

Doncaster and Bassetlaw Antimicrobial Guidelines for Primary Care

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1. INTRODUCTION

Principles of Treatment

Aims

- *To provide a simple, empiric approach to the treatment of common infections in primary care*
- *To promote the safe, effective and economic use of antibiotics.*
- *To minimise the emergence of bacterial resistance and reduce the risk of antibiotic associated infections in the community*

Principles of Treatment

1. This guidance is based on the best available evidence but its application must be modified by professional judgement
2. Always consult the latest BNF or Summary of Product Characteristics for full prescribing details
3. **Prescribe an antibiotic only when there is likely to be a clear clinical benefit – see link to top ten tips below**
4. **All antibiotics can cause *Clostridium difficile* infection.** Those associated with the highest risk (especially in elderly patients) are cephalosporins, quinolones, clindamycin and possibly co-amoxiclav. Use of these antibiotics should be restricted to the specific indications within the guidelines.
5. **Limit prescribing over the telephone to exceptional cases based on individual clinical judgement**
6. The use of deferred scripts for indications of doubtful value (e.g. otitis media) is one method of managing patient expectation. Retaining the prescription in the surgery for future collection is the recommended method.
7. Educating patients about the benefits and disadvantages of antimicrobial agents is advocated. Practices can provide leaflets and/or display notices advising patients not to expect a prescription for an antibiotic, together with the reasons why. This educational material can be obtained from various sources, such as the British Medical Association (BMA), Department of Health, Infection Control Team and Medicines Management Team.
8. For uncomplicated cystitis in otherwise fit non-pregnant women limit course to 3 days
9. Topical antibiotics should be used very rarely, if at all (eye infections are an exception). For wounds, topical antiseptics are generally more effective. Topical antibiotics encourage resistance and may lead to hypersensitivity. If antibiotic use is essential, try and select an antibiotic that is not used systemically.
10. In children under 12 years avoid the use of tetracyclines.
11. In children under 18 years avoid the use of quinolones if possible. Treatment should be initiated only after a careful benefit/risk evaluation, due to possible adverse events related to joints and/or surrounding tissue. See BNF for Children for further details
12. Co-amoxiclav should be reserved for bacterial infections likely, or known, to be caused by amoxicillin-resistant beta lactamase-producing strains, in view of the increased side effects (jaundice). (The Committee on Safety of Medicines: Current Problems, May 1997).
13. **Where a 'best guess' therapy has failed or special circumstances exist, seek advice from a relevant specialist/medical microbiologist.**

Top ten tips on effective antibiotic prescribing: click [link](#) or refer to the Royal College of Physicians website www.rcplondon.ac.uk

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Hypersensitivity to penicillin

- Allergic reactions to penicillins occur in 1–10% of exposed individuals; anaphylactic reactions occur in fewer than 0.05% of treated patients. If allergy status or nature of reaction is uncertain, avoid the use of the antibiotic concerned if there is a reasonable alternative.
- Patients reporting an adverse reaction to penicillin are relatively common. It is important therefore to clarify what reaction the patient actually has experienced (endorse reaction in detail in drug sensitivities section of patients electronic record). In some cases it is simply a common side effect of the drug (e.g. diarrhoea or vomiting) rather than true allergic reaction (e.g. rash, angioedema or anaphylaxis). Patients with true allergy to penicillins will react to all penicillins e.g. Penicillin V, Amoxicillin, Flucloxacillin and Co-Amoxiclav. They may also have a crossover-allergy to other β -Lactams. The risk of crossover is quoted as between 2 and 16.5% for cephalosporins (e.g. cefalexin). If the patient has a non-serious allergy to penicillins (e.g. rash alone, with no symptoms of anaphylaxis) cephalosporins may still be used. In which case patients should be made aware of the signs and symptoms of an allergic reaction and seek immediate medical advice. Patients with serious allergic symptoms to penicillins (i.e anaphylaxis, breathing difficulties, facial swelling or major skin reactions) should avoid cephalosporins and alternative agents be administered. For further advice on antibiotic choice please contact a consultant microbiologist.

Pregnancy and Breastfeeding

Pregnancy

- AVOID tetracyclines, aminoglycosides, quinolones, high dose metronidazole (2g), trimethoprim in 1st trimester and nitrofurantoin during 3rd trimester.
- Systemic antifungals, e.g. triazoles, imidazoles, griseofulvin & terbinafine should also not be used, consult manufacturer's recommendations or specialist advice if considering using.
- Antivirals – consult manufacturers information
- The following are considered to be safe in pregnancy: penicillins, cephalosporins, erythromycin, trimethoprim in 2nd and 3rd trimester only and nitrofurantoin in 1st and 2nd trimester only.

Breast Feeding

- AVOID tetracyclines, quinolones, high dose metronidazole and nitrofurantoin.
- Erythromycin is currently considered the safest of the macrolides in breastfeeding, consult manufacturers recommendations or specialist advice before prescribing other macrolides.
- Systemic antifungals, e.g. triazoles, imidazoles, griseofulvin & terbinafine should also not be used, consult manufacturer's recommendations or specialist advice if considering using.
- Antivirals – consult manufacturers information

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Contraception

- Current recommendations are that no additional contraceptive precautions are required when combined oral contraceptives are used with antibacterials that do not induce liver enzymes, unless diarrhoea or vomiting occur. These recommendations should be discussed with the patient, who should also be advised that guidance in patient information leaflets may differ. [BNF](#), [FSRH Drug Interactions Guidance](#)
- It is also currently recommended that no additional contraceptive precautions are required when contraceptive patches or vaginal rings are used with antibacterials that do not induce liver enzymes. There have been concerns that some antibacterials that do not induce liver enzymes (e.g. ampicillin, doxycycline) reduce the efficacy of combined oral contraceptives by impairing the bacterial flora responsible for recycling ethinylestradiol from the large bowel. However, there is a lack of evidence to support this interaction.
- Anecdotal reports of contraceptive failure have been made with the concomitant use of antifungals.

Interaction with warfarin and other anticoagulants

- Experience in anticoagulant clinics suggests that the INR can be altered by a course of antibiotics or antifungals.
- Increased frequency of INR monitoring is necessary during and after a course of antibiotics until the INR has stabilized. Cephalosporins, macrolides, tetracyclines, quinolones, metronidazole and trimethoprim seem to cause a particular problem. Contact the anticoagulant clinic for any further advice.

Methicillin Resistant *Staphylococcus aureus* (MRSA)

- MRSA are resistant to all beta-lactam antibiotics (e.g. flucloxacillin, co-amoxiclav, cephalosporins) and many other first-line antibiotics. All local strains remain susceptible to the parenteral antibiotics vancomycin and teicoplanin, *most* are also susceptible to tetracyclines.
- Most community *Staph. aureus* infections remain sensitive to β -lactam antibiotics such as Flucloxacillin. In the UK, most infections caused by MRSA are associated with healthcare interventions or residential care and occur in patients with the following risk factors:
 - Recently discharged from hospital
 - Nursed in residential home with MRSA-positive residents
 - Infection in a known carrier of MRSACommunity MRSA strains have been identified with increasing frequency in recent years. In some countries, a single community MRSA strain, such as the USA 300 clone in USA, have become predominant, while in the UK a number of different community strains have been identified.
- *Review empirical therapy when results of microbiological investigation are available*
- PHE Advice on screening and suppression of MRSA is available at: <https://www.gov.uk/government/publications/meticillin-resistant-staphylococcus-aureus-mrsa-screening-and-suppression-guidance-for-primary-care>

Erythromycin – Clarithromycin

Clarithromycin is now recommended instead of erythromycin as the macrolide of choice in penicillin allergy due to greater compliance with twice daily rather than four times daily dosing and fewer gastro-intestinal side-effects. Generic tablets are of similar costs, though **in children, erythromycin may be preferable as clarithromycin syrup can be more expensive.**

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Contacts for further Microbiology or Virology advice on investigation and treatment is available from:

a. Consultant Microbiologists

Dr Agwuh / Dr Gajee / Dr Jewes / Dr Milupi
Bassetlaw Hospital, Tel: 01909 500990 ext 2490
Doncaster Royal Infirmary, Tel: 01302 647217 or
Switchboard Tel: 01302 366666 ext 6517

b. Consultant Virologist or Virology Specialist Registrars

Northern General Hospital, Sheffield
Tel. 0114 2266477 (direct dial)
Tel. 0114 2434343 (main switchboard)

c. Health Protection Teams

Bassetlaw Patients

Public Health England East Midlands
East Midlands Health Protection Team
Seaton House
Citylink
Nottingham
NG2 4LA

In Hours Tel: 0344 225 4524 (option 1)
Out of Hours Tel: 0344 225 4524
Fax: 0115 969 3523

Doncaster Patients:

Public Health England South Yorkshire
South Yorkshire Health Protection Team
Unit C, Meadow Court
Hayland Street, off Amos Road
Sheffield
S9 1BY

In Hours Tel: 0114 321 1177
Out of Hours Tel: 0114 304 9843 ask for public health on call
Fax: 0114 242 8874

Click links for details on notifiable diseases and to locate the notification form for use by medical practitioners: [PHE Notifiable Diseases List](#); [Medical Practitioner Notification Form](#)

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2. UPPER RESPIRATORY TRACT INFECTIONS

