



Antimicrobial Prescribing Primary care guidelines

Version 4

Last updated February 2025

These guidelines are aimed for use by suitably trained healthcare professionals working within Bedfordshire, Luton and Milton Keynes primary care sector

Contents

Introduction	4
Upper Respiratory Tract Infections	5
Acute Sore Throat	5
Influenza	5
Scarlet fever	6
Acute Otitis Media	6
Acute Otitis Externa	7
Acute Sinusitis	8
Lower Respiratory Tract Infections	9
Acute cough	9
Acute exacerbation of bronchiectasis (non-cystic fibrosis)	10
Chronic Obstructive Pulmonary Disease (COPD) Exacerbation	11
Covid-19	11
Community Acquired Pneumonia (CAP)	12
Urinary Tract infections	13
Lower UTI	13
Catheter associated urinary tract infection	15
Recurrent UTI	16
Acute Pyelonephritis (upper urinary tract)	17
Acute Prostatitis	18
Gastrointestinal infections	19
Oral candidiasis	19
Infectious Diarrhoea	19
Traveller's diarrhoea	19
Clostridioides difficile infection	20
Threadworm	21
Acute diverticulitis	21
Helicobacter pylori	21
Genital tract infections	22
Local GUM services	22
Chlamydia trachomatis / urethritis	22
Gonorrhoea	23
Genital herpes	23
Bacterial vaginosis	23
Trichomoniasis	24

	Vaginal candidiasis	24
	Epididymitis	24
	Pelvic inflammatory disease (PID)	25
С	NS infection	25
	Suspected meningococcal disease	25
	Prevention of secondary case of meningitis	25
S	kin & Soft tissue infections	26
	Cold sores	26
	PVL-Staphylococcus Aureus	26
	Impetigo	26
	Eczema (secondary bacterial infections)	27
	Mastitis (lactational)	28
	Cellulitis and erysipelas	29
	Diabetic foot infection	30
	Leg ulcer infection	30
	Scabies	31
	Insect bites and stings	31
	Human and animal bites	31
	Tick bites (Lyme disease)	32
	Dermatophyte infection: skin (body & groin)	32
	Dermatophyte infection: nail	32
	Acne vulgaris	33
	Varicella zoster (chickenpox)	34
Εį	/e infections	35
	Conjunctivitis	
	Blepharitis	
S	uspected dental infections in primary care	35
	eferences	36

Introduction

Principles of treatment

- 1. This guidance should not be used in isolation; it should be supported with patient information about safety netting, self-care, back-up antibiotics where appropriate, infection severity and usual duration, clinical staff education, and audits. Materials are available on the RCGP TARGET website.
- 2. Prescribe an antibiotic only when there is likely to be clear clinical benefit, giving alternative, non-antibiotic self-care advice, where appropriate.
- 3. Always check for hypersensitivity and if a patient is genuinely allergic to penicillin use the recommended alternative(s) listed. See below for detailed information.
- 4. Consider a no or delayed / back up antibiotic strategy for acute self-limiting upper respiratory tract infections and mild UTI symptoms.
- 5. In severe infection, or immunocompromised, it is important to initiate antibiotics as soon as possible, particularly if sepsis is suspected. If patient is not at moderate to high risk for sepsis, give information about symptom monitoring, give safety netting information.
- 6. Use a lower threshold for antibiotics in immunocompromised, or in those with multiple morbidities; consider culture/specimens and seek advice.
- 7. Where an empirical therapy has failed, or special circumstances exist contact your local microbiologist for advice.
 - Luton and Dunstable Hospital: (01582) 497318 / 497319
 - Bedford Hospital: (01234) 795913
 - Milton Keynes Hospital: 01908 995 782/779
- 8. 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 *Clostridium difficile*, MRSA and resistant UTIs.
- 9. Avoid widespread use of topical antibiotics, especially if those agents also available systemically (for example fusidic acid); in most cases, topical use should be limited.
- 10. Modify suggested adult doses / durations for age, weight, renal function. Consider a larger dose or longer course in severe or recurrent cases or if immunocompromised. Children's doses are provided when appropriate and can be accessed through the cBNF links
- 11. Avoid the use of fluroquinolones, prescribe only where other antibiotics are inappropriate. This is due to rare association of long term non-reversible disabling side effects. MHRA alert: Jan 24

Alleraies

All patients should have an allergy history recorded including the date and nature of reaction where possible.

Penicillin allergy

Patients with a documented penicillin allergy should be reviewed to exclude a non-immunological adverse reaction, e.g. diarrhoea or vomiting.

All beta-lactams including Cephalosporins and Carbapenems should be avoided if the allergy history suggests angioedema (blistering or swelling,) bronchospasm, or urticaria (itchy rash) within minutes to hours after penicillin administration (type 1 hypersensitivity reaction), or a severe delayed reaction, e.g. serum sickness like reaction (vasculitic rash) drug rash with eosinophilia and systemic symptoms (DRESS) Stevens-Johnson syndrome / toxic epidermal necrolysis or if the allergy history is unclear.

Cephalosporins may be used with caution in other types of allergic reactions.

Co-trimoxazole – Co-trimoxazole contains trimethoprim and a sulphur-based product. Check for allergies to sulphur before prescribing.

Upper Respiratory Tract Infections

Acute Sore Throat

Advise on self-care: Sore throat can last around a week.

Consider 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. Use FeverPAIN or Centor tools below to help identify the people in whom this is more likely:

)
r

	Centor criteria		
(:	(score 1 each)		
•	Tonsillar exudate		
•	Tender anterior cervical lymphadenopathy or lymphadenitis		
•	History of fever (>38°c)		
•	Absence of cough		

Interpretation of score		
Fever PAIN 0-1 or Centor 0-2	No antibiotics	
Fever PAIN 2-3	No / back up antibiotic	
Fever PAIN 4-5 or Centor 3-4	Immediate / back up antibiotic	

For systemically unwell or high risk of complications: immediate antibiotic.

Always give self-care advice and safety net.

	Drug	Adult dose	Child dose	Duration
1 st line	Phenoxymethylpenicillin (penicillin V)	500mg QDS or 1g BD	BNF for Children	5-10 days*
2 nd line (penicillin allergy)	Clarithromycin OR	250 - 500mg BD	BNF for Children	5 days
	Erythromycin (in pregnancy)	250 - 500mg QDS or 500mg – 1g BD	BNF for Children	5 days

^{* 5} days for symptomatic cure, 10 days may increase the chance of microbiological cure.

Reference: NICE (NG84) sore throat (acute): antimicrobial prescribing visual summary Last updated Feb 23.

Influenza

Annual vaccination is essential for all those 'at risk' of influenza.

Prescribers in primary care may prescribe antivirals at NHS expense when surveillance data indicates an increase in influenza cases in the community. Prescribers are notified about this via the DoH CAS alert.

Antivirals are not recommended for healthy adults.

For management guidance please refer to UKHSA guidance on treatment of influenza: treatment and prophylaxis, as below.

Reference: Influenza: treatment and prophylaxis using anti-viral agents - GOV.UK Last updated Dec 21.

Scarlet fever

Scarlet fever is caused by *Streptococcus pyogenes*, also known as group A streptococcus (GAS). **Prompt treatment** with appropriate antibiotics significantly reduces the risk of complications. See NICE CKS link for details on those at higher risk of invasive (iGAS) infection and complications, and for further management details.

	Drug	Adult dose	Child dose	Duration
1 st line	Phenoxymethylpenicillin (Penicillin V)	500mg QDS	BNF for Children	10 days
2 nd line (penicillin allergy) Non-pregnant adults and children >6 months OR	Azithromycin	500mg OD	BNF for Children	5 days
2 nd line (Non-pregnant adults and children birth to 6 months) OR	Clarithromycin	250-500mg BD	BNF for Children	10 days
2 nd line Pregnancy & up to 28 days postpartum	Erythromycin	250-500mg QDS	-	10 days

Reference: NICE Clinical Knowledge summaries: Scarlet fever Last updated Sept 24.

Acute Otitis Media

Advise: acute otitis media lasts about 3 days but can last up to 1 week.

Manage symptoms with **self-care**. **Regular analgesia for pain and avoid antibiotics**.

(Those with otorrhea or those aged <2 years are most likely to benefit from antibiotics, as below.)

Presentation	Recommendation
Otorrhea or <2 years with bilateral infection	No, back-up or immediate antibiotic
Otherwise	No or back-up antibiotic
Systemically unwell / high risk of complications	Immediate antibiotic

Always give self-care advice and safety net.

