Antimicrobial Prescribing Quick Reference Guide for Primary Care in Nottinghamshire

For further information and management of other infections not listed here please refer to the full guideline on the Area Prescribing Committee website: [http://www.nottsapc.nhs.uk](http://www.nottsapc.nhs.uk)

Where empirical therapy has failed or special circumstances (e.g. previous C. difficile infection) exist, clinical advice should be sought from Microbiology Department at either Nottingham University Hospitals 01159249924 ext 61163 or Sherwood Forest Hospitals 01623622515 ext 3616.

### Infection Notes

**Recommended Agent(s)**

Doses are for adults unless otherwise stated.

<table>
<thead>
<tr>
<th>Infection</th>
<th>Notes</th>
<th>Doses for adults unless otherwise stated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upper Respiratory Tract Infections</strong></td>
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</tr>
<tr>
<td>Pharyngitis / Tonsillitis</td>
<td>• Consider a delayed prescription (3-5 days) as the majority are viral. 90% resolve in 7 days without antibiotics.</td>
<td>Amoxicillin for 5 days: Neonate 7-28 days: 30mg/kg TDS, 1month-1 yr: 125mg TDS, 1-5yrs: 250mg TDS, &gt;5yrs and adults: 500mg TDS. Penicillin allergy: Clarithromycin 250-500mg BD for 5 days (consider Erythromycin syrup in children).</td>
</tr>
<tr>
<td>NICE CG69</td>
<td>• A low FeverPAIN score 0-1: only 13-18% have streptococcus, close to background carriage. NO antibiotic strategy appropriate with discussion.</td>
<td>Phenoxyemethylpenicillin 1g BD for 10 days (or 500mg - 1g QDS if severe). Penicillin allergy: Clarithromycin 250-500mg BD for 5 days (consider Erythromycin syrup in children).</td>
</tr>
<tr>
<td>CKS</td>
<td>• A FeverPAIN score 2-3: 34-40% have streptococcus. A back-up/ delayed antibiotic is appropriate with discussion.</td>
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<tr>
<td>FeverPAIN</td>
<td>• A Fever PAIN score of ≥4: 62-65% have streptococcus, consider immediate antibiotic if symptoms are severe, or a short delayed prescribing strategy may be appropriate (48 hours).</td>
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<tr>
<td><strong>Acute Otitis Media</strong></td>
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<tr>
<td>CKS</td>
<td>• Consider no or delayed prescribing if not acutely unwell; illness resolves over 4 days in 80% without antibiotics. If acutely unwell (vomiting, fever, pain for &gt;48h and otorhoea) prescribe immediate antibiotics.</td>
<td>First line: Acetic acid 2% 1 spray TDS for 7 days. Second line options: Gentamicin with hydrocortisone, Locorten-Vioform, Otomize®, Sofradex®. If spreading cellulitis: Flucloxacillin 500mg QDS for 5 days.</td>
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<tr>
<td><strong>Otitis Externa</strong></td>
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<tr>
<td>CKS</td>
<td>• Organisms usually present as secondary colonisers. Cure rates similar at 7 days for acetic acid or antibiotic +/- steroid. Oral antibiotics only indicated if spreading cellulitis.</td>
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<tr>
<td><strong>Acute Sinusitis</strong></td>
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<tr>
<td>CKS</td>
<td>• Majority are viral and resolve in 7-10 days without antibiotics. Reserve antibiotics for severe or symptoms &gt;10 days. In persistent infection despite first line therapy, use co-amoxiclav.</td>
<td>Treat for 7 days: Phenoxyemethylpenicillin 500mg QDS or Amoxicillin 500mg TDS (1g TDS if severe) or Doxycycline 200mg stat then 100mg OD.</td>
</tr>
<tr>
<td><strong>Lower Respiratory Tract Infections</strong></td>
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<tr>
<td>Acute Cough, Bronchitis</td>
<td>• Numerous RCTs have shown little or no benefit of antibiotics in otherwise healthy adults. Consider antibiotics if &gt;80yrs and one of the following: hospitalisation in past year, oral steroids, diabetic, heart failure. Or if &gt;65yrs and two of the above.</td>
<td>Doxycycline 200mg stat then 100mg OD for 5 days or Amoxicillin 500mg TDS for 5 days.</td>
</tr>
<tr>
<td>CKS</td>
<td>• Antibiotics are helpful when purulent sputum and increased shortness of breath and/or increased sputum volume. Consider risk factors for resistant organisms: frequent exacerbations, severe COPD, comorbid disease, antibiotics in last 3 months.</td>
<td>Doxycycline 200mg stat then 100mg OD or Amoxicillin 500mg TDS or Clarithromycin 500mg BD for 5 days. If resistance likely: Co-amoxiclav 625mg TDS for 5 days.</td>
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</tbody>
</table>

