Oral: Doxycycline (not to be used in Children under 12s or in pregnancy)
OR
Oral: Clarithromycin
(Adults and Children)

OR Oral: Erythromycin – pregnancy</td><td>Adults & Children
12 years +:
200mg on day 1, then 100mg OD

Adults: 250 - 500mg BD
Children: BNF for children

Adults: 250mg to 500mg QDS or
500mg to 1000mg BD</td><td>5 days

5 days

5 days</td></tr>
<tr><td>Second choice or first choice if systemically very unwell or high risk of complications:
Oral: Co-amoxiclav
(Penicillin based antibiotic)</td><td>Adults: 500/125mg TDS

Children: BNF for children</td><td>5 days

5 days</td></tr>
<tr><td>Chronic Sinusitis (Rhinosinusitis)
Inflammation of the paranasal sinuses lasting more than 12 weeks</td><td>Discourage the use of long-term antibiotics for chronic sinusitis however there may be a place for their use for acute exacerbations in a person with chronic sinusitis (for example, purulent discharge, pain)</td><td colspan="3">Seek specialist advice before long-term antibiotics are initiated because of the potential for adverse effects, the concern of increasing bacterial resistance, the low specificity of a symptomatic primary care diagnosis, and the lack of evidence of efficacy other than in selected groups</td><td>ENT UK and Royal College of Surgeons, 2016;

CKS Chronic sinusitis, Jun 2018</td></tr>
</table>

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
LOWER RESPIRATORY TRACT INFECTIONS (LRTI)						
Note: Low doses of penicillins are more likely to select out resistance, we recommend 500mg of amoxicillin. Do **not** use fluoroquinolones (ciprofloxacin, ofloxacin) first line because they may have long-term side effects and there is poor pneumococcal activity.						
Acute cough, bronchitis (LRTI)	**Consider self-care treatments** **Acute cough with upper respiratory tract infection** — No antibiotic **Acute bronchitis** — No routine antibiotic **Acute cough and higher risk of complications (at face-to-face examination)** — Immediate or back up antibiotic **Acute cough and systemically very unwell (at face-to-face examination)** — Immediate antibiotic Higher risk of complications includes pre-existing comorbidity; young children born prematurely; people over 65 with 2 or more of, or over 80 with 1 or more of: hospitalisation in previous year, type 1 or 2 diabetes, history of congestive heart failure, current use of oral corticosteroids. Do not offer a mucolytic, an oral or inhaled bronchodilator, or an oral or inhaled corticosteroid unless otherwise indicated.	First Line **ONLY where antibiotics are indicated** Oral: Doxycycline (not to be used in Children under 12s or in pregnancy)	**Adults & Children** 12 years +:	200mg on day 1, then 100mg OD	5 days	NICE NG120, Feb 2019 NICE Cough (acute) – Visual Summary
		OR Oral: Amoxicillin (Penicillin based antibiotic)	**Adults:** **Children:** BNF for children	500mg TDS	5 days	
		Alternative choices Oral: Clarithromycin (Adults and Children)	**Adults:** **Children:** BNF for children	250 - 500mg BD	5 days	
		OR Oral: Erythromycin – **pregnancy**	**Adults:**	250mg to 500mg QDS **or** 500mg to 1000mg BD	5 days	
Acute exacerbation of COPD	Many exacerbations are not caused by bacterial infections so will not respond to antibiotics. Consider an antibiotic, but only after taking into account severity of symptoms (particularly sputum colour changes and increases in volume or thickness), need for hospitalisation, previous exacerbations, hospitalisations and risk of complications, previous sputum culture and susceptibility results, and risk of resistance with repeated courses. Some people at risk of exacerbations may have antibiotics to keep at home as part of their exacerbation action plan.	First Line Oral: Amoxicillin (Penicillin based antibiotic)	**Adults:**	500mg TDS	5 days	NICE COPD - Visual Summary NICE NG114, Dec 2018
		OR Oral: Doxycycline (not to be used in Children under 12s or pregnancy)	**Adults:**	200mg on day 1, then 100mg OD	5 days	
		OR Oral: Clarithromycin	**Adults:**	500mg BD		
		OR Oral: Erythromycin – **pregnancy**	**Adults:**	250mg to 500mg QDS **or** 500mg to 1000mg BD	5 days	
		Second line: Use alternative first choice				
		Alternative choice (if person at higher risk of treatment failure): Oral: Co-amoxiclav (Penicillin based antibiotic)	**Adults:**	500/125mg TDS	5 days	
		OR Oral: Levofloxacin (Consider safety issues)	**Adults:**	500mg OD	5 days	
		OR Oral: Co-trimoxazole (Consider safety issues)	**Adults:**	960mg BD	5 days	Dec 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
Community acquired pneumonia (CAP)	Assess severity in adults based on clinical judgement guided by mortality risk score CRB65. Each CRB65 parameter scores one: • **C**onfusion (AMT<8, or new disorientation in person, place or time) • **R**espiratory rate >30/min; • **B**P low systolic <90mmHg or low diastolic ≤ 60mmHg; • Age > **65** Score 0: low risk (less than 1% mortality risk) Score 1-2: intermediate risk (consider hospital referral) **Score 3-4: high risk (requires urgent hospital admission)** In children and young people, severity is assessed by clinical judgement. When choosing an antibiotic, take account of: • The severity assessment (adults), or the severity of symptoms or signs (children and young people); see above • The risk of complications, e.g. a relevant comorbidity (such as severe lung disease or immunosuppression) • Recent antibiotic use • Previous microbiological results, including colonisation with multi-drug resistant bacteria When prescribing antibiotics for a community acquired pneumonia • Offer an antibiotic(s). Start treatment as soon as possible, within 4 hours of establishing a diagnosis (within 1 hour if sepsis suspectd an person meets any high risk criteris – see NICE guidline on sepsis.) • For adults, follow the recommendations on microbiological tests in the NICE guideline on pneumonia And give advice about • Possible side effects of the antibiotic(s) • How long symptoms are likely to last (see also the NICE guideline on pneumonia) • Seeking medical help if symptoms worsen rapidly or significantly at any time, or do not start to improve within 3 days, or the person becomes systemically very unwell. Reassess if: • Symptoms do not improve as expected,or worsen rapidly or significantly, taking account of possible non-bacterial causes such as flu If symptoms have not improved after antibiotics, send a sample (e.g. sputum) for microbiological testing, if not already done	CRB65 = 0 or Non-severe symptoms or signs Oral: Amoxicillin (Penicillin based antibiotic) Alternative choice if amoxicillin unsuitable (e.g. penicllin allergy or atypical pathogens suspected) Oral: Doxycycline (not to be used in Children under 12s or in pregnancy) **OR** Oral: Clarithromycin **OR** Oral: Erythromycin – **pregnancy**	**Adults:** **Children:** **Adults:** **Adults:** **Children:** **Adults:** **Children:**	500mg TDS (higher doses can be used; see BNF) BNF for children 200mg on day 1, then 100mg OD 500mg BD BNF for children 500mg QDS BNF for children	5 days unless microbiological results suggest a longer course is needed or the person is not clinically stable (fever in the past 48 hours, or more than ` sign of clinical instability [systolic BP <90mmHg, heart rate >100/min, respiratory rate >24/min, arterial oxygen saturation <90% or PaO_2 <60mmHg in room air]	NICE NG138, Sep 2019 NICE Pneumonia (community-acquired): antimicrobial prescribing - Visual Summary
		CRB65 = 1-2 Clinically assess need for dual therapy for atypicals Oral: Amoxicillin (Penicillin based antibiotic) **WITH** (if atypical pathogens suspected) Oral: Clarithromycin **OR** Oral: Erythromycin – **pregnancy** Alternative choice if amoxicillin unsuitable (e.g. penicllin allergy) Oral: Doxycycline (not to be used in children under 12s or in pregnancy) **OR** Oral: Clarithromycin	**Adults:** **Children:** **Adults:** **Children** **Adults:** **Adults:** **Adults:**	500mg TDS (higher doses can be used; see BNF) BNF for children 500mg BD BNF for children 500mg QDS 200mg on day 1, then 100mg OD 500mg BD		
		CRB65 = 3-4 or Severe symptoms or signs Oral: Co-amoxiclav (Penicillin based antibiotic) **WITH** (if atypical pathogens suspected) Oral: Clarithromycin **OR** Oral: Erythromycin – **pregnancy** Alternative choice if co-amoxiclav unsuitable (e.g. penicllin allergy Oral: Levofloxacin (consider safety issues) **Refer to hospital if IV required**	**Adults:** **Children:** **Adults:** **Adults:** **Children:** **Adults:**	500/125 mg TDS BNF for children 500mg BD 500mg QDS BNF for children 500mg BD		

