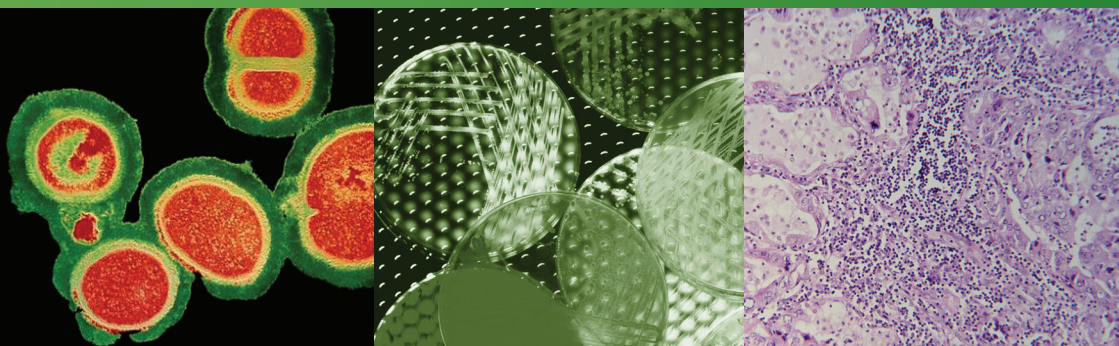


# Antimicrobial Protocol for the **Management of Infection** in Primary Care **2013-2015**

This document applies to the management of infection in primary care for all NHS providers and represents best practice for the private sector.

Next review due May 2015



Do **NOT** use antimicrobials unless absolutely essential

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This document has been adapted from the [e=> Health Protection Agency \(HPA\) Management of Infection guidance for Primary Care February 2013](#) taking into account prevalence and antibiotic resistance patterns of local pathogens with local specialist opinion through consultation with the Microbiologists from The Rotherham Foundation Trust. The guidance is based on the best available evidence but its application must be modified by professional judgement. A dose and duration of treatment for adults is usually suggested, but may need modification for age, weight and renal function. In severe or recurrent cases consideration of a larger dose or longer course may be necessary. Prescribers should also refer to the British National Formulary (BNF) and British National Formulary for Children (BNFC) for further dosing and information regarding interactions.

An electronic version of these guidelines can be found on the NHS Rotherham CCG internet [e=> http://www.rotherham.nhs.uk/clinicians/guidelines.htm#infections](http://www.rotherham.nhs.uk/clinicians/guidelines.htm#infections) and on the CCG Intranet by clicking on the Prescribing and Medicines Management homepage icon and selecting therapeutic guidelines under chapter 5:Infections.

**Where possible always refer to the electronic version as this will be updated with newer information as it becomes available and contains hyperlinks to other references which can be accessed by clicking in the PDF document where you see this symbol e=>**

### Aims

- to provide a simple, empirical approach to the treatment of common infections
- to promote the safe, effective and economic use of antibiotics
- to minimise the emergence of bacterial resistance in the community
- to reduce the incidence of antimicrobial associated diarrhoea and *Clostridium difficile*

### Antimicrobial Resistance (The Path of Least Resistance)

There is a growing national and international concern about the increasing resistance of micro-organisms to antimicrobial agents (House of Lords Select Committee on Science and Technology, Standing Medical Advisory Committee 1998) This resistance is an inevitable consequence of antimicrobial use by Darwinian selection pressure. Resistance makes infections more difficult, and often more expensive to treat and may increase complications and length of hospital stay. The Chief Medical Officer has highlighted the importance of prudent use of antimicrobials, i.e. appropriate choice, dose and duration of antimicrobial therapy in his report "Winning Ways" (December 2003). In general, the more broad-spectrum antimicrobials are more likely to be associated with the emergence of resistance, furthermore some of the less broad spectrum antimicrobials such as ciprofloxacin can select for emergence of MRSA.

### Antimicrobial Associated Diarrhoea

Antimicrobial usage particularly the more broad-spectrum ones may lead to diarrhoea and *Clostridium difficile* colitis. Therefore these guidelines aim to discourage the use of the more broad-spectrum antimicrobials particularly in Elderly patients. Clinicians should review and if possible stop antibiotics as they may increase the likelihood of *Clostridium difficile* Infection (CDI) developing. Antibiotics particularly associated with CDI include broad spectrum agents such as co-amoxiclav, cephalosporins, quinolones (including ciprofloxacin) and clindamycin (the '4C antibiotics'). Any future courses of antibiotics should be prescribed with care and where required a short course of a narrow-spectrum agent is preferable in line with these guidelines. [e=> HPA - Clostridium difficile](#)

These guidelines have been compiled by Jason Punyer, Prescribing Advisor, NHS Rotherham CCG. If you have any comments or suggestions for improvements to this document please contact on:

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☎ 01709 302636 07766442830

## KEY PRINCIPLES OF ANTIMICROBIAL PRESCRIBING:

1. Only prescribe antibiotics where there is evidence of a bacterial infection and there is likely to be a clear clinical benefit and in severe infections initiate antibiotics as soon as possible.
2. Do not prescribe an antibiotic before checking previous microbiology results to determine the patient's usual isolates and sensitivities, if there is a chronic underlying condition and/or to make sure the patient has not grown MRSA, ESBLs (Extended Spectrum Beta-lactamase producers) or clostridium difficile since these isolates will influence your antibiotic choice.
3. Check for hypersensitivity and allergy status, determine if genuine and document description clearly and the severity of it if not documented already.
4. Use simple, well established, generic narrow spectrum antibiotics where possible and they remain effective. Avoid broad spectrum agents (e.g. co-amoxiclav, quinolones and cephalosporins) as they increase the risk of c. difficile, MRSA and resistant UTIs.
5. NHS Rotherham guidelines suggest a dose and duration for empiric treatment; however in severe cases a larger dose or longer course may need to be considered. If in doubt contact Microbiology for advice.
6. Consider a 'no' or 'delayed antibiotic' strategy for acute self-limiting upper respiratory tract infections<sup>1A+</sup> and urinary tract infections when appropriate.
7. Antibiotics are ineffective against viral sore throats, simple coughs and colds.
8. Ensure the clinical indication, dose, route and duration of antibiotics is clearly documented in the patient's medical records.
9. Avoid the use of topical antibiotics, especially those that are available for systemic use (e.g. fusidic acid), this practice tends to compromise their effectiveness since it selects for resistance.
10. Limit prescribing of antibiotics over the telephone to exceptional cases ONLY.
11. Avoid longer courses of treatment than necessary.
12. Lower threshold for antibiotics in immunocompromised or those with multiple morbidities; consider culture and seek advice.
13. Avoid unnecessary use of combinations of antimicrobials where a single drug would be equally effective.
14. Avoid prophylactic use of antibiotics unless of proven benefit.
15. Clarithromycin has a better side-effect profile than erythromycin, greater compliance as its dose is twice rather than four times daily and generic tablets are similar cost and may be a suitable alternative where specifically mentioned. In children erythromycin may be preferable as clarithromycin syrup is twice the cost.

Where 'best guess' or empirical therapy has failed (including any determined through culture and sensitivity) or special circumstances exist, specialist Microbiologist advice can be obtained from Rotherham Foundation Trust (RFT.)

Consultant Microbiologist	☎	01709 304742 / 307712
Microbiology lab	☎	01709 304242
RFT Switchboard	☎	01709 82000 bleep no. 280.

Doses in these guidelines are for adults unless otherwise stated. For detailed information on prescribing in special patient groups, clinicians should consult either the current Antimicrobial Prescribing in Children e=> [British National Formulary \(BNF\)](#) or e=> [BNF for Children\(BNFC\)](#) for further information.

### Antimicrobial Prescribing in Children

The principles of antimicrobial prescribing are the same as those for adults. Historically antibiotic use in children (under 14 years of age) has been very high and has dramatically reduced over the last 10-20 years, although antibiotics are still used to treat common self-limiting infections in children. Patient/parent education and delayed prescribing regimens may be useful strategies to help contain antibiotic overuse.

### Antimicrobial prescribing in pregnancy

Drugs can have harmful effects on the embryo or developing foetus at any time during pregnancy. The BNF identifies drugs that:

- may have harmful effects in pregnancy and indicates the trimester of risk.
- are not known to be harmful in pregnancy.

Generally the following antibiotics or groups of antibiotics should be avoided: tetracyclines, aminoglycosides, quinolones, high dose metronidazole (2g).

Short-term use of nitrofurantoin (at term, theoretical risk of neonatal haemolysis) is unlikely to cause problems to the foetus. Trimethoprim is also unlikely to cause problems unless poor dietary folate intake or taking another folate antagonist such as antiepileptic or proguanil.

Generally the following antibiotics or groups of antibiotics are thought to be safe in pregnancy: penicillins, cephalosporins, erythromycin and nitrofurantoin (except at term).

For further information contact UK teratology information service e => [www.uktis.org](http://www.uktis.org) or 0844 8920909 (09:00 -17:00 Monday- Friday; urgent enquiries only outside these hours).

### Antimicrobial prescribing in breast-feeding

Although there is concern that drugs taken by the mother might affect the infant, there is insufficient evidence to provide guidance on the effect of some drugs in breastfeeding and therefore it is advisable to administer only essential drugs to a mother who is breast-feeding.

The potential for harm to the infant can be inferred from information found under individual drugs in the current BNF which identifies drugs that:

- should be used with caution or are contra-indicated in breast-feeding
- can be given to the mother because they are present in breast milk in amounts which are too small to be harm
- might be present in breast milk in significant amount but are not known to be harmful.

### Antimicrobial prescribing in women co-prescribed oral contraceptives

Recommendations for prescribing antimicrobials changed in January 2011 and were updated in January 2012. In line with the World Health Organization (WHO) and U.S. Medical Eligibility Criteria for Contraceptive Use, 2010 the Faculty of Sexual Reproductive Healthcare (FSRH) no longer advises that additional precautions are required when using combined hormonal contraception with antibiotics that are not enzyme inducers, see e=> [FSRH clinical guidance on drug interactions with hormonal contraception](#) for full details.