Authors: Dr Vivienne Weston, Consultant Microbiologist, Nottingham University Hospitals; Dr Amelia Joseph, Microbiology Specialty Registrar, Nottingham University Hospitals; Irina Varlan, Interface and Formulary Pharmacist, Mansfield and Ashfield CCG. Updated July 2017. Review date: August 2020.
### Community Acquired Pneumonia

**BTS 2009**

Use CRB65 score to guide management:

<table>
<thead>
<tr>
<th>CRB65</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Suitable for home treatment</td>
</tr>
<tr>
<td>1-2</td>
<td>Hospital assessment or admission</td>
</tr>
<tr>
<td>3-4</td>
<td>Urgent hospital admission</td>
</tr>
</tbody>
</table>

**CRB65 = 0:**

Amoxicillin 500mg TDS or Doxycycline 200mg stat / 100mg OD or Clarithromycin 500mg BD for 5 days (review at 3 days and extend to 7-10 days slow/poor response)

**CRB65 = 1 and at home:**

Amoxicillin 500mg-1g TDS plus Clarithromycin 500mg BD for 7-10 days or Doxycycline alone 200mg stat / 100mg OD for 7-10 days

### Genital Tract Infections

#### Vaginal Candidiasis

**CKS BASHH**

All topical and oral azoles give 75% cure. In pregnancy avoid oral azoles and use intravaginal treatment for 7 days.

- Clotrimazole 500mg pessary or 10% vaginal cream 5g single application or Fluconazole 150mg orally single dose

#### Chlamydia trachomatis

**BASHH**

- Opportunistically screen 16-25yr olds.
- Refer to an integrated sexual health centre for contact tracing and full sexual health screen.
- Pregnancy or breastfeeding: Azithromycin is the most effective option (unlicensed).
- Lower cure rate in pregnancy, test for cure at 6 weeks.

- Doxycycline 100mg BD 7 days or Azithromycin 1g single dose
- Pregnancy or breastfeeding: Azithromycin (off-label) 1g single dose or Erythromycin 500mg QDS for 7 days or Amoxicillin 500mg TDS for 7 days

#### Neisseria gonorrhoeae

**BASHH**

- Refer to an integrated sexual health centre for management, contact tracing and full sexual health screen. If patient unwilling or cannot access within a reasonable time, then treatment for uncomplicated gonorrhoea can be initiated on basis of a positive Microbiology result.
- Cefixime is no longer recommended.
- Test of cure at 2-4 weeks recommended.

- Ceftriaxone 500mg IM injection plus Azithromycin 1g PO single dose

#### Acute Prostatitis

**CKS**

Send pre-treatment MSU and review with results. Quinolones more effective but risk of adverse events e.g. C. difficile.

- Treat for 28 days:
  - First line: Ciprofloxacin 500mg BD or Ofloxacin 200mg BD
  - Second line: Trimethoprim 200mg BD

#### Pelvic Inflammatory Disease

**BASHH**

Send cervical swab for MC&S for N.gonorrhoeae, and cervical swab for C.trachomatis +/- N.gonorrhoeae. Consider referral to an integrated sexual health centre. Suspected PID in pregnancy requires urgent hospital assessment.

- Ceftriaxone 500mg IM stat plus Metronidazole 400mg BD for 14 days plus Doxycycline 100mg BD for 14 days

### Gastrointestinal Infections

#### Eradication of H.pylori

**NICE CG184**

- Treat positives in known DU, GU or low-grade MAL.Toma.
- Do not offer eradication in GORD.
- Eradication rates have been shown to be higher with 14 versus 7 days of treatment of
- Do not use clarithromycin if used previously for any infection, go to second line therapy

See full guideline for second line therapy and treatment failures.