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
Bronchiectasis (non-cystic fibrosis) acute exacerbation	An acute exacerbation of bronchiectasis is sustained worsening of symptoms from a person's stable state. • Send a sputum sample for culture and susceptibility testing • Offer an antibiotic - take account of: o the severity of symptoms o previous exacerbations, hospitalisations and risk of complications o previous sputum culture and susceptibility results • When results of sputum culture are available: o review choice of antibiotic o only change antibiotic according to susceptibility results if bacteria are resistant and symptoms are not already improving, using narrow spectrum antibiotics when possible • Give oral antibiotics first line if possible • Reassess at any time if symptoms worsen rapidly or significantly, taking account of: o other possible diagnoses, such as pneumonia o symptoms or signs of something more serious, such as cardiorespiratory failure or sepsis o previous antibiotic use, which may have led to resistant bacteria • Refer to hospital if the person has any symptoms or signs suggesting a more serious illness or condition (for example, cardiorespiratory failure or sepsis). • Seek specialist advice if: o symptoms do not improve with repeated courses of antibiotics o bacteria are resistant to oral antibiotics o the person cannot take oral medicines (to explore giving intravenous antibiotics at home or in the community if appropriate)	First Line: When current susceptibility data available, choose antibiotics accordingly: Oral: Amoxicillin (Penicillin based antibiotic)	**Adults:** **Children:**	500mg TDS BNF for children	7 – 14 days	NICE Bronchiectasis (acute exacerbation): antimicrobial prescribing - Visual Summary NICE NG117, Dec 2018
		OR Oral: Doxycycline (not to be used in Children under 12s or in pregnancy)	**Adults:**	200mg on day 1, then 100mg OD	7 - 14 days	
		OR Oral: Clarithromycin	**Adults:** **Children:**	500mg BD BNF for children	7 – 14 days	
		OR Oral: Erythromycin – **pregnancy**	**Adults:**	250mg to 500mg QDS **or** 500mg to 1000mg BD		
		Alternative choice (if person at higher risk of treatment failure): Oral: Co-amoxiclav (Penicillin based antibiotic)	**Adults:** **Children:**	500/125mg TDS BNF for children	7 - 14 days	
		OR Oral: Levofloxacin – **Adults** (Consider safety issues)	**Adults:**	500mg OD	7 – 14 days	
		OR Oral: Ciprofloxacin (on specialist advice) – **Children**	**Children:**	BNF for children	7 – 14 days	
		First choice intravenous antibiotics (if unable to take oral antibiotics or severely unwell) for empirical treatment in the absence of current susceptibility data (guided by most recent sputum culture and susceptibilities where possible)				
		IV: Co-amoxiclav (Penicillin based antibiotic)	**Adults:** **Children:**	1.2g TDS BNF for children	Review all IV antibiotic treatment in 48 -72 hours	
		OR IV: Piperacillin with Tazobactam (Penicillin based antibiotic)	**Adults:** **Children:**	4.5g TDS BNF for children		
		OR IV: Levofloxacin – **Adults** (Consider safety issues)	**Adults:**	500mg OD – BD		
		OR IV: Ciprofloxacin (**on specialist advice) – Children**	**Children:**	BNF for children		Dec 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
URINARY TRACT INFECTIONS						
Lower Urinary tract infection (UTI)	Advise paracetamol or ibuprofen for pain and drinking enough fluid to avoid dehydration. **Men, Pregnant women, children or young people:** • Immediate antibiotic. **Women**: **Non-pregnant** • Back up antibiotic (to use if no improvement in 48 hours or symptoms worsen at any time) or immediate antibiotic. When considering antibiotics, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use which may have led to resistant bacteria and local antimicrobial resistance data. **Send midstream urine for culture a**nd susceptibility for **pregnant women** and **men.** Seeking medical help if symptoms worsen at any time, do not improve within 48 hours of taking the antibiotic, or the person becomes very unwell. **Asymptomatic bacteriuria:** is significant levels of bacteria in urine with no UTI symptoms • Screened for and treated in pregnant women because risk factor for pyelonephritis and premature delivery • Not screened for or treated in non-pregnant women, men, children or young people **Prescribe a 5–10-day course of treatment for women who have**: • Impaired renal function. • Abnormal urinary tract (e.g. renal calculus, vesicoureteric reflux (abnormal flow of urine from the bladder into the upper urinary tract), reflux nephropathy, neurogenic bladder, urinary obstruction, recent instrumentation). • Immunosuppression (for example because they have poorly controlled diabetes mellitus or are receiving immunosuppressive treatment. Nitrofurantoin has been used for many years in pregnancy [Schaefer et al, 2007; UKTIS, 2012b]. The drug is concentrated in the urinary tract. Consequently, significant transfer across the placenta does not occur. Although it is not licensed for use in pregnancy, the manufacturer of nitrofurantoin reported that the drug has been used extensively clinically since 1952 and its suitability in pregnancy has been well documented. The BNF recommends that nitrofurantoin should be avoided at term, because of the risk of neonatal haemolysis. However, the risk seems very small — significant placental transfer of nitrofurantoin does not occur.	**Adults (16 year and over): Women (non pregnant) and Men**				NICE UTI (lower): antimicrobial prescribing - Visual Summary NICE NG109, Oct 2018 NICE Decision Aids: NICE Decision aid: Cystitis - Taking an antibiotic, Nov 2018
		First Line: Oral: Nitrofurantoin (Nitrofurantoin if GFR over 45ml/min) (May be used with caution if eGFR 30-44 ml/minute to treat uncomplicated lower UTI caused by suspected or proven multidrug resistant bacteria and only if potential benefit outweighs risk)	**Adults:**	100mg M/R BD	**Women:** 3 days **Men:** 7 days	
		Second line: **Men** Consider alternative diagnoses basing antibiotic choice on recent culture and susceptibility results				
		Second line: **Women** Oral: Pivmecillinam (Penicillin based antibiotic) **OR** Oral: Fosfomycin	**Adults:** **Adults:**	400mg initial dose, then 200mg TDS 3g single dose sachet	3 days STAT	
		Pregnant women:				
		First Line: Oral: Nitrofurantoin (avoid at term) (Nitrofurantoin if GFR over 45ml/min)	**Adults:**	100mg M/R BD	7 days	
		Second line: Oral: Amoxicillin (Penicillin based antibiotic) (Only if culture results available and susceptible) **OR** Oral: Cefalexin (Beta-lactam antibiotic)	**Adults:** **Adults:**	500mg TDS 500mg BD	7 days 7 days	
		Children and young people (3 months and over) Refer children under 3 months to paediatric specialist and treat with intravenous antibiotics				
		First line: Oral: Trimethoprim **OR** Oral: Nitrofurantoin (Nitrofurantoin if GFR over 45ml/min)	**Children:** **Children:**	BNF for children BNF for children	3 days 3 days	
		Second line: Oral: Nitrofurantoin (Nitrofurantoin if GFR over 45ml/min and **not** used **as first choice**) **OR** Oral: Cefalexin (Beta-lactam antibiotic)	**Children:** **Children:**	BNF for children BNF for children	3 days 3 days	

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
Acute pyelonephritis (upper urinary tract)	Send a midstream urine sample for culture and susceptibility testing. Advise paracetamol (+/- low-dose weak opioid) for pain for people over 12 and offer an antibiotic. When prescribing antibiotics, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use which may have led to resistant bacteria and local antimicrobial resistance data. People at higher risk of complications include those with abnormalities of the genitourinary tract or underlying disease (such as diabetes or immunosuppression). Refer children under 3 months to paediatric specialist and treat with intravenous antibiotics in line with the NICE guideline For IV options please refer to Pyelonephritis (acute): antimicrobial prescribing: Visual Summary	**Adults (12 year and over): Women (non pregnant) and Men**				NICE NG111, Oct 2018 Pyelonephritis (acute): antimicrobial prescribing: Visual Summary
		First line: Oral: Cefalexin (Beta-lactam antibiotic) **OR**	**Adults:**	500mg BD or TDS (up to 1g to 1.5g TDS or QDS for severe infections)	7-10 days	
		Oral: Co-amoxiclav (Penicillin based antibiotic) (only if culture results available and susceptible) **OR**	**Adults:**	500/125mg TDS	7-10 days	
		Oral: Trimethoprim (only if culture results available and susceptible) **OR**	**Adults:**	200mg BD	14 days	
		Oral: Ciprofloxacin (consider safety issues)	**Adults:**	500mg BD	7days	
		Pregnant women:				
		First line: Oral: Cefalexin (Beta-lactam antibiotic)	**Adults:**	500mg BD or TDS (up to 1g to 1.5g TDS or QDS for severe infections)	7-10 days	
		Second choice antibiotics or combining antibiotics if susceptibility or sepsis a concern Consult microbiologist				
		Children and young people under 16 years Refer children under 3 months to paediatric specialist and treat with intravenous antibiotics				
		First line: Oral: Cefalexin (Beta-lactam antibiotic) **OR**	**Children:**	BNF for children	7-10 days	
		Oral: Co-amoxiclav (Penicillin based antibiotic) (only if culture results available and susceptible)	**Children:**	BNF for children	7-10 days	