Indication	Comment	Drug	Dose	Duration
Influenza PHE influenza return to contents	<ul style="list-style-type: none"> Annual vaccination is essential for all those at risk of influenza (NB. this group now includes pregnant women, see HPA influenza link left for further details). For otherwise healthy adults, antivirals are not recommended. Treat 'at risk' patients, only when DH issues notice that influenza is circulating in the community or in a care home where influenza is likely -ideally within 48 hours of onset. Risk factors for complicated influenza: age over 65 years, pregnancy (including up to 2 weeks post-partum), chronic cardiac, respiratory, renal, hepatic or neurological disease, severe immunosuppression, diabetes mellitus, morbid obesity (BMI ≥ 40). Rapid emergence of oseltamivir resistance on treatment has been described in severely immunosuppressed patients Either oseltamivir and zanamivir can be used in women who are pregnant or breast-feeding when the potential benefits outweighs the risk. The dose of oseltamivir must be reduced in patients with eGFR $<60\text{mL/min/1.73m}^2$ see BNF for details 	Treatment Oseltamivir oral capsule Zanamivir diskhaler should be used if patient is severely immunosuppressed or if there is resistance to oseltamivir. Prophylaxis and Patients under 13 years See PHE influenza link on left and NICE Guidance (TA158)	75mg bd (refer to BNF for dose if eGFR is $<60\text{mL/min/1.73m}^2$) 10mg (2 inhalations) bd	5 days 5 days (up to 10 days if Oseltamivir resistance suspected [off label duration])
Pharyngitis Sore throat Tonsillitis NICE CG69 PHE CKS - Sore throat return to contents	<ul style="list-style-type: none"> Avoid antibiotics as 90% resolve in 7 days without, and pain only reduced by 16 hours Most throat infections are caused by viruses and many do not require antibacterial therapy. Centor score predicts likelihood of <i>Streptococcus pyogenes</i> (Group A β-haemolytic streptococcus) as the causative organism If Centor score 3 or 4: (1 point each for -Lymphadenopathy; absence of Cough; Fever; Tonsillar Exudate) consider 2 or 3-day-delayed or immediate antibiotics Antibiotics to prevent Quinsy NNT >4000 Antibiotics to prevent Otitis Media NNT 200 Pain relief is important and can be provided by analgesic antipyretics e.g. paracetamol or ibuprofen. Diphtheria is rare in the UK; but consider if recent travel or close contact with someone who has travelled overseas recently (especially Russia and former Soviet States, Africa, South America and South-East Asia) or the patient works in a clinical microbiology laboratory, or similar, where <i>Corynebacterium</i> species may be handled. Pharyngeal grey-white membrane may be present. <p>DISCUSS URGENTLY WITH MICROBIOLOGY/INFECTIOUS DISEASES IF DIPHTHERIA IS SUSPECTED</p>	First Choice No antibiotics Alternative Choice Phenoxymethylpenicillin If allergic to Penicillin: Clarithromycin Alternative in children $<12\text{yrs}$ Erythromycin suspension	Adult : 500mg qds or 1g bd (1g qds if severe) 1 mth – 11 mths: 62.5mg qds 1-5 yrs: 125mg qds 6-12 yrs: 250mg qds Adult & child ≥ 12 years: 250 - 500mg bd Children $<12\text{yrs}$: Dose dependent on age and body weight. See BNFC See BNFC for dose	10 days 5 days 5 days 5 days

Unless stated all guideline doses are for adults. Please refer to BNFC for children's doses.

Indication	Comment	Drug	Dose	Duration
Acute Otitis media NICE CG69 PHE CKS - Acute Otitis Media return to contents	<ul style="list-style-type: none"> Many infections are caused by viruses. Optimise analgesia Avoid antibiotics as 60% are better in 24 hours without: they only reduce pain at 2 days (NNT15) and do not prevent deafness Consider 2 or 3-day-delayed or immediate antibiotics if: <ul style="list-style-type: none"> < 2yrs with bilateral AOM (NNT4) or bulging membrane and ≥ 4 marked symptoms All ages with otorrhoea (NNT3) Antibiotics to prevent Mastoiditis NNT >4000 	First choice No antibiotics - "Wait and see" recommended for 72 hrs Alternative Choice Amoxicillin If allergic to Penicillin: Clarithromycin <u>Alternative in children <12yrs</u> Erythromycin suspension	Neonate 7- 28 days: 30 mg/kg tds 1 month – 1 year: 125mg tds 1-5 years: 250mg tds >5 yrs: 500mg tds Adult & child >12 yrs: 500mg bd Children <12yrs: Dose dependent on age and body weight. See BNFC 1 mth - 1yr: 125mg qds 2-7 yrs 250mg qds 8-12 yrs 250 -500mg qds	5 days 5 days 5 days

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Indication	Comment	Drug	Dose	Duration
Otitis externa – acute PHE CKS - Otitis externa return to contents	<ul style="list-style-type: none"> Remove or treat any precipitating or aggravating factors. Exclude an underlying chronic OM before treating Use analgesia and aural toilet first line Avoid ear drops containing an aminoglycoside if the tympanic membrane is perforated Cure rates similar at 7 days for topical acetic acid or antibiotic +/- steroid Only consider oral antibiotics when disease extends outside of the ear canal or patient systemically unwell. Refer patient to ENT Children with OM effusion should not be treated with antibiotic / topical steroids / decongestants or mucolytics. Diabetic and immunocompromised patients are particularly susceptible to aggressive destruction of cartilage caused by <i>Pseudomonas aeruginosa</i> ("Malignant Otitis Externa"). If suspected, the patient should be referred urgently to an ENT specialist. 	First choice Aural toilet Mild cases Acetic acid 2% Alternative choices Betamethasone 0.1% plus Neomycin 0.5% or Flumetasone pivalate 0.02% plus Clioquinol 1% Cellulitis/systemically unwell Flucloxacillin (+ refer to ENT) If allergic to penicillin: Clarithromycin (+ refer to ENT)	1 spray tds 2-3 drops tds 2-3 drops bd 500mg qds 500mg bd	7 days 7 days minimum to max 14 days 7 days 5-7 days 5-7 days
Otitis externa – chronic return to contents	<ul style="list-style-type: none"> No antibacterial / antifungals needed Keep clean and dry. 			

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Indication	Comment	Drug	Dose	Duration
Rhinosinusitis Acute or Chronic NICE CG69 PHE CKS - Sinusitis return to contents	<ul style="list-style-type: none"> Often associated with viral infection or perennial rhinitis Avoid antibiotics as 80% resolve in 14 days without, and they only offer marginal benefit after 7 days (NNT 15) Use adequate analgesia Consider 7-day-delayed or immediate antibiotic when purulent nasal discharge (NNT 8). In persistent rhinosinusitis an agent with anti-anaerobic activity will be required, e.g. co-amoxiclav. If penicillin allergy then discuss with microbiologist For persistent symptoms consider referral to ENT 	Acute / uncomplicated First Choice: No antibiotic Second Choice Amoxicillin or Phenoxymethylpenicillin If allergic to penicillin Doxycycline or Clarithromycin Persistent Symptoms Co-Amoxiclav Persistent Symptoms and Penicillin Allergy Discuss with microbiologist	 500mg tds 1g tds if severe 500mg qds 200mg stat then 100mg od 250mg to 500mg bd 625mg tds	 7 days 7 days 7 days 7 days

3. LOWER RESPIRATORY TRACT INFECTIONS

Indication	Comment	Drug	Dose	Duration
Acute bronchitis NICE CG69 PHE CKS - Acute Bronchitis return to contents	<ul style="list-style-type: none"> Antibiotics have only modest benefit if no co-morbidity – most cases associated with viral infection. Symptom resolution can take 3 weeks. Consider 7 day delayed antibiotic with symptomatic advice/leaflet Antibiotics or further investigation/management is appropriate for patients who meet any of the following criteria: <ul style="list-style-type: none"> Systemically very unwell Symptoms and signs suggestive of serious illness and/or complications At high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis, and young children who were born prematurely. Older than 65 years with acute cough and two or more of the following, or older than 80 years with acute cough and one or more of the following: <ul style="list-style-type: none"> hospitalisation in previous year type 1 or type 2 diabetes history of congestive heart failure current use of oral glucocorticoids 	First Choice (if no co-morbidities): no antibiotics Alternative Choice Amoxicillin If allergic to Penicillin: Doxycycline or Clarithromycin	500mg tds 200mg stat then 100mg daily 500mg bd	5 days 5 days 5 days
Acute exacerbation's of COPD NICE CG101 PHE CKS - COPD Exacerbation GOLD 2015 (NB. 2.15 MB pdf document - allow time to load) return to contents	<ul style="list-style-type: none"> Many cases are viral and non-infectious agents are also responsible for some exacerbations – consider whether antibiotics are needed. Bacteria, including <i>Streptococcus pneumoniae</i>, <i>Haemophilus influenzae</i> and <i>Moraxella catarrhalis</i>, can be isolated from sputum samples in stable COPD but are also associated with exacerbations Treat exacerbations promptly with antibiotics if purulent sputum and increased shortness of breath and/or increased sputum volume. If not responding to empiric 1st line therapy, send a sample of the sputum for microbial analysis. Risk factors for antibiotic resistant organisms include co-morbid disease, severe COPD, frequent exacerbations, antibiotics in last 3 months. Prophylactic continuous use of antibiotics has been shown to have no effect on the frequency of exacerbations Pneumococcal vaccination and annual influenza vaccination should be offered to all patients with COPD 	First Choice Amoxicillin If allergic to Penicillin: Clarithromycin Second Line (i.e. if 1st line treatment failed and awaiting culture results) Doxycycline Or Discuss with microbiologist	500mg tds 500mg bd 200mg stat then 100mg od	5 days 5 days 5 days

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Indication	Comment	Drug	Dose	Duration
Bronchiectasis BTS Guideline CKS - Bronchiectasis return to contents	<ul style="list-style-type: none"> The presence of purulent sputum alone, or isolation of a pathogen alone are not necessarily indications for antibiotic treatment Antibiotics are recommended for exacerbations that present with acute deterioration, worsening local symptoms and/or systemic upset. Sputum sample should be sent for culture before starting antibiotics and repeat if fail to respond to treatment Antibiotics can be modified if pathogen isolated <i>Pseudomonas aeruginosa</i> – treat with oral ciprofloxacin, however significant risk of resistance if repeated courses and associated with <i>C difficile</i> colitis. Often require IV antibiotics to achieve clinical improvement Patients with chronic <i>P. aeruginosa</i>, opportunistic mycobacteria or MRSA colonization or with >3 exacerbations per year should have regular follow-up in secondary care 	First Choice Amoxicillin	500 mg tds	14 days
		If allergic to Penicillin: Clarithromycin	500 mg bd	14 days
		If severe bronchiectasis and chronically colonised with <i>H influenzae</i> Amoxicillin	1g tds or 3g bd	14 days
		If <i>Pseudomonas aeruginosa</i> Ciprofloxacin	500-750 mg bd	14 days