If no oral antibiotic given, consider a prescription for eardrops containing anaesthetic and analgesia

	Drug	Child dose	Duration
If NO oral antibiotic given consider eardrops – ONLY if no eardrum perforation or otorrhoea	Phenazone (40mg/g) with lidocaine (10mg/g) (Otigo ®)	Apply 4 drops two or three times a day	
1 st line	Amoxicillin	BNF for Children	5-7 days (7 days for
2 nd line (due to penicillin allergy)	Clarithromycin OR	BNF for Children	more severe / recurrent infection)
	Erythromycin (in pregnancy)	BNF for Children	
2 nd line (worsening symptoms on 1 st choice taken for at least 2-3 days)	Co-amoxiclav	BNF for Children	

Reference: NICE (NG91) Otitis media (acute): antimicrobial prescribing visual summary Last updated March 22.

Acute Otitis Externa Use one of the choices below. Dose Duration 1st line Avoid antibiotic. Analgesia, self-care advice and apply localised heat, eg. hot flannel. See Otitis Externa Patient information leaflet Acetic acid (2%) (EarCalm®) spray 2nd Line (OTC) 2 sprays TDS Astringent 7 days max. for Adults & and after (Excessive use Children >12 swimming / may result in fungal infection) yrs showering / bathing. Max. frequency every 2-3 hours. 1 drop BD to Till resolution Antifungal Clotrimazole 1% solution (Canestan®) **TDS** and for 14 days afterwards. Adults & Prednisolone (Predsol®) Steroid 3 drops 2-3 7-14 days Children hourly (choice should Betamethasone (Betnesol®) 3 drops 2-3 7-14 days be guided by hourly personal Apply 0.25ml Antibiotic Ciprofloxacin ear drops (Cetraxal®) preference, risk twice a day 7 days of adverse *Betamethasone sodium phosphate 7-14 days Antibiotic 3 drops TDS / effects and & Steroid 0.1% & neomycin sulphate 0.5% QDS whether the (Betnesol N® ear, eye, nose drops) tympanic *Dexamethasone 0.1%, neomycin 7 days max. membrane is sulphate 3250 units/mL, glacial acetic 1 spray TDS intact) acid 2% (Otomize® spray) 3 drops BD Ciprofloxacin & Dexamethasone 7 days (Cilodex®) Ciprofloxacin & Fluocinolone (Cetraxal Apply 0.25ml 7 days BD *Hydrocortisone, Neomycin & Polymyxin 3 drops TDS-7 days (Otosporin®) QDS *Framycetin0.5%,Dexamethasone 3 drops TDS-7 days max.

If cellulitis or disease extending outside ear canal, or systemic signs of infection start treatment for cellulitis and refer to ENT to exclude malignant otitis externa.

QDS

0.05%, Gramicidin 0.005% (Sofradex®

Reference: NICE Clinical Knowledge summaries: Acute otitis externa Last updated May 24

^{*}Aminoglycoside containing preparations contraindicated if tympanic membrane perforated.

Acute Sinusitis

Self-care

- Consider paracetamol or ibuprofen for pain or fever
- Little evidence that nasal saline / nasal decongestants help but people may want to try

Sinusitis usually lasts 2-3 weeks. Antibiotics make little difference to how long symptoms last or the number of people whose symptoms improve.

Presentation	Recommendation
Symptoms ≤10 days	No antibiotic.
Symptoms & no improvement for >10 days	No antibiotic or back-up depending on likelihood of bacterial cause*. Consider a high dose nasal corticosteroid (if ≥12years) (offlabel use)
Systemically unwell / high risk of complications	Immediate antibiotic

Give safety net advice.

*Bacterial cause may be more likely if several of the following are present: symptoms >10 days, discoloured or purulent nasal discharge, severe localised unilateral pain (particularly pain over the teeth and jaw,) fever, marked deterioration after an initial milder phase.

	Drug	Adult dose	Child dose	Duration
1 st line	Phenoxymethylpenicillin (Penicillin V)	500mg QDS	BNF for Children	5 days
2 nd line (penicillin allergy)	Doxycycline (not for < 12 years or pregnancy) OR	200mg on first day, then 100mg OD	BNF for Children	
	Clarithromycin OR	500mg BD	BNF for Children	
	Erythromycin (in pregnancy)	250-500mg QDS or 500mg-1g BD	BNF for Children	
Alternative (or 1st line if systemically very unwell or high risk of complications)	Co-amoxiclav	500/125 TDS	BNF for Children	

Reference: NICE (NG79): Sinusitis (acute): antimicrobial prescribing visual summary Last updated Oct 17.

Lower Respiratory Tract Infections

Acute cough

Acute coughs are usually self-limiting but can last up to 3 to 4 weeks. Usually caused by a viral uRTI, eg cold & flu. But may also be caused by bronchitis (LRTI) which may be viral or bacterial. NICE suggest:

uRTI, not systemically very unwell or at higher risk of complications	No antibiotics
Acute bronchitis, not systemically very unwell or at higher risk of complications	No routine antibiotics
Higher risk of complications at face-to-face examination	Back-up or immediate antibiotics
Systemically very unwell at face-to-face examination	Immediate antibiotics

Patients at higher risk of complications include:

- People with a pre-existing co-morbidity
- Young children born prematurely
- >80years and 1 of the following or >65 years with 2 of the following:
 - hospitalisation in the past year
 - taking oral corticosteroids
 - type 1 or 2 diabetic
 - > congestive heart failure

Counsel on self-care & provide safety netting

Patients may wish to try the following, with limited evidence:

Honey (over 1s,) the herbal medicine pelargonium (in over 12s,) OTC cough medicine containing the expectorant guaifenesin (in over 12s,) OTC cough medicines containing cough suppressants, except codeine (in over 12s.)

Do not offer a mucolytic, oral or inhaled bronchodilator, oral or inhaled corticosteroid unless otherwise indicated.

	Drug	Adult dose	Child dose	Duration
1 st line (Adults) (Alternate 2 nd line choice in children)	Doxycycline (not to be used in children under 12 or pregnancy)	200mg on first day, then 100mg OD	BNF for Children	5 days
1st line (Children) (Alternate 2 nd line in Adults)	Amoxicillin (preferred in pregnancy) OR	500mg TDS	BNF for Children	
2 nd line (All)	Clarithromycin OR	250-500mg BD	BNF for Children	
	Erythromycin (preferred in pregnancy)	250-500mg QDS or 500mg-1g BD	BNF for Children	

Reference: NICE(NG120): Cough (acute): antimicrobial prescribing visual summary Last updated Feb 19

Acute exacerbation of bronchiectasis (non-cystic fibrosis)

An acute exacerbation of bronchiectasis is a sustained worsening of symptoms from a person's stable state.

- 1. Send a sputum sample for culture and susceptibility testing
- 2. Offer an antibiotic take account of:
 - o the severity of symptoms
 - previous sputum culture and susceptibility results (previous resistant or atypical bacteria are associated with a higher risk of treatment failure.)
 - o previous exacerbations, hospitalisations and risk of complications.

Give oral first line if possible, (if IV required refer to hospital / local IV at home pathway if appropriate.) Course length is based on severity of bronchiectasis, exacerbation history, severity of symptoms, previous culture and susceptibility results, and response to treatment. Give safety net advice.

- 3. Review choice of antibiotic
 - Only change antibiotic according to susceptibility results if bacteria are resistant and symptoms are not already improving, use narrower spectrum antibiotics where possible
- Reassess at any time if symptoms worsen rapidly or significantly, taking account of:
 - Other possible diagnosis, eg pneumonia
 - Symptoms or signs of something more serious such as cardiorespiratory failure or sepsis
 - o Previous antibiotic use, which may have led to resistant bacteria
- Seek specialist advice if:
 - Symptoms do not improve with repeated courses of antibiotics
 - o Bacteria are resistant to oral antibiotics
- Do not routinely offer antibiotic prophylaxis to prevent exacerbations. Seek specialist advice for management of repeated exacerbations.

	Drug	Adult dose	Child dose	Duration
	Be guided by recent culture ar	nd susceptibility w	here possible	•
1 st line	Amoxicillin (preferred if pregnant) OR	500mg TDS	BNF for Children	7-14 days
	Doxycycline (not to be used in children under 12 or pregnancy) OR	200mg on first day, then 100mg OD	BNF for Children	
	Clarithromycin	500mg BD	BNF for Children	
Alternative choice (if person at higher risk of	Co-amoxiclav OR	500/125mg TDS	BNF for Children	
treatment failure)*	Levofloxacin (Adults only; only if Co-amoxiclav is unsuitable; on specialist advice) OR	500mg OD or BD	-	
	Ciprofloxacin (Children only; only if Co-amoxiclav unsuitable; on specialist advice.)	-	BNF for Children	

^{*}Higher risk of failure if: repeated courses of antibiotics, previous sputum culture with resistant or atypical bacteria, or have a higher risk of developing complications.