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
Acute prostatitis	Acute prostatitis is a bacterial infection needing antibiotics and can occur spontaneously or after medical procedures. It can last several weeks and can lead to acute urinary retention and prostatic abscess. Advise paracetamol (+/- low-dose weak opioid) for pain, or ibuprofen if preferred and suitable. Advise drinking enough fluids to avoid dehydration Offer antibiotic and send a midstream urine sample for culture and susceptibility testing. Usual course of acute prostatitis is several weeks When results of urine culture available: • Review the choice of antibiotic, and • Change antibiotic according to susceptibility results if bacteria are resistant, using a narrow spectrum antibiotic when possible. Review antibiotic treatment after 14 days and either stop antibiotics or continue for a further 14 days if needed (based on assessment of history, symptoms, clinical examination, urine and blood tests). Quinolones achieve higher prostate levels. Admit to hospital if man has any of the following severely ill, in acute urinary retention. Consider urgent referral is man is immunocompromised or has diabetes or had a pre-existing urological condition	First line: To be guided susceptibilities when available: Oral: Ciprofloxacin (consider safety issues) **OR** Oral: Ofloxacin (consider safety issues) **OR** Oral: Trimethoprim (if unable to take quinolone) (off label use) Second line: After discussion with specialist: Oral: Levofloxacin (consider safety issues) **OR** Oral: Co-trimoxazole (consider safety issues)	**Adults:** **Adults:** **Adults:** **Adults:** **Adults:**	500mg BD 200mg BD 200mg BD 500mg OD 960mg BD	14 days then review 14 days then review 14 days then review 14 days then review 14 days then review	NICE NG110, Oct 2018 Prostatitis (acute): antimicrobial prescribing: Visual Summary
Recurrent urinary tract infection (prophylaxis)	First advise about **behavioural and personal hygiene** measures, and self-care (with D-mannose or cranberry products) to reduce the risk of UTI. For postmenopausal women, if no improvement, consider vaginal oestrogen (review within 12 months). For non-pregnant women, if no improvement, consider single-dose antibiotic prophylaxis for exposure to a trigger (review within 6 months). For non-pregnant women (if no improvement or no identifiable trigger) or with specialist advice for pregnant women, men, consider a trial of daily antibiotic prophylaxis (review within 6 months). Refer children and young people to specialist.	First line: Prophylaxis Oral: Nitrofurantoin (Nitrofurantoin if GFR over 45ml/min) Second line: Prophylaxis Consult local microbiologist Oral: Cefalexin (Beta-lactam antibiotic)	**Adults:** **Adults:**	100mg STAT when exposed to a trigger **OR** 50 - 100mg ON 500mg STAT when exposed to a trigger **OR** 125mg ON	Review all within 6 months	NICE NG112, Oct 2018 UTI (recurrent): antimicrobial prescribing, Visual-Summary NICE Decision Aids: NICE Decision aid: Reducing recurrent UTIs in premenopausal women (non-pregnant), Nov 2018 NICE Decision aid: Reducing recurrent UTIs in postmenopausal women, Nov 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
Catheter-associated urinary tract infection	Antibiotic treatment is **not routinely needed** for **asymptomatic bacteriuria** in people with a urinary catheter. (All catheters are colonised with organisms within 48 hours on insertion). Offer an antibiotic to all catheterized patients with symptoms suggestive of a UTI. • **Admit to hospital if severe** • **Culture the urine** as MRSA, ESBL producing multi resistant E Coli infections are common in these patients. • Consider removing or, if not possible, changing the catheter if it has been in place for more than 7 days. • **But do not delay antibiotic treatment.** Advise paracetamol for pain. Advise drinking enough fluids to avoid dehydration. When prescribing antibiotics, take account of severity of symptoms, risk of complications, previous urine culture and susceptibility results, previous antibiotic use which may have led to resistant bacteria and local antimicrobial resistance data. Do not routinely offer antibiotic prophylaxis to people with a short-term or long-term catheter.	**Adults (16 year and over): Women (non pregnant) and Men: No upper UTI symptoms**				NICE NG113, Nov 2018 UTI (catheter): antimicrobial prescribing: Visual Summary
		First Line: Oral: Nitrofurantoin (Nitrofurantoin if GFR over 45ml/min) **OR**	**Adults:**	100mg M/R BD	7 days	
		Oral: Trimethoprim (only if culture results available and susceptible) **OR**	**Adults:**	200mg BD	7 days	
		Oral: Amoxicillin (Penicillin based antibiotic) (Only if cultures results available and susceptible	**Adults:**	500mg TDS	7 days	
		Second line: Oral: Pivmecillinam (Penicillin based antibiotic)	**Adults:**	400mg initial dose, then 200mg TDS	7 days	
		Adults (12 year and over): Women (non pregnant) and Men: with UPPER UTI symptoms				
		Oral: Cefalexin (Beta-lactam antibiotic) **OR**	**Adults:**	500mg BD or TDS (up to 1g to 1.5g TDS **OR** QDS for severe infections)	7-10 days	
		Oral: Co-amoxiclav (Penicillin based antibiotic) (only if culture results available and susceptible) **OR**	**Adults:**	500/125mg TDS	7-10 days	
		Oral: Trimethoprim (only if culture results available and susceptible) **OR**	**Adults:**	200mg BD	14 days	
		Oral: Ciprofloxacin (consider safety issues)	**Adults:**	500mg BD	7 days	
		Pregnant women:				
		First line: Oral: Cefalexin (Beta-lactam antibiotic)	**Adults:**	500mg BD or TDS (up to 1g to 1.5g TDS or QDS for severe infections)	7-10 days	
		Second choice antibiotics or combining antibiotics if susceptibility or sepsis a concern Consult microbiologist				
		Children and young people under 16 years Refer children under 3 months to paediatric specialist and treat with intravenous antibiotics				
		Oral: Trimethoprim (only if culture results available and susceptible) **OR**	**Children:**	BNF for children	7 to 10 days	
		Oral: Amoxicillin (Penicillin based antibiotic) (only if culture results available and susceptible) **OR**	**Children:**	BNF for children	7 to 10 days	
		Oral: Cefalexin (Beta-lactam antibiotic) **OR**	**Children:**	BNF for children	7 to 10 days	
		Oral: Co-amoxiclav (Penicillin based antibiotic) (only if culture results available and susceptible)	**Children:**	BNF for children	7 to 10 days	

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children		Duration of treatment	References & Useful links
GASTRO-INTESTINAL TRACT INFECTIONS						
Oral candidiasis (Oropharyngeal fungal infections)	Acute pseudomembranous candidiasis (thrush), is usually an acute infection but it may persist for months in patients receiving inhaled corticosteroids, cytotoxics or broad-spectrum antibacterials. Topical azoles are more effective than topical nystatin. Oral candidiasis is rare in immunocompetent adults; consider undiagnosed risk factors, including HIV. Use 50 mg fluconazole if extensive/severe candidiasis; if HIV or immunocompromised, use 100 mg fluconazole	First line: Topical: Miconazole oromucosal gel	**Adults:** **Children:**	2.5ml of 24mg/ml (20mg/g) QDS (hold in mouth/retain near oral lesions before swallowing) (to be administered after food) BNF for children	7 days; then continue for 7 days after resolved	PHE context references and rationale Oct 2018 Oct 2018
		Second line: If Miconazole is not tolerated: Topical: Nystatin suspension	**Adults & Children:**	1ml; 100,000units/mL QDS (half in each side)	7 days, and continued for 48 hours after lesions have resolved	
		Third Line: Oral: Fluconazole capsules	**Adults:** **Children:**	50mg OD (100mg OD in HIV / immunocompromised) BNF for children	7-14 days	
Infectious Diarrhoea	Refer previously healthy children with acute painful or bloody diarrhoea, to exclude E. coli O157 infection. **Antibiotic therapy is not usually indicated unless patient is systemically unwell.** If systemically unwell and campylobacter suspected (such as undercooked meat and abdominal pain), consider clarithromycin 250–500mg BD for 5–7 days, if treated early (within 3 days). If giardia is confirmed or suspected – tinidazole 2g single dose is the treatment of choice.					PHE context references and rationale Oct 2018 Oct 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
Eradication of Helicobacter pylori (H.pylori)	Always test for H.pylori before giving antibiotics. Leave a 2-week washout period after proton pump inhibitor (PPI) use before testing for H. pylori with a carbon-13 urea breath test (UBT) or a stool antigen test (STA), or laboratory-based serology where its performance has been locally validated. **Treat all positives**, if known duodenal ulcers (DU), Gastric ulcer (GU), or low grade mucosa-associated lymphoid tissue (MALT) lymphoma (MALToma). NNT in non-ulcer dyspepsia (NUD): 14. Do not offer H.pylori eradication for GORD. Also note: Both H. pylori and NSAIDs are independent risk factors for peptic ulcers, so eradication will not remove all risk Do not use clarithromycin, metronidazole or quinolone if used in the **past year for any infection**. **Penicillin allergy:** use PPI PLUS clarithromycin PLUS metronidazole. If previous clarithromycin, use PPI PLUS bismuth salt PLUS metronidazole PLUS tetracycline hydrochloride. **Relapse and previous metronidazole and clarithromycin:** use PPI PLUS amoxicillin PLUS either tetracycline OR levofloxacin (if tetracycline not tolerated). Retest for H. pylori: post DU/GU, or relapse after second-line therapy, using UBT or SAT, consider referral for endoscopy and cultures.	Always use Oral **PPI** **AND 2 oral antibiotics**: First or Second line: Oral PPI **WITH** Oral Amoxicillin (Penicillin based antibiotic) **PLUS** • **Either** Oral Clarithromycin **OR** • Oral Metronidazole	**Adults:** Omeprazole 20 BD **or** Lansoprazole 30mg BD **Adults:** 1g BD 500mg BD 400mg BD **Children:** BNF for children	**First line** 7 days **Relapse** 10 days **MALToma** 14 days	PHE context references and rationale Oct 2018 PHE: Test and treat for HP in dyspepsia July 2017 NICE CG184, Updated Nov 2014
		Penicillin allergy Oral PPI **PLUS** • Oral Clarithromycin **AND** • Oral Metronidazole	**Adults:** 500mg BD 400mg BD **Children:** BNF for children		
		Penicillin allergy and previous clarithromycin Oral PPI **PLUS** • Oral Bismuth Subsalicylate **AND** • Oral Metronidazole **AND** • Oral Tetracycline hydrochloride	**Adults:** 525mg QDS 400mg BD 500mg QDS **Children:** BNF for children	**First line** 7 days **Relapse** 10 days **MALToma** 14 days	
		Relapse Oral PPI **PLUS** • Oral Amoxicillin **AND** • **Either** Oral levofloxacin **OR** • Oral Tetracycline hydrochloride	**Adults:** 1g BD 250mg BD 500mg QDS **Children:** BNF for children		
		Third line on advice Oral PPI **PLUS** Oral Bismuth Subsalicylate **AND** **Either**: 2 antibiotics as above not previously used **OR** • Rifabutin **OR** • Furazolidone	**Adults:** 525mg QDS 150mg BD 200mg BD	10 days	