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Indication	Comment	Drug	Dose	Duration
Community - acquired pneumonia (CAP) BTS Guideline NICE CG191 PHE <				

4. SKIN / SOFT TISSUE INFECTIONS

Indication	Comment	Drug	Dose	Duration
Erysipelas return to contents	<ul style="list-style-type: none"> Almost always caused by β-haemolytic streptococci, usually group A May be difficult to distinguish from cellulitis 	First Choice Phenoxymethylpenicillin Alternative if allergic to penicillin: Clarithromycin	500mg qds 500mg bd	7 days 7 days
Boils, Abscesses, Impetigo, Infected eczema CKS - Impetigo CKS - Boils/Carbuncles PHE - PVLSA return to contents	<ul style="list-style-type: none"> Usually caused by β-haemolytic streptococci or <i>S. aureus</i> For extensive, severe, or bullous impetigo, use oral antibiotics Reserve topical antibiotics for very localised lesions, and use only short courses, to reduce the risk of resistance Reserve mupirocin for MRSA For eczema, routinely adding an antibiotic to a steroid does not improve response and encourages resistance. <p>Panton-Valentine Leukocidin (PVL) is a toxin produced by 2% of <i>Staph. Aureus</i>. It can cause severe or recurrent impetigo, furunculosis or abscesses/boils. Cross-transmission may occur in households and other closed communities or in association with contact sports. If suspected, submit samples for culture and discuss with Microbiologist</p>	For localised lesion - impetigo or infected eczema only Fusidic acid ointment Boil, abscess, severe, widespread or unresponding impetigo/infected eczema Flucloxacillin or Clarithromycin if penicillin allergic	Topically tds 500mg qds 250mg to 500mg bd	5 days 7 days 7 days
Cellulitis CREST PHE return to contents	<ul style="list-style-type: none"> Most commonly caused by β-haemolytic streptococci, often group A but also groups B, C and G and <i>S. aureus</i> If peri-orbital cellulitis refer to hospital for further investigation and treatment If sea-water or freshwater exposure, discuss with microbiologist. If febrile, systemically unwell or with underlying co-morbidities which may complicate infection, refer to hospital for IV treatment Failure to respond may necessitate urgent parenteral antibiotics. Necrotising fasciitis is a rare but rapidly progressive and destructive soft tissue infection with a high mortality. Presenting signs are often non-specific and may initially resemble cellulitis. Worsening pain, disproportionate to clinical signs, skin necrosis +/-crepitus or bullae should prompt surgical referral and discussion with microbiologist 	First Choice Flucloxacillin Alternative if allergic to penicillin: Clarithromycin If poor response consider referral for IV treatment	500mg qds 500mg bd	7 days. If slow response continue for a further 7 days

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Indication	Comment	Drug	Dose	Duration
Lactation Mastitis CKS - Mastitis NICE CG37 WHO – Mastitis (2000) return to contents	<ul style="list-style-type: none"> Up to 1 in 10 breastfeeding females are affected Is most common during first 6 weeks post-partum Associated with pain, redness, fever, myalgia and malaise that occur in the setting of breastfeeding Mastitis can progress to breast abscess if not treated promptly Advise patient on getting plenty of rest, drinking plenty of fluid, taking pain killers such as paracetamol or ibuprofen, not to stop breastfeeding and avoiding tight clothing If there is development of a severely painful swollen lump, with redness and oedema overlying skin - refer to hospital for aspirate/culture. Refer to secondary care if: <ul style="list-style-type: none"> There are signs of sepsis (such as tachycardia, fever, and chills). The infection progresses rapidly. The woman is haemodynamically unstable or immunocompromised. Breast abscess is suspected Prescribe antibiotic if infected nipple fissure, or symptoms not improved/worsening 12-24hrs after effective milk removal and/or positive breast milk culture Advise patient to: <ul style="list-style-type: none"> Seek immediate medical advice if symptoms fail to settle after 48 hours of antibiotics treatment as the concern is to prevent the development of a breast abscess. Return to prescriber for further review at 7 days. If improving after 7 days continue for a further 7 days. If not seek advice from microbiologist as the concern is to prevent the development of a breast abscess 	First Choice Flucloxacillin Alternative if allergic to penicillin: Clarithromycin	500mg qds 500mg bd	7-14 days Patient to review at 48 hours. Prescriber to review at 7 days and decide whether to seek further advice or continue for a further 7 days. See comment section for further detail.
Leg ulcers PHE - Venous Leg Ulcers return to contents	<ul style="list-style-type: none"> Ulcers will always have bacteria present. Antibiotics do not improve healing unless active infection Culture swabs and antibiotics are only indicated if there is evidence of clinical infection such as inflammation / redness / cellulitis; increased pain; purulent exudates; rapid deterioration of ulcer or pyrexia. Sampling for culture requires cleaning to remove surface contaminants then vigorous curettage of the slough and necrotic tissue. Swab viable tissue which is showing signs of infection. 	Minor Flucloxacillin Alternative if allergic to penicillin: Clarithromycin Severe / unresolving Send swabs for microbial culture and discuss with microbiologist	500mg qds 500mg bd	7 days. If slow response continue for a further 7 days

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Indication	Comment	Drug	Dose	Duration
Diabetic foot infection NICE Diabetic Foot return to contents	<ul style="list-style-type: none"> Diabetic foot ulcers should urgently be referred to Diabetic Foot Clinic as per NICE guidance if new ulceration, swelling or discolouration Take cultures and samples before, or as close as possible to, the start of antibiotic treatment. 	Initial Flucloxacillin Alternative if allergic to penicillin: Clindamycin <i>High C Diff risk - Stop immediately if diarrhoea develops.</i> On going- Via MDT Foot clinic	500mg qds 300mg qds	7 days. 7 days.
Insect Bites CKS - Insect Bites and Stings return to contents	Treat only if infected Establish whether the bite was likely to have occurred in the UK or elsewhere as this will determine course of action If tick bite consider possibility of Lyme disease – do not offer antimicrobial prophylaxis or serological tests, but advise patient that if a rash appears at the site of the bite (erythema migrans) or a fever develops to seek medical advice	<u>UK inflicted Bite</u> First Choice Flucloxacillin Alternative if allergic to penicillin: Clarithromycin <u>Non - UK inflicted Bite</u> Seek advice from microbiology	500mg qds 500mg bd	7 days. If slow response continue for a further 7 days
Human and Animal Bites (prophylaxis and treatment) PHE return to contents	<ul style="list-style-type: none"> Organisms commonly isolated from dog and cat bites include <i>Pasteurella</i> species, <i>S. aureus</i>, streptococci and anaerobic bacteria Thorough irrigation is important Review all bites at 24 & 48 hours to ensure responding to treatment <p><u>Human bites</u></p> <ul style="list-style-type: none"> Assess risk of tetanus, HIV, hepatitis B&C Antibiotic prophylaxis is advised <p><u>Animal bites</u></p> <ul style="list-style-type: none"> Assess risk of tetanus, rabies Give prophylaxis if cat bite/puncture wound; bite to hand, foot or face; wounds involving injury to joint, tendon or ligament; or if patient immunocompromise/diabetic/asplenic/cirrhotic Children under 12 or pregnant women with penicillin allergy – discuss with Microbiologist Asplenic patients are prone to overwhelming sepsis following dog bites. 	First Choice - prophylaxis and treatment: Co-amoxiclav If allergic to penicillin : Metronidazole PLUS Doxycycline (not children under 12 or pregnancy; seek advice from microbiology for these) or human bite only: Metronidazole PLUS Clarithromycin	375-625mg tds 200-400mg tds 100mg bd 200-400mg tds 250-500mg bd	7 days 7 days 7 days

Unless stated all guideline doses are for adults. Please refer to BNFC for children's doses.

Indication	Comment	Drug	Dose		Duration
Scabies CKS - Scabies BNF - Scabies <small>(BNF link only accessible from computer with NHS N3 connection)</small> return to contents	<ul style="list-style-type: none"> Treat all members of the household, close contacts, and sexual contacts simultaneously (within 24 hours), even if absence of symptoms. Treat whole body including scalp, neck, face, ears and under nails (as per BNF section 13.10.4) For patients under the age of 2 months; advice from a paediatric dermatologist should be sought prior to any treatment. Machine wash (at 50°C or above) clothes, towels, and bed linen, on the day of application of the first treatment. 	First choice Permethrin - 5% Dermal Cream 2nd line:- Malathion - 0.5% aqueous liquid	Apply over whole body, wash off after 8 to 12 hours. Apply over whole body, wash off after 24 hours.		Use twice one week apart Use twice one week apart
Dermatophyte and candidal infection of the fingernail or toenail (Adults) Brit Association Dermatology Onychomycosis Guide 2014 PHE - Fungal Skin & Nail return to contents	<ul style="list-style-type: none"> Treat only if infection confirmed by laboratory For infection with dermatophytes use oral terbinafine or itraconazole For infections with candida or non-dermatophyte moulds use oral itraconazole Only use topical treatment if superficial infection of the top surface of the nail plate Topical treatment is inferior to systemic therapy in all but a small number of cases of very distal infection or in Superficial White Onychomycosis Idiosyncratic liver and other severe reactions occur very rarely with terbinafine and itraconazole <p>For children seek expert advice</p>	First choice for dermatophytes Terbinafine First choice for candida/non dermatophytes:- Itraconazole Alternative choice for superficial infection. <small>(only if systemic therapy contra-indicated/not tolerated)</small> Amorolfine 5% nail lacquer (for superficial)	250mg daily 200mg BD for 7days/month 1-2x weekly	Finger Toe Finger Toe Finger Toe	6-12wk 3-6mth 2 courses 3 courses 6mth 12mth