Reference: NICE (NG117) Bronchiectasis (acute exacerbation): antimicrobial prescribing visual summary Last updated Apr 19.

Chronic Obstructive Pulmonary Disease (COPD) Exacerbation

COPD is frequently exacerbated by causes other than bacteria. Consider an antibiotic **ONLY** after taking into account the severity of symptoms including:

- Sputum colour changes and increases in volume or thickness from usual
- Need for hospitalisation
- Previous exacerbations, hospitalisations and risk of complications
- Previous sputum culture and susceptibility results
- Risk of resistance with repeated courses

Consider that some patients may have antibiotic rescue packs at home as part of their exacerbation action plan.

Provide safety netting advice.

If sputum sample sent, review antibiotic choice based on the results.

	Drug	Adult dose	Duration	
1st line (Empirical treatment or be guided	Amoxicillin OR	500mg TDS (increased in severe infection to 1g TDS)	5 days	
by recent sputum C&S)	Doxycycline OR	200mg on first day, then 100mg OD		
		(see BNF for severe infection)		
	Clarithromycin	500mg BD		
2 nd line	Use alternate first choice, as above.			
Alternative choice if	Co-amoxiclav OR	500/125mg TDS	5 days	
patient at higher risk of treatment failure*	Co-trimoxazole OR	960mg BD		
(Be guided by susceptibilities where available)	Levofloxacin (Only if other antibiotic choices are unsuitable; on specialist advice, consider safety issues)	500mg OD		

^{*}Repeated courses of antibiotics / previous or current sputum culture with resistant bacteria / at higher risk of developing complications.

Reference: NICE(NG114): COPD (acute exacerbation): antimicrobial prescribing visual summary Last updated Apr 19

Covid-19

Antibiotics should not be used for preventing or treating COVID-19 unless there is clinical suspicion of additional bacterial co-infection.

Do not use azithromycin to treat COVID-19.

Do not use doxycycline to treat COVID-19 in the community.

Do not offer an antibiotic for preventing secondary bacterial pneumonia in people with COVID-19.

If a person in the community has suspected or confirmed secondary bacterial pneumonia, start antibiotic treatment as soon as possible, see community acquired pneumonia for choices.

Community Acquired Pneumonia (CAP)

Assess severity in adults based on clinical judgement and guided by a mortality risk score, CRB65.

Low severity	CRB65 0
Moderate severity	CRB65 1 or 2
High severity	CRB65 3 or 4 – Urgent hospital admission.

Each CRB65 parameter scores one:

Confusion (AMT<8, or new disorientation in person, place or time)

Respiratory rate >30/min

BP systolic <90mmHg or diastolic ≤ 60mmHg

Age > 65

In **children and young people** severity is based on clinical judgement. For children under 1 month, refer to paediatric specialist.

Start treatment as soon as possible after diagnosis, within 4 hours (within 1 hour if sepsis suspected.) When choosing an antibiotic, take account of severity, risk of complications, local antimicrobial resistance and surveillance data, recent antibiotic use and microbiological results.

Give safety net advice.

	Drug	Adult dose	Child dose	Duration		
Adult low severity (CRB 65 = 0) or Children Non- severe						
1 st line	Amoxicillin	500mg TDS	BNF for Children	5 days		
2 nd line (penicillin allergy / atypical suspected)	Doxycycline (not for < 12 years or pregnancy) OR	200mg on first day, then 100mg OD	BNF for Children			
σασροσίσα	Clarithromycin OR	500mg BD	BNF for Children			
	Erythromycin (in pregnancy)	500mg QDS	BNF for Children			
Adult moderate sev	erity (CRB65 = 1-2)					
1 st line	Amoxicillin PLUS (if atypical pathogen suspected)	500mg TDS (higher doses can be used, see BNF)	-	5 days		
	Clarithromycin OR	500mg BD				
	Erythromycin (if pregnant)	500mg QDS				
2 nd line (penicillin allergy)	Doxycycline OR	200mg on first day, then 100mg OD				
	Clarithromycin	500mg BD				
•	(CRB = 3-4) or Children severe					
1 st line (alternatively IV in hospital: details via	Co-amoxiclav PLUS (if atypical pathogen suspected)	625mg TDS	BNF for Children	5 days		
the link below)	Clarithromycin OR	500mg BD	BNF for Children			
	Erythromycin (in pregnancy)	500mg QDS	BNF for Children			
2 nd line (penicillin allergy) Adults	Levofloxacin	500mg BD	-			
	138) Pneumonia (community-acqui	red): antimicrobial prescr	ibing			
Last updated July 22						

Urinary Tract infections

Lower UTI

Advise paracetamol or ibuprofen for pain and drinking enough fluid to avoid dehydration.

Antibiotic prescribing strategy

Non-pregnant women: Back up antibiotic (to use if no improvement in 48 hours or symptoms worsen at any time) or immediate antibiotic

Pregnant women, men, children or young people: Immediate antibiotic

When considering antibiotics, take account of:

severity of symptoms

risk of complications

previous urine C&S

- local antimicrobial resistance data.
- · previous antibiotic use which may have led to resistant bacteria

Send midstream urine for C&S for pregnant women and men.

For under 16s, send urine for C&S or dipstick in line with <u>NICE guideline on urinary tract</u> infection in under 16s: diagnosis and management

Guidance on the diagnosis of UTI in different patient groups produced by UKHSA is available at UKHSA: urinary tract infection: diagnostic tools for primary care

If people have symptoms of pyelonephritis (such as fever) or a complicated UTI, refer to <u>acute pyelonephritis</u> for antibiotic choices.

Safety net / reassess at any time if symptoms worsen rapidly or significantly or do not improve in 48 hours of taking antibiotics. Send a urine sample if not already done so.

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 For detailed information see useful links below.

NON-PREGNANT WOMEN (≥ 16 years)

	Drug	Adult dose	Duration
1 st line	Nitrofurantoin (if eGFR ≥45ml/min) (May be used with caution if eGFR 30-44ml/min to treat uncomplicated lower UTI caused by suspected or proven MDR bacteria and only if potential benefit outweighs risk) OR	100mg m/r BD (or 50mg QDS if unavailable)	3 days
	Pivmecillinam (a penicillin)	400mg initial dose, then 200mg TDS	
2 nd line (if no improvement in	Nitrofurantoin (if eGFR ≥45ml/min) OR	100mg m/r BD (or 50mg QDS if unavailable)	3 days
symptoms on 1 st line after ≥48 hours / 1 st line inappropriate)	Pivmecillinam OR	400mg initial dose, then 200mg TDS	
	Trimethoprim – if low risk of resistance*	200mg BD	
	Fosfomycin	3g	Single dose

^{*}A lower risk of resistance may be more likely if not used in the past 3 months, previous urine culture suggests susceptibility (but this was not used), and in younger people in areas where local epidemiology data suggest resistance is low. A higher risk of resistance may be more likely with recent use and in older people in residential facilities

References: NICE: UTI (lower): antimicrobial prescribing visual summary Updated Oct 18 UKHSA: urinary tract infection: diagnostic tools for primary care Updated May 24

Lower UTI MEN (≥ 16 years) Drua Adult dose Duration 1st line Nitrofurantoin (Use if eGFR 100mg M/R BD (or 50mg 7 days ≥45ml/min) QDS if unavailable) 2nd line Trimethoprim 200mg BD 3rd line Consider alternative diagnoses and follow recommendations in the NICE antimicrobial prescribing guidelines on acute pyelonephritis or acute prostatitis, basing antibiotic choice on recent culture and susceptibility results. PREGNANT WOMEN (≥ 12 years) Drug Adult dose Duration 1st line Nitrofurantoin (Avoid at 100mg m/r BD (or 50mg QDS 7 days term. Use if eGFR if unavailable) ≥45ml/min) Amoxicillin (only if culture 500mg TDS 2nd line results available and susceptible) OR Cefalexin 500mg BD

Treatment of asymptomatic bacteriuria in pregnant women: choose from nitrofurantoin (avoid at term), amoxicillin or cefalexin based on recent culture and susceptibility results

CHILDREN (≥3 MONTHS) & YOUNG PEOPLE (under 16 years)