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
Traveller's diarrhoea	**Prophylaxis rarely, if ever, indicated.** Prophylactic antibiotics should not be recommended for most travellers. Travellers may become colonized with extended-spectrum β-lactamase (ESBL)–producing bacteria, and this risk is increased by exposure to antibiotics while abroad. Consider **standby** antimicrobial only for patients at high risk of severe illness, or visiting high-risk areas.	Standby: Oral: Azithromycin	**Adults:** 500mg OD	1-3 days	PHE context references and rationale Oct 2018 Oct 2018
		Prophylaxis/treatment: Oral: Bismuth subsalicylate	**Adults:** 2 tablets QDS	2 days	
Threadworm	**Treat all household contacts at the same time**. **Advise hygiene measures for 2 weeks** (hand hygiene; pants at night; morning shower, including perianal area). Wash sleepwear, bed linen, and dust and vacuum. **Child <6 months**, add perianal wet wiping or washes 3 hourly.	Oral: Mebendazole Not licensed for use in children under 2 years Hygiene measure **only** for at least 6 weeks	**Adults & Children over 6 months:** 100 mg for 1 dose; If reinfection occurs, second dose may be needed after 2 weeks. **Children under 6 months OR Pregnant** (first trimester)	STAT dose	PHE context references and rationale Oct 2018 Nov 2017
Clostridioides difficile (formerly Clostridium difficile)	Review need for any antibiotics prescribed and antiperistaltic agents and discontinue use where possible. **Mild cases** (<4 episodes of stool/day) may respond without metronidazole; 70% respond to metronidazole in 5 days; 92% respond to metronidazole in 14 days. **If severe** (T>38.5, or WCC>15, rising creatinine, or signs/symptoms of severe colitis): treat with oral vancomycin - review progress closely, and consider hospital referral.	First episode: Oral: Metronidazole	**Adults:** 400mg TDS **Children:** BNF for children	10-14 days	
		Severe, type 027 or recurrent: Oral: Vancomycin	**Adults:** 125mg QDS **Children:** BNF for children	10 – 14 days then taper. (e.g. 125mg QDS for 10-14 days followed by 125mg BD for 7 days then 125mg OD for 7 days then stop).	
		Recurrent or second line: Oral: Fidaxomicin (very high cost)	**Adults:** 200mg BD	10 days	

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
Acute diverticulitis	Self-care advice: • If patient is systemically well, consider not prescribing antibiotics, offer diet and lifestyle advice (see NICE guidance for recommendations), and advise the person to re-present if symptoms persist or worsen. • Offer antibiotics if systemically unwell or immunosuppressed or with significant comorbidities but does not meet the criteria for referral for suspected complicated acute diverticulitis • *Only prescribe ciprofloxacin if switching from IV ciprofloxacin with specialist advice, consider safety issues • Advise on the use of analgesia, such as paracetamol as-needed. • Advise the patient to avoid NSAIDs and opioid analgesia (such as codeine) if possible, due to the potential increased risk of diverticular perforation (see CKS for further information) • Recommend clear liquids only, with a gradual reintroduction of solid food if symptoms improve over the following 2–3 days (CKS) • Consider checking bloods for raised white cell count and CRP, which may suggest infection (CKS) • **If the person is managed in primary care, arrange a review within 48 hours,** or sooner if symptoms worsen. • Arrange urgent hospital admission if symptoms persist or deteriorate despite management in primary care. • **Consider arranging referral to a specialist in colorectal surgery** if a person is managed in primary care and has frequent or severe recurrent episodes of acute diverticulitis.	First line: Co-amoxiclav (Penicillin based antibiotic)	**Adults:** 625mg TDS	5 days (a longer course may be needed based on clinical assessment)	NICE NG147, Published Nov 2019 NICE NG147 visual summary
		Alternative if co-amoxiclav unsuitable: Cefalexin (caution in penicillin allergy) AND Metronidazole OR	**Adults:** 500mg BD or TDS (up to 1-1.5g TDS/QDS in severe infection) **Adults:** 400mg TDS	5 days (a longer course may be needed based on clinical assessment)	
		Trimethoprim AND Metronidazole OR	**Adults:** 200mg BD **Adults:** 400mg TDS		
		Ciprofloxacin (only if switching from IV ciprofloxaicin with specialist advice; consider safety issues) AND Metronidazole	**Adults:** 500mg BD **Adults:** 400mg TDS		

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
GENITAL TRACT INFECTIONS					
STI screening	People with risk factors should be screened for chlamydia, gonorrhoea, HIV and syphilis. Refer individual and partners to GUM. Risk factors: under25 years; no condom use; recent/frequent change of partner; symptomatic partner; area of high HIV.				PHE context references and rationale Oct 2018 Nov 2017
Chlamydia trachomatis/ urethritis	Opportunistically screen all patients aged 15 to 24 years. Treat partners and refer to GUM. Test positives for reinfection at 3 months. **Pregnant/breastfeeding**: azithromycin is most effective. As lower cure rate in pregnancy, test for cure at least 3 weeks after end of treatment.	First line: Oral: Azithromycin **OR** Oral: Doxycycline	**Adults:** 1g STAT **Adults:** 100mg BD	STAT dose 7 days	PHE context references and rationale Oct 2018 BASHH guidelines
		Pregnant or Breastfeeding Oral: Azithromycin **OR** Oral: Erythromycin **OR** Oral: Amoxicillin (Penicillin based antibiotic)	**Adults:** 1g STAT **Adults:** 500mg BD **or** 500mg QDS **Adults:** 500mg TDS	STAT dose 7 days 14 days 7 days	Oct 2018
Epididymitis	Usually due to Gram-negative enteric bacteria in men over 35 years with low risk of STI. If under 35 years or STI risk, refer to GUM	Oral: Doxycycline **OR** Oral: Ofloxacin (consider safety issues) **OR** Oral: Ciprofloxacin (consider safety issues)	**Adults:** 100mg BD **Adults:** 200mg BD **Adults:** 500mg BD	10 – 14 days 14 days 10 days	PHE context references and rationale Oct 2018 Nov 2017
Vaginal candidiasis	All topical and oral azoles give over 80% cure. **Pregnant:** avoid oral azoles, the 7 day courses are more effective than shorter ones. **Recurrent** (>4 episodes per year): 150mg oral fluconazole every 72 hours for 3 doses induction, followed by 1 dose once a week for 6 months maintenance.	First line: Topical: Clotrimazole Pessary **OR** Topical: Fenticonazole Vaginal capsules (Pessary) **OR** Topical: Clotrimazole Pessary **OR** Oral: Fluconazole (not in pregnancy)	**Adults:** 500mg vaginal pessary STAT **Adults:** 600mg vaginal capsules (Pessary) STAT **Adults:** 100mg vaginal pessary **Adults:** 150mg STAT	STAT STAT 6 nights STAT	PHE context references and rationale Oct 2018 BASHH guidelines
		Recurrent (>4 episodes per year): Oral: Fluconazole (not in pregnancy)	**Adults:** 150mg every 72 hours **THEN** 150mg once a week	3 doses 6 months	Oct 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
Bacterial vaginosis	Oral metronidazole is as effective as topical treatment, and is cheaper. 7 days results in fewer relapses than 2g stat at 4 weeks. Treating partners does not reduce relapse. **Pregnant/breastfeeding:** avoid 2g dose.	First line: Oral: Metronidazole	**Adults:** 400mg BD **or** 2g STAT (this dose not recommended in pregnancy)	7 days STAT	PHE context references and rationale Oct 2018
		Second Line: Topical: Metronidazole 0.75% vaginal gel **OR** Topical: Clindamycin 2% cream	**Adults:** 5g applicator at night **Adults:** 5g applicator at night	5 nights 7 nights	Nov 2017
Genital herpes simplex virus (HSV)	**Advise: Self-care:** • Clean the affected area with plain or salt water • Apply Vaseline or a topical anaesthetic to lesions to help with painful micturition, if required. • Increase fluid intake to produce dilute urine (which is less painful to void). Urinate in a bath or with water flowing over the area to reduce stinging. • Avoid wearing tight clothing, which may irritate lesions. • Take adequate pain relief. • Avoid sharing towels and flannels with household members • Discuss transmission. **First episode**: Oral antivirals are the primary treatment for genital herpes simplex infection — treatment should commence within 5 days of the start of the episode, or while new lesions are forming for people with a first clinical episode of genital herpes simplex virus (HSV) **and refer to GUM**. BASHH recommends five days of antiviral treatment for primary genital HSV, as there is no evidence of benefit for treatment longer than this period [BASHH, 2014]. However, the WHO recommends that 10 days treatment should be provided, as follow-up visits may not be possible and symptoms of the first clinical episode may be prolonged [WHO, 2016]. **Recurrent:** self-care if mild, or immediate short course antiviral treatment, or suppressive therapy if more than 6 episodes per year.	First line Oral: Aciclovir	**Adults:** 400mg TDS	5 days	PHE context references and rationale Oct 2018
		Second line Oral: Valaciclovir **OR** Oral: Famciclovir	**Adults:** 500mg BD **Adults:** 250mg TDS	5 days 5 days	
		Recurrent Oral: Aciclovir **OR** Oral: Famciclovir	**Adults:** 800mg TDS **Adults:** 1g BD	2 days 1 day	Nov 2017