- First line: Lansoprazole 30mg BD plus Clarithromycin 500mg BD plus Either Amoxicillin 1g BD or Metronidazole 400mg BD

#### Clostridium difficile diarrhoea

**PHE C.difficile**

- Stop unnecessary antibiotics and PPIs.
- Avoid anti-motility drugs in suspected/confirmed disease.
- Assess severity (see full guideline) and consider admission if severe.

Mild disease: Metronidazole 400mg TDS for 10 days Moderate/ unresponsive infection: Vancomycin 125mg QDS for 10 days For severe or recurrent disease see full guideline.
**Threadworms**

- Treat household contacts concurrently.
- Hygiene advice: morning baths/showers, hand-washing, nail cutting, wash bed linen.
- Mebendazole contraindicated in pregnancy and in <6 months of age.

Mebendazole in >6 months: 100mg single dose (not in pregnancy)

**Acute Diverticulitis**

- Routine use of antibiotics in uncomplicated diverticulitis is to be avoided.
- Review within 48 hours to assess clinical response.
- Refer to hospital if unresponsive or severe infection or significant co-morbidities

Co-amoxiclav 625mg TDS for 7 days
Penicillin allergy: Ciprofloxacin 500 mg BD plus Metronidazole 400mg TDS for 7 days

**Skin and Soft Tissue Infections**

<table>
<thead>
<tr>
<th>Infection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impetigo</td>
<td>Topical therapy should be reserved for only <strong>very minor infections</strong> to minimise resistance. The topical agent of choice is: <strong>Polyfax Ointment applied BD for 5 days.</strong> Topical fusidic acid should be avoided due to resistance rates, which may lead to treatment failures. Oral therapy is advised in all but very minor infections.</td>
</tr>
<tr>
<td>Cellulitis</td>
<td>If there is evidence of systemic infection, rapidly spreading cellulitis or severe pain urgent hospital referral is required. In facial cellulitis, use Co-amoxiclav 625mg TDS instead to extend cover to respiratory pathogens. In South Nottinghamshire there is a community based IV antibiotics service for uncomplicated cellulitis as an alternative to hospital admission, contact 0115 846 2376. 7 days. If slow response continue for a further 7 days.</td>
</tr>
<tr>
<td>Leg ulcers</td>
<td>In the absence of cellulitis, treatment not indicated. Send swabs only if clinical evidence of infection. Consider referral to Tissue Viability if difficult cases.</td>
</tr>
<tr>
<td>Diabetic foot infections</td>
<td>Antibiotics should only be used when surrounding cellulitis present. Refer to hospital if ulcer rapidly deteriorating or systemically unwell. First line: Co-amoxiclav 625mg TDS for 7-14 days Penicillin allergy: Clindamycin 300mg QDS for 7-14 days</td>
</tr>
<tr>
<td>Human or Animal Bites</td>
<td>Refer to full guideline for information on prophylaxis and treatment on bite wounds. When Co-amoxiclav is unsuitable and in penicillin allergy, refer to the full guideline. First line: Co-amoxiclav 625mg TDS for 7 days</td>
</tr>
<tr>
<td>Bacterial Conjunctivitis</td>
<td>Most are self-limiting, 64% self-resolve. Consider delayed prescribing strategy 4-5 days for mild cases. Treat if severe infection. PHE recommend not normally necessary to exclude from school or work. If severe: Chloramphenicol 0.5% drops 2 hourly for 48 hours, then 4 hourly. or Chloramphenicol 1% eye ointment TDS Continue for 48 hours after resolution.</td>
</tr>
<tr>
<td>Scabies</td>
<td>Treat whole body from ears/chin downwards and under nails. Treat all household and sexual contacts within 24hr. Two applications, one week apart (can be used in pregnancy and breastfeeding): Permethrin 5% cream or Malathion 0.5% aqueous liquid</td>
</tr>
<tr>
<td>Dermatophyte Nail Infection</td>
<td>Take nail clippings: start therapy only if infection confirmed by laboratory. Terbinafine is more effective thanazole, and liver reactions are rare. In children seek specialist advice. Best treated systemically: First line: Terbinafine 250mg OD for 3 months (fingers) and 6 months (toes). Second line: Itraconazole 200mg BD for 1 week per month for 2 months (fingers) and 3 months (toes).</td>
</tr>
</tbody>
</table>
### Dermatophyte Skin Infections

**CKS**

- Take skin scrapings for culture. See full guideline for dermatophyte scalp infections or intractable disease.