Refer children <3months to paediatric specialist

	Drug	Child dose	Duration
1 st line	Trimethoprim (if low risk of resistance*) OR	BNF for Children	3 days
	Nitrofurantoin (if eGFR ≥45ml/min) Use tablets or capsules where possible, (cost pressure.)	BNF for Children	
2 nd line (if worsening symptoms on 1 st	Nitrofurantoin (if eGFR ≥45ml/min) (if not used 1 st) OR	BNF for Children	
line after ≥48 hours / 1 st line inappropriate)	Amoxicillin (only if culture results available and susceptible) OR	BNF for Children	
	Cefalexin	BNF for Children	

*A lower risk of resistance may be more likely if not used in the past 3 months, previous urine culture suggests susceptibility (but this was not used), and in younger people in areas where local epidemiology data suggest resistance is low. A higher risk of resistance may be more likely with recent use and in older people in residential facilities

References: NICE: UTI (lower): antimicrobial prescribing visual summary Updated Oct 19

<u>UKHSA: urinary tract infection: diagnostic tools for primary care</u> Updated May 24

NICE (NG224) Urinary tract infection in under 16s: diagnosis and management Updated July 22

Catheter associated urinary tract infection

- Do NOT give antibiotics routinely in the absence of symptomatic infection. (Most catheters are colonised with organisms therefore the use of urine dipsticks is not routinely recommended.)
- 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 drinking enough fluids to avoid dehydration and self-care, paracetamol for pain.
- 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.

Safety net: Seek medical help if symptoms worsen or do not start to improve within 48 hours. For detailed information click on the links below.

NON-PREGNANT WOMEN / MEN					
	Drug	Adult dose	Duration		
1 st line, if no	Nitrofurantoin (if eGFR ≥45	100mg m/r BD (or if	7 days		
upper UTI	ml/minute) OR	unavailable 50mg QDS)			
symptoms	Trimethoprim (if low risk of resistance*) OR	200mg BD			
	Amoxicillin (only if culture results available and susceptible)	500mg TDS			
2 nd choice if no upper UTI symptoms	Pivmecillinam	400mg initial dose, then 200mg TDS			
1st choice if upper UTI symptoms	Cefalexin OR	500mg BD or TDS (up to 1g to 1.5g TDS or QDS for severe			
(for 1 st line IV		infections)	7. 40.1		
options refer to	Co-amoxiclav (only if	500/125mg TDS	7 to 10 days		
the visual	culture results available				
summary – useful	and susceptible) OR				
link)	Trimethoprim (only if	200mg BD			
	culture results available		14 days		
	and susceptible) OR	500 x x DD			
	Ciprofloxacin (only if other 1st choices are unsuitable.)	500mg BD	7 days		
PREGNANT WOME	/				
1st line oral (for	Cefalexin	500mg BD or TDS (up to 1g to			
2 nd line refer to		1.5g TDS or QDS for severe			
microbiologist or		infections)	7 to 10 days		
for IV options					
refer to the link.)					

^{*}A lower risk of resistance may be more likely if not used in the past 3 months, previous urine culture suggests susceptibility (but this was not used), and in younger people in areas where local epidemiology data suggest resistance is low. A higher risk of resistance may be more likely with recent use and in older people in residential facilities

References: NICE (NG113) CAUTI: antimicrobial prescribing visual summary Last updated Apr 19 UKHSA: urinary tract infection: diagnostic tools for primary care Last updated May 24

•	NTHS) & YOUNG PEOPLE		
Refer children <3m	onths to paediatric specialist		
	Drug	Child dose	Duration
1st line oral (for 1st line IV options refer to the visual	Trimethoprim (if low risk of resistance) OR	BNF for Children	
summary – useful link)	Amoxicillin (only if culture results available and susceptible) OR	BNF for Children	7 10 days
	Cefalexin OR	BNF for Children	7-10 days
	Co-amoxiclav (only if culture results available and susceptible)	BNF for Children	

Recurrent UTI

For flow chart on process, please refer to <u>Summary of Management of Recurrent lower UTIs in Adults – BLMKICB Medicines Optimisation</u>

For review of prophylaxis refer to the above.

	Drug	Adult dose	Child dose	Duration
Antisept	ic prophylaxis	•		
	Methenamine Hippurate	1g BD	6-15yrs on specialist advice. BNF for Children	Review at 6 months
Antibioti	c choices			
1 st line	Nitrofurantoin (avoid at term) – if eGFR ≥45ml/min OR	100mg single dose when exposed to trigger or 50 to 100mg at night.	BNF for Children	Review at 6 months
	Trimethoprim (avoid in pregnancy)	200mg single dose when exposed to a trigger or 100mg at night	BNF for Children	
2 nd line	Amoxicillin OR	500mg single dose when exposed to a trigger or 250mg at night	BNF for Children	
	Cefalexin	500mg single dose when exposed to a trigger or 125mg at night	BNF for Children	

References: NICE (NG112) Prevention of recurent UTI visual-summary Last updated Dec 24 UKHSA: urinary tract infection: diagnostic tools for primary care Last updated May 24

Acute Pyelonephritis (upper urinary tract)

Send a midstream urine for culture and susceptibility testing.

Advise drinking enough fluid, paracetamol (+/- low-dose weak opioid) for pain for those over 12. 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.

If patient has had an ESBL organism cultured in the last 12 months, you may consider discussing with a Microbiologist for suitable antibiotic choice.

People at higher risk of complications include those with abnormalities of the genitourinary tract or underlying disease (such as diabetes or immunosuppression.)

Avoid antibiotics that don't achieve adequate levels in renal tissue, such as nitrofurantoin.

Safety net: Seek medical help if symptoms worsen or do not start to improve within 48 hours.

For detailed information see useful links below.

	Drug	Adult dose	Duration
1st line oral	Cefalexin OR	500mg BD or TDS (up to 1g to	7-10 days
antibiotics (for 1st		1.5g TDS or QDS for severe	
line IV options		infections)	
refer to the visual	Co-amoxiclav (only if	500/125 TDS	
summary – useful	culture results available		
link)	and susceptible) OR		
	Trimethoprim (only if	200mg BD	14 days
	culture results available		
	and susceptible) OR		
	Ciprofloxacin (only if	500mg BD	7 days
	other 1st choice		
	antibiotics unsuitable.)		
PREGNANT WOME			
1st line oral (for 1st	Cefalexin	500mg BD or TDS (up to 1g to	7-10 days
line IV options		1.5g TDS or QDS for severe	
refer to the visual		infections)	
summary – useful			
link)			<u> </u>
CHILDREN (≥3 MOI	NTHS) & YOUNG PEOPLE		
Refer children <3m	onths to paediatric special	ist	·
	Drug	Child dose	Duration
1st line oral (for 1st	Cefalexin OR		7-10 days
line IV options		BNF for Children	
refer to the visual			
summary – useful	Co-amoxiclav (only if	DAIF	
	culture results available	BNF for Children	
link)	culture results available	To dimarch	

NICE (NG224) Urinary tract infection in under 16s: diagnosis and management Updated July 22

Acute Prostatitis

Advise paracetamol (+/- low-dose weak opioid) for pain, or ibuprofen if preferred and suitable. Send a midstream urine sample for culture and susceptibility testing and offer an antibiotic. Review results and adjust treatment as appropriate.

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).

For detailed information click on the useful link below.

	Drug	Adult dose	Duration
1st line. Be guided by susceptibilities when available.	Ciprofloxacin (Guided by C&S when available. Consider safety issues) OR	500mg BD	14 days and then review
	Ofloxacin (consider safety issues) OR	200mg BD	
	Trimethoprim (Seek specialist advice, guided by susceptibilities)	200mg BD	
2 nd line (After discussion with a	levofloxacin (consider safety issues) OR	500mg OD	
specialist)	co-trimoxazole	960mg BD	

Reference: NICE: Prostatitis (acute): antimicrobial prescribing visual summary Last updated April 19

Gastrointestinal infections

Oral candidiasis

Topical azoles are more effective than topical nystatin.

Oral candidiasis is rare in immunocompetent adults, consider undiagnosed risk factors, including HIV.

	Drug	Adult dose	Child dose	Duration
1 st line	Miconazole gel	2.5ml of 24mg/ml QDS (hold in mouth after food	BNF for Children	7 days. Continue for 7 days after resolution.

Note there is currently a long term manufacturing problem with Miconazole gel. Use 2nd line treatment option if unavailable.