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	References & Useful links
Gonorrhoea	Antibiotic resistance is now very high. Use IM ceftriaxone and oral azithromycin; **refer to GUM.** **Test of cure is essential.**	IM: Ceftriaxone **AND** Oral: Azithromycin	**Adults:** 500mg IM STAT 1g STAT	STAT STAT	PHE context references and rationale Oct 2018 Nov 2017
Pelvic inflammatory disease	**Refer** women and sexual contacts to GUM. **Raised CRP** supports diagnosis, absent pus cells in HVS smear good negative predictive value. **Exclude:** ectopic, appendicitis, endometriosis, UTI, irritable bowel, complicated ovarian cyst, functional pain. Moxifloxacin has greater activity against likely pathogens, but always culture for gonorrhoea and chlamydia, and test for Mycoplasma genitalium. If gonorrhoea likely (partner has it; sex abroad; severe symptoms), use regimen with ceftriaxone, as resistance to quinolones is high.	First Line Oral: Metronidazole **PLUS** Oral: Ofloxacin **OR** Oral: Moxifloxacin	**Adults:** 400mg BD 400mg BD 400mg OD	14 days 14 days 14 days	PHE context references and rationale Oct 2018 Oct 2018
		Gonorrhoea suspected IM: Ceftriaxone **AND** Oral: Metronidazole **AND** Oral: Doxycycline	**Adults:** 500mg IM STAT 400mg BD 100mg BD	STAT 14 days 14 days	
Trichomoniasis	Oral treatment needed as extravaginal infection common. Treat partners, and refer to GUM for other STIs. **Pregnant/breastfeeding**: avoid 2g single dose metronidazole Offer Clotrimazole for symptom relief (not cure) if metronidazole declined/ contra-indicated.	First Line Oral: Metronidazole Symptom relief (not cure)/pregnancy Topical: Clotrimazole	**Adults:** 400mg BD (better tolerated dose) **or** 2g (dose associated with more adverse effects) **Adults:** 100mg pessary at night	5-7 days STAT 6 nights	PHE context references and rationale Oct 2018 Nov 2017

Infection	Comments	Medications	ADULT dose for child's doses click on		Duration of treatment	References & Useful links
SKIN INFECTIONS						
Impetigo	**Localised non-bullous impetigo:** Hydrogen peroxide 1% cream (other topical antiseptics are available but no evidence for impetigo). If hydrogen peroxide unsuitable or ineffective, short-course topical antibiotic. **Widespread non-bullous impetigo:** Short-course topical or oral antibiotic. Take account of person's preferences, practicalities of administration, previous use of topical antibiotics because antimicrobial resistance can develop rapidly with extended or repeated use, and local antimicrobial resistance data. **Bullous impetigo, systemically unwell, or high risk of complications:** Short-course oral antibiotic. Do not offer combination treatment with a topical and oral antibiotic to treat impetigo (not more effective, risk adverse effects and resistance). *5 days is appropriate for most, can be increased to 7 days based on clinical judgement. Consider referral to specialist or hospital if: • Symptoms or signs suggest serious illness e.g. cellulitis • Immunocompromised patient with widespread impetigo • Bullous impetigo in babies • Impetigo recurring frequently • Systemically unwell • High risk of complications *For detailed information click on the visual summary.* **If PVL-SA (Panton-Valentine leucocidin Staphylococcus aureus) suspected see below.**	**Topical antiseptic:**				NICE NG153, Published Feb 2020
		Hydrogen peroxide 1%	**Adults and Children:**	BD or TDS	5 days*	
		First choice topical antibiotic if hydrogen peroxide unsuitable (e.g. impetigo is around eyes) or is ineffective:				
		Fusidic acid 2% cream	**Adults and Children:**	TDS	5 days*	
		Alternative topical antibiotic if fuside acid resistance confirmed				
		Mupirocin 2%	**Adults and Children:**	Thinly TDS	5 days*	
		Oral antibiotic:				
		First choice: flucloxacillin	**Adults** **Children:**	500mg QDS BNF for children	5 days*	
		Penicillin allergy or flucloxacillin unsuitable: clarithromycin **OR**	**Adults** **Children:**	250mg BD BNF for children		
		erythromycin (in pregnancy)	**Adults** **Children:**	250 to 500mg QDS BNF for children		
		If MRSA suspected or confirmed – consult local microbiologist				
Cold sores	Most resolve after 5 days without treatment. Topical antivirals applied prodromally can reduce duration by 12 to 18 hours. If frequent, severe, and predictable triggers: consider oral prophylaxis: Aciclovir 400 mg, twice daily, for 5 to 7 days					PHE context references and rationale Oct 2018 Nov 2017

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
PVL-SA (Panton-Valentine leucocidin *Staphylococcus aureus*)	Panton-Valentine leukocidin (PVL) is a toxin produced by 20.8 to 46% of *S. aureus* from boils/abscesses. The toxin destroys white blood cells. PVL strains are rare in healthy people, but severe. **Suppression therapy** should only be started after primary infection has resolved, as suppression therapy is ineffective if lesions are still leaking. **Risk factors for PVL**: if there is more than one case in a home or close community (school children; military personnel; nursing home residents; household contacts); recurrent skin infections; invasive infections; men who have sex with men, close contact sports. Consider taking a swab of pus from the contents of the lesion if the boil or carbuncle is: • Not responding to treatment, persistent or recurrent, to exclude atypical mycobacteria or PVL-SA. • There are multiple lesions. • The person: Is immunocompromised, is known to be colonized with MRSA, Has diabetes. • If PVL-SA is suspected, this should be mentioned specifically on the laboratory form.				PHE context references and rationale Oct 2018 PHE management of PVL-SA, Nov 2008 Nov 2017
Infected Eczema	**If not systemically unwell**, do not routinely offer either a topical or oral antibiotic. Manage underlying eczema and flares with treatments such as emollients and topical corticosteroids, whether antibiotics are given or not. **If systemically unwell** offer an antibiotic. **Symptoms and signs of secondary bacterial infection can include**: weeping, pustules, crusts, no response to treatment, rapidly worsening eczema, fever and malaise. Not all flares are caused by a bacterial infection,so will not respond to antibiotics. Eczema is often colonised with bacteria but may not be clinically infected. Do not routinely take a skin swab at initial presentation. Consider sending a skin swab if the infection is worsening or not improving as expected. If the infection recurs frequently, send a skin swab and consider taking a nasal swab and starting treatment for decolonisation. If an antibiotic is offered, when choosing between a topical or oral antibiotic, take account of patient preferences, extent and severity of symptoms or signs, possible adverse effects, and previous use of topical antibiotics because antimicrobial resistance can develop rapidly with extended or repeated use. Consider referral or seeking specialist advice if the person has spreading infection that is not responding to oral antibiotics, is systemically unwell, is at high risk of complications, has infections that recur frequently. Refer to hospital if there are symptoms or signs suggesting a more serious illness or condition such as necrotising fasciitis or sepsis.	**Topical antibiotic (if a topical is appropriate). For localised infections only:** **First line:** fusidic acid 2% **Adults and children:** **TDS** **5 – 7 days** **Oral antibiotic:** **First line:** Flucloxacillin **Adults:** **500mg QDS** **Children:** BNF for children **If flucloxacillin unsuitable:** Clarithromycin **Adults:** **250mg BD** **Children:** BNF for children **If flucloxacillin unsuitable and pregnant:** Erythromycin **Adults:** **250mg – 500mg QD** **Children:** BNF for children **5 – 7 days** **If there are symptoms or signs of cellulitis, see this section of the guideline.** **If MRSA or PVL-SA suspected or confirmed – consult local microbiologist.**			NICE NG190, Updated 2021 NICE NG 190 visusal summary July 2021

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Acne vulgaris	**Mild** (open and closed comedones) or **moderate** (inflammatory lesions): • **First line:** self-care (wash with mild soap; do not scrub; avoid make-up). • **Second line:** topical retinoid or benzoyl peroxide. Topical retinoids normalise follicular keratinisation, promote drainage of comedones, and inhibit new comedone formation. Due to its bactericidal properties, benzoyl peroxide produces rapid improvement in inflammatory lesions and prevents the development of antibiotic resistance. • **Third-line:** add topical antibiotic, or consider addition of oral antibiotic. There are increasing levels of Propionibacterium acnes resistance to antibiotics, especially erythromycin, the use of which should be restricted Topical monotherapy with antibiotics is not recommended because of the risk of antibiotic resistance. Topical antibiotics should be prescribed in combination with benzoyl peroxide **Severe (nodules and cysts):** add oral antibiotic (for 3 months max) and refer. There is little additional benefit in using oral antibiotics for more than 3 months, as prolonged use increases the resistance of Propionibacterium acnes. It is therefore recommended that antibiotics should be stopped after 3 months and referred. **Pregnancy:** Note Tetracycline not recommended in Pregnancy	First Line Self-care Second line Topical: Retinoid (Such as Adapalene 0.1% gel/cream) **OR** Topical: Benzoyl peroxide	**Adults:** **Children:** Apply thinly in the evening once a day BNF for children **Adults:** Apply 1–2 times a day, preferably apply after washing with soap and water, start treatment with lower-strength preparations. **Children:** BNF for children	6 – 8 weeks 6 – 8 weeks	PHE context references and rationale Oct 2018
		Third line **ADD** Topical: Clindamycin • Clindamycin 10mg/1 ml - 1% topical solution **or** • Clindamycin 10mg/1g gel **Or switch** to combination product Such as: • Clindamycin 10mg/g and Tretinoin 0.025 mg/g **or** • Clindamycin 10mg/g and Benzoyl peroxide 50 mg/g	**Adults:** Apply twice daily, to be applied thinly **Adults:** **Children:** Apply thinly once daily, in the evening BNF for children **Adults:** **Children:** Apply thinly once daily, in the evening BNF for children	12 weeks 12 weeks
		If treatment failure or Severe (nodes and cysts) Oral: Tetracycline OR Oral: Doxycycline	**Adults:** 500mg BD **Children:** BNF for children **Adults:** 100mg OD **Children:** BNF for children	6- 12 weeks 6- 12 weeks	Nov 2017