**Topical Terbinafine 1% BD for 1 week or Topical Clotrimazole 1% BD for 4-6 weeks**

### Varicella Zoster Virus Infections

**CKS Chickenpox**

- Chickenpox:
  - In pregnancy, neonates, or immunocompromised: seek urgent specialist advice.
  - Consider aciclovir if >14yrs, severe pain, on corticosteroids, or a smoker, and onset of rash <24hrs

**CKS Shingles**

- Shingles:
  - Treat if >50 years and within 72 hrs of rash (post-herpetic neuralgia rare if <50 years)
  - Treat with valaciclovir if ophthalmic (and refer to Ophthalmology), Ramsay Hunt, eczema, non-truncal distribution, or severe pain or severe rash.

- If treatment indicated:
  - Aciclovir 800mg 5 times a day for 7 days
  - Second line if compliance a problem: Valaciclovir 1g TDS for 7 days

- NB ten times the cost of aciclovir, 250mg tablets are significantly more expensive than 500mg

### Suspected meningitis / meningococcal disease

**Suspected meningitis / meningococcal disease**

- Transfer all patients to hospital immediately. Administer cefotaxime prior to admission, if no history of immediate hypersensitivity to penicillin and use with caution if non-severe allergy.

- Cefotaxime IV or IM if vein cannot be found
  - Child < 12yrs: 50mg/kg
  - Adult and child >12yrs and over: 1g.

### Suspected meningitis / meningococcal disease

**Lower UTI (Cystitis) i.e. no fever or flank pain**

**PHE**

**SIGN UTI**

- **Women:** treat if severe or ≥3 symptoms.
  - If mild or ≤2 symptoms:
    - Urine NOT cloudy has 97% negative predictive value
    - If cloudy, use dipstick: Nitrite plus blood or leucocytes has 92% positive predictive value
  - Send MSU in >65 year olds, treatment failures and when previous resistance to first line agents

- **Men:**
  - Consider prostatitis and send pre-treatment MSU
  - If mild/non-specific symptoms use negative dipstick to exclude UTI

**Before prescribing, consider risk factors for resistance:**

- >65 years old
- Care home resident
- Recurrent UTI
- Hospitalisation in the last 6 months
- Recent travel to country with increased antimicrobial resistance
- Previous resistant organism in urine
- Treatment failures

If risk factors for resistance present, send a pre-treatment urine sample.

- **First line:** Nitrofurantoin 100mg M/R BD (Avoid nitrofurantoin if eGFR <45ml/min - ineffective)
  (Use 50mg QDS if MR capsules unavailable)

- **Second line:**
  - If <65 years and no risk factors for resistance:
    - Trimethoprim 200mg BD
  - If ≥65 years or risk factor for resistance present:
    - Pivmecillinam 400mg stat then 200mg TDS (Pivmecillinam is a penicillin antibiotic)

  Treat women for 3 days and men for 7 days

**Third line (use empirically ONLY if first and second line treatments not suitable):**

- **Fosfomycin:**
  - **Women:** 3g single dose
  - **Men:** 3g stat plus a further 3g three days later

### Upper UTI (Pyelonephritis) **CKS**

- Send pre-treatment MSU.
  - If no response within 24 hours, admit to hospital.

- **First line:** Ciprofloxacin 500mg BD for 7 days

- **Second line:** Trimethoprim 200mg BD for 14 days only if lab report confirms sensitive or Cefalexin 500mg BD for 7 days
| Complicated UTI | Patients with recurrent urinary tract infections, previous urogenital surgery, or functional / anatomical abnormalities of the urinary tract should have previous urine culture results reviewed and a pre-treatment urine sample sent for MC&S. For therapy, follow the lower or upper UTI treatment choices above according to clinical symptoms, and review with urine culture result. Consider a 7 day course depending on response to therapy. |
| UTI in Pregnancy and UTI in Children | See full guideline. |
| Asymptomatic bacteriuria in >65yrs | Do not treat in the absence of symptoms as not associated with increased morbidity. |
| Urinary catheter in situ | Antibiotics will not eradicate bacteriuria. Dipstick tests are unhelpful in the diagnosis of possible catheter-associated UTI. Only treat if systemically unwell or pyelonephritis likely. |