2 nd line (if not tolerated)	Nystatin suspension	1ml of 100,000units/ml QDS (half in each side)	As per adult	7 days. Continue for 2 days after resolved.
Alternative if extensive / severe	Fluconazole*	50mg OD	BNF for Children	7-14 days

^{*}For patients with HIV use 100mg. For other immunocompromised 50-100mg.

Reference: NICE CKS: Management | Candida - oral Last updated Dec 24.

Infectious Diarrhoea

Viruses account for the **majority** of cases. Both viral and bacterial infections are **self-limiting**. **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 250mg to 500mg BD for 5 to 7 days, if treated early (within 3 days.) Otherwise consult Microbiology.

Please notify suspected cases of food poisoning / infectious bloody diarrhoea to UKHSA.

For management guidance refer to NICE CKS: Management | Gastroenteritis Last updated May 24

Traveller's diarrhoea

- Do not routinely offer prophylactic treatment for prevention of travellers' diarrhoea.
- Do not routinely prescribe 'stand-by' (to be used if affected) treatments for travellers' diarrhoea.
- Seek specialist advice if considering prophylactic antibiotic treatment or a 'stand-by antibiotic'.
- The National Travel Health Network and Centre (NaTHNaC) provides a telephone advice line for health professionals advising travellers with complex itineraries or specialist health needs.
 For more information, see the NaTHNaC website (NaTHNaC)
- For management guidance please refer to <u>NICE CKS: Management | Diarrhoea prevention</u> and advice for travellers Last updated Sept 23.

Clostridioides difficile infection

Take a stool sample and treat based on a positive result or pending the test result with a clinical suspicion.

Two tests are run: GDH antigen test and toxin test. Patients found to be GDH positive and toxin negative are carriers. (They may also require treatment if symptomatic.)

Do not take repeat stool samples following diagnosis or after treatment (C difficile can remain in the stools for long periods. When the patient is asymptomatic it is not significant.)

For children and young people, treatment should be started by, or after advice from, a microbiologist or paediatrician.

For adults, consider seeking specialist advice before starting treatment.

When commencing treatment:

Assess:

- · Whether it is a first or further episode
- · Severity of infection
- Individual risk factors for complications or recurrence, eq. age, frailty, or comorbidities.

Review:

- Any **existing antibiotics**: stop unless essential. If essential, consider changing to one with a lower risk of *C. difficile* infection.
- Any proton pump inhibitors, other medicines with gastrointestinal activity or adverse effects (such as laxatives) & medicines that may cause problems if people are dehydrated (such as NSAIDs & diuretics.)

Advise:

- Drinking enough fluids
- · Good hygiene measures & environmental cleaning
- Safety netting if symptoms get worse.

Do not offer antimotility medicines such as loperamide.

Offer treatment as below. If antibiotics have been started for suspected *C. difficile* infection, and subsequent stool sample tests do not confirm infection, consider stopping these antibiotics.

	Drug	Adult dose	Duration
1 st line for 1 st episode of mild, moderate or severe	Vancomycin	125mg QDS	10 days
2 nd line	Discuss with microbiologist any p	atient not improv	ving with Vancomycin.
For further episode within 12 weeks of symptom resolution (relapse)	Fidaxomicin (Discuss first with a microbiologist)	200mg BD	10 days
For further episode >12 weeks after symptom resolution (recurrence)	Vancomycin	125mg QDS	

For any further advice discuss with a microbiologist.

Reference: NICE, Clostridioides difficile infection: antimicrobial prescribing visual summary Last updated July 21.

Threadworm

Treat ALL household contacts at the same time, unless contraindicated.

Advise thorough hygiene measures for 2 weeks if treated with Mebendazole, (hand hygiene; cut fingernails regularly; morning shower, including perianal area). Wash sleepwear, bed linen, and dust and vacuum.

Children under 6 months and pregnant / breastfeeding – hygiene measures only for 6 weeks.

	Drug	Adult dose	Child dose	Duration
Adult / Child >6 months	Mebendazole (available OTC for children > 2 years and adults)	100mg stat	BNF for Children	1 dose. Repeat in 2 weeks if persistent
Child <6 months or pregnant / breastfeeding	Hygiene meas	ures only for 6 w	eeks.	

Useful link: NICE CKS: Threadworm Management Last updated Feb 23.

Acute diverticulitis

If systemically well:

• Consider no antibiotics. Simple analgesia & provide safety netting advice.

If systemically unwell / immunosuppressed / significant co-morbidity:

• Give oral antibiotics if patient does not meet the criteria for referral for suspected complicated acute diverticulitis.

	Drug	Adult dose	Duration
1 st line	Co-amoxiclav	500/125mg TDS	*5 days
Penicillin allergy	Cefalexin PLUS	500mg TDS (up	
(Cefalosporins not suitable if allergy		to 1g to 1.5g TDS	
history is of angioedema, blistering or		or QDS for severe	
swelling, bronchospasm or urticaria		infections)	
or if allergy history is unclear)	Metronidazole	400mg TDS	
Alternative	Trimethoprim PLUS	200mg BD	
	Metronidazole	400mg TDS	

^{*}A longer course may be needed on clinical assessment

Reference: NICE (NG147): Diverticular disease: diagnosis and management Last updated Nov 19.

Helicobacter pylori

Refer to NICE / CKS for treatment summaries.

Genital tract infections

Local GUM services

Local services include iCaSH (integrated Contraception and Sexual Health) for Bedfordshire and Milton Keynes Home (icash.nhs.uk) and Luton Sexual Health for Luton Luton Sexual Health – Providing sexual health advice and guidance to the town

See iCaSH for patient information leaflets.

Both services offer free STI screening postal kits.

Chlamydia trachomatis / urethritis

The national Chlamydia Screening Programme is focussed on reducing the harms of untreated chlamydia infection. As such, opportunistic screening of young people without symptoms in GP practices should focus on young women. Services provided by sexual health providers remain the same.

- If positive, treat, refer to GUM and initiate partner notification, testing and treatment.
- Advise patient with chlamydia to abstain from sexual intercourse until doxycycline is completed or for 7 days after treatment with azithromycin.
- If chlamydia, test for reinfection at 3 to 6 months if under 25 years or consider if over 25 years and high risk.
- As lower cure rate in pregnancy, test for cure, at least 3 weeks after end of treatment.

Vulvo vaginal swabs are the specimen of choice for women. First catch urine is the sample of choice for urethral chlamydia in men.

	Drug	Adult dose	Duration
1 st line	Doxycycline (not in pregnancy)	100mg BD	7 days
1st line in pregnancy / allergy or intolerance to tetracyclines	Azithomycin	1g stat on day one then 500mg OD for 2 days	3 days
2 nd line if doxycycline	Erythromycin OR	500mg BD	10-14 days
or Azithromycin is contraindicated:	Ofloxacin (not in pregnancy / breastfeeding)	200mg BD or 400mg OD	7 days
5 4 5 5 6 5 1	1 1: 01 1 201 7 (1		<u> </u>

Reference: BASHH Guideline Chlamydia 2015 (last update 2018)

Gonorrhoea

- Refer to GUM.
- Antibiotic resistance (ciprofloxacin) is now very high.
- Use IM ceftriaxone if susceptibility not known prior to treatment.
- Use ciprofloxacin **only** if susceptibility is known prior to treatment and the isolate is sensitive to ciprofloxacin at all sites of infection
- Advise patients to abstain from sexual intercourse until seven days after they and their partner(s) have completed treatment.
- Test of cure (TOC) is essential. A positive TOC should be discussed with the Sexual Health team for advice.

	Drug	Adult dose	Duration
1 st line.	Ceftriaxone injection	1g via deep IM injection. Reconstitute with Lidocaine 1%. See SPC for full details.	Single dose
Only if known to be Ciprofloxacin sensitive prior to treatment	Ciprofloxacin	500mg PO	Single dose

Reference: BASHH guideline Gonorrhoea 2018

Genital herpes

Advise: saline bathing, analgesia, or topical lidocaine for pain, and discuss transmission.

First episode: treat within 5 days if new lesions or if any systemic symptoms and refer to GUM.

Recurrent: self-care if mild, or immediate short course antiviral treatment, or suppressive therapy if more than 6 episodes per year.

	Drug	Adult dose	Duration
1 st line	Aciclovir OR	400mg TDS	5 days
2 nd line	Valaciclovir	500mg BD	5 days
If recurrent	Aciclovir	800mg TDS	2 days

For more details please see: BASHH Guideline: Anogenital Herpes 2024

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.

Pregnant/breastfeeding: avoid 2g dose.