### Antimicrobial Prescribing in Renal Impairment

The BNF identifies under individual drugs details of action to take in patients with renal impairment e.g. where there is a caution or contra-indication for use in patients with renal impairment. For further information on dose adjustments for patients with renal impairment consult the Renal Drug Handbook or seek specialist advice before prescribing.

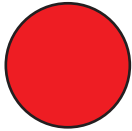
**Allergy Status**

- Always ask for a description of the reaction experienced.
- Document in the notes the name of medicine and the reaction
- Diarrhoea is a result of change in bowel flora and not an allergic reaction
- True penicillin-allergic patients will react to all penicillins. About 10% of penicillin-sensitive patients will also be allergic to cephalosporins. Where patients are penicillin allergic, use clarithromycin in place of the penicillin agent (unless an alternative is specified in the guideline or seek advice from microbiologist on suitable alternatives).

**PENICILLIN ALLERGY**

**LIFE THREATENING IMMEDIATE**

e.g. anaphylaxis  
angiodema  
urticaria  
rash –florid, blotchy



**Do not use (all Beta-lactams)**

**Penicillins**

Amoxicillin  
Benzylpenicillin  
Co-amoxiclav (Augmentin®)  
Co-fluampicil (Magnapen®)  
Flucloxacillin  
HeliClear® (contains amoxicillin, for H pylori eradication)  
Penicillin V  
Piperacillin with Tazobactam (Tazocin®)

**Cephalosporins**

Cefalexin  
Cefotaxime  
Ceftazadime  
Ceftriaxone  
Cefuroxime

**Carbapenems**

Imipenem  
Meropenem

**Monobactam**

Aztreonam  
(microbiologist may advise)

**NOT LIFE THREATENING DELAYED**

e.g. simple rash  
- non confluent  
- non-pruritic  
- restricted to small area



**Use with caution Cephalosporins, carbapenems and monobactams**

Cross-reactivity in 10% of patients allergic to penicillin

**Cephalosporins**

Cefalexin  
Cefotaxime  
Ceftazadime  
Ceftriaxone  
Cefuroxime

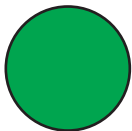
**Carbapenems**

Imipenem  
Meropenem

**Monobactam**

Aztreonam

**ALL TYPES**



**Safe to use antimicrobials not related to beta lactams**

Amikacin  
Azithromycin  
Ciprofloxacin  
Clarithromycin  
Clindamycin  
Colistin  
Co-trimoxazole  
Doxycycline  
Erythromycin  
Gentamicin

Metronidazole  
Nitrofurantoin  
Ofloxacin  
Rifampicin  
Sodium fusidate  
Teicoplanin  
Tetracycline  
Tobramycin  
Trimethoprim  
Vancomycin

# Self Limiting UPPER RESPIRATORY TRACT INFECTIONS<sup>1</sup>

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX														
<b>Influenza</b> <sup>1-3</sup> e=> HPA Influenza e=> NICE Influenza e => UKTIS	<b>Annual vaccination is essential for all those at risk of influenza.</b> For otherwise healthy adults antivirals not recommended. <b>Treat 'at risk' patients</b> , when influenza is circulating in the community and <b>within</b> 48 hours of onset or in a care home where influenza is likely. <b>At risk:</b> pregnant (including up to two weeks post partum), 65 years or over, chronic respiratory disease (including COPD and asthma), significant cardiovascular disease (not hypertension), immunocompromised, diabetes mellitus, chronic neurological, renal or liver disease																	
	Patients under 13 years see e => <b>HPA Influenza</b> If pregnant see e => <b>UKTIS treatment of Influenza in pregnancy</b>	Oseltamivir <b>or</b> zanamivir (if resistance to Oseltamivir)	75mg BD  10mg BD (2 inhalations)	5 Days  <b>or</b> 5 Days														
	For OD prophylaxis see e=> <b>NICE Influenza</b>																	
<b>Acute Sore Throat</b> e=> CKS	<b>Avoid antibiotics</b> as 90% resolve in 7 days without treatment, and pain only reduced by 16 hours <sup>2A+</sup>	Phenoxymethylpenicillin <sup>5B-</sup>	500 mg QDS 1gram BD <sup>6A+</sup> (QDS when severe <sup>7D</sup> )	10 days <sup>8A-</sup>														
		<b>Penicillin Allergy:</b> clarithromycin	250-500mg BD	5 days <sup>9A+</sup>														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Use CENTOR criteria to determine high risk <sup>3A-</sup></th> <th style="text-align: center;">Score</th> </tr> </thead> <tbody> <tr> <td>a) Tonsillar swelling or exudates</td> <td style="text-align: center;">+1</td> </tr> <tr> <td>b) Lymphadenopathy</td> <td style="text-align: center;">+1</td> </tr> <tr> <td>c) History of fever <math>\geq 38^{\circ}\text{C}</math></td> <td style="text-align: center;">+1</td> </tr> <tr> <td>d) Age &lt; 15 years</td> <td style="text-align: center;">+1</td> </tr> <tr> <td>e) Absence of cough</td> <td style="text-align: center;">+1</td> </tr> <tr> <td>f) Age &gt; 45 years</td> <td style="text-align: center;">-1</td> </tr> </tbody> </table>					Use CENTOR criteria to determine high risk <sup>3A-</sup>	Score	a) Tonsillar swelling or exudates	+1	b) Lymphadenopathy	+1	c) History of fever $\geq 38^{\circ}\text{C}$	+1	d) Age < 15 years	+1	e) Absence of cough	+1	f) Age > 45 years	-1
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e) Absence of cough	+1																	
f) Age > 45 years	-1																	
If CENTOR score 3 or 4 there is a higher probability of bacterial infection <b>so consider 2 or 3-day-delayed or immediate antibiotics</b> <sup>1A+</sup>																		
Antibiotics to prevent Quinsy NNT>4000 <sup>4B-</sup>																		
Antibiotics to prevent Otitis media NNT200 <sup>2A+</sup>																		

**Note:** Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup>= Systematic review, <sup>D</sup>= Informal Opinion, See references for full details

# Self Limiting UPPER RESPIRATORY TRACT INFECTIONS<sup>1</sup>

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Acute Otitis Media (child doses)</b> e=> CKS	<b>Optimise Analgesia</b> <sup>2,3B-</sup> <b>Avoid antibiotics</b> as 60% are better in 24 hours without: they only reduce pain at 2 days (NNT15) and do not prevent deafness <sup>4A+</sup>	amoxicillin <sup>8A+</sup>  <i>Penicillin Allergy:</i> azithromycin NB: (Better than erythromycin as active against H.Influenzae and Strep. Pneumonia)	<b>Child doses</b> 40mg/kg/day in 3 doses (max. 1.5g daily) <sup>12B-</sup>  >6m 10mg/kg 15-25kg 200mg 25-35kg 300mg 36-45kg 400mg >45kg 500mg  <b>ALL OD</b>	5 days <sup>13A+</sup>  3 days
	<b>Consider 2 or 3-day-delayed</b> <sup>1A+</sup> <b>or immediate antibiotics</b> for pain relief if: <ul style="list-style-type: none"> <li>• &lt;2yrs AND bilateral AOM (NNT4) or bulging membrane &amp; ≥ 4 marked symptoms <sup>5-7+</sup></li> <li>• <b>All ages</b> with otorrhoea NNT3 <sup>8A+</sup></li> </ul> Abx to prevent Mastoiditis NNT >4000 <sup>9B-</sup>  <b>Chronic or discharging Otitis Media</b> Swab and treat according to culture results or consult microbiologist.			
<b>Acute Otitis Externa</b> e=> CKS	First use aural toilet (if available) & analgesia  Cure rates similar at 7 days for topical acetic acid or antibiotic +/- steroid <sup>1A+</sup>  If disease is more invasive i.e. extending outside ear canal, swab and start oral antibiotics and refer <sup>2A+</sup>	<b>First Line:</b> acetic acid 2%  <b>Second Line:</b> neomycin sulphate with corticosteroid <sup>3A-, 4D</sup>	1 spray TDS  3 drops TDS	7 days  7 days min to 14 days max <sup>1A+</sup>
<b>Acute Rhinosinusitis</b> <sup>5C</sup> e=> CKS	<b>Avoid antibiotics</b> as 80% resolve in 14 days without, and they only offer marginal benefit after 7 days NNT 15 <sup>2,3A+</sup>  <b>Use adequate analgesia</b> <sup>4B+</sup>  Use Co-amoxiclav if sinusitis is of dental origin.	amoxicillin <sup>4A+,7A</sup> <b>or</b> <i>Penicillin Allergy:</i> doxycycline  <b>For persistent symptoms:</b> co-amoxiclav <sup>6B+</sup>	500mg TDS 1gram if severe <sup>11D</sup>  200mg stat /100mg OD  625mg TDS	7 days <sup>9A+</sup>  7 days  7 days
	<b>Consider 7-day-delayed or immediate antibiotic</b> when purulent pharyngeal discharge NNT8 <sup>1,2A+</sup>  In persistent infection use an agent with anti-anaerobic activity eg. co-amoxiclav <sup>6B+</sup>			

**Note:** Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup> = Systematic review, <sup>D</sup> = Informal Opinion, See references for full details



## LOWER RESPIRATORY TRACT INFECTIONS

**NOTE:** Low doses of penicillins are more likely to select out resistance.<sup>1</sup> Do not use quinolones (ciprofloxacin, ofloxacin) first line due to poor pneumococcal activity. Reserve all quinolones (including levofloxacin) for proven resistant organisms .