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Indication	Comment	Drug	Dose	Duration
Dermatophyte infection of the skin PHE - Fungal Skin & Nail CKS - Fungal skin infection - body & groin return to contents	<ul style="list-style-type: none"> Take skin scraping for culture As terbinafine is fungicidal, one week is as effective as 4 weeks azole which is fungistatic If intractable consider oral terbinafine Discuss SCALP infections with specialist Antifungal/steroid combination creams not recommended because they are licensed to be used for a maximum of 7 days however, topical antifungal treatment is usually required for a longer period. 	First Choice (not location specific) Topical Terbinafine 1% Second Choice for Non-groin infection Topical undecenoic acid or topical azole 1% cream Second Choice for Groin infection Topical azole 1% cream If failure of topical treatment: Oral Terbinafine	Apply 1-2 times daily Apply 1-2 times daily Apply 1-2 times daily 250mg od	1 wk 4-6 wks 4-6 wks Non groin 4 wks Groin 2-4 wks
Candida infection of the skin PHE - Fungal Skin & Nail CKS - Candida - Skin return to contents	<ul style="list-style-type: none"> Confirm by laboratory Infection not widespread/Patient not significantly immunocompromised <ul style="list-style-type: none"> Treat with 1% azole cream Widespread Infection/Topical Treatment Ineffective/Immunocompromised Patient <p>Use oral fluconazole for 2 weeks and then review response to treatment as follows:</p> <ul style="list-style-type: none"> Infection completely resolved - stop treatment. Infection improved but not completely resolved, continue treatment for a further 2 weeks Poor response or no improvement seek specialist advice. 	1% azole cream - use lotion if treating paronychia If oral therapy indicated (see left) Fluconazole	1-2 times daily 50mg od	1 week or in case of paronychia until swelling goes 2 weeks then review (see left)

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Indication	Comment	Drug	Dose	Duration
Pityriasis versicolor CKS - Pityriasis return to contents	<ul style="list-style-type: none"> Scratching the surface of the lesion should demonstrate mild scaling If initial therapy fails, verify that the treatment regimen has been followed adequately. Consider a second topical therapy before considering systemic treatment. Topical or oral corticosteroids should not be used as they may exacerbate the condition and cause skin atrophy. <p>If pityriasis versicolor is extensive or if topical treatment is ineffective:</p> <ul style="list-style-type: none"> Confirm the diagnosis by taking skin samples for microscopy. Consider referral to dermatologist or specialist, particularly if under 12 years of age Consider an oral antifungal treatment 	First Choice Ketoconazole 2% shampoo	once daily	5 days
		Second choice Selenium sulphide 2.5% shampoo (unlicensed indication)	once daily	7 days
		Small areas Clotrimazole 1% cream	apply 2-3 times daily	2-3wks
		If oral therapy indicated (see left) First Choice Itraconazole	200mg od	7 days
		Second Choice Fluconazole	50mg od	2-4wks

Last reviewed Nov 2015 Next review starting Jan 2018

6. PARASITIC INFECTIONS

Indication	Comment	Drug	Dose	Duration
Threadworm CKS - Threadworm return to contents	<ul style="list-style-type: none"> Mebendazole is the drug of choice for treating threadworm infection in patients over 6 months. (nb. 6 months to 2 yrs is unlicensed but recommended in BNFC) Children under 6 months – hygiene measures alone should be used. <p>Treatment with either must be combined with hygiene measures as outlined below. All household members should be treated at the same time.</p> <ul style="list-style-type: none"> Treatment with an anthelmintic is contraindicated in children aged less than 6 months and women in the first trimester of pregnancy. Women in the second or third trimester and women who are breastfeeding may also prefer not to take an anthelmintic For people who do not wish to take an anthelmintic, and those in whom an anthelmintic is not recommended, advise physical removal of the eggs, combined with hygiene measures. <p>Environmental hygiene measures — undertake on the first day of treatment:</p> <ul style="list-style-type: none"> Wash sleepwear, bed linen, towels, cuddly toys at normal temperatures and rinse well. Thoroughly vacuum and dust, paying particular attention to the bedrooms, including vacuuming mattresses. Thoroughly clean the bathroom by 'damp-dusting' surfaces, washing the cloth frequently in hot water. <p>Strict personal hygiene measures — for 2 weeks if combined with drug treatment or for 6 weeks if used alone:</p> <ul style="list-style-type: none"> Wear close-fitting underpants or knickers at night. Change them every morning. Cotton gloves may help prevent night-time scratching. Wash them daily. Bath or shower immediately on rising each morning, washing around the anus to remove any eggs laid by the worms during the night. <p>General personal hygiene measures — encourage all the time for all household members:</p> <ul style="list-style-type: none"> Wash hands and scrub under the nails first thing in the morning, after using the toilet or changing nappies, and before eating or preparing food. Discourage nail biting and finger sucking. Avoid the use of 'communal' or shared towels or flannels. 	<p>Children Under 6 months Hygiene measures</p> <p>Non pregnant Adults and children over 6 months Mebendazole Tabs</p> <p>Pregnancy & Breastfeeding Physical removal of eggs combined with hygiene methods is the preferred treatment.</p> <p>Mebendazole should not be used in the first trimester of pregnancy.</p> <p>If drug treatment is considered necessary in the second or third trimester of pregnancy or in breastfeeding, mebendazole is the anthelmintic of choice. Use in this way is unlicensed and contraindicated by manufacturers. Report any exposure in pregnancy to UKTIS: ☎0344 892 0909.</p> <p>http://www.uktis.org/</p>	100mg as single dose	<p>stat</p> <p>repeat after 14 days if infestation persists or has re-occurred</p>

7. GENITAL TRACT INFECTIONS

Indication	Comment	Drug	Dose	Duration
Vaginal Candidiasis STI Guideline (RCGP & BASHH) PHE return to contents	<ul style="list-style-type: none"> All topical and oral azoles give 75% cure. Avoid use of oral azoles in pregnancy. Intravaginal treatment requires longer duration of treatment in pregnancy 	Clotrimazole 10% or Clotrimazole or Fluconazole In pregnancy Clotrimazole or Miconazole 2% vaginal cream	5g vaginal cream (pv) 500 mg pessary (pv) 150 mg orally 100 mg pessary at night (pv) 5g intravaginal BD	stat stat stat 6 nights 7 nights
Bacterial Vaginosis STI Guideline (RCGP & BASHH) return to contents	<ul style="list-style-type: none"> Oral metronidazole is as effective as topical treatment but is cheaper. Trials show that the 2g stat dose is slightly less effective at 4 week follow-up, this should be considered only where patient compliance is considered a problem In Pregnancy avoid 2g single dose metronidazole. Breastfeeding – systemic metronidazole and clindamycin enter breast milk therefore use intravaginal treatment Treating partners does not reduce relapse. 	First Choice Metronidazole tablets or Metronidazole 0.75% vaginal gel Second Choice: Clindamycin 2% Cream	400mg bd or 2g one 5g applicator full at night one 5g applicator full at night	7 days stat 5 nights 7 nights
Gonococcal urethritis, cervicitis return to contents	<ul style="list-style-type: none"> Less common than chlamydial infection Main sites of infection are the mucous membranes of the urethra, endocervix, rectum, pharynx and conjunctiva Refer to G.U. medicine for management and contact tracing. 			
Chlamydia trachomatis urethritis, cervicitis STI Guideline (RCGP & BASHH) SIGN PHE - Chlamydia return to contents	<ul style="list-style-type: none"> Opportunistically screen those in whom prevalence is known to be highest, i.e. those aged 15 to 25 yrs or with >2 sexual partners in the previous 12 months, or a recent change of sexual partner. Refer to GUM clinic for contact tracing and management of partners Pregnancy or breastfeeding: azithromycin is the most effective option but is 'unlicensed'. The safety data are reassuring but limited when compared with amoxicillin and erythromycin, however these are less well tolerated and non-compliance may be a problem. Consider test for cure if anything other than 1st line treatment was given or in pregnancy where a test for cure is done 6 weeks after treatment Recurrent infections may be prevented by barrier contraception. Abstain from intercourse or use safe sex until 7 days after azithromycin or completion of other treatment by patient and partner. 	First Choice Azithromycin (can be used in pregnancy following discussion of benefits and risks) or Doxycycline (contraindicated in pregnancy) Alternatives in pregnancy or breastfeeding: Erythromycin or Amoxicillin	1 gram, 1 hr before or 2 hrs after food 100mg bd 500 mg qds 500 mg tds	stat 7 days 7 days 7 days