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Cellulitis and erysipelas	**Exclude other causes of skin redness (inflammatory reactions or non-infectious causes e.g. chronic venous insufficiency)** Consider marking extent of infection with a single-use surgical marker pen. When choosing an antibiotic, take account of: • The severity of infection • The site of infection • The risk of uncommon pathogens • Any microbiological results and MRSA status, if known Consider a swab for microbiological testing, but only if skin broken and risk of uncommon pathogen. When prescribing antibiotics for a cellulitis and erysipelas, give advice about • Possible side effects of the antibiotic(s) • Skin will take time to return to normal after finishing the antibiotics and full resolution at 5-7 days is not expected • Seeking medical help if symptoms worsen rapidly or significantly at any time, or do not start to improve within 2 to 3 days. Reassess if: • Symptoms worsen rapidly, or do not start to improve in 2 to 3 days • The person is very unwell, has severe pain, or redness or swelling beyond the initial presentation Refer to hospital if there are symptoms or signs of a more serious illness or condition such as orbital cellulitis, osteomyelitis, septic arthritis, necrotising fasciitis or sepsis. Consider referring or seeking specialist advice if the person: • Is severely unwell or has lymphangitis • Has infection near the eyes or nose • May have uncommon pathogens • Has spreading infection not responding to oral antibiotics • Cannot take oral antibiotics (to explore giving IV antibiotics at home or in the community if appropriate) • If there has been river or sea water exposure ***Do not*** routinely offer **antibiotic prophylaxis** to prevent recurrent cellulitis or erysipelas. Discuss any tiral of antibiotic prophyalxis to ensure shared decision making and choose: • Phenoxymethylpenicillin 250mg twice a day, or • Erythromycin 250mg twice a day for penicillin allergy Review at least every 6 months.	First line: Oral: Flucloxacillin (Penicillin based antibiotic) Penicillin allergy or flucloxacillin unsuitable: Oral: Clarithromycin **OR** Oral: Doxycycline Penicillin allergy (in pregnancy): Oral: Erythromycin	**Adults:** 500mg to 1g QDS **Children:** BNF for children **Adults:** 500mg BD **Children:** BNF for children **Adults:** 200mg stat then 100mg BD **Adults:** 500mg QDS **Children:** BNF for children	5-7 days;	NICE NG141, Updated 2019 NICE NG19, visual summary
		If infection near the eyes or nose consider discussing with microbiologist Oral: Co-amoxiclav (Penicillin based antibiotic) Penicillin allergy or co-amoxiclav unsuitable: Oral: Clarithromycin AND Oral Metronidazole	**Adults:** 500/125mg TDS **Children:** BNF for children **Adults:** 500mg BD **Children:** BNF for children **Adults:** 400mg TDS **Children:** BNF for children	7 days	
		MRSA infection suspected or confirmed or IV antibiotics required discuss with microbiologist			

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Leg Ulcers	Manage any underlying conditions to promote ulcer healing. Only offer an antibiotic when ther are symptoms or signs of infection (such as redness or swelling spreading beyond the ulcedr, localised warmth, increase pain or fever). Few leg ulcers are clinically infected but most are colonised by bacteria. When prescribing antibiotics, take account of severity, risk of complications and previous antibiotic use. Do not take a sample for microbiological testing at initial presentation, even if the ulcer might be infected as most leg ulcers are colonised by bacteria. Give advice to **seek medical help** if symptoms or signs of infection: • Worsen rapidly or significantly at any time, or • Do not start to improve within 2 to 3 days of starting treatment • Person becomes systemically unwell or has severe pain out of proportion to the infection If the infection is worsening, or not improving as expected, consider microbiological testing. When microbiological results are available: • Review the antibiotic and change according to results if infection is not improving, using a narrow spectrum antibiotic if possible. Consider **referring or seeking specialist advice** if the person: • Has a higher risk of complications because of comorbidities such as diabetes or immunosuppression • Has lymphangitis • Has spreading infection not responding to oral antibiotics • Cannot take oral antibiotics • Has a severe infection warranting the use of IV antibiotics • MRSA colonised/infection in last 24 months Refer to existing pathways for administration of iv antibiotics if appropriate *See the General Medical Council's Good practice in prescribing and managing medicines and devices for further information. Recommended for obese/severely obese patients.	First line: Oral: Flucloxacillin (Penicillin based antibiotic) Penicillin allergy or flucloxacillin unsuitable: Oral: Doxycycline OR Oral: Clarithromycin OR Penicillin allergy or flucloxacillin unsuitable (in pregnancy): Oral: Erythromycin	**Adults:** 500mg – 1g QDS (1g dose is off-label use*) **Adults:** 200mg on day 1, then 100mg OD (can be increased to 200mg daily) **Adults:** 500mg BD **Adults** 500mg QDS	7 days	NICE NG152, Updated 2020 NICE NG152, visual summary
		Second line: Oral: Co-amoxiclav Penicillin allergy or co-amoxiclav unsuitable Oral: Co-trimoxazole	**Adults:** 625mg TDS **Adults:** 960mg BD		

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Diabetic foot	**All diabetic foot wounds are likely to be colonised with bacteria.** Do not offer antibiotics to ***prevent*** diabetic foot infections. Diabetic foot infection has at least 2 of: • Local swelling or induration • Erythema • Local tenderness or pain • Local warmth • Purulent discharge Start antibiotic treatment as soon as possible. Take samples for microbiological testing before, or as close as possible to, the start of treatment. When choosing an antibiotic, take account of: • The severity of infection • The risk of complications • Previous microbiology results • Previous antibiotic use • Patient preference Severity is classed as: • Mild = local infection with 0.5cm to less than 2cm erythema • Moderate = local infection with more than 2cm erythema or involving deeper structures (e.g. abscess, osteomyelitis, septic arthritis or fasciitis). • Severe = local infection with signs of a systemic inflammatory response Refer to hospital immediately and Inform multidisciplinary foot care service if severe infection with limb or life threathening problems e.g ulceration with fever/any signs of sepsis /limb ischaemia, suspected deep-seated soft tissue or bone infection, gangrene).For all other active diabetic foot problems, refer to foot service within 1 working day. Seek Microbiologist advice when prescribing antibiotics for a suspected diabetic foot infection in • children and young people under 18 years. • MRSA infection suspected or confirmed • IV treatment required When prescribing antibiotics for a diabetic foot infection, give advice about • Possible side effects of the antibiotic(s) • Seeking medical help if symptoms rapidly or significantly at any time, or do not start to improve within 1 to 2 days. Reassess if symptoms rapidly or significantly at any time, or do not start to improve within 1 to 2 days. Take account of: • Other possible diagnoses, such as pressure sores, gout or non-infected ulcers • Symptoms or signs suggesting something more serious such as limb ischaemia , osteomyelitis, necrotising fasciitis or sepsis • Previous antibiotic use	Mild infection First line Oral: Doxycycline **OR** Oral: Clarithromycin **AND** Oral: Metronidazole (In pregnancy): Oral: Erythromycin **AND** Oral: Metronidazole	**Adults:** 200mg on first day, then 100mg OD (can be increased to 200mg OD) **Adults:** 500mg BD **Adults:** 400mg TDS **Adults:** 500mg QDS **Adults:** 400mg TDS	7 days then review (full resolution is not expected); if slow response, continue for a further 7 days.	NICE NG19, Updated 2019 NICE NG19, visual summary
		Moderate infection First line Oral: Co-amoxiclav (Penicillin based antibiotic) **AND** Oral: Metronidazole Penicillin allergy: Oral: Co-trimoxazole (off-label indication, see BNF for patient monitoring parameters) **AND** Oral: Metronidazole	**Adults:** 625mg TDS* **Adults:** 400mg TDS **Adults:** 960mg BD **Adults:** 400mg TDS	Minimum 7 days and up to 6 weeks for osteomyelitis .	
		If *Pseudomonas aeruginosa* suspected or confirmed discusss with Microbiologist Oral: Clindamycin **AND** Oral: Ciprofloxacin (consider safety issues)	**Adults:** 150 to 300mg QDS (can be increased to 450mg QDS) **Adults:** 500mg BD		