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Acute cough, bronchitis</b> e=> NICE 69	Antibiotic little benefit if no co-morbidity <sup>1-4A+</sup> Symptom resolution can take 3 weeks.	amoxicillin or <i>Penicillin Allergy:</i> doxycycline	500 mg TDS  200 mg stat /100 mg OD	5 days  5 days
		<b>Consider 7 day delayed antibiotic</b> with symptomatic advice/leaflet <sup>1,5A-</sup> <b>Consider immediate antibiotics if &gt; 80yr and ONE of:</b> hospitalisation in past year, oral steroids, diabetic, congestive heart failure OR> 65yrs with 2 of the above.		
<b>Acute exacerbation of COPD</b> e=> NICE 101 e => Thorax e=> GOLD	Treat exacerbations promptly with antibiotics if purulent sputum <b>and</b> increased shortness of breath <b>and/or</b> increased sputum volume <sup>1-3B+</sup> . <i>Risk factors for antibiotic resistant organisms include co-morbid disease, severe COPD, frequent exacerbations, antibiotics in last 3months<sup>2</sup></i>	amoxicillin  <i>Penicillin Allergy:</i> or doxycycline	500 mg TDS  200 mg stat /100 mg OD	5 days <sup>4c</sup>  5 days <sup>4c</sup>
		or clarithromycin  <b>If resistance risk factors:</b> co-amoxiclav	500 mg BD  625 mg TDS	5 days <sup>4c</sup>  5 days <sup>4c</sup>
<b>Community acquired pneumonia treatment in the community</b> <sup>5C</sup> e=> BTS 2009 Guideline	Score 0 suitable for home treatment; Score 1 - 2: refer to breathing space or hospital assessment / admission; <b>Score 3 - 4: urgent hospital admission</b>  Give immediate IM benzylpenicillin or amoxicillin 1gram orally <sup>D</sup> if delayed admission / life threatening  Mycoplasma infection is rare in over 65s <sup>1</sup>	<b>IF CRB65 = 0:</b>		
		amoxicillin <sup>A+</sup>  or Clarithromycin <sup>A-</sup>  or doxycycline <sup>D</sup>	500 mg TDS  500mg BD  200 mg stat then 100 mg OD	7 days  7 days  7 days
		<b>If CRB65 = 1 &amp; AT HOME:</b>		
		amoxicillin <sup>A+</sup> <b>AND</b> clarithromycin <sup>A-</sup>  or  doxycycline <b>alone</b>	500 mg TDS  500 mg BD  200 mg stat then 100 mg OD	7-10 days  7-10 days

**Note:** Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup>= Systematic review, <sup>D</sup>= Informal Opinion, See references for full details

## MYCOBACTERIAL INFECTIONS

CONDITION	COMMENTS	DRUG	DOSE
<b>Tuber-culosis / Atypical Mycobacterial infection</b> e => NICE CG117 e => HPA	Infection control risk – for appropriate isolation and infection control precautions refer to Infection control team via Rotherham Foundation Trust switchboard ☎ 01709 802000 Advice on management of Tuberculosis can be obtained by contacting the consultant respiratory physician via Rotherham Foundation Trust switchboard or from the TB Specialist Nurse on ☎ 01709 30421735 9 am – 5 pm, Mon - Fri		Follow advice provided by specialist team. In standard treatment for TB the initial phase of 2 months should be followed by a continuation phase of a further 4 months
	Individual cases of suspected or confirmed TB must be reported to Health Protection Unit Tel: 01142428850. Clusters must be reported to the Director of Public Health and or Nurse Consultant Health Protection  <b>Director of Public Health</b> 9 am – 5 pm, Mon - Fri ☎ 01709 255845 <b>Nurse Consultant Health Protection</b> 9 am – 5 pm, Mon - Fri ☎ 01709 255849 <b>Out of hours:</b> Contact Public health on-call doctor via Rotherham Foundation Trust switchboard ☎ 01709 802000		

## MENINGITIS

CONDITION	COMMENTS	DRUG	DURATION OF TX
<b>Suspected meningococcal disease</b> e=> HPA e=> NICE 102 e=> NICE Fever Guidelines	<b>Transfer all patients to hospital immediately.</b>  If time before admission, give IV benzylpenicillin <sup>1,2B+</sup> , unless hypersensitive, i.e. history of difficulty breathing, collapse, loss of consciousness, or rash <sup>1B-</sup>	IV or IM benzylpenicillin  or  IV or IM cefotaxime	Children <1 yr: 300 mg Children 1 - 9 yr: 600 mg Age 10+ years: 1200 mg (give IM if vein cannot be found)  Child < 12 yrs: 50mg/kg Age 12+ years: 1gram (give IM if vein cannot be found)
	<b>Prevention of secondary case of meningitis:                      Only prescribe following advice from Health Protection Agency /Public Health On-Call:</b>  <b>Contact details for Public Health                      9 am – 5 pm, Mon - Fri 01142 428850</b>  <b>Out of hours: Contact on-call Public Health via Rotherham Foundation Trust switchboard ☎ 01709 802000</b>		

Note: Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup>= Systematic review, <sup>D</sup>= Informal Opinion, See references for full details

## URINARY TRACT INFECTIONS

People >65 years: do not treat asymptomatic bacteriuria in the absence of white cells or <10 5, CFU/ml; it is common but is not associated with increased morbidity<sup>1B+</sup> unless pathogen isolate is MRSA.

**Typical UTI Symptoms:** dysuria, urgency, frequency, polyuria, suprapubic tenderness, haematuria

e => See HPA UTI guidance for diagnosis information

**Catheter in situ:** antibiotics will not eradicate asymptomatic bacteriuria; only treat if systemically unwell or pyelonephritis likely<sup>2B+</sup>

Do not use prophylactic antibiotics for catheter changes unless history of catheter-change-associated UTI<sup>3B</sup> (e => NICE and e => SIGN guidance).

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Uncomplicated UTI in adults (no fever or flank pain)</b>  e => HPA QRG e => SIGN e => NICE CG139 e => Women CKS e => Men CKS	<b>WOMEN</b> with severe $\geq 3$ symptoms: treat <sup>1,2C</sup>  <b>WOMEN</b> with mild $\leq 2$ symptoms: use dipstick and presence of cloudy urine to guide treatment. Nitrite & blood/leucocytes has 92% positive predictive chance of infection -ve nitrite, leucocytes, and blood has a 76% negative predictive chance of no infection <sup>3A-</sup>  <b>Counsel women that symptoms may still be present after 3 days but that they will clear.</b>  <b>MEN:</b> Investigate for underlying pathology. Consider prostatitis and send pre-treatment MSU OR if symptoms mild/non-specific, use -ve nitrite and leucocytes to exclude UTI <sup>6C</sup>  >90% coliforms sensitive to Nitrofurantoin. ~70% coliforms sensitive to Trimethoprim	<b>First line</b> Macrobid® (nitrofurantoin) 8B+ 9C 10B+  <b>OR</b> Macrochantin® (nitrofurantoin) 8B+ 9C 10B+	100mg MR BD <sup>11C</sup>  50mg Caps every 6 hours	<b>Women all ages</b> 3 days <sup>2,12,13A+</sup>  <b>Men</b> 7 days <sup>1,4C</sup>
	<b>Prescribe Nitrofurantoin by brand as macrorystal forms of nitrofurantoin are better tolerated and more cost effective</b> <b>Avoid Nitrofurantoin in renal impairment (eGFR&lt;60ml/minute)</b>	<b>OR</b> trimethoprim <sup>7B+</sup>	200mg BD	<b>Women all ages</b> 3 days <sup>2,12,13A+</sup>  <b>Men</b> 7 days <sup>1,4C</sup>
	<b>Second line:</b> perform culture in all treatment failures <sup>1B</sup> Amoxicillin resistance is common; only use if susceptible <sup>14B+</sup> Community multi-resistant e => <a href="#">Extended-spectrum Beta-lactamase</a> E. coli are increasing: nitrofurantoin or fosfomycin ( on microbiology advice, prescribed via Rotherham hospital) are options <sup>14,15B,16A</sup>			
<b>Acute prostatitis</b>  e => BASHH e => CKS	Send MSU for culture and start antibiotics <sup>1C</sup> 4 week course may prevent prostatitis <sup>1C</sup> Quinolones achieve much higher prostate levels <sup>2</sup>  <b>Note: Ciprofloxacin encourages emergence of MRSA and C.difficile</b>	Ciprofloxacin <sup>1C</sup>	500 mg BD	28 days <sup>1C</sup>
		<b>OR</b> Ofloxacin <sup>1C</sup>	200mg BD	28 days <sup>1C</sup>
		<b>Second line</b> trimethoprim <sup>1C</sup>	200mg BD	28 days <sup>1C</sup>
<b>Epididymo-orchitis</b> If UTI suspected,	See Genital tract infections section if STI suspected.  <b>Note: Ciprofloxacin encourages emergence of MRSA and C.diff</b>	Ciprofloxacin	500mg BD	10 days

**Note:** Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup> = Systematic review, <sup>D</sup> = Informal Opinion, See references for full details