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Indication	Comment	Drug	Dose	Duration
Pelvic Inflammatory Disease (PID) PID National Guideline (BASHH) STI Guideline (RCGP & BASHH) return to contents	<ul style="list-style-type: none"> • Refer woman and contacts to GUM clinic • Always culture for gonorrhoea & chlamydia • Ofloxacin should be avoided in patients who are at high risk of gonococcal PID because of increasing quinolone resistance in the UK (e.g. when the patient's partner has gonorrhoea, in clinically severe disease or following sexual contact abroad). • 28% of gonorrhoea isolates now resistant to quinolones so only use ofloxacin regimen if gonococcal PID unlikely. • Complications of gonorrhoea, such as PID, should be referred to GUM 	Ofloxacin plus Metronidazole	400mg bd 400mg bd	14 days 14 days
Epididymo-orchitis STI Guideline (RCGP & BASHH) return to contents	<ul style="list-style-type: none"> • Important to differentiate from Torsion – (Delay >6 hours →infarction). Torsion more likely if < 20 years old, sudden onset of pain. If torsion cannot be excluded then urgent urology referral is advised • Under 35 years - most often a sexually transmitted pathogen such as <i>Chlamydia trachomatis</i> and <i>Neisseria gonorrhoeae</i>. • Over 35 years - most often non-sexually transmitted Gram negative enteric organisms causing urinary tract infections. Particular risks include recent instrumentation or catheterisation. • There is crossover between these groups and complete sexual history taking is imperative • Refer to GUM clinic if sexually transmitted organisms likely e.g. under 35yrs. • Refer to urologist if urinary tract pathogen identified as anatomical or functional abnormalities of the urinary tract are common in this group. • 20 – 30% of post- pubertal men with mumps develop orchitis 	If Sexually Transmitted Organisms a possibility Refer to GUM clinic If gram negative enteric organisms more likely Ciprofloxacin	500mg bd	10 days

8. URINARY TRACT INFECTIONS

Indication	Comment	Drug	Dose	Duration
General Guidance return to contents	<ul style="list-style-type: none"> Common organisms causing urinary tract infection include: <i>E. coli</i>, <i>Proteus</i> spp., <i>Klebsiella</i> spp., <i>Staphylococcus saprophyticus</i> and <i>Enterococcus</i> spp. Local data shows that 88% of urine pathogens are susceptible to nitrofurantoin and 64% susceptible to trimethoprim. Samples are more likely to be submitted for culture in hospitalized patients or those with recurrent infections or who have failed to respond to empiric treatment. – therefore sensitivity rates for uncomplicated infections in primary care are likely to be higher. Amoxicillin resistance is common, therefore ONLY use if culture confirms sensitivity. The prevalence of asymptomatic bacteriuria increases with age. There is evidence that, in non-pregnant women, elderly patients and catheterized patients, treatment does more harm than good and antibiotics are not indicated. In pregnancy, however, treatment of asymptomatic bacteriuria is likely to be beneficial. In the presence of a catheter, antibiotics will not eradicate bacteriuria; only treat if systemically unwell or pyelonephritis likely. Do not prescribe trimethoprim to a patient who is taking methotrexate – risk of haematological toxicity. Do not prescribe pivmecillinam to a patient who is taking valproate/valproic acid – risk of carnitine depletion leading to hyperammonaemic encephalopathy. 			
Uncomplicated UTI in women and men (no fever or flank pain) PHE - UTI SIGN CKS - UTI women CKS - UTI men RCGP online learning SAPG - Delayed Ab/No Ab strategy for UTI in women return to contents	<ul style="list-style-type: none"> Women with severe/ ≥ 3 symptoms of UTI: treat Women with mild/ ≤ 2 symptoms: use dipstick to guide treatment. Positive nitrite & blood/leucocytes has 92% positive predictive value ; negative nitrite, leucocytes, and blood has a 76% NPV Men: Consider prostatitis and send pre-treatment MSU OR if symptoms mild/non-specific, use negative nitrite and leucocytes to exclude UTI. If symptoms are severe (for example severe nausea and vomiting, confusion, tachypnoea, tachycardia, or hypotension), refer to hospital; intravenous antibiotics may be required. Community multi-resistant <i>E. coli</i> with Extended-spectrum Beta-lactamase enzymes (ESBLs) are increasing so perform culture in all treatment failures. Risk factors for increased resistance include: care home resident, recurrent UTI, hospitalisation >7d in the last 6 months, unresolving urinary symptoms, recent travel to a country with increased antimicrobial resistance (outside Northern Europe and Australasia) especially health related, previous known UTI resistant to trimethoprim, cephalosporins or quinolones In general use Nitrofurantoin first line. Trimethoprim and pivmecillinam are alternative first line agents. Nitrofurantoin contraindicated if eGFR less than 45 mL/min or G6PD deficiency. A short course (3-7 days) may be used with caution if eGFR 30-44 mL/min and multi-resistant isolate with no alternative. If increased resistance risk send culture for susceptibility & give safety net advice If increased resistance risk and GFR<45mL/min consider pivmecillinam If increased resistance risk and elderly consider pivmecillinam 	First Choice Nitrofurantoin or Trimethoprim or Pivmecillinam Second Choice Depends on susceptibility of organism isolated	50mg qds or MR caps 100mg bd 200mg bd 400mg tds (Swallow whole with plenty of fluid while sitting or standing) Note stated dose of pivmecillinam is higher than BNF. This is a PHE recommendation	3 days women 7 days men

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Indication	Comment	Drug	Dose	Duration
UTI in pregnancy return to contents	<ul style="list-style-type: none"> In pregnancy: send MSU for culture & sensitivity and start empirical antibiotics Short-term use of nitrofurantoin during 1st and 2nd trimester of pregnancy is unlikely to cause problems to the foetus. Avoid use during 3rd trimester or if mother is G6PD deficient Avoid trimethoprim in the first trimester, or in women who have a low folate status or on folate antagonists e.g. anti-epileptic or proguanil. If patient is not able to take a listed antibiotic contact microbiologist to discuss alternative treatment options. 	First Choice Nitrofurantoin (except in 3 rd trimester) or Amoxicillin (if susceptible) Second Choice Trimethoprim (except in 1 st trimester) Third Choice Cefalexin	50mg qds or MR caps 100mg bd 500mg tds 200 mg bd 500mg bd	7 days 7 days 7 days 7 days
UTI in Children NICE CG54 NICE CG160 return to contents	<ul style="list-style-type: none"> Send pre-treatment MSU for any of the following: <ul style="list-style-type: none"> all infants and children less than 3 years diagnosis of acute pyelonephritis/upper UTI risk of serious illness dipstick positive for leucocyte esterase or nitrite. Dipstick testing can be used to aid diagnosis in children over 3 years Imaging: refer if child <6 months or atypical UTI (e.g. any of the following: seriously ill, poor urine flow, abdominal mass, raised creatinine, failure to respond to appropriate antibiotics, infection with non-<i>E. coli</i> organisms) or recurrent UTI <p>NICE CG54 Urinary Tract Infection in children</p> <ul style="list-style-type: none"> Infants and children with a high risk of serious illness and all infants younger than 3 months with a possible UTI should be referred immediately to the care of a paediatric specialist. For infants and children 3 months or older with cystitis/lower urinary tract infection: treat with oral antibiotics for 3 days. For infants and children 3 months or older with acute pyelonephritis/upper urinary tract infection: consider referral to a paediatric specialist treat with oral antibiotics for 7–10 days. <p>NICE CG54 includes guidance on diagnosis of UTI; however Assessment of the illness level should also be made as per NICE CG160 Feverish Illness in Children.</p>	<p><u>Cystitis/Lower UTI</u></p> First Choice Trimethoprim or Nitrofurantoin Alternative Choice Amoxicillin – if known to be susceptible <u>Acute pyelonephritis/Upper UTI</u> First Choice Co-amoxiclav If penicillin allergic contact microbiologist to discuss treatment options	See BNF for children for doses	3 days 3 days 3 days 7 to 10 days

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Indication	Comment	Drug	Dose	Duration
Acute Pyelonephritis (Adults) return to contents	<ul style="list-style-type: none"> Assess for admission to hospital if there are signs of renal infection, e.g. fever or flank pain. If admission not required send MSU for culture & sensitivity and start antibiotics. If no response within 24 hours of antibiotic treatment, admit 	First Choice Co-amoxiclav If penicillin allergic or ESBL risk contact microbiologist to discuss treatment options	500/125mg tds	10-14 days
Acute prostatitis STI Guideline (RCGP & BASHH) return to contents	<ul style="list-style-type: none"> Acute prostatitis is caused by urinary tract pathogens Send MSU for culture and start antibiotics 4-weeks treatment is recommended to reduce the risk of chronic prostatitis Following recovery, investigation to exclude an underlying structural abnormality is advised Chronic prostatitis refer to Urology Quinolones are more effective, as they have greater penetration into the prostate, but there is a higher risk of adverse effects e.g. <i>C.difficile</i>. There is poorer evidence for trimethoprim but it can be used in patients allergic to or unable to take ciprofloxacin (e.g. seizures). 	First Choice Ciprofloxacin Alternative Choice Trimethoprim	500mg bd 200mg bd	28 days 28 days

9. GASTRO-INTESTINAL TRACT INFECTIONS

Indication	Comment	Drug	Dose	Duration
<i>Helicobacter pylori</i> eradication NICE CG184 PHE - H pylori CKS- Dyspepsia return to contents	<ul style="list-style-type: none"> <i>H. pylori</i> can be diagnosed initially using carbon-13 urea breath test (UBT) or stool antigen test (SAT). PPI within 2 weeks or antibiotics within 4 weeks of test may lead to false negative result. For children the most accurate method of diagnosis is endoscopy with biopsy. Testing in primary care may help diagnosis and can be either with UBT or SAT. UBT is not recommended for children under 6 years as greater risk of false positives in this age group. Treatment of H Pylori in children is only recommended under specialist supervision. <i>Helicobacter</i> eradication is beneficial in known DU, GU or low grade MALToma Routine testing is not recommended in patients with gastro-oesophageal reflux disease Do not use clarithromycin, metronidazole or quinolone if used in the past year for any infection. <p><u>Symptomatic relapse – consider seeking specialist advice as may indicate antibacterial resistance</u></p> <ul style="list-style-type: none"> DU/GU/MALToma or relapse after second line treatment: retest for <i>H. pylori</i> using breath or stool test OR consider endoscopy for culture & susceptibility NUD: Do not retest, offer PPI or H2RA If patient fails to meet any criteria for first or second line treatment or fails second line treatment then seek advice from gastroenterologist 	First Line Lansoprazole + Amoxicillin + Clarithromycin or Lansoprazole + Amoxicillin + Metronidazole If previous exposure to both clarithromycin and metronidazole Lansoprazole + Amoxicillin + Tetracycline If penicillin allergic Lansoprazole + Clarithromycin + Metronidazole If penicillin allergic & previous exposure to clarithromycin and/or metronidazole but no exposure to quinolone Lansoprazole + Tetracycline + Levofloxacin Second line – only if patient still has symptoms following first line treatment – see next page	30mg bd 1g bd 500mg bd 30mg bd 1g bd 400mg bd 30mg bd 1g bd 500mg qds 30mg bd 250mg bd 400mg bd 30mg bd 500mg qds 250mg bd	7 days or MALToma 14 days 7 days or MALToma 14 days 7 days or MALToma 14 days 7 days or MALToma 14 days 7 days or MALToma 14 days