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Bites (Human and Animal)	Seek specialist advice from a microbiologist for bites from a wild or exotic animal (including birds and non-traditional pets) or domestic animal bites (including farm animal bites) you are unfamiliar with. Manage the wound with irrigation and debridement as necessary **Offer an antibiotic treatment course** for human or animal bites if there are symptoms or signs of infection, such as: • Increased pain • Inflammation, • Fever, • Discharge or • An unpleasant smell Take a swab for microbiological testing if there is discharge (purulent or non-purulent) from the wound **Do not offer antibiotic prophylaxis** if a human or animal bite has not broken the skin. **Human bite** ***Offer antibiotic prophylaxis*** if the human bite has broken the skin and drawn blood. ***Consider antibiotic prophylaxis*** if the human bite has broken the skin but not drawn blood if it is in a high-risk area or person at high risk (see below). **Cat bite** ***Offer antibiotic prophylaxis*** if the cat bite has broken the skin and drawn blood. ***Consider antibiotic prophylaxis*** if the cat bite has broken the skin but not drawn blood if the wound could be deep. **Dog or other traditional pet bite (excluding cat)** ***Offer antibiotic prophylaxis*** if the bite has broken the skin and drawn blood if it has caused considerable, deep tissue damage or is visibly contaminated (for example, with dirt or a tooth). ***Consider antibiotic prophylaxis*** if the bite has broken the skin and drawn blood if it is in a high risk area or person at high risk. High-risk areas include the hands, feet, face, genitals, skin overlying cartilaginous structures or an area of poor circulation People at high risk include those at risk of a serious wound infection because of a co-morbidity (such as diabetes, immunosuppression, asplenia or decompensated liver disease) Assess the risk of tetanus, rabies or a bloodborne viral infection and take appropriate action. Consider referral or seeking specialist advice if, for example, the person: • Is systemically unwell • Has an infection after prophylactic antibiotic • Cannot take or has an infection that is not responding to • oral antibiotics ***can be increased to 7 days based on assessment of wound**	First line: Prophylaxis/treatment for both Human and Animal bites: Oral: Co-amoxiclav (Penicillin based antibiotic)	**Adults:** 375 mg - 625mg TDS **Children:** BNF for children	3 days for prophylaxis 5 days for treatment*	NICE NG184 Updated 2020 NICE NG184, visual summary
		Alternative to co-amoxiclav for adults and young people aged 12 to 17 years Oral: Metronidazole **AND** Oral: Doxycyline	**Adults:** 400mg TDS **Children:** BNF for children **Adults:** 200mg STAT then 100- **Children:** 200mg OD BNF for children	3 days for prophylaxis 5 days for treatment*	
		Alternative in pregnancy	Seek specialist advice		
		Alternative to co-amoxiclav for children under 12 years Co-trimoxazole (off-label – consider safety issues)	**Children:** BNF for children	3 days for prophylaxis 5 days for treatment*	Jul 2021

Infection	Comments	Medications	ADULT dose for child's doses click on		Duration of treatment	References & Useful links
Scabies	**First choice permethrin**: Treat whole body from ear/chin downwards, and under nails. **If using permethrin** and patient is under 2 years, elderly or immunosuppressed, or **if treating with malathion**: also treat face and scalp. **Treat all home and sexual contacts**: treat within 24 hours	First Line: Permethrin 5% cream Second Line: Malathion 0.5% aqueous liquid	**Adults and Children**	Apply once weekly for 2 doses, then wash off after 8–12 hours. If hands are washed with soap within 8 hours of application, they should be treated again with cream.	2 applications, 1 week apart	PHE context references and rationale Oct 2018 Oct 2018
Mastitis	S. aureus is the most common infecting pathogen. Suspect if woman has: a painful breast; fever and/or general malaise; a tender, red breast. **Breastfeeding:** oral antibiotics are appropriate, where indicated. Advise the woman to continue breastfeeding if possible (including from the affected breast)	First line: Oral: Flucloxacillin (Penicillin based antibiotic)	**Adults:**	500mg QDS		PHE context references and rationale Oct 2018
		Penicillin allergy: Oral: Erythromycin **OR** Oral: Clarithromycin	**Adults:** **Adults:**	250mg-500mg QDS 500mg BD		Nov 2017
Dermatophyte infection: skin **Including:** • Tinea corporis (ringworm) • Tinea pedis (athlete's foot) • Tinea cruris (jock itch) • Tinea faciei (facial ringworm) • Tinea capitis (scalp ringworm)	**Most cases**: use topical terbinafine as fungicidal, treatment time shorter than with fungistatic imidazoles. If candida possible, use imidazole. **If intractable, or scalp:** send skin scrapings, and if infection confirmed: use oral terbinafine or itraconazole. It should be noted that liver reactions have been reported 0.1 to 1% with oral antifungals **Scalp:** oral therapy, and discuss with specialist.	First Line: Topical: Terbinafine 1% cream	**Adults and Children:**	Apply thinly OD -BD	1 -2 weeks then review	PHE context references and rationale Oct 2018
		Second Line: Topical: Imidazole e.g. Clotrimazole 1% cream **OR** For athlete's foot only Topical: Undecanoates (Mycota®)	**Adults and Children:** **Adults and Children:**	Apply BD – TDS Apply BD	Continue use for 7 days after lesions have healed therefore a total of 4 – 6 weeks	
		If intractable, or scalp Oral: Terbinafine **OR** Oral: Itraconazole	**Adults:** **Children:** **Adults:** **Children:**	250mg OD BNF for children 100mg OD BNF for children	4-6 weeks 15 days then review	Oct 2018

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Dermatophyte infection: nail	**Take nail clippings**; start therapy only if infection is confirmed. Oral terbinafine is more effective than oral azole. It should be noted that liver reactions have been reported 0.1 to 1% with oral antifungals. If candida or non-dermatophyte infection is confirmed, use oral itraconazole. **Topical nail lacquer is not as effective.** Stop treatment when continual, new, healthy, proximal nail growth **To prevent recurrence**: apply weekly 1% topical antifungal cream to entire toe area. **Children**: seek specialist advice	First Line Oral: Terbinafine	**Adults:** 250mg OD **Children:** BNF for children	Fingers: 6 wks Toes: 12 wks	PHE context references and rationale Oct 2018 Oct 2018
		Second line: Oral: Itraconazole	**Adults:** 200mg BD for 7 days per month **Children:** BNF for children	Fingers: 2 courses Toes: 3 course	

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Varicella zoster (chicken pox) & Herpes Zoster (shingles)	**Pregnant/immunocompromised/neonate:** seek urgent specialist advice. Regardless of immune function and the use of any immunoglobulins, neonates with chickenpox should be treated with a parenteral antiviral to reduce the risk of severe disease. Oral therapy in children is not recommended as absorption is variable. Chickenpox in otherwise healthy children between 1 month and 12 years is usually mild and antiviral treatment is not usually required **Chickenpox:** consider acyclovir if: onset of rash less than 24 hours, and 1 of the following: • >14 years of age as Chickenpox is more severe in adolescents than in children; • severe pain; • dense/oral rash; • taking steroids; • smoker Give paracetamol for pain relief **Shingles:** treat if >50 years, (Postherpetic neuralgia (PHN)rare if <50 years) and **within 72 hours** of rash, or 1 of the following: • Active ophthalmic; • Ramsay Hunt syndrome; • Eczema; • Non-truncal involvement; • Moderate or severe pain; • Moderate or severe rash. Shingles treatment if not within 72 hours: consider starting antiviral drug up to 1 week after rash onset, if high risk of severe shingles or continued vesicle formation; older age; immunocompromised; or severe pain.	If indicated: First line Oral: Aciclovir Second line for shingles if poor compliance: Oral: Famciclovir – **not suitable for children** (high cost drug) **OR** Oral: Valaciclovir (high cost drug)	**Adults:** 800mg FIVE times a day **Children:** BNF for children **Adults:** 500mg TDS or 750mg BD **Adults:** 1g TDS **Children:** BNF for children	7 days 7 days 7 days	PHE context references and rationale Oct 2018 Oct 2018

Infection	Comments	Medications	ADULT dose for child's doses click on	Duration of treatment	References & Useful links
Tick bites (Lyme disease)	**Prophylaxis**: Not routinely recommended in Europe. **In pregnancy**, consider amoxicillin. **If immunocompromised**, consider prophylactic doxycycline. Risk increased if high prevalence area and the longer tick is attached to the skin. Only give prophylaxis within 72 hours of tick removal. Give safety net advice about erythema migrans and other possible symptoms that may occur within 1 month of tick removal.	Prophylaxis: Oral: Doxycycline	**Adults:** 200mg STAT **Children:** BNF for children	STAT	PHE context references and rationale Oct 2018 NICE NG95 updated Oct 2018
	Treatment: Treat erythema migrans empirically; serology is often negative early in infection. For other suspected Lyme disease such as neuroborreliosis (CN palsy, radiculopathy) seek advice.	First Line Treatment: Oral: Doxycycline Alternative (first line in Children): Oral: Amoxicillin (Penicillin based antibiotic)	**Adults:** 100mg BD **or** 200mg OD **Adults:** 1g TDS **Children:** BNF for children	21 days 21 days	Oct 2018
MRSA decolonisation (Suppression)	GPs may be asked to screen and decolonise patients e.g. a patient elects to have surgery outside their area. GPs should **not be routinely asked to screen** patients attending Croydon University Hospital (CUH). Croydon Health Services Trust (CHS) has pre-admission clinics to select and screen patients for MRSA and to de-colonise patients if they are MRSA positive. Screen positive results available after discharge CUH: The Department of Health recommends that (adult) patients found to be colonised with MRSA should be offered decolonisation treatment. Therefore the positive MRSA screen results available after a patient has been discharged will be faxed to a patient's GP (by the infection control team) with advice to offer the patient decolonisation treatment. To reduce persistent MRSA carriage, treat underlying skin conditions (e.g. eczema, dermatitis), remove and/or replace invasive devices and treat skin breaks. Where necessary, seek advice from Dermatologist (antiseptic detergents should be used with caution on patient with dermatitis). **Use both nasal and skin regimens.**				For MRSA screening and suppression (decolonisation), please see full Croydon MRSA 2012 Guide:
	Nasal: Apply pea-sized amount to inner surface of each nostril using a cotton wool bud. • Patients should be able to taste mupirocin at back of throat. • Prolonged (>5 days) or repeated courses (>2 per admission) must not be given because of the risk of the development of resistance. • Mupirocin should not be given until a positive MRSA result is confirmed	First Line: Topical: 2% Mupirocin nasal ointment (Bactroban®) If MRSA resistant to mupirocin: Topical: Chlorhexidine hydrochloride 0.1%+ Neomycin sulfate 0.5% nasal cream (Naseptin®) (NB avoid in patients with peanut allergy)	**Adults:** TDS **Adults:** QDS	5 days 10 days	
	Skin – Topical antiseptic wash: • Particularly apply to known carriage sites (axilla, groin & perineum). If possible wash hair twice weekly with antiseptic detergent. An ordinary shampoo can be used afterwards if required. • After washing, use clean towels, sheets & clothing. • Launder items separately from other family members, using as high a temperature as fabric allows	4% chlorhexidine gluconate (Hibiscrub®) antiseptic detergent Moisten skin and apply undiluted antiseptic detergent to all areas in the place of soap, leave for 3 minutes then rinse.	**Adults:** Daily	5 days	