# URINARY TRACT INFECTIONS

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX	
<b>UTI in pregnancy</b> e => HPA QRG e => CKS e => UKTIS	Send MSU for culture & sensitivity and start empirical antibiotics <sup>1A</sup> Short-term use of e => <b>nitrofurantoin</b> in pregnancy is unlikely to cause problems to the foetus <sup>2C</sup> manufacturer advises avoid at term. Avoid e => <b>trimethoprim</b> if low folate status <sup>3</sup> or on folate antagonist (e.g. antiepileptic or proguanil) <sup>2</sup> e => <b>Amoxicillin</b> resistance is common; only use if susceptible <sup>14B+</sup> In first trimester; give 400mcg folic acid. If high risk of neural tube defects consider 5mg e => <b>Cefalexin UKTIS</b>	<b>First line:</b> <b>Macrobid®</b> (nitrofurantoin) <b>OR</b> <b>Macrochantin®</b> (nitrofurantoin) 88+ 9C 10B+	100 mg MR BD  50mg Caps every 6 hours	7 days <sup>6C</sup>  7 days <sup>6C</sup>	
		Prescribe Nitrofurantoin by brand as macrocrystal forms of nitrofurantoin are better tolerated and more cost effective. <b>Avoid Nitrofurantoin in renal impairment (eGFR&lt;60ml/minute)</b>	<b>OR</b> if susceptible, amoxicillin	500 mg TDS	7 days <sup>6C</sup>
<b>UTI in children</b> e => HPA QRG e => NICE e => See also NHSR UTI guidelines in children e => RFT Paediatric Antimicrobial Policy 2012-14	<b>Child &lt;3 months:</b> refer urgently for assessment <sup>1C</sup> <b>Child ≥ 3 months:</b> use positive nitrite & blood/leucocytes to start antibiotics <sup>1A+</sup> <b>Send pre-treatment MSU for all.</b> Ensure clear accurate diagnosis for Lower UTI, as may mask other underlying pathology. If ill/toxic, fever >38°C treat as for upper UTI. <b>Recurrent episodes where Imaging tests may be indicated:</b> only refer if child <6 months or atypical UTI <sup>1C</sup> (seriously ill/septic, poor urine stream, kidney/bladder mass, raised creatinine, failure to respond to Treatment within 48hrs, non E-coli infection (inc coliforms).Note: Cefalosporins encourage emergence of ESBLs	<b>Lower UTI:</b> trimethoprim <sup>1A</sup> <b>or</b> nitrofurantoin <sup>1A-</sup> if susceptible, amoxicillin <sup>1A</sup>	See BNF / BNFC for dosage for individual age ranges	<b>Lower UTI</b> 3 days <sup>1A+</sup>	
		NB Trimethoprim is preferred if sensitive and liquid is required as much more cost effective than Nitrofurantoin liquid. <b>Avoid Nitrofurantoin in renal impairment (eGFR&lt;60ml/minute)</b>	<b>Second Line:</b> cefalexin <sup>1C</sup>	See BNF / BNFC for dosage for individual age ranges	<b>Lower UTI</b> 3 days <sup>1A+</sup>
		<b>Upper UTI:</b> co-amoxiclav <sup>1A</sup> <b>Second line:</b> cefixime <sup>2A</sup> (not licensed in children under 6 months)	See BNF / BNFC for dosage for individual age ranges	<b>Upper UTI</b> 7-10 days <sup>1A+</sup>	

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## URINARY TRACT INFECTIONS

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Acute pyelonephritis (Loin pain / Fever)</b>  e => CKS	If admission not needed, send MSU for culture & sensitivities and start antibiotics <sup>1C</sup>	<b>If &lt;50yrs of age</b> ciprofloxacin <sup>3A-</sup>	500 mg BD	10-14 days <sup>3A-</sup>
	If no response within 24 hours, admit <sup>2C</sup>	Norfloxacin is NOT appropriate as does not penetrate parenchyma sufficiently		
<b>Recurrent UTI in women ≥3 UTIs/year</b>	Cranberry products, <sup>4A+, 5A+</sup> <b>OR</b> Post-coital prophylaxis <sup>1,2B+</sup> <b>OR</b> standby antibiotic <sup>3B+</sup> may reduce recurrence.  <b>Nightly:</b> reduces UTIs, but adverse effects <sup>1A+</sup>	<b>If &gt;50yrs of age</b> co-amoxiclav <sup>4C</sup>	625mg (500/125) TDS	14 days <sup>4C</sup>
		Macrodantin® (nitrofurantoin) <b>OR</b> Trimethoprim	50–100 mg capsules  100 mg	See below  See below
		<b>Post coital:</b> stat dose (off-label) <sup>2B+, 3C</sup> <b>Prophylaxis:</b> OD at night <sup>1A+</sup> Prescribe Nitrofurantoin by brand as better tolerated and more cost effective <i>Avoid Nitrofurantoin in renal impairment (eGFR&lt;60ml/minute)</i>		

Note: Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup> = Systematic review, <sup>D</sup> = Informal Opinion, See references for full details

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<p><b>Eradication of Helicobacter pylori</b></p> <p>e=&gt; NICE e=&gt; HPA QRG</p>	<p>Eradication is beneficial in known Duodenal Ulcer (DU), Gastric Ulcer (GU) <sup>1A+</sup> or low grade MALToma <sup>2B+</sup></p> <p>For Non Ulcer Dyspepsia (NUD), the NNT is 14 for symptom relief <sup>3A+</sup></p> <p>Consider test and treat in persistent uninvestigated dyspepsia <sup>4B+</sup></p> <p>Do not offer eradication for Gastro Oesophageal Reflux Disease (GORD) <sup>1C</sup></p> <p><b>Do not use clarithromycin or metronidazole if used in the past year for any infection</b> <sup>5A+, 6A+</sup></p>	<p><b>First line</b> <sup>1A+</sup></p> <p>PPI (use most cost effective that is tolerated)*</p> <p><b>PLUS</b></p> <p>clarithromycin (C)</p> <p><b>AND</b></p> <p>amoxicillin (AM)</p> <p>OR</p> <p><b>Penicillin Allergy:</b> metronidazole (MTZ)</p>	<p>BD</p> <p>500mg BD with AM 250 mg BD with MTZ</p> <p>1gram BD</p> <p>400 mg BD</p>	<p><b>All for 7 days</b> <sup>1,9A+</sup></p> <p>Relapse <sup>10C</sup></p> <p>OR</p> <p>MALToma <sup>1C</sup> 14 days</p>
	<p><b>Symptomatic relapse</b></p> <p>DU/GU relapse: retest for H pylori using stool (preferred as more cost effective) or breath test OR consider endoscopy for culture &amp; susceptibility <sup>1C</sup></p> <p>NUD: Do not retest, offer PPI or H2RA <sup>1C, 3A+</sup></p> <p><b>*PPI choice</b> should be made on the basis of interactions with other medicines and tolerability. A PPI with the lowest acquisition cost should be chosen that is suitable for an individual e.g. most cost effective options are: Lansoprazole 30mg BD or Omeprazole 20mg BD</p> <p>Then use in order: Pantoprazole 40mg BD Esomeprazole 20mg BD Rabeprazole 20mg BD</p>	<p><b>Second line</b> <sup>7A+</sup></p> <p>PPI (use most cost effective that is tolerated)*</p> <p><b>PLUS</b></p> <p>bismuthate (De-nol tab@)</p> <p><b>PLUS 2 unused antibiotics from:</b></p> <p>amoxicillin</p> <p>metronidazole</p> <p>tetracycline <sup>8C</sup></p>	<p>BD</p> <p>120 mg QDS</p> <p>1 gram BD</p> <p>400 mg TDS</p> <p>500 mg QDS</p>	
<p><b>Acute gastro-enteritis</b></p>	<p><b>Antimicrobials usually NOT required.</b></p> <p>May be necessary in invasive salmonellosis. Seek advice from microbiology.</p> <p><b>Cases of food poisoning should be notified.</b></p>			

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# GASTRO- INTESTINAL TRACT INFECTIONS

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Antibiotic associated diarrhoea - Clostridium difficile Infection</b> e => DH & HPA	C. diff Infection (CDI) may manifest whilst on antibiotics, but a significant number of cases occur following cessation of therapy, the incubation period extending to several weeks. Symptoms may include fever, abdominal pain and diarrhoea (with/without blood and or mucus). Antibiotics particularly associated with CDI include broad spectrum agents such as co-amoxiclav, cephalosporins, quinolones (including ciprofloxacin) and clindamycin (the <sup>14C</sup> antibiotics). Any patient with an antigen GDH positive but toxin-positive result should be treated (as below) if the diarrhoea is otherwise unexplained and persists. Patient's with a CDI should have an alert attached in their clinical record in active/current problems, as once a patient has had a CDI or has been identified as antigen GDH positive and C.diff toxin negative the risk of clinical infection remains throughout their life. <b>C.Diff Infection (CDI) (i.e GDH +ve, C.Diff toxin +ve) READ Code: EMIS/Systm One: A3Ay2 Please add a free text alert to identify: GDH +ve, C.Diff toxin -ve:</b>			
	Stop unnecessary antibiotics and/or PPIs <sup>1,2B+</sup> 70% respond to metronidazole in 5 days; 92% in 14 days <sup>3</sup> If severe symptoms or signs (below) should treat with oral vancomycin, review progress closely and/or consider hospital referral. Admit if severe: Temp>38.5°C; WCC >15, rising creatinine or signs/symptoms of severe colitis <sup>1C</sup>	<b>1st/2nd episodes</b> metronidazole <sup>1A-</sup> <b>3rd episode or severe</b> oral vancomycin <sup>1A</sup> See e => <a href="#">RFT Antimicrobial Policy for Adults</a> for full details or consult microbiologist	400 or 500 mg TDS  125mg QDS	14 days <sup>1C</sup>  14 days <sup>1C</sup>
<b>Infectious diarrhoea</b> e => CKS	Refer previously healthy children with acute, painful or bloody diarrhoea to exclude E. coli 0157 infection. <sup>1C</sup> <b>Antibiotic therapy not indicated unless systemically unwell.<sup>2C</sup></b> If systemically unwell and campylobacter suspected (e.g. undercooked meat and abdominal pain), consider <b>Clarithromycin 250–500 mg BD for 5–7 days if treated early<sup>3C</sup></b>			
<b>Travellers diarrhoea</b> e=> CKS	<b>Only consider standby antibiotics for</b> remote areas or people at high-risk of severe illness with travellers' diarrhoea <sup>1,2C</sup> Medical attention should be sought in the country of travel for assessment of whether antibiotics are required or not. If standby treatment appropriate give: <b>ciprofloxacin 500mg BD for 3 days</b> (private Rx) <sup>2C, 3B+</sup> If quinolone resistance high (e.g.south Asia): consider bismuth subsalicylate (Pepto Bismol®) 2 tablets QDS as prophylaxis <sup>2B+</sup> , or for 2 days treatment. <sup>4B+</sup> available to buy over the counter from pharmacies			
<b>Threadworms</b> e => CKS	<b>Treat all household contacts at the same time</b> PLUS advise hygiene measures for 2 weeks (hand hygiene, pants at night, morning shower) PLUS wash sleepwear, bed linen, dust, and vacuum on day one <sup>1C</sup>	<b>&gt;6 months:</b> mebendazole (off-label if <2yrs) <b>3-6 months:</b> piperazine + senna <b>&lt; 3months:</b> 6 weeks hygiene <sup>1C</sup>	100 mg <sup>1C</sup>  2.5ml spoon <sup>1C</sup>	stat  stat, repeat after 2 weeks

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## GENITAL TRACT INFECTIONS

Contact [e => UKTIS](#) for information on foetal risks if patient is pregnant

### STI screening

People with risk factors should be screened for chlamydia, gonorrhoea, HIV, syphilis. Refer individual and partners to GUM service.