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Indication	Drug	Dose	Duration	Drug	Dose	Duration
<i>Helicobacter pylori</i> eradication continued	Second line treatment options (not Maltoma) if patient still has symptoms following first line treatment					
	For Maltoma – second line – refer to specialist					
	If clarithromycin regime used first time			Penicillin allergic and has not had quinolone exposure in last 12 months		
	Lansoprazole + Amoxicillin + Metronidazole	30mg bd 1g bd 400mg bd	7 days			
	If metronidazole regime used first time			Lansoprazole + Tetracycline + Levofloxacin	30mg bd 500mg qds 250mg bd	7 days
	Lansoprazole + Amoxicillin + Clarithromycin	30mg bd 1g bd 500mg bd	7 days			
	Previous exposure to both clarithromycin and metronidazole and first line treatment did not include tetracycline					
	Lansoprazole + Amoxicillin + Tetracycline	30mg bd 1g bd 500mg qds	7 days			
	Previous exposure to both clarithromycin and metronidazole; first line treatment was with lansoprazole, amoxicillin and tetracycline and no quinolone exposure in last 12 months					
	Lansoprazole + Amoxicillin + Levofloxacin	30mg bd 1g bd 250mg bd	7 days			

These are second line treatment options (not Maltoma) for use if patient still has symptoms following first line treatment
For Maltoma – second line – refer to specialist

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Indication	Comment	Drug	Dose	Duration
Gastroenteritis/ Infective Diarrhoea PHE - Infectious diarrhoea NICE CG 84 return to contents	<ul style="list-style-type: none"> Most infectious diarrhoea is a self-limited, usually viral illness Submit stool sample if systemically unwell, bloody diarrhoea, post-antibiotics/hospitalisation, recent foreign travel, persistent symptoms or if advised by Public Health. Include relevant travel or antibiotic history so that other specific pathogens are looked for – only those >65 years are routinely tested for <i>C. difficile</i>. Fluid replacement is essential. Antibiotic therapy is not usually indicated as it only reduces diarrhoea by 1-2 days in uncomplicated infections and can cause resistance. Antibiotic therapy is contraindicated if patient is infected with <i>E. coli</i> O157 as it can lead to Haemolytic Uraemic Syndrome Antibiotic treatment is recommended for children younger than 6 months with Salmonella gastroenteritis – discuss with Microbiologist If severe diarrhoea or systemically unwell discuss with Microbiologist. <p>Please notify known or suspected cases of food poisoning or infectious bloody diarrhoea to, and seek advice on exclusion of patients, from Public Health England. Send stool samples in these cases</p>			
<i>Clostridium difficile</i> PHE – Clostridium difficile return to contents	<ul style="list-style-type: none"> Stop unnecessary antibiotics and/or PPIs Any of the following may indicate severe infection and the patient should be admitted for assessment: Temperature >38.5°C; WCC >15 x 10⁹/L, rising creatinine or signs/symptoms of severe colitis Recurrent disease occurs in about 20% patients 	1st episode (non severe) Metronidazole 2nd episode/recurrent disease Vancomycin Severe disease Discuss with Microbiologist	400mg tds 125mg qds	10-14 days 10-14 days
Giardiasis return to contents	<ul style="list-style-type: none"> If the patient relapses consider another course of therapy and investigation of the family who may be asymptomatic excretors. 	Metronidazole	Child 1-2 yrs 500mg od 3-6 yrs 600-800mg od 7-9 yrs 1g od Adult & Child ≥10years 400mg tds or 2g od (less well tolerated)	3 days 3 days 3 days 5 days 3 days
Cryptosporidiosis PHE - preventing spread guidance return to contents	<ul style="list-style-type: none"> Infection is acquired from contact with infected humans or animals or after ingestion of contaminated water. Produces watery diarrhoea which can last for up to 2 to 3 weeks (or longer in immunosuppressed patients). No specific treatment is currently available. This is a notifiable disease as clusters of cases warrant further investigation to exclude a common source. Cases should avoid using swimming pools until two weeks after the first normal stool. 			

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Indication	Comment
<p>Cholecystitis</p> <p>NICE CG188</p> <p>CKS - cholecystitis</p> <p>return to contents</p>	<p>Suspect acute cholecystitis when someone presents with:</p> <ul style="list-style-type: none"> • A history of sudden-onset, constant, severe pain in the upper right quadrant, and possibly anorexia, nausea, vomiting, and sweating. • Low grade fever (a high temperature is uncommon). • Tenderness in the upper right quadrant, with or without Murphy's sign (inspiration is inhibited by pain on palpitation) on examination. A positive Murphy's sign has specificity of 79-96% for acute cholecystitis • History of gallstones (cholelithiasis) is often present <p>Signs which may indicate a complication include:</p> <ul style="list-style-type: none"> • Right upper quadrant palpable mass (distended gallbladder or an inflammatory mass around the inflamed gallbladder) • Fever (evidence of sepsis) • Jaundice (stone in the bile duct or external compression of the biliary ducts e.g. Mirrizzi syndrome) <p>Urgent admission to hospital is recommended with any person with suspected acute cholecystitis or any of the above complications for</p> <ul style="list-style-type: none"> • Confirmation of the diagnosis (e.g. abdominal ultrasound, serum amylase, raised white cell count and C-reactive protein) • Monitoring (e.g. blood pressure, pulse, & urinary output) • Treatment (e.g. intravenous fluids, antibiotics, & analgesia) • Surgical assessment for cholecystectomy <p>Consider prescribing an oral nonsteroidal anti-inflammatory drug, while the person is waiting to be admitted.</p> <p>Consider routine referral of people with mild intermittent symptoms and who are not unwell</p> <p><u>For patients who have already been seen by secondary care and are awaiting surgery</u></p> <p>Follow the surgical management plan if presenting with a flare up of their condition. This may include prescribing of antibiotics.</p>

Unless stated all guideline doses are for adults. Please refer to BNFC for children's doses.

Indication	Comment	Drug	Dose	Duration
Diverticular Disease RCS Commissioning Guide 2014 CKS - Diverticular disease World Gastroenterology Organisation Practice Guidelines -2007 return to contents	<p><u>Previously diagnosed colonic diverticula with symptoms such as lower abdominal pain, nausea/vomiting and signs including fever and localised guarding.</u></p> <ul style="list-style-type: none"> Referral to hospital is not mandatory for this group of patients, and they may be managed at home. If patient deemed suitable for home management, this should be in accordance to NICE guidelines with suitable analgesics (Paracetamol rather than non-steroidal anti-inflammatory drugs), and clear liquids for 2-3 days There is low level evidence that patients suitable for management at home may be managed without the use of antibiotics; however, in general, a course of oral antibiotic is recommended. 	<p>First Choice Co-amoxiclav</p>	500/125mg tds	7 days
	<p><u>Suspected acute diverticulitis but has not previously had a definitive diagnosis of colonic diverticula.</u></p> <ul style="list-style-type: none"> Management as above is suitable Referral for out-patient investigation also recommended <p><u>Acute Diverticulitis</u></p> <ul style="list-style-type: none"> Admission to hospital should be arranged for patients with acute diverticulitis as per NICE guidelines. Refer patient to hospital if <ul style="list-style-type: none"> Pain cannot be managed with Paracetamol Hydration cannot be easily maintained with oral fluids, Or antibiotics cannot be tolerated The person is frail or has significant comorbidity, particularly if immunocompromised Complications are suspected (e.g. rectal bleeding that may require transfusion, perforation and peritonitis, intra-abdominal abscess, or fistula) Symptoms persist after 48 hours despite conservative management at home. 	<p>Penicillin Allergy Ciprofloxacin</p>	500mg bd	7 days
		<p>AND Metronidazole</p>	400mg tds	7 days

10. VIRAL INFECTIONS

Indication	Comment	Drug	Dose	Duration
Herpes zoster (shingles) CKS - Shingles return to contents	Treat if: <ul style="list-style-type: none"> >50 years (as they are at highest risk for post-herpetic neuralgia) and within 72 hours of onset of rash Ophthalmic zoster (at any age) – refer immediately Immunocompromised (at any age) – seek Virology advice Pregnancy – seek Virology advice Non-truncal involvement (at any age) Eczema (at any age) Ramsey Hunt Syndrome (at any age) Presents with moderate or severe pain or moderate or severe rash (at any age) 	First Choice Aciclovir If non-compliant with first choice Valaciclovir or Famciclovir Nb. if non-compliant with first choice assess likelihood of compliance with others as these are significantly more expensive.	800mg 5 x daily 1g tds 500mg tds or 750mg bd (more expensive)	7 days 7 days 7 days
Varicella zoster (chickenpox) CKS - Chickenpox return to contents	<ul style="list-style-type: none"> Consider treatment for adults & adolescents (>14yrs) seen within 24 hours of onset of rash. Seek advice from Virologist if patient is pregnant or a neonate or immunocompromised. 	Aciclovir	800mg 5 x daily	7 days
Herpes simplex - Oral CKS - Herpes Simplex oral return to contents	<ul style="list-style-type: none"> Treatment should begin as early as possible after the start of an infection. Topical treatment only effective if initiated prior to vesicles appearing Obtain advice from Virologist if patient is immunocompromised. Consider GUM referral Consider dermatology referral if patient has eczema herpeticum Consider seeking special specialist advice if patient is pregnant (particularly near term) Seek specialist advice if neonatal herpes simplex is suspected 	Minor oral infection Aciclovir cream 5% Extensive oral infection (severe herpetic stomatitis) Aciclovir Immunocompromised Seek advice from Virologist	5 x daily 200mg 5 x daily	5 days 5 days

Unless stated all guideline doses are for adults. Please refer to BNFC for children's doses.