Infection	Comments	Medications	ADULT dose for child's doses click on		Duration of treatment	References & Useful links
MRSA Treatment	**Do not use clindamycin** **For active MRSA infection, confirmed by lab results** 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 and use of linezolid.	Doxycycline alone **OR** Trimethoprim	**Adults:**	100mg BD 200mg BD	7 days 7 days	

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	Referances & Useful links
EYE INFECTIONS					
Conjunctivitis	**First line**: bath/clean eyelids with cotton wool dipped in sterile saline or boiled (cooled) water, to remove crusting. Reassure the person that most cases of acute, infectious conjunctivitis are self-limiting and do not require antimicrobial treatment — viral (non-herpetic) conjunctivitis usually resolves within one to two weeks without treatment. **Treat only if severe**, as most cases are viral or self-limiting. **Bacterial conjunctivitis**: usually unilateral and also self-limiting. It is characterised by red eye with mucopurulent, not watery discharge. 65% and 74% resolve on placebo by days 5 and 7. Advise the person that most cases of bacterial conjunctivitis are self-limiting and resolve within 5–7 days without treatment. Treat with topical antibiotics if severe or circumstances require rapid resolution. A delayed treatment strategy may be appropriate — advise the person to initiate topical antibiotics if symptoms have not resolved within 3 days. Arrange urgent assessment by ophthalmology if the person has: • Ophthalmia neonatorum (sticky eye with redness in a neonate). • Infection with a sexually transmitted pathogen is confirmed • Suspected gonococcal or chlamydial conjunctivitis. • Possible herpes infection. • Suspected periorbital or orbital cellulitis. • Severe disease, for example, corneal ulceration, significant keratitis or presence of pseudomembrane. • Recent intraocular surgery. • Conjunctivitis associated with a severe systemic condition such as rheumatoid arthritis or immunocompromised. • Corneal involvement associated with soft contact lens use: Do not give antibiotics in the interim as this may interfere with corneal culture. Advise the person to take their contact lenses with them to eye casualty as special diagnostic tests may be required.	First line: If severe: Topical: Chloramphenicol 0.5% drop (can be purchased OTC in pharmacy) **OR** Topical: Chloramphenicol 1% ointment (**Pregnancy and breastfeeding** - Avoid chloramphenicol unless essential) (**Neonates** - Avoid chloramphenicol unless essential)	**Adults and Children over 1 month old:** Apply 1 drop to the effected eye every 2 hours then reduce frequency as infection is controlled to 3–4 times daily. **Adults and Children over 1 month old:** Apply daily, at night	48 hours after resolution	PHE context references and rationale Oct 2018
	Third line: Fusidic acid as it has less Gram-negative activity. Fusidic Acid (Fucithalmic®) 1% Viscous Eye Drops eye drop brand has been discontinued .This should be reserved as a treatment option for patients who: are pregnant or breastfeeding, have a personal or family history of blood dyscrasias (such as aplastic anaemia), are intolerant of chloramphenicol or patients that may require assistance in applying drops e.g. young children or elderly people (Fusidic acid requires twice daily administration).	Second line Topical: Fusidic acid 1% modified-release eye drops (High cost)	**Adults & Children:** Apply twice daily	48 hours after resolution	Oct 2018

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	Referances & Useful links
Blepharitis	**First instance:** lid hygiene for symptom control, including: warm compresses; lid massage and scrubs; gentle washing; avoiding cosmetics. **Topical antibiotics** if hygiene measures are ineffective after 2 weeks. **Signs of meibomian gland dysfunction, or acne rosacea**: consider oral antibiotics.	If indicated: First line Topical: Chloramphenicol 1% ointment	**Adults & Children:** Apply twice daily	6 weeks trial	PHE context references and rationale Oct 2018
		Second line Oral: Oxytetracycline	**Adults** 500mg BD (initial) for 4 weeks then 250mg BD (maintenance) 8 weeks **Children:** BNF for children	4 weeks 8 weeks	
		OR Oral: Doxycycline	**Adults:** 500mg BD (initial) for 4 weeks then 250mg BD (maintenance) 8 weeks **Children:** BNF for children	4 weeks 8 weeks	Nov 2017

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	Referances & Useful links
DENTAL INFECTIONS TREATED 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. • **Antibiotics do not cure toothache.** First line pain treatment is with paracetamol and/or ibuprofen; codeine is **not effective** for toothache.					
Oral candidiasis	See under **Gastrointestinal tract infections** section				
Mucosal ulceration and inflammation (simple gingivitis)	Temporary pain and swelling relief can be attained with saline mouthwash (½ tsp salt in warm water). Use antiseptic mouthwash if more severe, and if pain limits oral hygiene to treat or prevent secondary infection. The primary cause for mucosal ulceration or inflammation (aphthous ulcers; oral lichen planus, herpes simplex infection; oral cancer) needs to be evaluated and treated.	First line: Topical: Simple saline mouthwash Second line: Topical: Chlorhexidine 0.12 - 0.2% (Do not use within 30 mins of toothpaste) **OR** Topical: Hydrogen peroxide 6%	**Adults & Children:** Rinse mouth with ½ tea spoon salt dissolved in glass warm water **Adults: Children:** Rinse mouth with 10 mL BD for about 1 minute BNF for children **Adults: Children:** Rinse mouth with 15ml diluted in in ½ glass warm water for 2 – 3 mins BD - TDS BNF for children	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene	PHE context references and rationale Oct 2018 Nov 2017
Acute necrotising ulcerative gingivitis	Refer to dentist for scaling and hygiene advice. Antiseptic mouthwash if pain limits oral hygiene. Commence metronidazole if systemic signs and symptoms.	Topical: Chlorhexidine 0.12 - 0.2% (Do not use within 30 mins of toothpaste) **OR** Topical: Hydrogen peroxide 6% Oral: Metronidazole	**Adults: Children:** Rinse mouth with 10 mL BD for about 1 minute BNF for children **Adults: Children:** Rinse mouth with 15ml diluted in in ½ glass warm water for 2 – 3 mins BD - TDS BNF for children **Adults: Children:** 400mg TDS BNF for children	Always spit out after use. Until pain allows for oral hygiene 3 days	PHE context references and rationale Oct 2018 Nov 2017

Infection	Comments	Medications	ADULT dose for child's doses click on BNF for children	Duration of treatment	Referances & Useful links
Pericoronitis	Refer to dentist for irrigation and debridement. If persistent swelling or systemic symptoms, use metronidazole or amoxicillin. Use antiseptic mouthwash if pain and trismus limit oral hygiene.	If indicated: First line Oral: Metronidazole **OR** Oral: Amoxicillin (Penicillin based antibiotic)	**Adults:** 400mg TDS **Children:** BNF for children **Adults:** 500mg TDS **Children:** BNF for children	3 days 3 days	PHE context references and rationale Oct 2018 Nov 2017
		Topical: Chlorhexidine 0.12 - 0.2% (Do not use within 30 mins of toothpaste) **OR** Topical: Hydrogen peroxide 6%	**Adults:** Rinse mouth with 10 mL BD for about 1 minute **Children:** BNF for children **Adults:** Rinse mouth with 15ml diluted in in ½ glass warm water for 2 – 3 mins BD - TDS **Children:** BNF for children	Always spit out after use. Until pain allows for oral hygiene	
Dental abscess	Regular analgesia should be the first option until a dentist can be seen for urgent drainage, [+] as repeated courses of antibiotics for abscesses are **not appropriate**. Repeated antibiotics alone, without drainage, are ineffective in preventing the spread of infection. Antibiotics are only recommended if there are signs of severe infection, systemic symptoms, or a high risk of complications. Patients with severe odontogenic infections (cellulitis, plus signs of sepsis; difficulty in swallowing; impending airway obstruction) should be referred urgently for hospital admission to protect airway, for surgical drainage and for IV antibiotics. The empirical use of cephalosporin, co-amoxiclav, clarithromycin, and clindamycin do not offer any advantage for most dental patients, and should only be used if there is no response to first-line drugs.				PHE context references and rationale Oct 2018 Nov 2017
	If pus is present, refer for drainage, tooth extraction, or root canal. Send pus for investigation. If spreading infection (lymph node involvement or systemic signs, that is, fever or malaise) ADD metronidazole. Use clarithromycin in true penicillin allergy and, if severe, refer to hospital.	First Line: Oral: Amoxicillin (Penicillin based antibiotic) **OR** Oral: Phenoxymethylpenicillin (Penicillin based antibiotic)	**Adults:** 500mg - 1000mg TDS **Children:** BNF for children **Adults:** 500mg – 1000mg QDS **Children:** BNF for children	Upto 5 days – review day 3 Upto 5 days – review day 3	
		If severe: **ADD** Oral: Metronidazole	**Adults:** 400mg TDS **Children:** BNF for children	Upto 5 days – review day 3	
		If penicillin allergy: Oral: Clarithromycin	**Adults:** 500mg BD **Children:** BNF for children	Upto 5 days – review day 3	