**Risk factors:** < 25y, no condom use, recent (<12mth)/frequent change of partner, symptomatic partner <sup>1,2</sup>

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Chlamydia trachomatis</b>  e=> SIGN e=> BASHH e=> HPA e=> CKS	Opportunistically screen all aged 15-25yrs <sup>1</sup> Treat partners and refer to GUM service <sup>2,3 B+</sup> <b>Pregnancy<sup>2C</sup> or breastfeeding:</b> <b>azithromycin</b> (off-label use) is the most effective option <sup>5A+, 6B-</sup> Due to lower cure rate in pregnancy, test for cure 6 weeks after treatment <sup>3C</sup> For suspected epididymitis in men <sup>8A-</sup>	azithromycin <sup>4A+</sup> <b>OR</b> doxycycline <sup>4A+</sup> <i>If Pregnant or breastfeeding:</i> azithromycin <sup>5A+</sup> <b>OR</b> erythromycin <sup>5A+</sup> <b>OR</b> amoxicillin <sup>5A+</sup>	1 gram  100 mg BD  1 gram (off-label use) 500 mg QDS  500 mg TDS	stat <sup>4A+</sup>  7 days <sup>4A+</sup>  stat <sup>5A+</sup>  7 days <sup>5A+</sup>  7 days <sup>5A+</sup>
		doxycycline <b>OR</b> ofloxacin	100mg BD  200mg BD	10 -14 days  14 days
<b>Vaginal candidiasis</b>  e=> BASHH e=>HPA e=>CKS	All topical and oral azoles give 75% cure <sup>1A+</sup>  <b>Pregnancy:</b> avoid oral azole drugs <sup>2B-</sup> use intravaginal for 6 nights/7 days <sup>3A+, 2,4 B-</sup>	clotrimazole <sup>1A+</sup> <b>or</b>	500 mg pess/ 10% cream	stat
		oral fluconazole <sup>1A+</sup>  <i>If Pregnant</i> clotrimazole <sup>3A+</sup> <b>or</b>	150 mg orally  100 mg pessary ON	stat  6 nights <sup>5C</sup>
		miconazole 2% cream <sup>3A+</sup>	5 gram intra-vaginally BD	7 days
<b>Bacterial vaginosis</b>  e=> BASHH e=> HPA e=> CKS	Oral metronidazole is as effective as topical treatment <sup>1A+</sup> but is cheaper.  Less relapse with 7/7 than 2 gram stat at 4 weeks <sup>3A+</sup>  <b>Pregnant <sup>2A+</sup> /breastfeeding:</b> avoid 2 gram stat <sup>3A+, 4B-</sup>  Treating partners does not reduce relapse <sup>5B+</sup>	oral metronidazole <sup>1,3A+</sup> <b>or</b>	400 mg BD or 2 gram	7 days <sup>1A+</sup> stat <sup>3A+</sup>
		If Pregnant metronidazole 0.75% vaginal gel <sup>1A+</sup> <b>or</b>	5 gram applicator ful at night	5 nights <sup>1A+</sup>
		clindamycin 2% crm <sup>1A+</sup>	5 gram applicator full at night	7 nights <sup>1A+</sup>

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## GENITAL TRACT INFECTIONS

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX	
<b>Trichomoniasis</b>  e=> BASHH e=> HPA e=> CKS	Treat partners and refer to GUM service <sup>1B+</sup>  <i>In pregnancy or breastfeeding:</i> avoid 2 gram single dose metronidazole <sup>2B-</sup> .  Consider clotrimazole for symptom relief (not cure) if metronidazole declined <sup>3B+</sup>	metronidazole <sup>4A+</sup>  <i>If Pregnant or breastfeeding:</i> metronidazole <sup>4A+</sup>  <b>OR</b> clotrimazole <sup>3B+</sup>	2 gram OR 400 mg BD  400mg BD  100 mg pessary at night	stat <sup>4A+</sup> 5-7 days <sup>4A+</sup>  5-7 days <sup>4a+</sup>  6 nights <sup>3B+</sup>	
	<b>Pelvic Inflammatory Disease</b>  e=> RCOG e=> BASHH	Consider referral for woman & contacts to GUM service <sup>1,2B+</sup>  Always culture for gonorrhoea & chlamydia <sup>2B+</sup> (GC) 28% of gonorrhoea isolates now resistant to quinolones <sup>3B+</sup>  If gonorrhoea likely (partner has it, severe symptoms, sex abroad) avoid ofloxacin regimen.	metronidazole <sup>PLUS</sup> ofloxacin <sup>1, 2, 4B+</sup> <b>If high risk of GC</b>  Ceftriaxone <sup>PLUS</sup> metronidazole  <b>PLUS</b> doxycycline <sup>1, 2, 4B+</sup>	400 mg BD  400 mg BD  500mg IM  400 mg BD  100 mg BD	14 days  14 days  stat  14 days  14 days
<b>Acute prostatitis</b>  e=> BASHH e=> CKS	Send MSU for culture and start antibiotics <sup>1C</sup>  4-wk course may prevent chronic prostatitis <sup>1C</sup>  Quinolones achieve higher prostate levels <sup>2</sup> <i>Note: Ciprofloxacin encourages emergence of MRSA and C.diff</i>	ciprofloxacin <sup>1C</sup>  <b>or</b> ofloxacin <sup>1C</sup>  <b>2nd line:</b> trimethoprim <sup>1C</sup>	500 mg BD  200 mg BD  200 mg BD	28 days <sup>1C</sup>  28 days <sup>1C</sup>  28 days <sup>1C</sup>	
	<b>Epididymo-orchitis</b>	Most probably STI related, consider referral to GU Medicine for contact tracing and counselling. <b>If UTI suspected, see Urinary tract infections section</b> <i>Note: Ciprofloxacin encourages emergence of MRSA and C.diff</i>	<b>If Chlamydia and gonorrhoea unlikely</b>		
			doxycycline <b>OR</b> ofloxacin	100mg BD  200mg BD	10-14 days  14 days
<b>Infection due to bowel organisms</b>					
		Ciprofloxacin	500mg BD	10 days	

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Conjunctivitis</b> e=>CKS	<p><b>Most conjunctivitis is viral or self-limiting.</b></p> <p><b>Bacterial conjunctivitis is usually unilateral and also self limiting.</b><sup>2C</sup> It is characterised by red eye with mucopurulent, not watery discharge.</p> <p><b>Only treat if severe.</b></p> <p>65% resolve on placebo by day five <sup>1A+</sup></p> <p><b>Fusidic acid has less Gram-negative activity</b> <sup>3</sup></p>	<p><b>If severe:</b>                      4,5B+,6B-</p> <p>Chloramphenicol 0.5% drop</p> <p><b>AND</b> (if needed)                      1% ointment</p> <p><b>Second line:</b>                      fusidic acid 1% gel</p>	<p>2 hourly for 2 days then 4 hourly (<i>whilst awake</i>)</p> <p>at night</p> <p>BD</p>	<p>5 days or 48 hours after resolution</p>
<b>Blepharitis</b> e=> CKS	<p>Blepharitis is a chronic or intermittent condition, and although it cannot typically be cured permanently, symptoms can usually be controlled with adequate self-care measures. Eyelid hygiene is the mainstay of treatment and should be carried out twice daily initially, then reduced to once daily. Artificial tears or ocular lubricants may help ease symptoms.</p> <p><b>If treatment failure then treat as conjunctivitis for 6 weeks.</b></p>			
	<p>Consider prescribing low dose oral tetracycline's (<i>Off licence</i>) if topical antibiotics have failed to elicit an adequate response, or if there are signs of Meibomian gland dysfunction or rosacea.</p>	<p>Tetracycline</p> <p>Oxytetracycline</p> <p>Lymecycline</p> <p>Doxycycline</p>	<p>See <a href="#">CKS link</a></p> <p>Use low doses for 6 weeks<sup>4</sup></p> <p>Doses should be further reduced after 2-4 weeks following improvement</p>	<p>6- 12 weeks repeated courses may be necessary intermitently</p>
<b>Herpes simplex</b> e=> CKS	<p>Urgent referral to ophthalmology. Treat only in primary care in exceptional circumstances and under direction of eye specialist</p>			
	<p>Refer to ophthalmology</p> <p>Avoid steroids</p>	<p>Aciclovir 3% eye ointment</p>	<p>Five times a day at 4 hourly intervals</p>	<p>Continue for three more days after healing</p>
<b>Styes (Hordeola)</b> e=> CKS	<p>Styes are self-limiting and rarely cause serious complications. Symptoms rapidly subside once the styne has ruptured or has been drained. Advise the person: To apply a warm compress (for example, using a clean flannel that has been rinsed with hot water) to the affected eye for 5–10 minutes. Repeat three to four times daily until the styne drains or resolves.</p> <p>To avoid excessively hot compresses (to avoid scalding, particularly in children). See <a href="#">CKS link</a> for full details.</p> <p><b>Patients should not attempt to puncture an external styne themselves.</b></p>			