	D	A alcolated as a se	Dti
	Drug	Adult dose	Duration
1 st line	Metronidazole PO	400mg BD	5 to 7 days or
		or 2g stat	Single dose
2 nd line	Metronidazole 0.75% vaginal gel OR	5g applicator at night	5 nights
	Clindamycin 2% vaginal cream	5g applicator at night	7 nights
	Clindamycin 2% vaginal	5g applicator at night	7 nights

For more details please see: BASHH guideline Bacterial Vaginosis 2012

Trichomoniasis

Oral treatment needed as extra-vaginal infection common.

Treat partners and refer to GUM for other STIs.

Pregnant/breastfeeding: avoid 2g single dose Metronidazole, use 400mg BD. If this is declined / contraindicated seek advice from GUM.

	Drug	Adult dose	Duration
1 st line	Metronidazole	400mg BD Or 2g (more adverse effects)	7 days or Single dose

For more details please see: BASHH: Trichomonas Vaginalis 2021

Vaginal candidiasis

All topical and oral azoles give over 80% cure.

Advise on self-management.

Pregnancy: avoid oral azoles. If 1st line not tolerated / contraindicated use alternate regimes (see links below and for recurrent infection.)

	Drug	Adult dose	Duration
1 st line (non- pregnant)	Fluconazole OR	150mg PO	Single dose (available OTC)
	Clotrimazole	500mg PV pessary	Single dose (available OTC)
1 st line (pregnant & ≥16yrs)	Clotrimazole	500mg PV pessary	Up to 7 days (unlicensed)
Recurrent (>4 episodes per year)	Fluconazole	150mg every 72 hours for 3 doses, followed by 1 dose once a week for 6 months	6 months

For more details please see: <u>BASHH: Vulvovaginal Candidiasis 2019</u> NICE CKS: Management | Candida - female genital Updated Oct 23.

Epididymitis

For infection probably due to a sexually transmitted pathogen (eg. under 35 years, new sexual partner or more than 1 sexual partner in the last year, lack of consistent condom use and a contact of an STI): **Refer to GUM**

For infection probably due to an enteric organism (eg. Older than 35years, not sexually active, recent instrumentation, men who practice insertive anal intercourse, men with known abnormalities of the urinary tract or positive urine dipstick for leucocytes and nitrates.) Treat as below:

	Drug	Adult dose	Duration
1st line	Ofloxacin OR	200mg BD	14 days
	Levofloxacin	500mg OD	10 days
	If quinolones are contraindicated:	625mg TDS	10 days
	Co-amoxicalv		
l –	546111 5 111	1.11. 2020	

For more details please see: BASHH: Epididymo-orchitis 2020

Pelvic inflammatory disease (PID)

Refer women and sexual contacts to GUM.

PID may be symptomatic or asymptomatic.

A positive test for gonorrhea, chlamydia, or *M. genitalium* supports diagnosis but the absence of infection does not exclude PID. Testing for all three organisms is recommended.

Absent pus cells in HVS smear good negative predictive value but their presence is non-specific. Differential diagnoses include: ectopic pregnancy, appendicitis, endometriosis, UTI, ovarian cyst torsion or rupture, functional pain.

If M. genitalium tests positive use moxifloxacin.

	Drug	Adult dose	Duration
1 st line	Ceftriaxone PLUS	1g IM	Single dose
	Metronidazole PLUS	400mg BD	14 days
	Doxycycline	100mg BD	
2 nd line	Metronidazole PLUS	400mg BD	14 days
	Ofloxacin OR	400mg BD	-
	Moxifloxacin alone	400mg OD	14 days

For more details: BASHH guidelines PID 2019

CNS infection

Suspected meningococcal disease

Transfer all patients to hospital as an emergency.

Do not delay transfer to hospital to give antibiotics. If there is likely to be a clinically significant delay in transfer to hospital for people with strongly suspected bacterial meningitis give antibiotics as soon as possible.

Do not give IV antibiotics if there is a definite history of anaphylaxis to penicillins; rash is not a contraindication.

References:

<u>UKHSA: Guidance for public health management of meningococcal disease in the UK</u> <u>Updated Nov 24</u> <u>Overview | Meningitis (bacterial) and meningococcal disease: recognition, diagnosis and management | <u>Guidance | NICE</u> <u>Updated March 24.</u></u>

	Drug	Adult dose	Child dose
Either	Benzylpenicillin	1.2g stat	<1 year: 300mg stat
	IV or IM		1 to 9 years: 600mg stat
			≥10 years: 1.2g stat
OR	Ceftriaxone IV or	2g stat	≥9 years or ≥50kg: 2g stat
	IM		<9 years or <50kg: 80-100mg/kg OD, (up to a maximum of 4g.)

Prevention of secondary case of meningitis

Only prescribe following advice from the UKHSA health protection team (East of England):

■ 0300 3038537. Contacts: UKHSA health protection teams - GOV.UK (www.gov.uk)

Skin & Soft tissue infections

Cold sores

For patients with primary infection **a**dvise on pain relief if needed with paracetamol and / or ibuprofen. Topical antivirals are available OTC, which some people may find helpful.

In healthy patients if frequent, persistent or severe lesions: consider oral prophylaxis on clinical judgement: Aciclovir 200mg 5 times a day for 5 days.

For further management guidance, including immunocompromised patients please refer to NICE Clinical Knowledge Summaries. NICE CKS: Herpes simplex - oral Last updated May 24.

PVL-Staphylococcus Aureus

For management guidance refer to UKHSA <u>PVL-Staphylococcus aureus infections: diagnosis and</u> management

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.

	Drug	Adult dose	Child dose	Duration
Topical antiseptic	Hydrogen peroxide 1%	BD or TDS	BNF for Children	*5 days
Topical antibiotic 1st choice	Fusidic acid 2%	TDS	BNF for Children	
2 nd line if fusidic acid resistance suspected or confirmed	Mupirocin 2%	TDS	BNF for Children	
Oral antibiotic 1st line	Flucloxacillin	500mg QDS	BNF for Children	
Penicillin allergy	Clarithromycin OR	250mg BD	BNF for Children	
	Erythromycin (in pregnancy)	250-500mg QDS	BNF for Children	

^{*5} days is appropriate for most, can be increased to 7 days based on clinical judgement.

Reference: NICE: Impetigo: antimicrobial prescribing visual summary Last updated Feb 20.

Eczema (secondary bacterial infections)

Manage underlying eczema and flares with treatments such as emollients and topical corticosteroids, whether antibiotics are given or not.

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.

If MRSA suspected or confirmed - consult microbiologist.

Presentation	Recommendation				
Not systemically	Do not routinely offer either a topical or oral antibiotic.				
unwell	(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.)				
Systemically unwell	Oral antibiotic. See <u>cellulitis</u> section if appropriate.				

	Drug	Adult dose	Child dose	Duration
Topical antibiotic (If topical is appropriate.) For localised infections only	Fusidic acid 2%	TDS	BNF for Children	5 to 7 days
Oral antibiotic 1st line	Flucloxacillin	500mg QDS	BNF for Children	
Penicillin allergy	Clarithromycin OR	250mg BD (500mg in severe)	BNF for Children	
	Erythromycin (in pregnancy)	250-500mg QDS	BNF for Children	

Reference: NICE: Secondary bacterial infection of eczema: antimicrobial prescribing visual summary Last updated March 21

Mastitis (lactational)

Mastitis is painful inflammation of the breast which may or may not be associated with lactation.

Suspect if woman has: a painful breast; fever and/or general malaise; a tender, red breast.

In lactating women S. aureus is the most common infecting pathogen.

Advise on simple analgesics +/- cold compress if appropriate.

Advise the woman to continue breastfeeding, including from the affected breast.

Prescribe antibiotics as below if a woman has nipple fissure that is infected, symptoms have not improved (or are worsening) after 12-24 hours despite effective milk removal, and / or breast milk culture is positive.

Identify and manage any pre-disposing factors and safety net.

See CKS link below for further details and management of breast abscess.

	Drug	Adult dose (≥14yrs)	Duration
1 st line	Flucloxacillin	500mg QDS	10-14 days
Penicillin allergy	Erythromycin OR	250-500mg QDS	
	Clarithromycin	500mg BD	
Treatment failure / recurrence	Co-amoxiclav	625mg TDS	10-14 days

Reference: NICE Clinical Knowledge summaries <u>NICE CKS Mastitis and breast abscess</u> Last updated Aug 24.

Mastitis (non-lactational)

Advise on simple analgesics +/- warm compress if appropriate.

Identify and manage pre-disposing factors.

Prescribe an antibiotic for all patients and safety net.