Indication	Comment	Drug	Dose	Duration
Herpes simplex – Genital CKS – Herpes simplex genital STI Guideline (RCGP & BASHH) return to contents	<p>Ideally should be referred to GUM</p> <p>The following categories of patient must be referred to the appropriate speciality</p> <ul style="list-style-type: none"> • Pregnant women • Immunocompromised patients • Severe local secondary infection • Systemic herpes infection (e.g. meningitis) <p>Patients with HIV may be treated in primary care provided that the infection is uncomplicated and not severe. However, prompt referral is indicated if there is no response to treatment (i.e. lesions are still forming after 3–5 days of treatment).</p> <p>If referral to GUM not possible same/next day then swab base of lesion (pop blister if necessary) for HSV using a viral swab. Virus typing (to differentiate HSV type 1 from type 2) should be obtained – will help with prognosis, counseling and management</p> <p><u>Self-care measures</u></p> <ul style="list-style-type: none"> • Clean the affected area with plain or salt water to help prevent secondary infection and promote healing of lesions. • Apply vaseline or a topical anaesthetic (e.g. lidocaine 5%) 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 (e.g. oral paracetamol). • Avoid sharing towels and flannels with household members (although it is very unlikely that the virus would survive on an object long enough to be passed on, it is sensible to take steps to prevent this). • Advise all people to abstain from sex (including non-penetrative and orogenital sex) until follow up, or until lesions have cleared. 	<p>Immunocompetent - if cannot be referred to GUM</p> <p>Start within 5 days of onset or while new lesions are forming. Also advise on self-care measures (see left)</p> <p>Aciclovir</p> <p>HIV- only if referral declined AND non-severe uncomplicated infection</p> <p>Aciclovir</p>	<p>200mg 5 x daily</p> <p>400mg 5 x daily</p>	<p>5 days or longer if new lesions are still forming while on treatment.</p> <p>7-10 days If new lesions forming after 3-5 days patient must be referred</p>

11. INFESTATIONS

Indication	Comment	Drug	Dose	Duration
Head lice PHMEG 2012 CKS - Head lice BNF - Head lice return to contents	<p>Head lice infestation (pediculosis) should be treated using lotion or liquid formulations only if live lice are present.</p> <p>Treatment has the best chance of success if it is performed correctly and if all affected household members are treated on the same day.</p> <p>Treatment is with either: physical insecticide; chemical insecticide; or physical removal.</p> <p>Treatment choice depends on preference of the individual or their parents/carer (after considering the advantages and disadvantages of each treatment) and what has been previously tried. See CKS for list of advantages/disadvantages.</p> <ul style="list-style-type: none"> Physical insecticides kill the lice by physically coating their surfaces and suffocating them. P Chemical insecticides poison the lice. C Physical removal involves with wet combing with a nit comb, e.g. Bug Buster® <p>Wet combing or dimeticone 4% lotion is recommended first-line for pregnant or breastfeeding women, young children aged 6 months to 2 years, and people with asthma or eczema.</p> <ul style="list-style-type: none"> Treat all affected household contacts simultaneously Dimeticone preparations contain inflammable ingredients that are combustible while on the hair. Hair with dimeticone applied should be kept away from open fire, other sources of ignition and hair dryer. Do not use shampoos. They are diluted too much in use to be effective. A contact time of 8–12 hours or overnight treatment is recommended for lotions and liquids. A 2-hour treatment is not sufficient to kill eggs (BNF) Wet combing can be used as alternative to insecticides; however it is considered to be less effective (PHMEG) The use of agents with shorter contact times are not recommended as first line treatments since direct comparisons of efficacy with other treatments are not available (DTB 2009;47:50-2) 	<p>P denotes physical insecticide C denotes chemical insecticide</p> <p>First Choices</p> <p>P Dimeticone 4% Lotion (Hedrin)</p> <p>C Malathion 0.5% Liquid (Derbac M)</p> <p>Alternative Choice <i>(nb. More expensive than first choice treatments)</i></p> <p>P Dimeticone 92% Spray (Nyda)</p> <p>Pregnancy/breast feeding/young children (6mths- 2yrs)/ asthma /eczema</p> <p>Wet combing (Advise that it will take 10 minutes to complete the process on short hair, but 20–30 minutes for long, frizzy, or curly hair.)</p> <p>or</p> <p>Dimeticone 4% Lotion (Hedrin)</p>	<p><u>Manufacturer recommendations</u></p> <p>Allow 8 hours contact before washing off</p> <p>Allow 12 hours contact before washing off</p> <p>Allow 8 hours contact before washing off</p> <p>Two combing procedures per session. Four sessions spaced over 2 weeks (on days 1, 5, 9, and 13)</p> <p>Continue until no full-grown lice have been seen for three consecutive sessions</p> <p>As above.</p>	<p>Repeat treatment after 7 days</p> <p>Repeat treatment after 7 days</p> <p>Repeat treatment after 8 – 10 days</p>


12. DENTAL INFECTIONS

Indication	Comment	Drug	Dose	Duration
Dental infections	This section of the guidance should only be used for the management of acute oral conditions pending referral to dentist. If possible advice should be sought from the patient's dentist.			
Mucosal ulceration and inflammation (simple gingivitis) PHE return to contents	<ul style="list-style-type: none"> • Temporary pain and swelling relief can be attained with saline mouthwash • Use antiseptic mouthwash if more severe & pain limits oral hygiene. Can also be used to treat or prevent secondary infection. • The primary cause for mucosal ulceration or inflammation (aphthous ulcers, oral lichen planus, herpes simplex infection, oral cancer) needs to be evaluated and treated. 	Simple saline mouthwash Chlorhexidine 0.12-0.2% <i>(Do not use within 30 mins of toothpaste)</i>	$\frac{1}{2}$ tsp salt dissolved in glass warm water Rinse mouth for one minute BD with 5 ml diluted with 5-10 ml water.	Always spit out after use. Use until lesions resolve or less pain allows oral hygiene
Dental abscess PHE return to contents	<ul style="list-style-type: none"> • Regular analgesia should be first option until a dentist can be seen for urgent drainage, as repeated courses of antibiotics for abscess are not appropriate. • Repeated antibiotics alone, without drainage are ineffective in preventing spread of infection. • Antibiotics are recommended if there are signs of severe infection, systemic symptoms or high risk of complications. • Refer urgently for admission severe odontogenic infections such as cellulitis plus signs of sepsis, difficulty in swallowing, impending airway obstruction, Ludwigs angina. 	Amoxicillin Or Phenoxymethylpenicillin <i>True penicillin allergy</i> Clarithromycin <i>Severe Infection or Spreading infection (lymph node involvement or systemic signs i.e. fever or malaise)</i> Add Metronidazole	500mg TDS 500mg to 1g QDS 500mg BD 400mg TDS	5 days 5 days 5 days 5 days

13. BACTERIAL MENINGITIS OR MENINGOCOCCAL DISEASE

Indication	Comment	Drug	Dose	Duration
Bacterial meningitis or Meningococcal disease PHE - Meningococcal disease NICE CG102 return to contents	<ul style="list-style-type: none"> Rapid admission to hospital is highest priority when meningococcal disease is suspected. Meningococcal Disease is a Notifiable Disease All meningitis infections to be notified to Public Health England who will advise on prophylaxis of contacts. Recommended that all GPs carry benzylpenicillin injection <p><u>Suspected bacterial meningitis</u></p> <ul style="list-style-type: none"> Children and young people with clinical signs of meningitis but WITHOUT non-blanching rash should be transferred directly to secondary care without giving parenteral antibiotics. If urgent transfer to hospital is not possible (for example, in remote locations or adverse weather conditions), antibiotics should be administered. <p><u>Suspected meningococcal disease</u></p> <ul style="list-style-type: none"> Those with suspected meningococcal septicaemia (WITH non-blanching rash) +/- signs of meningitis: Parenteral antibiotics (intramuscular or intravenous benzylpenicillin) should be given at the earliest opportunity, either in primary or secondary care, but urgent transfer to hospital should not be delayed in order to give the parenteral antibiotics. 	<p>Recommended all GPs carry Benzylpenicillin injection. Administration is either slow IV or IM.</p> <p>Not to be given if history of anaphylaxis or angioedema with previous administration of penicillin, cephalosporin or other beta-lactam antibiotic.</p>	<p>Adults & Child ≥ 10yrs: 1.2g</p> <p>Child 1-9 yrs: 600mg</p> <p>Child <1 yr: 300mg</p>	<p>Single dose</p> <p>Single dose</p> <p>Single dose</p>