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX	
<b>MRSA</b>	For MRSA screening and suppression, see e => <a href="#">HPA MRSA QRG</a>				
	Patient's with a history of MRSA should have an alert attached in their clinical record in active/current problems, as once a patient has been identified as MRSA positive the risk of clinical infection remains throughout their life. MRSA is resistant to Beta-lactam Antimicrobials such as flucloxacillin, co-amoxiclav, cephalosporins and other agents such as ciprofloxacin and any future courses of antibiotics should be prescribed with care. <b>MRSA READ codes: EMIS: A3B11 Systm One: XE0R6</b>				
	Use cultures to confirm MRSA infection. For active <b>MRSA infection:</b> Use antibiotic sensitivities to guide treatment. If severe infection or no response to monotherapy after 24-48 hours, seek advice from microbiologist on combination therapy	If active infection, <b>MRSA confirmed</b> by lab results, infection not severe and admission not required <sup>1,2B+</sup>	doxycycline alone <sup>1B+</sup> <b>or</b> clindamycin alone <sup>1,2B+</sup> (if sensitive)	200mg Stat then 100 mg BD  300-450 mg QDS <b>Stop if diarrhoea develops</b>	5 days  7 days
<b>PVL S. aureus</b> e=> <a href="#">HPA QRG</a>	Panton-Valentine Leukocidin (PVL) is a toxin produced by 2% of S. aureus. Can rarely cause severe invasive infections in healthy people. Send swabs if recurrent boils/abscesses. At risk: close contact in communities or sport; poor hygiene <sup>1C</sup>				
<b>Impetigo</b> e=> <a href="#">CKS</a>	Reserve topical antibiotics for very localised lesions to reduce the risk of resistance <sup>1,5C,4B+</sup>	Topical Polyfax® ointment <b>or</b> Hydrogen peroxide (Crystacide®)	Apply BD	Up to 3 weeks	
	Avoid fusidic acid preparations to reduce risk of resistance as also available orally	flucloxacillin <sup>2C</sup>	Apply BD- TDS	Up to 3 weeks	
	For extensive, severe, or bullous impetigo, use oral antibiotics <sup>1C</sup>	<i>If penicillin allergic:</i> clarithromycin <sup>2C</sup>	500 mg QDS	7 days	
	Reserve mupirocin for MRSA <sup>1</sup>	<b>MRSA only</b> mupirocin <sup>3A+</sup>	250-500 mg BD  TDS	7 days  5 days	
<b>Eczema</b>	If no visible signs of infection, use of antibiotics (alone or with steroids) encourages resistance and does not improve healing. <sup>1B</sup> In eczema with visible signs of infection, use oral treatment as in impetigo. <sup>2C</sup>				

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**SKIN / SOFT TISSUE BACTERIAL INFECTIONS**

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<p><b>Bites</b></p> <p>e=&gt; CKS</p>	<p>Thorough irrigation is important <sup>1C</sup></p> <p><b>Human:</b> Assess risk of tetanus, HIV, hepatitis B&amp;C<sup>1C</sup> Antibiotic prophylaxis is advised <sup>3B-</sup></p> <p><b>Animal and Human:</b> Assess risk of tetanus and rabies <sup>2C</sup> Give prophylaxis if cat bite/puncture wound<sup>3</sup>; bite to hand, foot, face, joint, tendon, ligament; immunocompromised / diabetic/asplenic/cirrhotic or elderly patients</p> <p><i>Note: Ciprofloxacin encourages emergence of MRSA and C.diff</i></p>	<p><b>Prophylaxis or treatment:</b></p> <p>co-amoxiclav alone</p> <p><i>If penicillin allergic:</i></p> <p>clindamycin</p> <p><b>PLUS</b> ciprofloxacin</p>	<p>375-625 mg TDS<sup>4C</sup></p> <p>300 mg QDS</p> <p>500 mg BD</p>	<p>All for 7 days<sup>4,5,6C</sup></p> <p><b>AND review at 24 &amp; 48hrs<sup>7C</sup></b></p>
<p><b>Cellulitis</b></p> <p>e=&gt; CKS</p> <p>and</p> <p><b>Erysipelas</b></p> <p>e=&gt; CKS</p>	<p>Ensure correct diagnosis- if bilateral cool red legs with no fever and normal WBC, likely to be stasis dermatitis rather than cellulitis</p> <p>If patient afebrile and healthy other than cellulitis, use oral flucloxacillin alone <sup>1,2C</sup></p> <p>If river or sea water exposure, discuss with microbiologist.</p> <p>If febrile and ill, admit for IV treatment <sup>1C</sup></p> <p><i>Stop clindamycin if diarrhoea occurs.</i></p>	<p>flucloxacillin <sup>1,2,3C</sup></p> <p><i>If penicillin allergic:</i> clarithromycin <sup>1,2,3C</sup></p> <p><b>or</b></p> <p>clindamycin <sup>1,2C</sup></p> <p><b>facial:</b> co-amoxiclav <sup>4C</sup></p>	<p>500 mg QDS</p> <p>500 mg BD</p> <p>300–450 mg QDS</p> <p>500/125 mg TDS</p>	<p>All for 7 days.</p> <p>If slow response continue for a further 7 days.<sup>1C</sup></p>

Note: Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: <sup>A+</sup> = Systematic review, <sup>D</sup> = Informal Opinion, See references for full details

CONDITION	COMMENTS	DRUG	DOSE	DURATION OF THERAPY
<p><b>Acne</b> e=&gt; HPA QRG</p>	<p><b>Note: Acne is generally NOT infected.</b> Dermatology rarely advocate topical antibiotics. Oral preparations should only be used in cases where topical preparations have proved inadequate</p> <p>Tetracyclines only for use in 12+ yrs</p> <p>Minocycline should <b>NOT</b> be used for treatment of acne. e=&gt; DTB</p> <p>Change antibiotic if &lt;50% improvement after 3 months (to Erythromycin or Trimethoprim).</p> <p>If no further response, refer to dermatologist for retinoid therapy NB It is important to check LFTs and fasting lipids pre-referral</p>	<p>Topical Benzoyl Peroxide</p> <p><b>ADD</b></p> <p>Oxytetracycline</p> <p><b>or</b></p> <p>Lymecycline</p> <p><b>or</b></p> <p>Doxycycline</p> <p>Second line (females only) and/or Co-cyprindiol with appropriate advice e=&gt; MHRA</p>	<p>Apply OD – BD After washing with soap and water</p> <p>500mg BD</p> <p>408mg OD</p> <p>100mg OD</p>	<p>Maximum improvement usually after 4-6months but in severe cases may need 2 years or longer.</p>
<p><b>Bacterial Paronychia</b> e=&gt; CKS</p>	<p>Empirical therapy (Staph aureus, beta-heam Strep A,B,C,G)</p> <p>If there is proximal red streaking or lymphadenopathy, consider mixed infection with Streptococcus. Consider treating for both staphylococcal and streptococcal (i.e. add Penicillin V) infection or be guided by swab results Also consider HSV' as this can cause lymphangitis as well (often recurrent)</p>	<p>Flucloxacillin +/-</p> <p>Phenoxy-methylpenicillin</p> <p><i>If penicillin allergic:</i> Erythromycin alone</p>	<p>250mg – 500mg QDS</p> <p>250mg – 500mg QDS</p> <p>250mg – 500mg QDS</p>	<p>7 days</p> <p>7 days</p> <p>7 days</p>

Note: Doses are oral and for adults unless otherwise stated. See BNF or BNFC for further information. Letters indicate strength of evidence: A+ = Systematic review, D = Informal Opinion, See references for full details

**SKIN / SOFT TISSUE BACTERIAL INFECTIONS**

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<p><b>Leg Ulcers</b></p> <p>e=&gt; HPA QRG</p> <p>e=&gt; CKS</p>	<p><b>Ulcers always colonised, often with many organisms. Antibiotics do not improve healing unless active infection</b><sup>1A+</sup></p> <p>If active infection, <i>send pre-treatment swab</i><sup>3C</sup></p> <p>Review antibiotics after culture results.</p> <p>Refer to Tissue Viability Nurse for specialist opinion if infection severe.</p> <p>☎ 01709 423258</p>	<p>Significance is established by clinical signs of infection: Active infection if spreading cellulitis/ increased pain/pyrexia/purulent exudate/odour<sup>2C</sup></p>		
		<p><b>If active infection:</b></p> <p>flucloxacillin or clarithromycin</p> <p><b>Second line</b>, if cultures confirm sensitivity Co-amoxiclav</p>	<p>500 mg QDS</p> <p>500 mg BD</p> <p>625mg TDS</p>	<p>All for 7 days.</p> <p>If slow response continue for a further 7 days.<sup>1C</sup></p>
<p><b>Diabetic patients with an infected foot or foot ulcer</b></p>	<p>Prescribe for Minor infections; Localised erythema, warmth and swelling around ulcer (&lt;3cm).</p> <p>Foot examination, to include:</p> <ul style="list-style-type: none"> <li>• vascular &amp; neurological assessment</li> <li>• Wound assessment</li> <li>• Wound swabs</li> <li>• Blood glucose</li> <li>• Temperature</li> <li>• Pulse and BP</li> </ul> <p>Wound swabs should be obtained as soon as possible and antimicrobials checked against sensitivity results and changed accordingly.</p> <p>For moderate or severe infections refer to Tissue Viability Nurse for specialist opinion. 01709 423258</p>	<p>flucloxacillin</p> <p><b>PLUS</b></p> <p>amoxicillin</p> <p><i>If allergic to penicillin</i></p> <p>erythromycin</p> <p><b>ADD</b></p> <p>metronidazole (if wound malodorous)</p> <p><b>Second line</b></p> <p>co-amoxiclav</p> <p>See also e =&gt; <a href="#">RFT Antimicrobial Policy for Adults</a> for full details</p>	<p>500mg QDS</p> <p>+</p> <p>500mg TDS</p> <p>500mg QDS</p> <p>400mg TDS</p> <p>625mg TDS</p>	<p>All for 7 days &amp; review</p>