See link below for further details

	Drug	Adult dose (≥14yrs)	Duration			
1 st line	Co-amoxiclav	Co-amoxiclav 625mg TDS				
Penicillin allergy	Metronidazole PLUS	400mg TDS				
	Either Clarithromycin	500mg BD				
	Or Erythromycin	250-500mg QDS				
Treatment failure / recurrence	Guided by further investigation / work up. See link below.					

Reference: NICE Clinical Knowledge summaries <u>NICE CKS Mastitis and breast abscess</u> Last updated Aug 24.

Cellulitis and erysipelas

- Exclude other causes of skin redness (inflammatory reactions or non-infectious causes.)
- Consider marking extent of infection with a single-use surgical marker pen.
- Offer an antibiotic. Consider severity, site of infection, risk of uncommon pathogens, any microbiological results and MRSA status.
- Infection around eyes or nose is more concerning because of serious intracranial complications.

Advise:

- Skin will take time to return to normal after finishing antibiotics. Full resolution at 5-7 days is not expected.
- Safety netting

For alternative choice antibiotics for severe infection or suspected or confirmed MRSA infection discuss with a Microbiologist. See also useful link to NICE visual summary at the foot of the table.

Do not routinely offer antibiotics to prevent recurrent cellulitis or erysipelas.

	Drug	Adult dose	Child dose	Duration
1 st line	Flucloxacillin	500mg to 1g QDS	BNF for Children	5 to 7 days*
Penicillin allergy or flucloxacillin unsuitable	Clarithromycin OR	500mg BD	BNF for Children	
	Erythromycin (in pregnancy) OR	500mg QDS	BNF for Children	
	Doxycycline (adults only) OR	200mg on day 1, then 100mg OD	-	
	Co-amoxiclav (children only, not in penicillin allergy)	-	BNF for Children	
If infection near eyes or nose:	Co-amoxiclav	500/125mg TDS	BNF for Children	7 days*
If infection near eyes or nose (penicillin	Clarithromycin AND	500mg BD	BNF for Children	
ällergy)	Metronidazole (in children only if anaerobes suspected)	400mg TDS	BNF for Children	

^{*}A longer course (up to 14 days in total) may be needed but skin takes time to return to normal after finishing antibiotics. Full resolution at 5 to 7 days is not expected.

Reference: NICE (NG141): Cellulitis and erysipelas: antimicrobial prescribing visual summary Last updated Sept 19.

Diabetic foot infection

In diabetes, all foot wounds are likely to be colonised with bacteria.

Diabetic foot infection has ≥ 2 of: local swelling or induration; erythema; local tenderness or pain; local warmth; purulent discharge.

Severity classification				
Mild	local infection with 0.5 to <2cm erythema			
Moderate	local infection with >2cm erythema or involving deeper structures (such as abscess, osteomyelitis, septic arthritis or fasciitis)			
Severe	local infection with signs of a systemic inflammatory response.			

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 severity, risk of complications, previous microbiological results and antibiotic use, and patient preference.

Do not offer antibiotics to prevent diabetic foot infection.

	Drug	Adult dose	Duration
Mild infection 1st line	Flucloxacillin	500mg to 1g QDS	7 days*
Penicillin allergy	Clarithromycin OR	500mg BD	
	Erythromycin (in pregnancy) OR	500mg QDS	
	Doxycycline	200mg on day 1, then 100mg OD (can be increased, see BNF)	

For antibiotic choices for moderate or severe infection, infections where *Pseudomonas aeruginosa* or MRSA is suspected or confirmed, and IV antibiotics refer to the NICE guidelines via useful link below.

Reference: NICE: Diabetic foot infection: antimicrobial prescribing visual summary Updated Oct 19.

Leg ulcer infection

Manage any underlying conditions to promote ulcer healing.

Offer an antibiotic **only** when there are symptoms or signs of infection (such as redness or swelling spreading beyond the ulcer, localised warmth, increased 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

Be aware that it will take time for the infection to resolve (full resolution would not be expected until **after** the antibiotic course is completed.)

	Drug	Adult dose	Duration
1 st line	Flucloxacillin	500mg-1g QDS	7 days
Penicillin allergy /	Doxycycline OR	200mg on day 1, then 100mg OD, (can	
Flucloxacillin		be increased to 200mg OD.)	
unsuitable	Clarithromycin OR	500mg BD	
	Erythromycin (in	500mg QDS	
	pregnancy)		
2 nd line (guided by	Co-amoxiclav OR	500/125 TDS	7 days
C&S when available)	Co-trimoxazole	960mg BD	

For IV antibiotic choices if severely unwell or MRSA suspected or confirmed, refer to link below.

Reference: NICE: Leg ulcer infection: antimicrobial prescribing visual summary Updated Feb 20.

^{*}A longer course (up to a further 7 days) may be needed based on clinical assessment. However, skin does take time to return to normal, and full resolution at 7 days is not expected.

Scabies

Permethrin & Malathion: Treat whole body including face, scalp and under nails.

Home/sexual contacts: treat within 24 hours.

	Drug	Adult dose	Child dose	Duration	
1 st line	Permethrin 5% cream	As above	BNF for Children	2 applications, 1 week apart.	
Permethrin allergy	Malathion 0.5% aqueous liquid	As above	BNF for Children		
Treatment failure	Advise re-treatment with topical. If symptoms persist after re-treatment consider PO Ivermectin / discussion with dermatology.				

Reference: NICE CKS: Scabies Last updated May 24

Insect bites and stings

Most insect bites or stings will not need antibiotics. Do not offer an antibiotic if there are no symptoms or signs of infection. If there are symptoms or signs of infection, see cellulitis and erysipelas.

Human and animal bites

Offer an antibiotic for a human or animal bite 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.

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 another traditional pet bite (excluding cat bite)

Do not offer antibiotic prophylaxis if the bite has broken the skin but not drawn blood.

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.

	Drug	Adult dose	Child dose	Duration
1 st line	Co-amoxiclav	250/125 or 500/125 TDS	BNF for Children	3 days for prophylaxis. 5 days* for
Penicillin allergy	Doxycycline (not to be used in children under 12 or pregnancy) PLUS	200mg on day 1, then 100mg or 200mg OD	BNF for Children	treatment.
	Metronidazole	400mg TDS	BNF for Children	
Pregnancy	Seek specialist advice			

^{*}course length can increase to 7 days (with review) based on clinical assessment of the wound.

Reference: NICE: Human and animal bites: antimicrobial prescribing visual summary Last update Nov 20.

Tick bites (Lyme disease)

Treat erythema migrans **empirically**; serology is often negative early in infection.

For other suspected Lyme disease such as neuroborreliosis (CN palsy, radiculopathy) seek advice.

For management guidance please refer to NICE (NG95): Lyme disease Last updated Oct 18.

	Drug	Adult dose	Child dose	Duration
1st line (without focal symptoms but with erythema migrans and / or non-focal symptoms)	Doxycycline (not to be used in children under 12 or pregnancy)	100mg BD	BNF for Children	21 days
Alternative	Amoxicillin	1g TDS	BNF for Children	
Alternative if both above are unsuitable	Azithromycin	500mg OD	BNF for Children	17 days

Dermatophyte infection: skin (body & groin)

For mild, non-extensive disease advise treatment with a topical antifungal. Advise on self-care.

If an adult has severe or extensive disease, send skin scrapings, and if infection confirmed; use oral antifungal (terbinafine 1st line.) Can also be started if clinical features very suggestive of infection based on clinical judgement.

For detailed management guidance refer to NICE CKS: <u>NICE CKS: Fungal skin infection - body and groin</u> Last updated July 23.

	Drug	Adult dose	Child dose	Duration
1 st line	Topical Terbinafine OR	1% OD to BD	BNF for Children	1 to 4 weeks
	Topical Clotrimazole OR	1% BD	BNF for Children	4 to 6 weeks
	Topical Miconazole	2% BD	BNF for Children	Continue for 10 days after lesions healed

Consider topical corticosteroid if associated marked inflammation: Hydrocortisone 1% OD for up to 7 days

Dermatophyte infection: nail

Advise on self-care management strategies. Treatment is not necessarily needed if the person is not troubled by the appearance of the nail and / or infection is asymptomatic.

For primary infection: Take nail clippings; start oral therapy as below, only if fungal infection is confirmed. If candida or non-dermatophyte infection is confirmed, use oral itraconazole 1st line.

Note: topical nail lacquer (OTC) is only recommended in adults for dermatophyte / candida infection, which is very early with distal superficial nail involvement / superficial white onychomycosis. Cure rates are very low.