14. SEPSIS

Indication	Comment
Sepsis - Adults Surviving Sepsis Sepsis Trust - Clinical tools	<p>Early Recognition and Treatment is Critical</p> <div> <div>Signs of sepsis</div> <p> Slurred speech Extrême muscle pain Passing no urine Severe breathlessness I feel I might die Skin mottled or discoloured </p> </div> <div> <div>Diagnosis of Sepsis</div> <div> <p>1. Are any two of the following criteria present?</p> <ul style="list-style-type: none"> • Temp >38.3 or <36 • Respiratory rate of >20 • Heart Rate >90bpm • White cell count <4 X 10/L or >12X10/L • Glucose >7.7 mmol/L(if not diabetic) <p>If YES patient has Systemic Inflammatory Response Syndrome(SIRS)</p> <p></p> <p>2. Is there a clinical suspicion of new infection?</p> <ul style="list-style-type: none"> • Cough/sputum/chest pain • Abdominal pain/distension/diarrhoea • Line infection • Endocarditis • Dysuria; • Headache with neck stiffness • Cellulitis/Wound/Joint infection <p>If YES, patient has SEPSIS – if appropriate for treatment in primary care start antibiotic as per diagnosis, e.g. cellulitis, but also check whether step 3 also applies.</p> </div> <div> <p>3. Is there evidence of any organ dysfunction?</p> <ul style="list-style-type: none"> • BP <90/mean <65mmHg(after initial fluid challenge) • Lactate >2mmmol after initial fluids • INR >1.5 or aPTT >60s • Bilirubin >34µmol/L • Urine output <0.5mL/kg/h for 2h • Creatinine >177µmol/L • Platelets <100 X10/L <p>If YES, patient has SEVERE SEPSIS - URGENTLY REFER to hospital as patient may require intravenous antibiotics (within one hour) and further investigations.</p> </div> </div>

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Indication	Comment
Sepsis - Paediatrics	<p style="text-align: center;">Early Recognition and Treatment is Critical IMMEDIATE TRANSFER TO HOSPITAL IF ANY SUSPICION OF SEPSIS IN A CHILD</p>
<p>Sepsis Trust - Clinical tools</p> <p>Scottish Paediatric Sepsis 6</p> <p>return to contents</p>	<div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">Recognition of a child at risk of sepsis</div> <p>Suspected or proven infection AND at least two of the following:</p> <ul style="list-style-type: none"> • Core temperature < 36°C or > 38°C • Inappropriate tachycardia • Altered mental state(including: sleepiness / irritability / lethargy / floppiness) • Reduced peripheral perfusion / prolonged capillary refill / cool or mottled peripheries <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">Reduced threshold for suspicion of Sepsis</div> <p>Some children are at higher risk of sepsis. Treatment may be considered with fewer signs than those listed above. These include, but are not limited to:</p> <ul style="list-style-type: none"> • Infants < 3/12 • Immunosuppressed / compromised • Recent surgery • Indwelling devices / lines • Complex neurodisability / Long term conditions • High index of clinical suspicion (tachypnoea, rash, leg pain, biphasic illness, poor feeding) • Significant parental concern <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;">Red Flag Sepsis Signs</div> <ul style="list-style-type: none"> • Appearance: Pale/mottled/ashen/blue or non-blanching (purpuric) rash. • Cardiovascular dysfunction: Hypotension, tachycardia/bradycardia, prolonged capillary refill time >5 seconds, or blood gas lactate >2X upper limit of normal. • Respiratory dysfunction: Tachypnoea/bradypnoea/apnoea, grunting, or oxygen required to maintain saturations >92%. • Neurological dysfunction: AVPU = V, P or U; lack of response to social cues; significantly decreased activity; or weak, high-pitched or continuous cry. • Renal dysfunction: Reduced urine output/parents report excessively dry nappies.

Unless stated all guideline doses are for adults. Please refer to BNFC for children's doses.

15. Acknowledgements

This guidance is a revised version of the 2013 Doncaster and Bassetlaw Antibiotic Guidance for Primary Care. The revision has been undertaken by:

Ken Agwuh - Consultant Microbiologist - Doncaster and Bassetlaw Hospitals NHS Foundation Trust
Manyando Milupi - Consultant Microbiologist - Doncaster and Bassetlaw Hospitals NHS Foundation Trust
Rob Wise - Medicines Management Pharmacist - NHS Bassetlaw CCG

An outline of the amendments that have been made from the 2013 version is included in the following pages.

16. Approval

This guidance has been approved by the following CCG representative meetings:

NHS Bassetlaw CCG Primary Care Committee, May 2016 (following review by Primary Care Forum, March 2016 and GP Prescribing Leads, April 2016)
NHS Doncaster CCG Medicines Management Committee, March 2016

17. Outline list of changes to sections - 2013 guidance to 2015 guidance

Logos and hyperlinks updated as appropriate	
Footer – review date extended to Jan 2018 since next PHE guidance due for publication Oct 2017 & allows for any delay in publication.	
INTRODUCTION	
Contact Details	DBHFT Consultant list & Health Protection Team telephone numbers updated
UPPER RESPIRATORY TRACT INFECTIONS	
Influenza	Duration of zanamivir extended to 10 days if oseltamivir resistance
Pharyngitis Sore Throat Tonsillitis	Dosing modification for penicillin V in adults as per PHE guidance. Addition of clarithromycin as treatment option for children if penicillin allergy Dosing for penicillin allergy options in children now hyperlinked to BNF & not stated in guideline
Otitis Media	Criteria for delayed/immediate antibiotics amended to add ≥4 marked symptoms to bulging membrane as per PHE Dosing of amoxicillin amended as per updated PHE guidance Clarithromycin now added as a treatment option for children. Dose linked through to BNF Erythromycin dose linked through to BNF
Otitis Externa	Added recommendation to refer to ENT if oral therapy commenced Duration for use of betamethasone/neomycin modified to indicate minimum 7days, maximum 14.
Rhinosinusitis	Amoxicillin dosing amended to use 1g if infection deemed severe Phenoxymethylpenicillin added as a treatment option Prescribing options for persistent symptoms added
LOWER RESPIRATORY TRACT INFECTIONS	
Acute Bronchitis	Recommendation re delayed antibiotic changed to read as 7 day delayed antibiotic
Acute exacerbation of COPD	Doxycycline moved to be treatment option following failed first line therapy and prior to knowing culture results. Clarithromycin left as first line treatment if penicillin allergy.
Community acquired pneumonia	Separation of treatment regimens according to CRB-65 score. Modification of treatment duration

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SKIN/SOFT TISSUE INFECTIONS	
Impetigo, infected eczema	Category changed to include boils and abscesses
Cellulitis	Highlight added to Necrotising Fasciitis to emphasise signs that should prompt referral
Lactation Mastitis	New section
Diabetic Foot Infection	Recommendation re culture and sampling added as per NICE Guidance
Insect Bites	New Section
Human and Animal Bites (prophylaxis and treatment)	Addition of age detail , i.e. <12, for children
Scabies	Contact time for permethrin cream amended to reflect BNF recommendation Advice added re temperature for machine washing of clothes Explanation added re the term simultaneously – to mean within 24 hours as per PHE
Dermatophyte and candidal infection of the fingernail or toenail (Adults)	Clarification of first choice options. Amorolfine nail lacquer “demoted” and set as an alternative choice due to its limited place in therapy
Dermatophyte infection of the skin	Added recommendation not to use combination steroid/antifungal creams
Candida infection of the skin	Treatment separated according to severity of condition/immune status of patient etc. Addition of oral fluconazole as a treatment recommendation
EYE INFECTIONS	
Conjunctivitis	Treatment duration for Chloramphenicol & Fusidic Acid added as per PHE
PARASITIC INFECTIONS	
Threadworm	Piperazine phos / Sennoside removed as a treatment option as it is no longer available. Recommendation added to use hygiene measures only if age under 6 months.
GENITAL TRACT INFECTIONS	
Vaginal Candidiasis	Section name changed from candidiasis. Miconazole cream added as a treatment option in pregnancy
Bacterial Vaginosis	5 day Treatment length for metronidazole removed. Recommendation is 7 days. Quantity in applicator for vaginal cream/gel treatment options now stated as 5g
Chlamydia trachomatis urethritis, cervicitis	Minor rewording re screening Azithromycin now moved above doxycycline as a treatment choice as it is a stat dose, i.e. more likely to be taken as prescribed and no longer a significant cost difference to doxycycline
Epididymo-orchitis	Warning added re urgent referral if torsion cannot be ruled out

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URINARY TRACT INFECTIONS	
General Guidance	Added warning re not to use pivmecillinam if patient taking valproate/valproic acid
Uncomplicated UTI	Nitrofurantoin promoted as 1 st line choice. eGFR for Nitrofurantoin use reflects MHRA &PHE guidance Pivmecillinam added as a treatment option Added information re risk factors for resistance and recommendations for management Additional hyperlinks for information including CKS and RCGP
Acute pyelonephritis	Added to contact microbiologist if ESBL risk
GASTRO-INTESTINAL TRACT INFECTIONS	
<i>Helicobacter Pylori</i>	Information relating to testing in children added Treatment options expanded – taking previous antibiotic exposure into greater consideration. Removal of Tripotassium Dicitratobismuthate (De-Noltab®) quadruple therapy regimen as De-Noltab® being discontinued by current UK license holder from Jan 2016
<i>Clostridium difficile</i>	Vancomycin added for second episode/recurrent disease
Giardiasis	Minor amendment to dosing age ranges
Cholecystitis	New Section
Diverticular Disease	New Section
VIRAL INFECTIONS	
Herpes Zoster	Famciclovir dose amended as per PHE Pregnancy added as a patient category to seek virology advice
Varicella Zoster	Addition of age detail , i.e. >14yr, for treatment consideration
Herpes Simplex - Genital	Recommendation added re obtaining viral swab if referral to GUM not possible Information on self-care measures added
INFESTATIONS	
Head Lice	Further detail added to text information. Treatment choices amended to First choice and Alternative choice (owing to relative cost difference). Detail added re wet combing process, i.e. frequency and duration
Scabies	As above (skin/soft tissue section)
BACTERIAL MENINGITIS OR MENINGOCOCCAL DISEASE	
	Sentence added to inform reader that meningitis is a notifiable disease

DENTAL INFECTIONS	
Dental abscess	Further detail added re role of metronidazole. Reinforcing message added repeated antibiotics ineffective if no drainage.
SEPSIS	New Section
Acknowledgements & Approval	Updated

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