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Dermophyte infection – skin</b> e=> CKS body & groin e=> CKS foot e=> CKS scalp	Terbinafine is fungicidal <sup>1</sup> , so treatment time shorter than with fungistatic imidazoles If candida possible, use imidazole <sup>1</sup>	Topical terbinafine <sup>4A+</sup> <b>or</b> topical imidazole <sup>4A+</sup> <b>or</b> (athlete's foot only): topical undecanoates (Mycota <sup>®</sup> ) <sup>4B+</sup>	BD  BD  BD	1-2 weeks <sup>4A+</sup>  for 1-2 wks after healing (i.e. 4-6wks) <sup>4A+</sup>  for 1-2 wks after healing (i.e. 4-6wks) <sup>4A+</sup>
	If intractable: send skin scrapings <sup>2C</sup> If infection confirmed, use oral terbinafine/itraconazole <sup>3B+</sup> Scalp: discuss with specialist	<b>Take nail clippings: start therapy only if infection is confirmed by laboratory</b> <sup>1C</sup> Terbinafine is more effective than azoles <sup>6A+</sup> Liver reactions rare with oral antifungals <sup>2A+</sup> If candida or non-dermatophyte infection confirmed, use oral itraconazole <sup>3B+ 4C</sup> For children, seek specialist advice <sup>3C</sup>	<b>Superficial only</b> amorolfine 5% nail lacquer <sup>5B-</sup>  <b>First line:</b> terbinafine <sup>6A+</sup>  <b>Second line:</b> itraconazole <sup>6A+</sup>	1-2 x weekly fingers toes  250 mg OD fingers toes  200 mg BD  fingers toes
<b>Scalp Ringworm and extensive Tinea infections</b>	Scalp ringworm is most common in pre-pubescent children and is relatively rare in adults. This is because during puberty a chemical change occurs in the glands in your scalp, and these changes make your scalp less attractive to fungi.	Terbinafine  If Terbinafine fails  Itraconazole (pulse)	250mg OD  200mg OD for 7 days	For at least 4 weeks  Repeat after 21 days for 3 courses

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<p><b>Balanitis</b></p> <p>e=&gt;CKS</p>	<p>An irritant balanitis is more common than infective. Regular bathing with saline is soothing followed by use of an emollient (aqueous cream) A sub-preputial swab should be taken for culture.</p> <p>Candidal balanitis is probably more common than bacterial. (e.g.strep anaerobes) and a diagnosis should be made on clinical grounds whilst awaiting culture results.</p>	<p>Topical Clotrimazole 1%</p> <p><b>OR</b></p> <p>Miconazole 2% cream</p>	<p>Apply BD - TDS</p>	<p>Continue for 2-3 days after area has healed</p>
<p><b>Pityriasis versicolor (NB Yeast infection)</b></p> <p>e=&gt;CKS</p>	<p>Selsun® shampoo can be used. (available Over the counter from pharmacies).</p> <p>In recurrent cases, or if extensive or patient immunosuppressed Itraconazole can be considered.</p> <p>Inflammatory depigmentation can last for many months but will eventually recover and isn't an indication for protracted treatment.</p>	<p>Topical Selenium Sulphide shampoo</p> <p>Recurrent or severe cases Itraconazole</p>	<p>Apply neat as a lotion and wash off after 2-8 hours.</p> <p>200mg OD</p>	<p>Repeat in 1 week</p> <p>7 days</p>
<p><b>Seborrhoeic Capitis</b></p>	<p>Virtually incurable and this should be made clear to patients.</p>	<p>Treatment recommendations from dermatology are to rotate treatments between ketoconazole shampoo / Capasal shampoo / Selsun shampoo and betametasone scalp application</p>		

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Oral thrush</b> e=> CKS	May be associated with long term inhaled steroids or long term broad spectrum antibiotics or HIV infection. Chronic infection may indicate malignancy - take a biopsy Check inhaler technique Review antibiotic prescribing e => See also policy for prescribing in neonates and babies  For Oral thrush associated with dentures, see Dental/ Oral Infections section	<b>First line</b> Miconazole (Not licensed in <4 months)	Miconazole 20mg/g oromucosal gel sugar free  1ml QDS after food	Place 5ml to 10ml in the mouth and hold near the affected area(s) QDS for  7 days
		<b>Second line</b> Nystatin Oral Suspension 100,000 u/ml (Not licensed in <1 month) <b>OR</b> <b>If severe use</b> Fluconazole		
<b>Systemic or Dermal candidiasis</b> e=> CKS	All topical and oral imidazoles give 80 - 95% cure.  In pregnancy avoid oral imidazole  Use combination cream with 1% hydrocortisone where inflammation is present  Duration of therapy will depend on clinical condition	Fluconazole	50mg OD	2 - 4 weeks (up to 6 weeks in tinea pedis)  will depend on clinical condition
		<i>pregnancy or breast feeding:</i> Clotrimazole 1% cream +/- 1% hydrocortisone <b>OR</b> Miconazole 2% cream +/- 1% hydrocortisone	Apply BD -TDS  Apply BD	

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**SKIN / SOFT TISSUE VIRAL INFECTIONS**

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Varicella zoster/ chicken pox</b>  e=> CKS  &  <b>Herpes zoster/ shingles</b>	Pregnant / immunocompromised /neonate: seek urgent specialist advice <sup>1B+</sup>  <b>Chicken pox:</b> If started <24h of rash & >14y or severe pain or dense/oral rash or 2o household case or steroids or smoker consider aciclovir <sup>2-4</sup>  <b>Shingles:</b> treat if >50 yrs <sup>5A+</sup> and within 72 hrs of rash <sup>6B+</sup> (Post Herpetic Neuralgia rare if <50yrs <sup>7B-</sup> ); or if active ophthalmic <sup>8B+</sup> or Ramsey Hunt <sup>9C</sup> or eczema.  Consider use of analgesia where required and in adults amitriptyline for reduction of post-herpetic neuralgia.	<b>If indicated for chicken pox/ First line for Shingles:</b> aciclovir <sup>3B+, 5A+</sup>	800 mg five times a day	7 days <sup>3B+</sup>
		<b>Second line for shingles if compliance a problem, as ten times cost</b>  famciclovir <sup>11B+</sup>	250 mg TDS	7 days <sup>11B+</sup>
<b>Herpes simplex (Cold sores)</b>  e=> CKS	<b>Cold sores resolve after 7-10 days even without treatment.</b> The benefits of topical antivirals (aciclovir 5% or penciclovir 1% cream) are small and applied prodromally reduce duration by ~12-24hrs <sup>1,2,3B+,4</sup> If desired, use early in the prodromal stage. Topical preparations available over the counter from pharmacies. <b>Avoid steroids</b>	Aciclovir 5% cream   <b>More serious infections</b> Aciclovir	Apply to lesions at first sign of attack Five times a day at four hourly intervals   200mg five times a day	5 days   5 days
<b>Molluscum contagiosum</b>  e => CKS	This is a common condition, particularly in children with eczema and treatment is not usually necessary. Reassure patient/parents that they are likely to resolve spontaneously after 6 to 18 months and that inflamed lesions are usually about to resolve (being an immunologically mediated inflammatory reaction rather than bacterial secondary infection),			
	Crystacide cream may help as it has some mild anti-viral ( as well as antibacterial action) but use with care as may worsen eczema	Hydrogen peroxide 1% (Crystacide®)	Apply BD- TDS	Up to 3 weeks as necessary for flare ups

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of THERAPY
<b>Scabies</b> e=> CKS	Treat all home & sexual contacts within 24h <sup>1C</sup>  Treat whole body from ear/chin downwards paying particular attention to the web of fingers and toes and brushing under nails. If under 2/elderly, also face/scalp <sup>2</sup>	<b>First line</b> permethrin <sup>3A+</sup> 5% cream (2x30g tubes may be needed for larger patients)  <i>If allergy, pregnancy or breast feeding:</i> malathion <sup>3C</sup> 0.5% aqueous liquid	Apply over whole body, neck down and wash off after 8-12 hours  Apply over whole body and wash off after 24 hours	Apply TWO applications 1 week apart <sup>1C</sup>
	Wash clothes and bed clothes after treatment. Refer to BNF/CKS for full recommendations			
<b>Head Lice</b> e=> CKS	Evidence of a "live" louse should be obtained before initiating treatment Avoid shampoos, cream rinses and mousses.  Treat all affected household members simultaneously.  Advice and treatment available from community pharmacies (OTC or through Minor Ailments "Pharmacy First" Scheme)  DoH patient advice leaflet available at e => DoH	<b>Bug busting comb and hair conditioner is useful for detection and an option for treatment.</b> This involves methodically combing wet hair with the fine-toothed Bug Buster® comb to remove lice (for ~30 mins). This is undertaken for four sessions over 2 weeks. Wet combing should be continued until no full-grown lice have been seen for three consecutive sessions. Clinical trials report success rates of ~50-60%		
		<b>First line</b> Dimeticone 4% lotion  <b>OR</b> Malathion 0.5% aqueous liquid (less effective than dimeticone and resistance has been reported.	Apply to dry hair and scalp leave application on 8 hours then wash off.  Apply to dry hair and scalp leave application on 12 hours and wash off.	A second application may be applied 7 days following the original application

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## DENTAL / ORAL INFECTIONS

This guidance is not designed to be a definitive guide to oral conditions. It is for GPs for the management of acute oral conditions pending being seen by a dentist or dental specialist. GPs should not routinely be involved in dental treatment and, if possible advice should be sought from the patient's dentist, who should have details of how to access treatment out-of-hours, or advice sought from NHS direct on 0845 4647.

CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Mucosal ulceration and inflammation (simple gingivitis)</b>  e => CKS	Temporary pain and swelling relief can be attained with saline mouthwash <sup>1C</sup> Use antiseptic mouthwash: If more severe & pain limits oral hygiene to treat or prevent secondary infection. 2-8C	Simple saline mouthwash <sup>1C</sup>  Chlorhexidine 0.12-0.2% <sup>2-6A+</sup> (Do not use within 30 mins of toothpaste)	½ tsp salt dissolved in glass warm water  Rinse mouth for 1 minute BD with 5 ml diluted with 5-10 ml water.	<b>ALL</b>  Always spit out after use.  Use until lesions resolve or less pain allows oral hygiene
	The primary cause for mucosal ulceration or inflammation (aphthous ulcers, oral lichen planus, herpes simplex infection, oral cancer) needs to be evaluated and treated.	Hydrogen peroxide 6% <sup>6-8A-</sup> (spit out after use)	Rinse mouth for 2 mins TDS with 15ml diluted in ½ glass warm water	
<b>Acute necrotising ulcerative gingivitis<sup>C</sup></b>  e => CKS	Commence metronidazole <sup>1-7</sup> and refer to dentist for scaling and oral hygiene advice. <sup>C</sup>	Metronidazole  If metronidazole inappropriate	400mg TDS	3 Days
	Use in combination with antiseptic mouthwash if pain limits oral hygiene.	chlorhexidine 0.12-0.2% or hydrogen peroxide 6%	see above dosing in mucosal ulceration	Until oral hygiene possible
Only treat if systemic features of infection. Treat for 3 days or until				
<b>Pericoronitis<sup>1B</sup></b>  e => CKS	Refer to dentist for irrigation & debridement. <sup>1C</sup>	amoxicillin <b>OR</b> metronidazole <sup>1-7C</sup>	500 mg <sup>6</sup> TDS  400 mg TDS	3 days  3 days
	If persistent swelling or systemic symptoms use metronidazole. <sup>1-5A</sup> Use antiseptic mouthwash if pain and trismus limit oral hygiene	chlorhexidine 0.12-0.2% or hydrogen peroxide 6%	see above dosing in mucosal ulceration	Until oral hygiene possible

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CONDITION	COMMENTS	DRUG	DOSE	DURATION of TX
<b>Dental abscess<sup>B</sup></b>  e => CKS	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; <sup>1</sup> 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. <sup>2,3</sup> Severe odontogenic infections; defined as cellulitis plus signs of sepsis, difficulty in swallowing, impending airway obstruction, Ludwigs angina. Refer urgently for admission to protect airway, achieve surgical drainage and IV antibiotics The empirical use of cephalosporins, <sup>9</sup> co-amoxiclav, clarithromycin, and clindamycin do not offer any advantage for most dental patients and should only be used if no response to first line drugs when referral is the preferred option. <sup>6,12C</sup>			
	If pus drain by incision, tooth extraction or via root canal. <sup>4-7B</sup> Send pus for microbiology.  True penicillin allergy: use clarithromycin or clindamycin <sup>C</sup> if severe.  If spreading infection (lymph node involvement, or systemic signs ie fever or malaise) ADD metronidazole <sup>8-10C</sup>	Amoxicillin <sup>2</sup> <b>OR</b> Phenoxymethyl penicillin <sup>2</sup> <i>If allergic to penicillin</i> Clarithromycin  <b>Severe infection ADD</b> Metronidazole <sup>8-10</sup> <i>or if allergy</i> Clindamycin <sup>3,8-11</sup>	500 mg TDS <sup>2</sup>  500 mg – 1g QDS <sup>2</sup>  500 mg BD  400 mg TDS  300mg QDS	Up to 5 days review at 3 days <sup>11</sup>       5 days  5 days <sup>11</sup>
<b>Oral Candidiasis associated with dentures</b>	Denture hygiene measures may help to settle an acute episode of oral candidiasis and reduce the risk of recurrence. Leave the dentures out for at least 6 hours in a 24 hour period to promote healing of the gums. If the gums are inflamed they may benefit from dentures being left out for longer.	<b>1st line:</b>  Miconazole 20mg/g oromucosal gel sugar free	Place 5ml to 10ml in the mouth and hold near the affected area(s) QDS	7 days
		<b>Second Line:</b>  Nystatin 100,000units/ml oral suspension sugar free  <b>Treatment failure:</b> Fluconazole 50mg capsules	Place 1 ml in the mouth and hold near the affected area(s) QDS  OD	7 days  7 days
Clean dentures by brushing, and then soak them in a disinfectant solution overnight. The dentures can be soaked in any solution used to sterilize babies bottles (providing they contain no metal). Allow the dentures to air-dry after disinfection — this also kills adherent candida on dentures. Brush the mucosal surface regularly with a soft brush. See a dentist to correct ill-fitting dentures				

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## PROPHYLAXIS AGAINST INFECTIVE ENDOCARDITIS

Antibiotics have been offered routinely as a preventative measure to people at risk of infective endocarditis undergoing interventional procedures. However, there is little evidence to support this practice. Antibiotic prophylaxis has not been proven to be effective and there is no clear association between episodes of infective endocarditis and interventional procedures. Any benefits of prophylaxis need to be weighed against the risks of adverse effects for the patient and of antibiotic resistance developing. As a result, this guideline recommends that antibiotic prophylaxis is no longer offered routinely for defined interventional procedures.

For full details please see [e=> RFT Antimicrobial Policy for Adults](#)

## MEDICAL PROPHYLAXIS

CONDITION	DRUG	DOSE	DURATION of TX
Meningococcal Disease/ Meningitis contacts	Ciprofloxacin oral (Unlicensed Indication) <b>or</b> Rifampicin oral	500mg	single dose
		600 mg BD	2 days
	<i>If pregnant</i> Ceftriaxone i/m	250mg	single dose
Haemophilus Influenzae type b disease contacts	Rifampicin oral	600 mg BD	4 days
Whooping Cough contacts	Erythromycin oral	600 mg QDS	7 days
Post splenectomy / Asplenic patients (Or sickle cell disease patients)	Penicillin V oral	500 mg BD	for Life
	<i>Penicillin allergy</i> Erythromycin oral	500 mg OD	for Life
For Vaccinations information please see <a href="#">e=&gt; RFT Antimicrobial Policy for Adults (splenectomy guidelines, Appendix G)</a>			
Tuberculosis Prophylaxis (Susceptible close contacts or those who have become tuberculin positive)	Isoniazid oral <b>PLUS</b> Rifampicin oral	300 mg OD	for 3 months
	(or for selected patients)	600 mg OD (450 mg if less than 50kg)	
	Isoniazid oral	300 mg OD	for 6 months

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Letters indicate strength of evidence: <sup>A+</sup> = Systematic review, <sup>D</sup> = Informal Opinion, See references for full details

## Notifiable diseases

Doctors must notify the Proper Officer of the local authority (usually the consultant in communicable disease control) when attending a patient suspected of suffering from any of the diseases listed below; a form is available from the Proper Officer. Notification should be made on suspicion, and not delayed whilst awaiting confirmation.

**Anthrax**  
**Botulism**  
**Brucellosis**  
**Cholera**  
**Diarrhoea (infectious bloody)**  
**Diphtheria**  
**Encephalitis, acute**  
**Food poisoning**  
**Haemolytic uraemic syndrome**  
**Haemorrhagic fever (viral)**  
**Hepatitis, viral**  
**Legionnaires' disease**  
**Leprosy**  
**Malaria**  
**Measles**  
**Meningitis**  
**Meningococcal septicaemia**

**Mumps**  
**Paratyphoid fever**  
**Plague**  
**Poliomyelitis, acute**  
**Rabies**  
**Rubella**  
**SARS**  
**Scarlet fever**  
**Smallpox**  
**Streptococcal disease (Group A, invasive)**  
**Tetanus**  
**Tuberculosis**  
**Typhoid fever**  
**Typhus**  
**Whooping cough**  
**Yellow fever**

It is good practice for doctors to also inform the consultant in communicable disease control of instances of other infections (e.g. psittacosis) where there could be a public health risk. From a local Public Health perspective it would also be helpful to contact the Nurse Consultant Health Protection where notifiable diseases are suspected to be more than an isolated case.

Consultant in communicable disease control (CCDC) 01142 428850

Nurse Consultant Health Protection 9 am – 5 pm 01709255849


## Patient education and support materials

Educating patients about the benefits and disadvantages of anti-microbial 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. Educational materials are available from NHS Rotherham Medicines Management Team, through the practice's Prescribing Advisors and Medicines Management Technicians or by contacting Medicines Management admin on 01709302632. There is a 'Non prescription' pad which has been developed for prescribers to use to hand to patients instead of a prescription where antibiotics are not indicated. The 'Non prescription' will have a diagnosis ticked and explains why antibiotics are not necessary and advises patients on self help treatments to ease symptoms. This can be printed directly from this document or pads obtained from the Medicines Management Team. There are also two different designs of poster available for display in GP practices, pharmacies or other public places and a credit card sized information card to educate patients that antibiotics are not always necessary. Both designs of poster are available in A4 or A3 sizes from the Medicines Management Team or printed directly from this document.

# ANTIBIOTICS

## Use them wisely

Many of the common infections of the nose, throat, ears and chest are due to viruses. Viruses are NOT killed by antibiotics. Use this chart to find out which infections are usually caused by viruses. Talk with your doctor or community pharmacist about ways to feel better when you are ill.



NHS  
Rotherham

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Illness	Usual cause		Antibiotic needed
	Virus	Bacteria	
Cold	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
Flu	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
Chest cold (in otherwise healthy children and adults)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
Most sore throats	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
Bronchitis (in otherwise healthy children and adults)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
Runny nose (with green or yellow mucus)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No
Ear infection (Otitis media)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No

Antibiotics should only be used when prescribed to treat a bacterial infection.



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## References and other useful sources of information

This guidance is largely based on the [e => Health Protection Agency \(HPA\) Management of Infection guidance for Primary Care February 2013](#). Where numbers are present as superscript to text they represent references from the HPA guidance and grading of guidance recommendations are qualified by a letter to show the strength of recommendation as shown below:

Study design	Recommendation grade
Good recent systematic review of studies	A+
One or more rigorous studies, not combined	A-
One or more prospective studies	B+
One or more retrospective studies	B-
Formal combination of expert opinion	C
Informal opinion, other information	D

Further additions have been taken from the [e => RFT Antimicrobial Policy for Adults 2013-15](#) and [e => RFT Paediatric Antimicrobial Policy 2012-14](#)

Where [e => CKS](#) is referenced in this document it links to the appropriate clinical area for NHS Clinical Knowledge Summaries <http://cks.nice.org.uk/>

Other useful references consulted for this guidance are shown below:

British society for antimicrobial chemotherapy [e => http://www.bsac.org.uk](#)

NHS Evidence – Infections (Infections specialist collection)

[e => http://www.evidence.nhs.uk](#)

[e => http://www.sdcep.org.uk/index.aspx?o=2334](#) Scottish dental clinical effectiveness programme

BNF 64 September 2012; current BNF [e => www.bnf.org](#)

BNF for Children 2012 – 2013; current BNFC [e => www.bnfc.org](#)