Monitor subsequent nail growth 3-6 months after the start of treatment.

For children: seek specialist advice.

For detailed management refer to NICE CKS: NICE CKS: Fungal nail infection Last updated Aug 24

	Drug	Adult dose	Child dose	e Duration
1 st line	Terbinafine	250mg OD	BNF for Children	Fingers: 6 weeks Toes: 12 weeks
2 nd line	Itraconazole (consider safety issues)	200mg BD	-	Pulsed therapy for 1 week, with subsequent courses repeated after 21 days. Fingers: 2 courses. Toes: 3 courses

Acne vulgaris				
Severity				
Mild to	1 or more of:			
Moderate	Any number of non-inflammatory lesions (comedones)			
	Up to 34 inflammatory lesions (with or without non-inflammatory lesions)			
	Up to 2 nodules			
Moderate to	Either or both of:			
Severe	• ≥ 35 inflammatory lesions (with or without non-inflammatory lesions)			
	3 or more nodules			

First-line treatment options: offer a 12 week course of one of the options below, taking account of severity, preferences, etc. Completing the course is important because positive effects can take 6 to 8 weeks. **Do not use:** monotherapy with a topical antibiotic, monotherapy with an oral antibiotic, or a combination of a topical antibiotic and an oral antibiotic

Review at 12 weeks. See detailed information on review / relapse overleaf.

Only continue a topical or oral antibiotic for more than 6 months in exceptional circumstances. Review at 3 monthly intervals and stop the antibiotic as soon as possible.

For more information see the NICE guideline on acne vulgaris Last updated Dec 23.

1 st Line	Drug	Adult dose	Child dose	Duration	
Any Severity	Adapalene (0.1% or 0.3%)/ 2.5%	OD (thinly in	9-17years:	12	
OR	Benzoyl peroxide gel (Epiduo®)	the evening)	As adult	weeks	
Any Severity	Tretinoin 0.025%/ Clindamycin 1%	OD (thinly in	12-17		
OR	gel (Treclin®)	the evening)	years: As		
			adult		
Mild to	Topical Benzoyl peroxide (3% or 5%)	OD (in the	12-17		
Moderate:	/ Clindamycin 1% gel (eg. Duac®)	evening)	years: As		
OR			adult		
Moderate to	Adapalene (0.1% or 0.3%)/ / 2.5%	OD (in the	9-17years:		
Severe:	Benzoyl peroxide gel (Epiduo®)	evening)	As adult		
OR	AND				
	Lymecycline	408mg OD	12-17		
	OR	OR	years: As		
	Doxycycline	100mg OD	adult		
Moderate to	15% or 20% Azelaic acid	BD	12-17		
Severe:	(Finacea® 15% gel or Skinoren®		years: As		
	20% cream)		adult		
	AND				
	Lymecycline	408mg OD	12-17		
	OR	OR	years: As		
	Doxycycline	100mg OD	adult		
	, ,				
Moderate to	For patients unable to tolerate / have				
Severe:	Lymecycline and Doxycycline, consider	•	m /		
	Erythromycin in combination with topical treatment.				
Alternative: (if	Topical Benzoyl peroxide 5% gel /	OD to BD	12-17		
1 st line	wash (Acnecide®)		years: As		
contraindicated,	(Also available OTC)		adult		
or to avoid					
topical retinoids					
or an antibiotic.)					

Acne vulgaris

12 week review

If acne has failed to respond:

- Mild-moderate offer another treatment option.
- Moderate-severe if not previously taking an oral antibiotic, offer an option that includes Lymecycline or Doxycycline plus a topical treatment.
- Moderate-severe- been taking an oral antibiotic consider referral to dermatology

If improving but not cleared completely: Continue treatment for 12 more weeks.

If completely cleared: Stop any oral antibiotic, continue topical treatment.

24 weeks review

• **Mild to moderate** – failure to respond adequately to 2 different 12-week courses of treatment options, consider dermatology referral.

Relapse

If relapses after responding adequately to an appropriate first-line therapy consider either another 12 weeks of the same treatment or an alternative 12 week treatment.

Varicella zoster (chickenpox)

Pregnant / immunocompromised / neonate: seek urgent specialist advice.

Consider symptom relief with paracetamol / chlorpheniramine / topical calamine.

Consider oral Aciclovir in an immunocompetent adult / adolescent (≥14 years) who presents within 24 hours of onset of rash, particularly with severe chickenpox / risk of complications.

For further detailed information see <u>NICE CKS: Child or adult | Management | Chickenpox</u>. Last updated Nov 23

	Drug	Adult dose	Child dose	Duration
1 st line	Aciclovir	800mg 5 times a day	BNF for Children	7 days

Herpes zoster (shingles)

Admit / seek specialist advice if; serious complications suspected, head and neck, ophthalmic, visceral or CNS involvement, severely immunocompromised, immunocompromised child, unusual lesions.

See NICE / CKS link for further details. <u>NICE CKS | Management | Shingles</u> Last updated Nov 24. For other patients manage pain and:

Treat with oral antiviral if ≤72 hours of rash onset and 1 of:

- Immunocompromised (non-severe, based on judgement. If severe refer to hospital.)
- Age ≥50 (post-herpetic neuralgia more likely)
- Non-truncal involvement (excluding head and neck)
- moderate / severe pain or moderate / severe rash
- people with pre-disposing skin conditions

If > 72 hours: consider starting antiviral up to 1 week after rash onset if:

High risk of severe shingles or complications, eg.

- continued vesicle formation
- Immunocompromised / older age
- signs of visceral, cutaneous or neurological dissemination
- severe pain

	Drug	Adult dose	Child dose	Duration
1 st line	Aciclovir	800mg 5 times a day	BNF for Children	7 days
2 nd line	Valaciclovir	1g TDS	BNF for Children	

Dose adjust in patients with reduced renal function.

Eye infections

Conjunctivitis

Treat only if severe, as most cases are viral or self-limiting.

Advise on bathing / cleaning eyelids with cotton wool soaked in boiled and cooled water, cool compresses and lubricating agents.

Bacterial conjunctivitis: usually self-limiting. It is characterised by red eye with mucopurulent, not watery discharge.

	Drug	Adult dose	Child dose	Duration	
1 st line	Bathe / clean eyelids with cotton wool dipped in sterile saline or boiled (cooled) water, to remove crusting				
2 nd line	Chloramphenicol 0.5% eye drops OR	2 hourly for 2 days, then reduce to 3 to 4 times daily.	BNF for Children	48 hours after resolution	
	Chloramphenicol 1% eye ointment	3 or 4 times daily or once daily at night if using antibiotic eye drops during the day.			
3 rd line (has less gram-negative cover)	Fusidic acid 1% gel	BD	BNF for Children		

Reference: NICE CKS: Conjunctivitis management in primary care Last updated Oct 22

Blepharitis

Use 2nd line topical antibiotic if hygiene measures are ineffective after 2 weeks.

If signs of meibomian gland dysfunction or acne rosacea, consider oral antibiotics.

il signs of meibornian giand dysfunction of ache rosacea, consider oral antibiotics.					
	Drug	Adult dose	Child dose	Duration	
1 st line	Eyelid hygiene: Wiping the I	id margins twice daily	then reduce to once	e daily	
	Warm compress: Apply to c	losed eyelids for 5-10) mins once or twice	daily	
	Eyelid massage (with those with posterior blepharitis)				
	Avoid eye makeup. Safety net.				
2 nd line	d line For those with anterior blepharitis: consider topical antibiotic to be rubbed onto the lid margin, see Conjunctivitis.				
For those with posterior blepharitis associated with meibomian gland dysfunction and rosacea, consider oral antibiotics, as per NICE CKS: Rosacea					
Reference	NICE CKS: Blepharitis Man	agement Last update	ed Sept 24.		

Suspected dental infections in primary care

Refer to the dentist for treatment. GP prescribing in Primary Care is **not recommended**. See <u>BMA advice</u>.

References

BASHH 2016 UK National Guideline on the Management of Scabies. Available via <u>Scabies 2016 |</u> BASHH Accessed 10.1.25.

NICE, UKHSA, Summary of antimicrobial prescribing guidance – managing common infections, V1.2 Sept 24. Available via <u>Summary of antimicrobial guidance: Summary of antimicrobial prescribing guidance - managing common infections | RCGP Learning</u> Accessed 10.1.25.

UKHSA. 2021. Guidance on the use of antiviral agents for the treatment and prophylaxis of seasonal influenza. Available via Influenza: treatment and prophylaxis using anti-viral agents - GOV.UK Accessed 7/11/24.